

WELCOME TO HBES 2007

Conference Participants:

It is with great pleasure that we welcome you to the 19th annual meeting of the Human Behavior and Evolution Society at the College of William and Mary in Virginia. We hope you will enjoy our excellent conference facilities, beautiful campus, and historic surroundings, as well as (what we hope will prove to be) an outstanding program.

You will notice that the conference format is generally similar to previous years, and we have retained a few important changes introduced by last year's organizers. First, in light of the large number of posters, there will be two poster sessions (Thursday and Friday evenings) rather than one. (An unfortunate consequence of this necessary change is the loss of the once-traditional Friday evening barbeque dinner.) Second, based on feedback from last year's participants, we will again utilize the computerized presentation timer (developed by Hasan Ayaz) to keep oral presentations synchronized. Third, because of the previous success (i.e., overwhelming number of submissions) for the New Investigator and Postdoctoral Competitions, we have made some changes to the judging procedures and will be unable to announce the winners at the Saturday banquet.

We are grateful to Robert Kurzban, co-organizer of the HBES 2006 conference, for providing us with extensive documentation and materials from last year's conference that has proved invaluable in our planning. We are also grateful to the William and Mary Conference Services office – Elizabeth Kiewiet, Matthew Miller, and Lois Parker – for their terrific work (and patience with us).

We sincerely hope that your conference experience will be both personally enjoyable and intellectually enriching.

Lee Kirkpatrick & Brandy Burkett
Conference Organizers

David Schmitt, Debra Lieberman, & Mark Flinn
Program Committee

Tim Ketelaar
Awards Coordinator

TABLE OF CONTENTS

	PAGE
Schedule at a Glance.....	1
Program of Events	
Thursday	3
Friday	9
Saturday	15
Sunday	19
Poster Sessions	
Thursday	23
Friday	28
Keynote and Plenary Abstracts	33
Session Talk Abstracts	
Thursday Morning	37
Thursday Afternoon	43
Thursday Evening	49
Friday Morning	53
Friday Afternoon	59
Friday Evening	65
Saturday Morning	69
Saturday Afternoon	75
Sunday Early Morning	80
Sunday Late Morning	86
Poster Abstracts	
Thursday	91
Friday	110
Index	129

Schedule at a Glance

Wednesday May 30th

3:00-9:00 p.m.	Registration, Dormitory Check-In	Atrium
7:00-9:00 p.m.	Welcome Reception (complimentary beer and wine)	Lodge 1

Thursday May 31st

8:15-8:45 a.m.	Coffee	Atrium and Tidewater B
8:45-9:00 a.m.	Announcements and Welcome	Commonwealth Auditorium
9:00a-5:00 p.m.	Registration, Dormitory Check-In	Atrium
9:00-10:00 a.m.	Plenary Address: Dan Sperber	Commonwealth Auditorium
10:00-10:30 a.m.	Break (coffee, beverages)	Atrium and Tidewater B
10:30a-12:10 p.m.	Morning Sessions (A1-A4)	
12:10-1:30 p.m.	Lunch Break	
1:30-2:30 p.m.	Plenary Address: Hod Lipson	Commonwealth Auditorium
2:30-3:00 p.m.	Break (coffee, beverages)	Atrium and Tidewater B
3:00-4:40 p.m.	Afternoon Sessions (B1-B4)	
4:40-5:00 p.m.	Break	
5:00-6:00 p.m.	Evening Sessions (C1-C4)	
6:00-7:30 p.m.	Dinner Break	
6:00-7:30 p.m.	HBES Executive Council Meeting	James Room
7:30-9:30 p.m.	Poster Session 1 and Cash Bar	Trinkle Hall

Friday June 1st

8:15-9:00 a.m.	Coffee	Atrium and Tidewater B
9:00a-5:00 p.m.	Registration	Atrium
9:00-10:00 a.m.	Plenary Address: Owen Jones	Commonwealth Auditorium
10:00-10:30 a.m.	Break (coffee, beverages)	Atrium and Tidewater B
10:30a-12:10 p.m.	Morning Sessions (D1-D4)	
12:10-1:30 p.m.	Lunch Break	
12:10-1:30 p.m.	HBES Publications Committee Meeting	James Room
1:30-2:30 p.m.	Plenary Address: C. Sue Carter	Commonwealth Auditorium
2:30-3:00 p.m.	Break (coffee, beverages)	Atrium and Tidewater B
3:00-4:40 p.m.	Afternoon Sessions (E1-E4)	
4:40-5:00 p.m.	Break	
5:00-6:00 p.m.	Evening Sessions (F1-F4)	
6:00-7:30 p.m.	Dinner Break	
7:30-9:30 p.m.	Poster Session 2 and Cash Bar	Trinkle Hall

Saturday June 2nd

8:15-9:00 a.m.	Coffee	Atrium and Tidewater B
9:00a-5:00 p.m.	Registration	
9:00-10:00 a.m.	Plenary Address: David Bjorklund	Commonwealth Auditorium
10:00-10:30 a.m.	Break (coffee, beverages)	Atrium and Tidewater B
10:30a-12:10 p.m.	Morning Sessions (G1-G4)	
12:10-1:30 p.m.	Lunch Break	
1:30-2:30 p.m.	Plenary Address: Martin Nowak	Commonwealth Auditorium
2:30-3:00 p.m.	Break (coffee, beverages)	Atrium and Tidewater B
3:00-4:40 p.m.	Afternoon Sessions (H1-H4)	
4:40-6:30 p.m.	Break	
6:30-8:00 pm	Keynote Address: Paul Ewald	Commonwealth Auditorium
8:00-10:00 p.m.	Banquet	Chesapeake A/B/C

Sunday June 3rd

8:15-9:00 a.m.	Coffee	Atrium and Tidewater B
9:00-10:40 a.m.	Early Morning Sessions (I1-I4)	
10:40-11:00 a.m.	Break (coffee, beverages)	Atrium and Tidewater B
11:00a-12:20 p.m.	Late Morning Sessions (J1-J4)	

12:20 p.m. Conference Ends

PROGRAM OF EVENTS

WEDNESDAY, May 30

3:00-9:00 p.m.	Registration	Atrium
7:00-9:00 p.m.	Welcome Reception	Atrium

THURSDAY, May 31

8:15-8:45 a.m.	Coffee	Atrium and Tidewater B
8:45-9:00 a.m.	Welcome and Announcements	Commonwealth Auditorium
9:00-10:00 a.m.	Plenary: Dan Sperber	Commonwealth Auditorium
	<i>Mindreading, Comprehension, and Epistemic Vigilance in an Evolutionary and Developmental Perspective</i>	
10:00-10:30 a.m.	Break	Atrium and Tidewater B

Morning Sessions

Session A-1: <i>Menstrual Cycle Effects: Mate Choice and Competition</i> Chair: Anthony C. Little	Commonwealth Auditorium
--	-------------------------

TH 10:30	<i>Preferences for masculinity in male bodies change across the menstrual cycle</i> Anthony C. Little, Benedict C. Jones, Robert P. Burriss
TH 10:50	<i>Women's Estradiol Predicts Preference for Facial Cues of Men's Testosterone</i> James R. Roney, Zachary L. Simmons
TH 11:10	<i>Changes in Women's Vocal Behavior across the Ovulatory Cycle</i> Gregory A. Bryant, Martie G. Haselton
TH 11:30	<i>Voice Attractiveness Varies Across the Menstrual Cycle: A Replication and Extension.</i> R. Nathan Pipitone, Gordon G. Gallup Jr.
TH 11:50	<i>The Effects Of Conception Risk On Women's Economic Decision-Making: Changes In Bargaining Behavior Across The Menstrual Cycle</i> Margery Lucas, Elissa Koff, Susan Skeath

Session A-2: *Social Information and Coalition Formation*

Chesapeake A

Chair: Peter J. Richerson

TH 10:30	<i>Success Based Biased Cultural Transmission</i> Peter J. Richerson, Adrian Bell, Charles Efferson, Vicken Hillis, Mark Lubell, Richard McElreath, Tim Waring
TH 10:50	<i>The impact of environmental variability on social learning.</i> Ulf Toelch., M. J. Bruce, S.M. Reader
TH 11:10	<i>Models of Genetic and Cultural Group Selection: A Critical Survey</i> Julian Garcia, Jeroen C.J.M. van den Bergh.
TH 11:30	<i>"What's good for us is good for me": How the mind tracks coalitional valuation</i> Andrew W. Delton, Theresa E. Robertson
TH 11:50	<i>The dynamics of Machiavellian intelligence</i> Sergey Gavrillets, Aaron Vose

Session A-3: *Behavioral Ecology 1:*

Chesapeake B/C

Status, Timing, and Reproductive Success

Chair: John Q. Patton

TH 10:30	<i>Status, its Attributes and Outcomes in a Small-Scale Amazonian Society</i> John Q. Patton
TH 10:50	<i>Early First Birth: Implications to Fitness among Pumé Foragers of Venezuela</i> Karen L. Kramer, Russell D. Greaves
TH 11:10	<i>Realistic Mate Choice among Unmarried Shuar Teenagers</i> Elizabeth G. Pillsworth
TH 11:30	<i>Speed of Puberty, Appearance and Testosterone in Adult Human Males</i> Jamie F. Lawson, Miriam J. Law Smith, Emad A.S. Al-Dujaili, Martin A. Sharp, Michael R. Stirrat, David I. Perrett
TH 11:50	<i>Perceptions of dominance and attractiveness in male voices suggest functional specificity in signal attention</i> Carolyn R. Hodges, David A. Puts, Steven J.C. Gaulin

Session A-4: *Symposium: Humor—What a Funny Adaptation*

Tidewater A

Chair: Gil Greengross

TH 10:30	<i>Do bad jokes make you ugly? The relationship between humor quality and attractiveness</i> Eric R. Bressler, Sigal Balshine
TH 10:50	<i>Is Religion an Exaptation succeeding Humor?</i> Joseph Polimeni, Jeffrey P. Reiss
TH 11:10	<i>Humor in Romantic Contexts: Do Men Participate and Women Evaluate?</i> Christopher J. Wilbur, Lorne Campbell
TH 11:30	<i>The Importance of Status, Personality and Sex in the Use of Self- and Other-deprecating Humor.</i> Gil Greengross, Geoffrey Miller
TH 11:50	<i>Humor in Marriage in Five Cultures</i> Glenn Weisfeld, Nicole T. Nowak, Todd W. Lucas, E. Olcay Imamoglu, Carol C. Weisfeld, Jiliang Shen, Marina Butovskaya, and Michele R. Parkhill

12:10-1:30 p.m. Lunch on Your Own

1:30-2:30 p.m. Plenary: Hod Lipson

Commonwealth Auditorium

***What do Robots Dream of?
Emergent Self-Models in Machine Minds***

2:30-3:00 p.m. Break

Atrium and Tidewater B

Afternoon Sessions

Session B-1: *Menstrual Cycle Effects: EPCs and Flirtation*

Chesapeake A

Chair: Steven W. Gangestad

TH 3:00	<i>Estrus, Pair-Bonding, and the Costs of Extra-Pair Sex</i> Steven W. Gangestad, Randy Thornhill, Christine E. Garver-Apgar
TH 3:20	<i>Intrasexual Conflict Experienced by Women and their Romantic Partners as a Function of Women's Fertility Status</i> Christine E. Garver-Apgar, Steven W. Gangestad, Randy Thornhill
TH 3:40	<i>Ovulatory shifts in women's choice of dress: Naturalistic and experimental evidence</i> Kristina M. Durante, Norman P. Li, and Martie G. Haselton
TH 4:00	<i>Raised salivary testosterone in women is associated with increased attraction to masculine faces</i> L. L. M. Welling, B. C. Jones, L. M. DeBruine, C. A. Conway, M. J. Law Smith, A. C. Little, D. R. Feinberg, M. A. Sharp, & E. A. S. Al-Dujaili
TH 4:20	<i>Fluctuation in Female Gonadal Hormones and Individual Differences in Reproductive Strategy</i> Kikue Sakaguchi, Seijiro Honma, Toshikazu Hasegawa

Session B-2: *Cultural Development and Cross-Cultural Variations*
 Chair: Lisa McAllister

Tidewater A

TH 3:00	<i>The Effects of Acculturation on Fertility in an Indigenous Population</i> Lisa McAllister, Jonathan Stieglitz
TH 3:20	<i>Contextualizing the Punishment or Toleration of Freeriders: A Cross-Cultural Examination of Cooperation</i> Christina N. Pomianek, Reed L. Wadley
TH 3:40	<i>A Holy Grail for Anthropology? Explaining the Latitudinal Gradient in Cultural Diversity</i> Thomas Currie, Ruth Mace
TH 4:00	<i>Origins of Genital Mutilation Behavior: An Adaptive Approach</i> Christopher G. Wilson
TH 4:20	<i>Cultural Evolution Following Changes in the Human Social Environment</i> Lesley Newson

Session B-3: *Behavioral Ecology 2:
 Violence, Group Size, and Niches*
 Chair: David Sloan Wilson

Chesapeake B/C

TH 3:00	<i>COMMUNITY-BASED RESEARCH FROM AN EVOLUTIONARY PERSPECTIVE</i> David Sloan Wilson
TH 3:20	<i>Using Experimental Economics to Explore the Evolutionary-Ecological Paradigm in Human Microsocieties</i> Daniel Tumminelli O'Brien, Omar Tonsi Eldakar, David Sloan Wilson
TH 3:40	<i>The Trade-off between Number and Size of Offspring in Humans and Other Primates</i> Robert S. Walker
TH 4:00	<i>Life history tradeoffs and the health of Shuar juveniles of Morona-Santiago, Ecuador</i> Lawrence S. Sugiyama, Aaron D. Blackwell, George Pryor, III, Pepe Pozo M.D., Washington Tiwia
TH 4:20	<i>Whom Do Children Smell Like More?</i> Alexandra Alvergne, Charlotte Faurie, Michel Raymond

Session B-4: *Symposium: Evolutionary Psychology and Politics*

Chair: Dominic Johnson

Commonwealth
Auditorium

TH 3:00	<i>Adaptive Politics: Strategic Advantages of Psychological Biases?</i> Dominic Johnson
TH 3:20	<i>Natural Defense: Darwinian Perspectives on Security in an Uncertain World</i> Raphael Sagarin
TH 3:40	<i>Evolutionary Psychology and International Relations: Insights for Realism and Nuclear Deterrence Theory</i> Bradley A. Thayer
TH 4:00	<i>Do humans have an evolved 'Theory of Group Mind'?</i> John Tooby, Leda Cosmides
TH 4:20	<i>The Evolution of Political Theory</i> Oliver Curry

4:40-5:00 p.m. Break*Evening Sessions*Session C-1: *Adaptive Value of Religion*

Chair: Ingrid K. Storm

Chesapeake B/C

TH 5:00	<i>Liberal and Conservative Religions as Different Socio-ecological Strategies</i> Ingrid K. Storm, David Sloan Wilson
TH 5:20	<i>Commitment and Cooperation in an Afro-Brazilian Religion</i> Montserrat Soler
TH 5:40	<i>Religious Attachment Theory and the Biosocial Evolution of the Major World Religions</i> Stephen K. Sanderson

Session C-2: *Social Exchange and Health*

Chair: Annemie Ploeger

Tidewater A

TH 5:00	<i>The Origin of Schizophrenia: A View from Evolutionary Developmental Biology</i> Annemie Ploeger, Fritson Galis, Han L.J. van der Maas, Maartje E.J. Raijmakers
TH 5:20	<i>The Apparent Health of Social Partners Biases the Reciprocation of Trust</i> Daniel Brian Krupp, Lisa M. DeBruine, Benedict C. Jones
TH 5:40	<i>Own Attractiveness Affects Strategies in an Economic Game</i> Finlay G. Smith, Lisa M. DeBruine, Benedict C. Jones, Daniel B. Krupp, Claire A. Conway & Lisa L. M. Welling

Session C-3: *Cooperation in Groups: Punishment*

Chair: Timothy Ketelaar

Commonwealth
Auditorium

TH 5:00	<i>Psychological Mechanisms underlying costly Punishment</i> Timothy Ketelaar, Bryan L.Koenig, Robert Kurzban
TH 5:20	<i>Selfishness as second order altruism</i> Omar Tonsi Eldakar, Dene Leo Farrell, David Sloan Wilson
TH 5:40	<i>Group Size, Equity and Efficiency</i> Johan Almenberg, Anna Dreber

Session C-4: *Symposium: Sexual Conflit in Humans*

Chairs: Aaron Goetz and Todd Shackelford

Chesapeake A

TH 5:00	<i>The Art of Persuasion: It Depends on Your Sex</i> Alastair P. C. Davies, Todd K. Shackelford
TH 5:20	<i>Female Adaptations for Rape Avoidance</i> William F. McKibbin, Todd K. Shackelford, Valerie Starratt, Aaron T. Goetz
TH 5:40	<i>Activating Sperm Competition Psychology: An Experimental Study</i> Aaron T. Goetz, Todd K. Shackelford, Valerie G. Starratt, William F. McKibbin

Thursday Poster Session – Trinkle Hall 7:30-9:30 p.m.

See pages 91-109 for locations and abstracts.

Session D-2: *Mate Choice: Face, Voice, and Culture*

Chair: Coren L. Apicella

Commonwealth

Auditorium

FR 10:30	<i>When Hadza Hunter-Gatherers Meet your Average Joe: Cross-cultural preferences for averageness in faces</i> Coren L. Apicella, Anthony C. Little, Frank W. Marlowe
FR 10:50	<i>Voice Pitch, Hunting, Gathering, and Mate Quality Perceptions among Hadza Men and Women</i> David R. Feinberg, Coren L. Apicella, Frank W. Marlowe
FR 11:10	<i>Cultural Variation in Parental Influence on Mate Choice</i> Abraham P. Buunk, Justin H. Park
FR 11:30	<i>The effects of skin colour distribution and topography cues on the perception of female facial age, attractiveness, and health</i> Bernhard Fink, Paul J. Matts, Karl Grammer, Maria Burquest
FR 11:50	<i>You Can Judge a Hormonal Surge by its Cover: Testosterone Responses to Competition in Men are Positively Associated with Facial Masculinity</i> Nicholas Pound, Ian S. Penton-Voak, Alison Surridge

Session D-3: *Aggression: Hazing, Torture, and Suicide*

Chair: Aldo N. Cimino

Chesapeake A

FR 10:30	<i>Is Hazing a Byproduct? Testing the Motivational Systems that Underlie the Abuse of New Group Members</i> Aldo N. Cimino
FR 10:50	<i>Bullies and Victims in Retrospect: Adult Body Morphology, Self-Reported Aggressive Behavior, Pace of Development, and Popularity in College Students</i> Daniel D. White, Andrew C. Gallup
FR 11:10	<i>When What's Good for One Isn't Good for All: Maintaining Dominance at the Expense of Group Performance.</i> Nicole L. Mead, Jon K. Maner
FR 11:30	<i>We Will Hunt Them Down: Social Dominance Orientation, CIRCA, and Ethnic Cleansing</i> Lotte Thomsen, Jim Sidanius, Alan Fiske, Elizabeth Pillsworth
FR 11:50	<i>Dying to Kill: The Dynamics of Suicide Terrorism</i> J. Anderson Thomson, Jr.

Session D-4: *Symposium: Establishing the Evolutionary Study of Traditional Behavior, Part 1*
 Chairs: Craig T. Palmer and Christina N. Pomianek

Chesapeake B/C

FR 10:30	<i>Traditions: The Missing Link in Evolutionary Explanations of Human Behavior</i> Craig T. Palmer
FR 10:50	<i>Traditions as Descendant-Leaving Strategies</i> Lyle B. Steadman
FR 11:10	<i>Judaism as a Tradition-Leaving Strategy</i> Rick Goldberg
FR 11:30	<i>Traditions and Cooperative Behavior: What Makes People Follow the Rules?</i> Nancy E. Aiken
FR 11:50	<i>Comanche Indian Clans and Traditions</i> Gerald Betty

12:10-1:30 p.m. Lunch on Your Own

1:30-2:30 p.m. Plenary: C. Sue Carter **Commonwealth Auditorium**

Molecules And Monogamy: What's Love Got To Do With It?

2:30-3:00 p.m. Break **Atrium and Tidewater B**

Afternoon Sessions

Session E-1: *Reasoning, Language, and Morality*
 Chair: Gary L. Brase

Tidewater A

FR 3:00	<i>Pictorial Representations and Bayesian Reasoning</i> Gary L. Brase
FR 3:20	<i>Differential Inductive Reasoning about Social Categories and Their Members' Traits</i> Cristina Moya, Francisco Gil-White, Robert Boyd, Daniel Fessler
FR 3:40	<i>Adaptationist Approaches to Consciousness</i> Francis F. Steen
FR 4:00	<i>Hazard Management as a Distinct Adaptive Problem</i> Laurence Fiddick
FR 4:20	<i>Is 'Accent' a Dedicated Dimension of Agent Representation?</i> David Pietraszewski, Alex Schwartz, Leda Cosmides, John Tooby.

Session E-2: *Sexual Coercion, Exploitation, and Exclusion*

Chair: David M. Buss

Commonwealth
Auditorium

FR 3:00	<i>Exploitability: From Sexual Deceivability to Competitor Killability</i> David M. Buss, Joshua D. Duntley
FR 3:20	<i>The Psychology of Male In-Pair Sexual Coercion in Forensic and Non-forensic Samples</i> Joseph A. Camilleri, Vernon L. Quinsey
FR 3:40	<i>Avoidance of Sexual Coercion during the Fertile Window</i> Diana S. Fleischman, Carin Perilloux, David M. Buss
FR 4:00	<i>Reducing versus Beating the Competition: Scarce Resources Elicit Differing Forms of Aggression from Females and Males</i> Joyce Benenson, Timothy Antonellis, Benjamin Cotton, Kathleen Noddin, Kristin Campbell
FR 4:20	<i>Social Dominance and Sexual Orientation</i> Thomas E. Dickins, Mark J. T. Sergeant

Session E-3: *Cooperation in Groups: Altruism*

Chair: Wesley Allen-Arave

Chesapeake A

FR 3:00	<i>An Audience of Social Network Members, But Not Strangers, Promotes Charitable Donations</i> Wesley Allen-Arave
FR 3:20	<i>Partner Choice Creates Competitive Altruism in Humans</i> Pat Barclay, Robb Willer
FR 3:40	<i>Acting Like You Mean It: Biological Motion Signals Altruism</i> Michael E. Price, William M. Brown, Jinsheng Kang, Basil Badi, Yue Zhao, Sulafa Yassin, Dominic Johnson
FR 4:00	<i>Twenty seconds are enough - identifying other's altruism by thin slices of behavior</i> Detlef Fetchenhauer, Ton Groothuis
FR 4:20	<i>Is human self-sacrifice adaptive? A mathematical examination of cultural, ecological, and demographic variables contributing to suicidal self-sacrifice in humans</i> Aaron D. Blackwell, Lawrence S. Sugiyama

Session E-4: *Symposium: Establishing the Evolutionary Study of Traditional Behavior, Part 2*
Chair: Craig T. Palmer and Christina N. Pomianek

Chesapeake B/C

FR 3:00	<i>Moral and Legal Systems: Characteristics, origins, and functions</i> Kathryn Coe, Craig T. Palmer
FR 3:20	<i>Incorporating Innovation into Tradition</i> Reed L. Wadley, Christina N. Pomianek
FR 3:40	<i>Kith & Kin: An Extension of the Inclusive Fitness Model</i> Gordon F.M. Rakita
FR 4:00	<i>Traditional Stories as Metatraditions</i> April R. Bass, Todd L. VanPool
FR 4:20	<i>Linguistic Traditions and Dialects as a Means of Recognizing Kin</i> Todd L. VanPool, Christine S. VanPool, April Bass

4:40-5:00 p.m. Break

Evening Sessions

Session F-1: *Emotions, Smiles, Surprises, and Schadenfreude*
Chair: Jennifer S. Davis

Chesapeake A

FR 5:00	<i>Smiles as signals of Status: Evidence from Football Players and Fashion Models</i> Jennifer S. Davis, Timothy Ketelaar, Bryan L. Koenig, L. Wells, M. Klungle
FR 5:20	<i>Judgments of Sex and Emotional Expression of Faces are Not Independent at Brief Presentation Times, or in a Speeded Response Task</i> Ian S. Penton-Voak, N. Wisbey, Nicholas Pound
FR 5:40	<i>Schadenfreude: An Adaptationist Critique</i> Bryan L. Koenig, Leisha A. Colyn, Timothy Ketelaar

Session F-2: *Mate Choice: Preferences and Search Strategies*
Chair: Lynda G. Boothroyd

Commonwealth Auditorium

FR 5:00	<i>Facial Correlates of Sociosexuality</i> Lynda G Boothroyd, Benedict C Jones, D Michael Burt, David I Perrett
FR 5:20	<i>Human Mate Choice Copying</i> Kelly Asso, Lev Gottlieb, Robert Kurzban
FR 5:40	<i>Social Selection: The Invisible Hand that Shaped Altruism</i> Randolph M. Nesse

Session F-3: *Cooperation and Reciprocity*

Chesapeake B/C

Chair: Sarah Mathew

FR 5:00	<i>From asocial to social and back again: Rock-paper-scissor dynamics in the evolution of cooperation</i> Sarah Mathew, Robert Boyd
FR 5:20	<i>Can two wrongs make a right? Considering the initial viability of (second-order) strategies in models of indirect reciprocity.</i> Karthik Panchanathan
FR 5:40	<i>Cooperation in Natural Group Tasks is NOT a Social Dilemma: A Marginally-Diminishing Group Return Curve</i> Tatsuya Kameda, Nobuye Ishibashi, Reid Hastie

Session F-4: *Symposium: The Empathic Brain—*

Tidewater A

Toward the Social Cognitive Analysis of Moral Behavior

Chair: Sven Vanneste

FR 5:00	<i>Empathy and altruistic motivation</i> Jelle De Schrijver
FR 5:20	<i>Do we simulate?</i> Farah Focquaert
FR 5:40	<i>3. Minimal social cues, explicit incentives and mutual cooperation in repeated mixed-motive games.</i> Carolyn H. Declerck, Christophe Boone, Sigrid Suetens

Friday Poster Session – Trinkle Hall 7:30-9:30 p.m.

See pages 110-128 for locations and abstracts.

SATURDAY, JUNE 2nd

8:15-9:00 a.m. Coffee Atrium and Tidewater B

9:00-10:00 a.m. Plenary: David Bjorklund Commonwealth Auditorium

***The Adaptive Nature of Immaturity:
A View from Evolutionary Developmental Psychology***

10:00-10:30 a.m. Break Atrium and Tidewater B

Morning Sessions

Session G-1: *Kinship and Cues to Relatedness* Chesapeake B/C
Chair: Ilanit Tal

SA 10:30	<i>Sibling Kin Recognition: Predicting Altruism and Incest Aversion Among Sibling Pairs</i> Ilanit Tal, Debra Lieberman
SA 10:50	<i>Facilitating Inclusive Fitness: Proximal Mediators of Kin-Based Altruism and Prosocial Behavior</i> Gregory D. Webster, Courtney A. Rocheleau, Angela Hendricks, Angela Bryan
SA 11:10	<i>Kin Recognition Signals in Adult Faces</i> Lisa M. DeBruine, Finlay G. Smith, Benedict C. Jones, S. Craig Roberts, Marion Petrie, Tim D. Spector, L. Morris Gosling
SA 11:30	<i>Genetic Relatedness and Sibling Ties</i> Thomas V. Pollet, Daniel Nettle
SA 11:50	<i>Altruism Towards Cousins</i> Joonghwan Jeon, David M. Buss

Session G-2: *Personality and Individual Differences* Tidewater A
Chair: Randy Thornhill

SA 10:30	<i>What is the Relevance of Attachment and Life History to Political Values?</i> Randy Thornhill, Corey L. Fincher
SA 10:50	<i>Sex and Age Differences on Evolutionary Psychology-Based Individual Differences Motives in a U.S. Census Conforming Stratified Sample</i> Larry C. Bernard
SA 11:10	<i>Prestige and Dominance: Validation of a Self-Report Measure of Two Distinct Pathways to Status</i> Nicole R. Buttermore
SA 11:30	<i>The evolutionary genetics of personality traits and intelligence</i> Lars Penke, Jaap J. A. Denissen, Geoffrey F. Miller
SA 11:50	<i>Selective Attention to Threat in the Psychopathic Personality</i> Eyah Aharoni, Alan J. Fridlund

Session G-3: *Mating: Hormones, Odor, and Morphology*

Chair: Emmalyn L. Garrett

Commonwealth
Auditorium

SA 10:30	<i>A preliminary test of the relative contributions of WHR and BMI assessment psychology to male perceptions of female attractiveness</i> Emmalyn L. Garrett, Aaron D. Blackwell, Lawrence S. Sugiyama
SA 10:50	<i>Waist-Hip Ratio and Cognitive Ability: Is Gluteofemoral Fat a Privileged Store of Neurodevelopmental Resources?</i> William D. Lassek, Steven J.C. Gaulin
SA 11:10	<i>Male Body Build Reveals Developmental Stability</i> William M. Brown, Michael E. Price, Jinsheng Kang, Yue Zhao, Hui Yu
SA 11:30	<i>Does Illness Affect the Axillary Microflora of Humans? A Possible Opportunity for Pathogen-mediated Sexual Selection.</i> Amy Cavanaugh, Lee Dugatkin
SA 11:50	<i>Additional Cross-Cultural Evidence for the Role of Foot Size Relative to Stature in Judgments of Attractiveness and Age</i> Daniel M.T. Fessler, Kevin J. Haley, Salomi S. Asaridou, Mark Cravalho, Tiara Delgado, Maryanne L. Fisher, David Frederick, Paulina Geraldo Perez, Cari Goetz, Kevin Lew, Deanne Lucas, Barbara Rupp, Dong Mei Sun

Session G-4: *Symposium: Life History Theory and Risk*

Chair: Kermyt G. Anderson

Chesapeake A

SA 10:30	<i>Life History Tradeoffs and High-Risk HIV/AIDS Risk Behaviors in South Africa</i> Kermyt G. Anderson
SA 10:50	<i>Risk and Long-Range Dispersal: Searching for Natal Sites of 19th Century Colorado Silver Prospectors</i> Susan Glover, Mary Towner
SA 11:10	<i>Ecological and Cultural Influences on Women's Life Histories: Transnational Data</i> Bobbi S. Low
SA 11:30	<i>Testing the Mother versus the Grandmother Hypothesis in the Dogon</i> Beverly I. Strassmann, Kathy Welch
SA 11:50	<i>An Evolutionary Analysis of Risk Communication: Ambiguity and Ambivalence Hypothesis of Judgmental and Decision Biases</i> X.T. Wang

12:10-1:30 p.m. Lunch on Your Own**1:30-2:30 p.m. Plenary: Martin Nowak Commonwealth Auditorium*****Five Mechanisms for the Evolution of Cooperation*****2:30-3:00 p.m. Break Atrium and Tidewater B**

Afternoon Sessions

Session H-1: *Parent-Offspring Conflict, Influence, and Resemblance*

Tidewater A

Chair: Gabriel L. Schlomer

SA 3:00	<i>Mother-Child Conflict in Half-Sibling Families: A Test of Hypotheses from Parent-Offspring Conflict Theory</i> Gabriel L. Schlomer, Bruce J. Ellis, Judy Garber
SA 3:20	<i>Maternal Condition and Sex-biased Maternal Investment in a Western Australian Population</i> Sarah Ward, Debra S. Judge, James S. Chisholm, and Edouard Tursan d'Espaignet
SA 3:40	<i>Paternal Harsh Parenting in Relation to Paternal Versus Child Characteristics: The Moderating Effect of Paternal Resemblance Belief</i> Lei Chang, Hongli Li, Jun Liu
SA 4:00	<i>The Daughter-Guarding Hypothesis: Parental Influence on Children's Mating Behavior</i> Carin Perilloux, Diana S. Fleischman, David M. Buss
SA 4:20	<i>A Twin-Family Study of Social Closeness: Aunts, Uncles, Nieces and Nephews</i> Nancy L. Segal, James P. Seghers, William D. Marelich, Kevin Chavarria, and Mindy Mechanic

Session H-2: *Symposium: The Father Effect—*

Chesapeake A

Motivations and Investment Across Child Life Histories

Chair: Brooke A. Scelza

SA 3:00	<i>Neuroendocrinology of Human Fatherhood</i> Peter B. Gray
SA 3:20	<i>Paternal Investment and Constrained Mating Opportunity among the Khasi</i> Donna L. Leonetti
SA 3:40	<i>Post-Pubescent Paternal Investment: The importance of Martu fathers at initiation time</i> Brooke A. Scelza
SA 4:00	<i>Do Hadza Children Benefit from their Father's Foraging?</i> Brian M. Wood, Frank W. Marlowe
SA 4:20	<i>Fatherhood and Testosterone in Hadza Hunter-Gatherers and Neighboring Datoga Pastoralists</i> Martin M. Muller, Frank W. Marlowe, Revocatus Bugumba, Peter E. Ellsion

Session H-3: *Jealousy: Relatives, Rivals, and Mate Guarding*

Chesapeake B/C

Chair: Achim Schuetzwohl

SA 3:00	<i>The Intentional Object of Romantic Jealousy</i> Achim Schuetzwohl
SA 3:20	<i>Love, Lust, and Loyalty: Sex Differences in Responses to and Reasons for Infidelity among 65,029 Online Participants.</i> David A Frederick, Martie G. Haselton
SA 3:40	<i>The Impact of Genetic Relatedness on Distress from Infidelity</i> Ashley Hoben, Melissa Gray, Loriann Williams, Angel McGee, Anthony Cox, and Maryanne Fisher
SA 4:00	<i>Sex Differences in Response to an Imagined Partner's Homosexual or Heterosexual Affair</i> Mark D. Cloud, Jaime C. Confer, and Tatiana Patakyova
SA 4:20	<i>Jealousy, Mate-guarding, and Vigilance to Intrasexual Rivals</i> Jon K. Maner, Saul L. Miller, & Matthew T. Gailliot

Session H-4: *Symposium: Kindness in Film*Commonwealth
Auditorium

Chair: Lynn E. O'Connor

SA 3:00-4:20	<i>Kindness of Strangers: A documentary film with commentary by Lynn E. O'Connor, David Sloan Wilson, and Herb Gintis</i>
--------------	---

4:40-5:00 p.m. Break**7:00-8:30 p.m. Keynote Address: Paul Ewald Commonwealth Auditorium*****The Broadening and Deepening of Evolutionary Medicine*****8:30pm Banquet Chesapeake A/B/C**

SUNDAY, JUNE 3rd

8:15-9:00 a.m.

Coffee

Atrium and Tidewater B

Early Morning Sessions

Session I-1: *Emotion: Anger, Disgust, and Distress*

Chair: Aaron N. Sell

Commonwealth
Auditorium

SU 9:00	<i>Violent Yells Dissected: Physical Strength is Revealed in the Voice and Enhanced during Anger.</i> Aaron N. Sell, John Tooby, Leda Cosmides
SU 9:20	<i>Exploring three domains of disgust</i> Joshua M. Tybur, Debra Lieberman
SU 9:40	<i>A Developmental Perspective on the Role of the Recognition of Facial Expressions of Emotions and Group Living</i> Julie Coultas, Nicola Yuill, Rebecca Susenbach, Vanessa Howard, Tori Carter
SU 10:00	<i>Feeling Alone: Do Emotions Orchestrate Responses to Different Social Exclusions?</i> Theresa E. Robertson, Andrew W. Delton, Stanley B. Klein
SU 10:20	<i>An Evolutionary Psychological Investigation of Parental Distress and Reproduction Coercion during Gay Sons' 'Coming Out'</i> Timothy J. Wisniewski, Thomas Robinson and Robert Deluty

Session I-2: *Game Theory, Risk Taking, and Testosterone*

Chair: Terry Burnham

Chesapeake A

SU 9:00	<i>IQ, genes, and economic behavior</i> Terry Burnham, David Cesarini, Björn Wallace, Magnus Johannesson, Paul Lichtenstein
SU 9:20	<i>Nature, Nurture and the Ultimatum Bargaining Game</i> Björn Wallace, David Cesarini, Paul Lichtenstein, Magnus Johannesson.
SU 9:40	<i>Choosing Gambles in Utero: Prenatal Environment Shapes Economic Risk Preferences.</i> Anna Dreber, Moshe Hoffman
SU 10:00	<i>A subordinate Status Position Increases the Present Value of Financial Resources for Low 2D:4D Men</i> Kobe Millet, Siegfried Dewitte
SU 10:20	<i>Fear of Punishment: Testosterone Elicits Trustworthiness in Trust Games</i> Michael R. Stirrat Jamie F. Lawson Martin A. Sharp Emad A.S. Al-Dujali Ian D. Stephen David I. Perrett

Session I-3: *Mating Strategies and Attraction Tactics*

Chesapeake B/C

Chair: Peter M. Todd

SU 9:00	<i>How Well can People Judge Another's Courtship Interest in Them?</i> Peter M. Todd, Claire Tramm, Lars Penke, Jens Asendorpf
SU 9:20	<i>Adaptive Variation in the Intensity of Mate Attraction Tactics</i> Bram Van den Bergh, Siegfried Dewitte
SU 9:40	<i>Social Transmission of Face Preferences Among Humans</i> Benedict C. Jones, Lisa M. DeBruine, Anthony C. Little, Robert P Burriss, David R Feinberg
SU 10:00	<i>Amplified Signals of Mating Interest and Unwanted Attention</i> Morgan Duggan, Joshua D. Duntley
SU 10:20	<i>Women's preferences for male body types in long term and short term mating contexts</i> Megan E. McClellan, Aaron D. Blackwell, Lawrence S. Sugiyama

Session I-4: *Symposium: Correlates of Life History Strategy*

Tidewater A

Chair: Aurelio José Figueredo

SU 9:00	<i>How Individual Differences in Reproductive Strategy and Sexual Attractiveness Influence Affective and Punitive Intentions to Sexual and Emotional Infidelity</i> Aurelio José Figueredo, Daniel N. Jones, Erin D. Dickey, W. Jake Jacobs
SU 9:20	<i>Life History Strategy, Competitive Disadvantage, or By-Product: A Test of Multiple Evolutionary Hypotheses of Sexual Coercion</i> Paul Gladden, Melissa Sisco, Aurelio Jose Figueredo
SU 9:40	<i>Ethnocentrism and Life History Strategy</i> Dok J. Andrzejczak , Daniel N. Jones, Vanessa Smith, Eiliana Montero, & Aurelio José Figueredo
SU 10:00	<i>Life History Strategy, Executive Functions, and Personality</i> Kevin MacDonald Aurelio José Figueredo Christopher J. Wenner
SU 10:20	<i>Reproductive Value as a Proximate Measure of Marginal Inclusive Fitness Returns</i> David A. Nolin

10:40-11:00 a.m. Break**Atrium and Tidewater B**

Late Morning Sessions

Session J-1: *Arts & Literature*

Chair: Joseph Carroll

Tidewater A

SU 11:00	<i>Author Sex Bias in the Depiction of Mate Selection Preferences in Victorian Novels</i> Joseph Carroll, John A. Johnson, Jon Gottschall, Daniel Kruger
SU 11:20	<i>Evolutionary Phenomena in Contemporary Romance Literature</i> Maryanne Fisher, Anthony Cox
SU 11:40	<i>State of the arts: Missing links in evolutionary explanations of art behavior</i> Michelle Scalise Sugiyama, Lawrence S. Sugiyama
SU 12:00	<i>Darwinists Assemble! : An Evolutionary Analysis of Comic Books</i> Terry L. Duehr, Craig T. Palmer

Session J-2: *Friendships and Loyalties*

Chair: Peter DeScioli

Chesapeake B/C

SU 11:00	<i>Divided Loyalties and Rank-masking Among Friends</i> Peter DeScioli, Robert Kurzban
SU 11:20	<i>Friend Matching: A Test of Genetic Similarity Theory</i> April Bleske-Rechek, Sarah Hubert, Stephanie Maves, Lindsay Matteson
SU 11:40	<i>Schadenfreude as a Mate-Value Tracking Mechanism Within Same-Sex Friendships</i> Leisha A. Colyn, Anne K. Gordon
SU 12:00	<i>Friendship and inequity aversion in humans</i> Rita C. Smariotto, Liesbeth H.M. Sterck, Abraham P. Buunk, Henk de Vos, Jorg J.M. Massen

Session J-3: *EPC's Hook-Ups, and Mate Searching: Perceptions and Motivations*

Chair: Paul W. Andrews

Commonwealth Auditorium

SU 11:00	<i>Sex Differences in Detecting Sexual Infidelity</i> Paul W. Andrews, Michael C. Neale, Geoffrey F. Miller, Martie G. Haselton, Randy Thornhill, Steven W. Gangestad
SU 11:20	<i>Looking for Mr Right: Experiments in Mate Search</i> Edward R. Morrison, Andrew P. Clark, Ian S. Penton-Voak
SU 11:40	<i>Gender Differences and Hooking Up: Comfort Level of Self and Others</i> Chris Reiber
SU 12:00	<i>Back-Up Mates</i> Joshua D. Duntley, David M. Buss

Session J-4: *Groups, Coalitions, and Conflicts*

Chesapeake A

Chair: Elsa Ermer

SU 11:00	<i>Regulation of Resource Division by Coalitional Status</i> Elsa Ermer, Leda Cosmides, & John Tooby
SU 11:20	<i>Making Faces Erases Races: The Effects of Emotional Expression on Memory for Group Members</i> Joshua M. Ackerman, Jenessa R. Shapiro, Steven L. Neuberg, Douglas T. Kenrick
SU 11:40	<i>Intergroup Vigilance: Effects of Self-Protective Motivation on Racial Categorization</i> Saul L. Miller, Jon K. Maner
SU 12:00	<i>The Role of Race and Gender in the Persistence of Conditioned Fear</i> Carlos D. Navarrete, A. Olsson, Arnold Ho, W. Mendes, L. Thomsen, Jim Sidanius

12:20 p.m. Conference ends.

Poster Session I: Thursday

Aggression

1	<i>Women in the American Southwest: Adaptations to Warfare</i> Chet R. Savage
2	<i>An Evolutionary Perspective On The Effect of Terrorist Incidents on Presidential Approval in the Years Following September 11, 2001</i> Kenneth A. Letendre
3	<i>Digit Ratio Moderates the Impact of an Aggressive Music Video on Aggression</i> Kobe Millet, Siegfried Dewitte
4	<i>The Myth of the Alpha Male: Aggression, Competition, and Social Reception of Dominant Females</i> Patricia H. Hawley
5	<i>Models of Aggression at Home and Aggressive and Ludic Behavior of Pre-School Boys During Free-Play Activities</i> Timóteo Madaleno Vieira et al.

Attractiveness

6	<i>Psychological Mechanisms Designed to Regulate Assertiveness Signaling in Human Males during Courtship Interactions</i> Aaron W. Lukaszewski, James R. Roney
7	<i>Attractiveness in flux: Predicting preferences via facial motion depends on dating context and cues to prosociality</i> Andrew P. Clark, Vienna Jack, Edward R. Morrison, Hippolatus Jones, Ian Penton-Voak
8	<i>Menstrual Phase Shift for Male Attractiveness Based on Body Parts</i> Devendra Singh, Drew Bailey
9	<i>Female physical characteristics and intrasexual competition</i> Dominique Klappauf, Bernhard Fink, Peter M. Kappeler
10	<i>The Mane Event: the Influence of Hair Length and View on Perceptions of Female Attractiveness</i> Kelley Knapp-Kline et al.
11	<i>Hands As Fitness Indicators: Seinfeld Was Right About Man Hands!</i> Laura K. Dane, Levente Orban, Aman Bassi, Geoffrey F. Miller
12	<i>Male Facial Attractiveness Predicts Body Morphology and Strength: Additional Evidence</i> Melanie L. Shoup, Gordon Gallup Jr.
13	<i>Can Same Sex Behavior Have Contributed to Human Paedomorphosis?</i> P.D. Moncrief, Jr.
14	<i>Facial Paedomorphosis in Hominid Evolution and the Preference for Truncated Facial Development (TFD)</i> Paul Wehr, Michael Torp

Emotion

15	<i>Frequency and Intensity of Post-Relationship Grief in University Students</i> Craig Eric Morris
16	<i>Could Blushing be a Socio-Sexual Signaling for Mate Attraction?</i> PengKwei Chang, Erica S. Rutters, Kevin G. Byrnes, Anthony C. Torres
17	<i>Deadly Sin or Functional Adaptation? An Evolutionary View of Envy</i> Rachael G. Falcon

Jealousy

18	<i>Relief over a Partner's Infidelity</i> Achim Schuetzwohl
19	<i>Are Socially Dominant Men More Facially Dominant and More Prone to Sexual Jealousy?</i> Chawki A. Belhadi, Roger L. Mellgren
20	<i>The Roots of Sexual Jealousy and Aggression</i> Chelsie L. Connolly, Joshua D. Duntley
21	<i>Knowing the Triggers of Jealousy in Mates: A Facet of Mating Intelligence</i> Glenn Geher, John L. Johnson
22	<i>Acts of Infidelity</i> Laurence Fiddick
23	<i>Jealousy Toward Outgroup Rivals</i> Liga Klavina, Abraham P. Buunk, Justin H. Park
24	<i>Jealousy, Accusations, and Shifts in Assurance Tactics in College Students</i> William Von Dollon, Rebecca L. Burch
25	<i>Paternal Assurance Tactics in Convicted Spouse Abusers</i> Sara Rassing, Rebecca L. Burch

Mate Preferences

26	<i>Sex Differences in Unemployment Predict Divorce across Cultures: Support for Sexual Strategies Theory</i> Gregory D. Webster
27	<i>Cues for Paternal Investment: Physical or Psychological ?</i> Heather R. Coffin, Marjorie L. Harper, Monica McNeeley, Sun-Mee Kang
28	<i>Adaptive Shifts in Female Mate Preferences as a Function of Declining Reproductive Value</i> Judith A. Easton, Jaime C. Confer, David M. Lewis, David M. Buss
29	<i>Age and Attraction in the Ecuadorian Amazon</i> Michelle Escasa

Mate Preferences Continued

30	<i>GayDar: Another Tool for the Choosier Sex</i> Patricia Hall, Cathy Schaeff
31	<i>Mate Preferences of Younger and Older Adults</i> Richard L. Michalski, Vandhana Ramadurai, Todd K. Shackelford, Catherine A. Salmon
32	<i>Gender Differences in Young Brazilians' Mate Choice: A Test of Evolutionary and Romantic Market Theories</i> Rogério Ferreira Marquezan; Francisco Dyonísio Cardoso Mendes
33	<i>Parent-Offspring Conflict in Mate Preferences</i> Shelli L. Dubbs, Abraham P. Buunk, Justin H. Park
34	Observer Ratings of Human Mating Interactions Skyler Place, Peter Todd, Lars Penke and Jens Asendorpf
35	<i>Deficits in Emotional or Sexual Access and Relationship Termination Decisions</i> T. Joel Wade, Ryan Palmer
36	<i>Population Heterogeneity and Individual Search Behavior in a Foraging-based Model of Marriage and Divorce</i> Thomas Hills, Peter M. Todd
37	<i>Perceptual Policy Capturing: highlighting differences between implicit and explicit mating preferences</i> Zachary L. Simmons

Menstrual Cycle

38	<i>Adaptationist Accounts of the Origin and Ontogeny of Menopause</i> Barry X. Kühle
39	<i>Saliency of emotional displays of danger and contagion in faces is enhanced when progesterone levels are raised</i> C. A. Conway et al.
40	Rape may be less frequent during the ovulatory phase of the menstrual cycle after all David M. Lewis
41	Differences in Meat Consumption as a Function of Sexual Activity and Hormonal Contraception Diana S. Fleischman, Daniel M. T. Fessler
42	<i>Cyclic Shifts in Jealousy Across the Menstrual Cycle</i> Jason Lyons, Roger Mellgren
43	Welling et al. [rescheduled as oral presentation: Session B1]
44	<i>Attractiveness Ratings of Point-light Displays of Female Gaits Across the Menstrual Cycle</i> Meghan P. Provost, Vernon L. Quinsey, Nikolaus F. Troje

Menstrual Cycle Continued

45	<i>Menstrual Cycle Effects on Attention to Mate-relevant Information</i> Maya Rosen, Hassan H. Lopez
46	<i>Seminal Compounds, Routes of Administration, and Mood</i> Steve Kempa, Rebecca L. Burch

Personality and Psychopathology

47	<i>Birth Order and Number of Older Male Siblings: Evidence of a Downstream Intrauterine Testosterone Effect</i> Andrew C. Gallup, Daniel D. White, Gordon G. Gallup Jr.
48	Ploeger, Frietson Galis, Han L.J. van der Maas, Maartje E.J. Raijmakers <i>[rescheduled as oral presentation: Session C2]</i>
49	<i>High-K Reproductive Strategy: A Negative Predictor of Depressive Symptomatology</i> Cezar Giosan
50	<i>The Canary in the Coal Mine: Does High Stress Vulnerability Have Adaptive Value</i> Jack A. Palmer, Linda K. Palmer
51	(Male) Narcissists Don't Just Think They're More Attractive – They ARE More Attractive Jonathan P. Baker, Mark W. Remiker, April Bleske-Rechek
52	<i>The Effect of Computer Anxiety and Enneagram on Behavioural Intention</i> Marianne S.M. Too, Hishamuddin B. Ismail, Nor'ain M. Yusoff
53	<i>Assortative Mating: A Prospective Investigation of Individual and Relationship Predictors of Couple Stability</i> Mark W. Remiker, Jonathan P. Baker, April Bleske-Rechek
54	<i>Adaptive Value of Extraversion: Short and Long Term Mating Strategy Differences</i> Naomi C. Pike
55	<i>Humor Appreciation is Inhibited by Self-deception and Augmented by Implicit Preferences</i> Robert Lynch
56	<i>The Impact of Self-perception on Sociosexuality</i> Sarah L. Strout
57	<i>Birth order and face-to-face contact with a sibling: Firstborns have more contact than laterborns</i> Thomas V. Pollet, Daniel Nettle
58	<i>"Who wears Cosmetics?" Individual Differences and their Relationship with Cosmetic Usage.</i> Julia M. Robertson

Religion and Morality

59	<i>Historically normative patterns of childhood punishment reflected within religious belief systems</i> Benjamin J. Abelow
60	<i>Supernatural Niche Construction Incubates Brilliance and Governs the Ratchet Effect</i> David Kydd
61	Ingrid K. Storm, David Sloan Wilson <i>[rescheduled as oral presentation: Session C1]</i>
62	<i>Wife beating, nature or nurture?</i> Jelena Cvorovic
63	<i>The Evolution of Moral Rules from Natural Laws</i> John A. Johnson
64	<i>Fear Wears A Cheap Tuxedo: The Cognitive Similarities of Creationism and Intelligent Design.</i> Kilian J. Garvey
65	<i>Rationology 101: How the Author of Genesis Got It Right (and the Golden Rule Got It Wrong)</i> Phil Roberts, Jr.

Signaling

66	<i>Emotional Self-Deception Facilitates Sexually Antagonistic Opimal Mating Strategies</i> Christopher G. Eppig
67	<i>Improvised Rhythmic Creativity and Measures of Accuracy in Beat Synchronization and Continuation</i> Christopher O. E. Jenkins, Geoffrey F. Miller
68	<i>Intentional Humor as a Mental Fitness Indicator</i> Daniel P. Howrigan, Kevin B. MacDonald
69	<i>Facial Redness, Blood Colouration and Apparent Health</i> Ian D Stephen, David I Perrett, Jamie F Lawson, Michael R Stirrat
70	<i>A Dress to Impress or a Toy to Enjoy? Exploring Consumer Motivations for Luxury Consumption</i> Liselot Hudders, Patrick Vyncke
71	<i>Costly Apology Appeases a Victim's Anger More Effectively Than No-Cost Apology</i> Yohsuke Ohtsubo

Poster Session II: Friday

Altruism

1	<i>Altruism and Currency-Free Resources: General Intelligence Moderates the Association between Body Fat and Altruism</i> Barbara Briers, Kobe Millet, and Siegfried Dewitte
2	<i>Classmates and lovers can detect each other's level of altruism</i> Julia Pradel, Detlef Fetchenhauer
3	<i>Evolution of parochialism requires group competition</i> Julian Garcia, Jeroen C.J.M. van den Bergh
4	<i>Survivor Guilt and Altruism: Responses to Inequity in the Workplace</i> Lynn E. O'Connor, Jack W. Berry, & Patrice Crisostomo
5	<i>Helping others to find long-term and short-term mates: A test of inclusive fitness, reciprocal altruism, and parental investment theories</i> Peter K. Jonason, Pamela L. Izzo, and Sam E. Mono

Cognition

6	<i>Co-Evolution of Environment Structure and Foraging Strategies</i> Anske van Luijtelaar, Peter M. Todd
7	<i>The evolution of visualization</i> Bence Nanay
8	<i>Foraging Memory: Landscape Cues Activate Memories of Foraging Episodes</i> Brian Bergstrom, Pascal Boyer
9	<i>Uncertainty as a Moderator of the Influences of Social Stimuli on Fertility Behavior: A Study of Human Adolescents</i> Jeff Davis, Daniel Werre
10	<i>Positive Illusions in the Mating Domain</i> Jessica A. Pass, Justin H. Park, Siegwart M. Lindenberg, Abraham P. Buunk
11	<i>No Lifeguard on Duty: Do Humans Exhibit Aquatic Distance Estimation Adaptations?</i> Kristin M. Goodwin, Russell E. Jackson, Lawrence K. Cormack
12	<i>[withdrawn]</i>
13	<i>Snake in the Grass Revisited: Further Tests of an Evolved Attentional Bias for Threatening Stimuli</i> Suzanne M. Mahoney, Corinne Y. Ostock, and Mark D. Cloud
14	<i>The Sun is Out Because It's Happy: Children's Immature Cognition as An Ontogenetic Adaptation</i> Virginia A. Periss, Micah Joy Stranger, Carlos H. Blasi, David F. Bjorklund

Cooperation

15	<i>Empathy in Third Party Interventions: Does Feeling their Pain make you Inflict Pain?</i> Alex W. Shaw, Sarah S, Gilbert, Robert O. Kurzban
16	<i>Is gossip about cheaters trusted?</i> Daisuke Nakanishi, Yohsuke Ohtsubo
17	<i>Female Adolescent Antisocial Behavior: Is Poor Health a Motivation to Defect?</i> Daniel J. Duhigg, Kathleen Pajer
18	<i>Comparison of the Role of Intentions in Second-party and Third-party Punishment.</i> Haruto TAKAGISHI, Toshio YAMAGISHI
19	<i>Constrained Maximization: A Naturalistic Defense</i> Joseph S. Simonian
20	<i>Welfare Tradeoff Ratios and Social Support</i> Julian Lim, Daniel Sznycer, Jade Gibson Price, John Tooby, Leda Cosmides
21	<i>Latter-Day Saints Childcare Networks in Boise, Idaho</i> Kersti Harter, Dr. John Ziker
22	<i>Social niche cultivation among the Shiwiar of Ecuador</i> Lawrence S. Sugiyama, Michelle Scalise Sugiyama, Aaron D. Blackwell, H. Clark Barrett
23	<i>Human Societies as Complex Adaptive Systems</i> Marcus J. Hamilton, Robert S. Walker
24	<i>Chaos and oscillation in the evolution of indirect reciprocity in n-person games</i> Shinsuke Suzuki, Eizo Akiyama
25	<i>On the Origin of Collective Action</i> Susanne Rebers
26	<i>Attention bias towards non-cooperative people. A dot probe classification study in cheating detection</i> Sven Vanneste, Alain Van Hiel
27	<i>Sensitivity to Perception of Interpersonal Relationship Can Affect Rejection Rate in an Ultimatum Game.</i> Toko Kiyonari, Carolyn H. Declerck, Christophe Boone, Griet Emonds

Kinship and Parental Investment

28	<i>Birth Order Affects Cooperation Between Unrelated Adults: Firstborns are Less Trustful and Reciprocate less</i> Alexandre Courtiol, Michel Raymond, Martin Daly, Charlotte Faurie
29	<i>Intergenerational Transfers and Reproduction in Western Australian Women</i> Debra S. Judge

Kinship and Parental Investment Continued

30	<i>Pathogen Saliency Amplifies Incest-Avoidance Responses</i> Justin H. Park, Ron Visser, Mark Schaller
31	<i>Dynamics of Parent-Child Cultural Transmission</i> Kathryn Demps, Richard McElreath
32	<i>From Womb to Tomb: Filial Piety as Parental Manipulation in the Continuing Negotiation of Parent-Child Conflict</i> Lei Chang
33	<i>What Doggerel may say about Motherese</i> Siamak T. Naficy
34	<i>Does Embodied Capital Theory Explain Urban-Rural Differences in Indo-Fijian Child Productivity?</i> Siobhan M. Mattison, Dawn B. Neill
35	<i>Variation in Reproductive Success in a 19th Century Amish Settlement: The Effect of Spouse Relatedness</i> W. Thomas Conelly

Sex and Mating

36	<i>The Relationship between Hypothesized Psychological Genetic Fitness Indicators and Indices of Mating Success</i> Camargo, M. A., Geher, G., Sheldon, M., & Coombs, M.
37	<i>Evolutionary Perspectives on the Content Analysis of Heterosexual and Homosexual Pornography</i> Catherine Salmon, Kathryn Satava, Amy Diamond
38	<i>The Relationship between First Sexual Intercourse, and Sexual Attitudes and Behaviours</i> Charlotte J. Clements, Mark J. T. Sergeant
39	<i>Reproduction Expediting: How Women Solve Adaptive Problems Linked with Declining Reproductive Value</i> Jaime C. Confer, Judith A. Easton, David M. Lewis, David M. Buss
40	<i>Homosexual Mating Strategies: Testing the Hypermasculine/Hyperfeminine Hypothesis</i> Jennifer R. Wiley
41	<i>Head and Neck Circumferences and Head-to-Neck Ratio: Size AND Ratio matter when predicting sexual behaviors</i> Jeremy A. Atkinson
42	<i>Beyond BMI: Skeletal Morphology is a Better Predictor of Sexual Behaviour</i> Jeremy A. Atkinson
43	<i>The revised SOI: A more differentiated look at sociosexuality and its effects on courtship and romantic relationships</i> Lars Penke, Jens B. Asendorpf

Sex and Mating Continued

44	<i>The Impact of Sex, Sexual History and Relationship Expectation on Attractiveness and the Recall of Sexual Strategies</i> Loriann Williams, Maryanne Fisher
45	<i>When you know you are the other man...</i> Erica Princiotta, Rachel Olson, Rebecca L. Burch
46	<i>Changes in mate retention, safe guarding, and sexual behaviors during pregnancy</i> Richard L. Michalski
47	<i>Rape Fantasies</i> Victoria Ackroyd, Joshua D. Duntley

Sex Differences

48	<i>Are Men More Love-Prone Than Women?</i> Andrew Galperin, Martie G. Haselton
49	<i>Sex Differences in Attitudes Towards Familial Relations, Relationship Dissolution, and Intrasexual Competition</i> Angel McGee, Ashley Hoben, Loriann Williams, Melissa Gray, Anthony Cox, and Maryanne Fisher
50	<i>Nipple Erection as a Sexual Signal</i> Gordon G. Gallup, Jr
51	[withdrawn]
52	<i>Sex Differences in Object Location Memory: Fixed versus moving through Space</i> Jose A. Velarde, Roger. Mellgren
53	<i>Different Strokes: Sex Differences in Competitiveness Have Disappeared in Swimming But Not in Running</i> Robert O. Deaner
54	<i>Is The Preference For Holding Infants On The Left A Female Adaptation?</i> Rodrigo Andrés Cárdenas, Jason B. Almerigi, David A. Puts, & Lauren Julius Harris
55	<i>Sex Differences in Endocrine Response to Physical Competition</i> Sharp, M.A., Al-Dujaili, E.A.S.
56	<i>Sex Differences in Fat-Free Mass, Muscle Mass, and Strength Place Humans among the More Sexually Dimorphic Primates</i> William D. Lassek, Steven J.C. Gaulin

Testosterone

57	<i>Are Highly Masculine Brains Doomed to Behave Out of Sync With Their Partner's Behavior?</i> Alita J. Cousins, Melissa Franklin
58	<i>The Effects of Conspicuous Consumption on Testosterone</i> Gad Saad, John Vongas
59	<i>Hormones, facial morphology, and trust game play</i> Helen Wasielewski, Lee Cronk
60	<i>Early puberty males have low 2D4D</i> Jamie F. Lawson, Miriam J Law Smith, Lisa M. Debruine, David I. Perrett
61	<i>Finger morphology, physical attractiveness, and the use of hierarchy negotiation tactics</i> Sim, Kyungok & Gallup, G. G., Jr.
62	<i>Independent Voice Ratings and Digit Ratio (2D:4D) in Children.</i> Susan M. Hughes, Dinna V. Pich, & Shevon E. Nicholson

Theory and Applications

63	<i>Yawning and Multiple Sclerosis: Further Support for the Brain Cooling Hypothesis</i> Andrew C. Gallup, Gordon G. Gallup Jr.
64	<i>Extending Knowledge of Behavior: Understanding Evolved Behaviors, Human Drives, and Technology Acceptance</i> D. Chon Abraham
65	<i>Some Potential Benefits of Applying Evolutionary Theory to Educational Issues</i> Fred Kuch, Keith Zvoch
66	<i>Testing the Controversy: An Empirical Examination of Adaptationists' Political Attitudes</i> Joshua M. Tybur, Geoffrey F. Miller, Steven W. Gangestad
67	<i>A Model of Human Consciousness (Global Cultural Evolution)</i> Marcus Abundis
68	<i>A Functional Taxonomy of Human Evolved Psychological Adaptations</i> Niruban Balachandran
69	<i>Exploring Genetic and Protein Databases of Interest to Evolutionary Psychologists: Using Alzheimer's Disease as a Case Study</i> Tanja Bekhuis
70	<i>Evolution from a Complexity Perspective</i> Ton Jörg

Keynote and Plenary Abstracts

Keynote Address

Commonwealth Auditorium

Saturday, 6:30 p.m.

The Broadening and Deepening of Evolutionary Medicine

Paul W. Ewald Professor of Biology

Director, Program in Evolutionary Medicine, University of Louisville

Evolutionary medicine has developed as a somewhat haphazard collection of hypotheses in response to the particular interests of investigators. Considering that evolutionary principles offer the ultimate framework for understanding life processes, we can envision a future in which evolutionary medicine offers an essential, conceptual framework for the entire health sciences. This integration will need to develop beyond the suggestion of particular hypotheses for particular diseases to a comprehensive assessment of the range of feasible hypotheses and combinations of hypotheses that bear on the nature of any particular state of health or illness. I will illustrate this vision by applying evolutionary insights to the causes of the two greatest killers in prosperous societies--atherosclerosis and cancer--and the ways in which these insights may facilitate practical steps toward improving health.

Plenary Addresses

Commonwealth Auditorium

Thursday, 9:00 a.m.

Mindreading, Comprehension, and Epistemic Vigilance in an Evolutionary and Developmental Perspective

Dan Sperber

Research Professor and Director, French Centre National de la Recherche Scientifique

How do the mindreading abilities of humans relate to their communicative skills and to the massive dependence on others for the acquisition of knowledge? Deirdre Wilson and I (*Relevance: Communication and Cognition, 2nd Edition*; 1995) have long argued that human communication is a sophisticated form of mindreading. Since communication develops from late infancy onwards, this seems incompatible with the common interpretation of experiments with the False Belief Task as showing that genuine mindreading develops in children only at the age of four. However, recent experiments by Onishi & Baillargeon (2005) seem to demonstrate that 15-month-olds are able to anticipate the behavior of an agent on the basis of its false beliefs. We (Luca Surian, Stefana Cataldi and I, in press) have shown the same thing with 13-month-olds. In the light of these new findings, the claim that human communication is a form of mindreading is much easier to defend. But what, then, is the significance of the standard False Belief Task results? I argue (on the basis of experimental work done with Olivier Mascaro) that these results correspond to another cognitive transition of great evolutionary significance: the emergence of epistemic vigilance, without which our epistemic dependence on others would be counteradaptive.

Thursday, 1:30 p.m.

What do Robots Dream of? Emergent Self-Models in Machine Minds

Hod Lipson

**Depts. of Mechanical & Aerospace Engineering, Computing & Information Science
Cornell University**

Robotic systems are of growing interest both because of their many practical applications as well as their ability to help understand human and animal behavior, cognition, and physical performance. Though industrial robots have long been used for repetitive tasks in structured environments, one of the long-standing challenges is achieving robust and adaptive performance under uncertainty. This talk will examine an approach for adaptation of behavior based on the notion of self-modeling. We use a form of evolutionary learning, allowing a robot to reconstruct its own body plan from observed actuation-sensing relationships. Robot actions that cause disagreement among predictions of different candidate self-models are used for inference because they elucidate uncertainties, whereas actions that cause agreement among predictions of different candidate self-models are used for robust control, as they avoid uncertainties. This process will be demonstrated for virtual and physical robots as they go through morphological changes, such as damage.

The notion of self-models in robotics gives rise to a number of interesting questions regarding the form and function of self-models in machines, and the parallels between these models and the cognitive processes underlying animal and human cognition.

Friday, 9:00 a.m.

Evolution, Behavior, and Legal Systems

Owen D. Jones

**Professor of Biological Sciences, FedEx Research Professor of Law
Vanderbilt University**

Forget criminal trials, speeding tickets, and plaintiffs' attorneys looking for big wins on small injuries. Forget divorce lawyers, robed judges, and anti-drug legislation. These and similarly popular impressions are among the many distracters for the unwary, who often miss the most essential thing to understand about law. At the broadest level, law is a tool for moving human animals to behave in ways they would not otherwise behave if left solely to their own devices.

Put starkly, legal systems modify features of the human environment in an effort to modify human behavior. Law is therefore one long-running behavioral experiment. Its methods are often guided, however, by incomplete or inaccurate assumptions about where behavior comes from. Viewed this way, law's need for evolutionary perspectives on behavior, including those from evolutionary biology and evolutionary psychology, becomes obvious. A better understanding of behavior can aid society's efforts to change behavior with tools of law more efficiently and effectively – all consistent with whatever socially percolated goals society has assigned law to pursue.

This talk will provide an overview of ways that law can be a vehicle for applied evolutionary analysis – both gaining from existing work and raising new questions for scientific research.

Friday 1:30 p.m.

Molecules And Monogamy: What's Love Got To Do With It?

C. Sue Carter

**Professor of Psychiatry and Co-Director, The Brain Body Center
University of Illinois, Chicago**

The purpose of this talk will be to examine the mechanisms through which experience - both positive and negative - might have long-term consequences for later behavioral and emotional states. Studies of socially monogamous mammals, including prairie voles, have documented a neuroendocrine basis for positive behaviors, including social bonds and parental behavior. This research has implicated neuropeptide hormones, including oxytocin and the related peptide vasopressin, in the regulation of social interactions and reactivity to positive and negative experiences. For example, social isolation has profound effects on oxytocin, vasopressin, CRF, neurogenesis and autonomic and behavioral reactions to subsequent stressful experiences. It is also increasingly obvious that even brief behavioral or hormonal experiences in early life, mediated in part by long-lasting changes in oxytocin and vasopressin or their receptors, can have life-long consequences and may increase or decrease the capacity of an individual to form social bonds, show parental behavior and deal with the stress of life. These findings also have implications for understanding the role of peptides in disorders, such as autism and schizophrenia. In the context of the peptide hormones that support social behaviors, we gain a different perspective on human concepts such as monogamy, social bonds and even "love."

Saturday, 9:00 a.m.

The Adaptive Nature of Immaturity: A View from Evolutionary Developmental Psychology

David F. Bjorklund

Professor of Psychology, Florida Atlantic University

I explore the possibility that the immature behaviors and cognitions of infants and young children are sometimes adaptive. I first outline some of the basic principles of evolutionary developmental psychology, which involves the application of the basic principles of Darwinian theory to explain contemporary human development. Evolutionary developmental psychology involves the expression of evolved probabilistic/epigenetic mechanisms over the course of ontogeny that underlie the universal development of social and cognitive competencies and how these processes adapt to local conditions. These are mechanisms that are highly probable when species-typical environments are encountered and are products of emerging developmental systems that have evolved over the course of the ontogenies of our ancestors. In particular, I propose that aspects of developmental immaturity had an adaptive role in human evolution and continue to have an adaptive role in human development. I argue that infants and children have an integrity of their own - as individuals with abilities and characteristics that are especially suited to the environments they inhabit. Some features have evolved to adapt children to their current environments and not necessarily to future ones. Specific topics to be discussed include: the role of developmental retardation in human evolution; the evolution of childhood; the relation between humans' extended childhood and brain plasticity; adaptive aspects of infants' perception and cognition that limit the amount of information they can process; behavioral neoteny as exemplified by play and expressions of immaturity that influence adult perceptions of children; and some cognitive "limitations" of childhood, such as overestimation of one's abilities. I propose that viewing immaturity as being sometimes adaptive to the developing child alters our perspective of how we view children, their development, and their education.

Saturday, 1:30 p.m.

Five Mechanisms for the Evolution of Cooperation

Martin Nowak
Professor of Mathematics and Biology
Director, Program for Evolutionary Dynamics
Harvard University

Cooperation means that one individual pays a cost for another to receive a benefit. Cost and benefit are measured in terms of fitness. Reproduction can be genetic or cultural. I will discuss five mechanisms for the evolution of cooperation: kin selection, group selection, network reciprocity (=graph selection), direct reciprocity and indirect reciprocity. Each mechanism leads to a simple rule that specifies whether cooperation can be favored by natural selection. I will argue that indirect reciprocity is the key mechanism for the evolution of any pro-social behavior in humans. Moreover, I will propose that cooperation is essential for constructing new levels of organization in biology. The emergence of genomes, cells, multi-cellular organisms, and human society are all based on cooperation. Cooperation enables evolutionary dynamics to be constructive.

Further reading:

Nowak MA (2006). Five rules for the evolution of cooperation. *Science* 314: 1560-1563

Nowak MA (2006) *Evolutionary Dynamics*, Harvard University Press

Session Talk Abstracts

Thursday, May 31

Thursday Morning Sessions

Session A-1 *Menstrual Cycle Effects: Mate Choice and Competition* Commonwealth Auditorium

Chair: Anthony C. Little

TH 10:30 a.m.

Preferences for masculinity in male bodies change across the menstrual cycle

Anthony C. Little, Benedict C. Jones, Robert P. Burriss (contact: anthony.little@stir.ac.uk)

In human females cyclic shifts in preference have been documented for odour and physical and behavioral male traits. Women prefer the smell of dominant males, more masculine male faces, and men behaving more dominantly when at peak fertility than at other times in their menstrual cycle. Here we examine variation in preferences for body sexual dimorphism. Across two studies, both between and within-participant, we show that women prefer greater masculinity in male bodies at times when their fertility is likely highest, in the follicular phase of their cycle, particularly when rating for a short-term than when rating for a long-term relationship. Cyclic preferences could influence women to select partners when most likely to become pregnant that possess traits that may be most likely to maximize their offspring's quality via attraction to masculinity or serve to help acquire investment via attraction to femininity.

TH 10:50 a.m.

Women's Estradiol Predicts Preference for Facial Cues of Men's Testosterone

James R. Roney, Zachary L. Simmons (contact: roney@psych.ucsb.edu)

An increasing number of studies provide evidence that women's mate preferences shift across the menstrual cycle, with the time near ovulation associated with stronger preferences for more masculine traits. Very little research has addressed the physiological mechanisms that may regulate such shifts. Here we show that women with higher estradiol concentrations exhibit stronger preferences for the faces of men with higher testosterone concentrations, and that women's testosterone preference and estradiol curves track one another across days of the cycle. Estradiol concentrations were most strongly associated with testosterone preference during the luteal phase, furthermore, which suggests that cycle phase fluctuations may have functions beyond the calibration of preferences to the timing of ovulation. These findings are the first to directly demonstrate that hormone concentrations in one sex can calibrate attraction to cues of hormonal status in members of the opposite sex.

TH 11:10 a.m.

Changes in Women's Vocal Behavior across the Ovulatory Cycle

Gregory A. Bryant, Martie G. Haselton (contact: gabryant@ucla.edu)

Recent research has documented a variety of potentially detectable ovulatory cues in humans, including cyclic changes in body scents, flirtatious behavior, and style of dress. We examined whether women's vocal behavior changes systematically across the ovulatory cycle. We collected two sets of vocal samples from 33 normally-ovulating undergraduate women: one set during the luteal phase of the cycle and one set during the follicular phase (with ovulation confirmed by luteinizing hormone tests). Fundamental frequency (pitch) was significantly higher in the high-fertility (follicular) than low-fertility phase of the cycle ($p < .05$). In this talk, we present these results along with results from other vocal measures. Previous work has shown that female voices higher in pitch

are rated as more attractive. Thus, the hormones underlying ovulation may predict within-woman variation in vocal attractiveness, and ovulation may be detectable through changes in the sound of women's voices.

TH 11:30 a.m.

Voice Attractiveness Varies Across the Menstrual Cycle: A Replication and Extension.

R. Nathan Pipitone, Gordon G. Gallup Jr. (contact: rp2497@albany.edu)

Though language expression through speech seems to be the major function in human vocal communication, there seems to be underlying biological information conveyed through vocal production. Cyclic hormones affect women's voices across the menstrual cycle. The present study investigates ratings of voice attractiveness as a function of where women were in their menstrual cycle, and whether hormonal contraceptives can impact voice preferences. Results show a significant increase in ratings of voice attractiveness as risk of conception increases across the menstrual cycle in naturally cycling women. There was no effect of vocal attractiveness and conception risk in women who were using hormonal contraceptives. We were able to show this effect in two independent samples of females and raters. Human evolutionary history could have placed a premium on vocal production serving as an honest signal regarding mate choice and reproductive opportunity.

TH 11:50 a.m.

The Effects Of Conception Risk On Women's Economic Decision-Making: Changes In Bargaining Behavior Across The Menstrual Cycle

Margery Lucas, Elissa Koff, Susan Skeath (contact: mlucas@wellesley.edu)

Because competition for resources to support a healthy pregnancy was likely important for ancestral women, it was hypothesized that women evolved a propensity for intrasexual competition over resources when fertility risk was high. To investigate this hypothesis, 68 female participants played a series of bargaining games to test their willingness to share a monetary stake. Place in cycle was estimated using self-report and actuarial data and participants were placed in one of four categories: high conception risk (HCR), pre-ovulatory, post-ovulatory, or contraceptive users. Women in the HCR group made lower offers to share a stake than did non-ovulating women (but not contraceptive users). Pre-ovulatory participants made lower offers than post-ovulatory participants but higher than HCR participants. Also, HCR women had the highest rate of rejections and post-ovulatory women the lowest. The data support the hypothesis that, when fertility risk is high, intrasexual competition for resources increases.

Session A-2 Social Information and Coalition Formation

Chair: Peter J. Richerson

Chesapeake A

TH 10:30 a.m.

Success Based Biased Cultural Transmission

Peter J. Richerson, Adrian Bell, Charles Efferson, Vicken Hillis, Mark Lubell, Richard McElreath, Tim Waring (contact: pjrigherson@ucdavis.edu)

A fundamental micro problem of cultural evolution is how people use social information to guide their behavior. In this experiment, participants were asked to make "planting decisions" based on payoff and choice information from themselves and their neighbors. We asked which social-learning models best described participant behavior. The social learning models we examined included linear-imitation, conformity, imitate-the-best, and compare-means. The best predictive model hands down was imitate-the-best. The results from this experiment are interesting in comparison to similar experiments with different social information. These experiments illustrate the use of model fitting/model selection statistical methods that are replacing conventional null hypothesis testing approaches in ecology and evolutionary biology.

TH 10:50 a.m.

The impact of environmental variability on social learning.

Toelch U., Bruce, M.J., Reader, S.M. (contact: toelch@geo.uu.nl)

Social transmission of information between individuals of a population represents one of the foundations of culture. Several theoretical evolutionary models predict the conditions under which the evolution of social learning may be favored. We empirically investigated the predictions of a model by Laland, Boyd, and Richerson (1996) that identified environmental variability as a key factor for the emergence of social learning. For this, we tested human participants in a virtual 3D maze using an alternative forced choice task under low, medium, and high environmental variability, with freely available individual and social information. The participants' information gathering strategies differed between treatments. In volatile environments the decision-making process was mainly based on individual information, whereas in more stable environments decision-making involved individual as well as social information as predicted by the model. Moreover, the results suggest that humans' information gathering strategies may be flexible in response to current environmental variability.

TH 11:10 a.m.

Models of Genetic and Cultural Group Selection: A Critical Survey

Julian Garcia, Jeroen C.J.M. van den Bergh. (contact: j.garcia@feweb.vu.nl)

We review 37 formal models of group selection. For this purpose, a conceptual framework of group selection is developed. It distinguishes between genetic and cultural evolution at both individual and group levels. Evaluating available models against this background, it appears that the set of feasible assumptions and mechanisms of group evolution has not been completely explored. This is especially true for cultural group selection. Elements of the framework, notably group formation, among-group interactions, cultural acquiring, and direct warfare, have been addressed using a limited range of assumptions. As a result, a number of theoretical issues, including those relevant to the social sciences, have remained unexplored. Another conclusion is that model-based research seems to be disconnected from the literature on empirical and experimental studies. Finally, we argue that a number of spatial evolutionary modeling studies that make no reference to group selection are worth to be reinterpreted with group selection in mind.

TH 11:30 a.m.

"What's good for us is good for me": How the mind tracks coalitional valuation

Andrew W. Delton, Theresa E. Robertson (contact: delton@psych.ucsb.edu)

A growing body of theory and evidence indicates the human mind has a suite of evolved specializations for regulating coalitional cooperation. We hypothesize that one subcomponent of this is an ability to infer and track the degree to which other individuals value the coalition. Consistent with this hypothesis, a series of experiments showed that (a) the mind does categorize as a separate type those individuals who highly value the coalition, (b) this categorization leads to adaptive downstream inferences, and (c) these effects are not due to plausible alternatives, such as the mind categorizing by competence. Additional results showed that the members of the coalition were perceived as valuing the coalition as a whole more than they valued any of the individuals composing it. These results suggest that a coalition can be treated cognitively as an individual and this "individual"—not its constituent parts—is what is perceived as highly valued.

TH 11:50 a.m.

The dynamics of Machiavellian intelligence

Sergey Gavrilits, Aaron Vose (contact: gavrilits@tiem.utk.edu)

The "Machiavellian intelligence" hypothesis (or the "social brain" hypothesis) posits that large brains and distinctive cognitive abilities of humans have evolved via intense social competition in which social competitors developed increasingly sophisticated "Machiavellian" strategies as a means to achieve higher social and reproductive success. Here we build a mathematical model aiming to explore this hypothesis. In the model, genes control brains which invent and learn strategies (memes) which are used by males to gain advantage in competition for mates. We show that the dynamics of intelligence has three distinct phases. During the dormant phase only newly invented memes are present in the population. During the cognitive explosion phase the

population's meme count and the learning ability, cerebral capacity (controlling the number of different memes that the brain can learn and use), and Machiavellian fitness of individuals increase in a runaway fashion. During the saturation phase natural selection resulting from the costs of having large brains checks further increases in cognitive abilities. Overall, our results suggest that the mechanisms underlying the "Machiavellian intelligence" hypothesis can indeed result in the evolution of significant cognitive abilities on the time scale of 10 to 20 thousand generations. We explore the dynamic features of the evolution of intelligence in the model.

Session A-3 Behavioral Ecology I: Status, Pubertal Timing, and Reproductive Success

Chesapeake B/C

Chair: John Q. Patton

TH 10:30 a.m.

Status, its Attributes and Outcomes in a Small-Scale Amazonian Society

John Q. Patton (contact: johnpatton@fullerton.edu)

People in all societies strive to attain and maintain high status. High status individuals have more control over their lives and the lives of others. The reproductive benefits of high status have been documented in a number of ethnographic and historic contexts. In this paper I examine data collected over a period of 14 years that track the social trajectories of men and women in tribal community in the Ecuadorian Amazon. Various individual and social attributes are used to create a highly predictive model of men's and women's status, and a number of direct and indirect reproductive benefits of high status are identified.

TH 10:50 a.m.

Early First Birth: Implications to Fitness among Pumé Foragers of Venezuela

Karen L. Kramer, Russell D. Greaves (contact: Karen.Kramer@sunysb.edu)

High risk and negative consequences are commonly associated with early reproduction. Yet teen pregnancy is prevalent in many populations. Although the biological and social costs to early reproduction have been well studied in urban, acculturated populations, we know relatively little about them under pretransition conditions of high fertility and high mortality. This paper uses reproductive histories from Pumé foragers of Venezuela to ask how early is too early? And what fitness cost do mothers pay by initiating reproduction at an early age? Young Pumé mothers are more likely to experience an infant death, but they also are more like to have an additional child over the course of their reproductive careers. Results suggest that starting to reproduce at a young age is a riskier strategy during early parities. However, maternal age at first birth is not a significant predictor of surviving completed fertility.

TH 11:10 a.m.

Realistic Mate Choice among Unmarried Shuar Teenagers

Elizabeth G. Pillsworth (contact: pillse@ucla.edu)

Human mate choice entails multiple decision-making problems, including the choice of a social partner with whom one may cooperatively raise offspring. Individuals of both sexes may attempt to maximize the objectively cooperative qualities in their mate, such as kindness and faithfulness, but they must also predict the long-term compatibility of potential mates with themselves. I propose that traits that are universally valued but idiosyncratically defined, such as "interesting personality" and "good sense of humor," will act as cues to compatibility and will therefore play an important role in long-term mate choice. Data were collected from 48 unmarried Shuar women and men (indigenous hunter-horticulturalists living in Ecuador), all acquainted with one another. Participants rated the desirability of opposite-sex peers, rated each other and themselves on a variety of mate-quality characteristics, and provided demographic and personality data. Findings regarding those qualities that best predict desirability will be discussed.

TH 11:30 a.m.

Speed of Puberty, Appearance and Testosterone in Adult Human Males

Jamie F. Lawson, Miriam J. Law Smith, Emad A.S. Al-Dujaili, Martin A. Sharp, Michael R. Stirrat, David I. Perrett (contact: jfl4@st-and.ac.uk)

Life history trajectory has wide-ranging effects on the timing of key reproductive events (such as age of puberty, age of first sex, age of first reproduction) and on associated behaviours. Age at puberty is associated with exaggerated male-typical sexual behaviours in adult men, such as frequency of intercourse, sex drive and number of partners. Behavioural sexual dimorphisms are likely to be related to sex hormones. We hypothesise that early developing males will have higher levels of testosterone, and that they will appear more masculine as a consequence. We show, in a sample of 48 adult men (mean age 21 years), that males reporting earlier puberty are rated as looking more attractive and more masculine than males reporting later puberty. Early developing males have higher levels of salivary testosterone as adults than later developing males. This suggests a link between broad life history trajectory, mating strategy and testosterone in men.

TH 11:50 a.m.

Perceptions of dominance and attractiveness in male voices suggest functional specificity in signal attention

Carolyn R. Hodges, David A. Puts, Steven J.C. Gaulin (contact: crhodges@umail.ucsb.edu)

Low baseline fundamental frequency (F0) positively influences perceptions of dominance by males and attractiveness by females. The present study examines the effect of F0 variation over an utterance (measured by the within-subject standard deviation in F0 across the utterance, F0-SD) on these types of judgments. 111 male voices from an unscripted dating-game were judged by male participants for physical and social dominance and by fertile and non-fertile females for short-term and long-term relationships. Results show that F0-SD (but not average F0) predicted males' judgments of dominance, whereas average F0 (but not F0-SD) predicted fertile-phase women's judgments of sexual attractiveness. These findings may demonstrate functional specificity in signal attention; females may attend to static components of mate quality (e.g., "good genes"), whereas intrasexual competitors may attend to signal features that more accurately track situational changes in physical, social, or motivational states.

Session A-4 Symposium: Humor—What a Funny Adaptation

Tidewater A

Chair: Gil Greengross

TH 10:30 a.m.

Do bad jokes make you ugly? The relationship between humor quality and attractiveness

Eric R. Bressler, Sigal Balshine (contact: ebressler@wsc.ma.edu)

Prior research has found that humor enhances one's desirability as a mate, particularly when women evaluate men's humor. This supports the notion that the evolution of humor has been influenced by sexual selection. Production of humor may act as a signal of quality (either genetic or parental), while appreciation of humor may enhance acquisition of resources from partners. However, not all humor is equally funny. If humor provides information about individual quality, then individuals may reduce their own desirability as a mate if they persistently produce humor that is not actually funny. Here, we present preliminary results of several studies investigating how humor of varying quality influences desirability. Our results support the notion that humor quality is positively correlated with the influence it has on the desirability of the humorist, and hence humor production may have evolved as a risky courtship strategy.

TH 10:50 a.m.

Is Religion an Exaptation succeeding Humor?

Joseph Polimeni, Jeffrey P. Reiss (contact: JPolimeni@shaw.ca)

Pascal Boyer's theory on the cognitive mechanics of spirituality bears a distinctive resemblance to Thomas Veatch's hypothesized cognitive structure of humor. In Boyer's theory, spiritual thoughts contain direct violations of an ontological category. In Veatch's hypothesis, violations of the subjective moral order form the basis of humor. These cognitive paradigms are somewhat unique as they can act as stimuli provoking discernable neurological responses such as hearty laughter or feelings of spiritual transcendence. Because some of the earliest symbolic art resembles that of contemporary shamans, the origins of spirituality and religion could be, at least, 35,000 - 40,000 years old. Humor may be phylogenetically older than religion due to the observation that chimpanzee teasing resembles humor. Furthermore, laughter may have been the affirming social bonding agent replacing the positive reinforcing experience of physical touch as hominid groups grew in size. Therefore, we hypothesize that religion could be an exaptation succeeding humor.

TH 11:10 a.m.

Humor in Romantic Contexts: Do Men Participate and Women Evaluate?

Christopher J. Wilbur, Lorne Campbell (contact: cwilbur2@uwo.ca)

Sexual selection theory posits that, within romantic contexts, men should produce humor in service of attracting mates and women should prudently evaluate these humorous offerings. We conducted three studies to test this prediction. In Study 1, when asked to report on mating strategies, men were more likely to report using humor production and women were more likely to report using humor evaluation. In Study 2, an analysis of online personal ads revealed that men were more likely to offer humor production; women were more likely to request a humorous partner. Study 3, examining context specificity, revealed that men were more likely than women to report using humor production when attracting potential romantic partners. Importantly, this difference was absent for imagined interactions in non-romantic contexts. Women, however, were more likely than men to report using humor evaluation across contexts. These findings provide support consistent with a sexual selection account of humor.

TH 11:30 a.m.

The Importance of Status, Personality and Sex in the Use of Self- and Other-deprecating Humor

Gil Greengross, Geoffrey Miller (contact: humorology@gmail.com)

Recent studies reveal that humor plays a key role in sexual selection. Since humor is hard to define, it is unclear what types of humor are important for each sex, and how exactly they are used. The purpose of this study was to examine the use of aggressive humor (self- and other-deprecating humor) within different status domains, and to see how personality and demographic characteristics are related to different types of humor. Several effects were found for willingness to be involved in a long term sexual relationship with the presenter. Both men and women expressed more willingness to have a long term sexual relationship with the higher status individual who used self-deprecating humor, compared to other-deprecating humor. These results are discussed in light of sexual selection theory and costly signaling theory, as well in their relation to subjects' personality and humor scales.

TH 11:50 a.m.

Humor in Marriage in Five Cultures

Glenn Weisfeld, Nicole T. Nowak, Todd W. Lucas, E. Olcay Imamoglu, Carol C. Weisfeld, Jiliang Shen, Marina Butovskaya, and Michele R. Parkhill (contact: weisfeld@sun.science.wayne.edu)

We set out to test Geoffrey Miller's idea that men use humor to court women, and women use men's humor as a marker of intelligence. In the U.S., U.K., China and Turkey (Russian data not yet analyzed), husbands were perceived to make wives laugh more than the reverse, and wives' marital satisfaction was associated with having a humorous spouse to a greater extent than was husbands' satisfaction. So Miller received partial support. However, preliminary results indicate that humorousness does not correlate with perceived intelligence, contrary to Miller, nor with kindness, understanding, or dependability in a crisis. Marriage may be one of many social contexts in which humor is used to provide valuable, poignant information, especially by illustrating life's pitfalls. The humorist receives expressions of appreciation that may be redeemed for tangible reciprocal help. Humor may also function in signalling amorous interest (by laughter) and in testing the spouse's mood.

Thursday Afternoon Sessions

Session B-1 *Menstrual Cycle Effects: EPCs and Flirtation*

Chesapeake A

Chair: Steve W. Gangestad

TH 3:00 p.m.

Estrus, Pair-Bonding, and the Costs of Extra-Pair Sex

Steven W. Gangestad, Randy Thornhill, Christine E. Garver-Apgar (contact: sgangest@unm.edu)

Studies have found that normally ovulating women report greater interest in men other than their primary male partners during the fertile window of their menstrual cycles than outside that window. These results indicate that, contrary to common belief, women did not evolve to lose estrus, a cycle phase during which female mammals exhibit adaptation to seek good genes for offspring. In studies to date, however, most (though not all) participants have been young, unmarried, and childless. It has been suggested that, given the importance of pair-bonding and male provisioning in human reproduction, women in highly committed, stable relationships and/or women with offspring possibly do not exhibit estrous sexuality. In further analyses of two published studies, we find no evidence that estrous extra-pair interest diminishes with increased relationship length, satisfaction, investment, commitment, having children, or age. We discuss how women's estrous sexuality may nonetheless reflect the costs of extra-pair sex.

TH 3:20 p.m.

Intrasexual Conflict Experienced by Women and their Romantic Partners as a Function of Women's Fertility Status

Christine E. Garver-Apgar, Steven W. Gangestad, Randy Thornhill (contact: garver@unm.edu)

When nearing ovulation, women report more fantasy and attraction to men other than their current romantic partner, particularly if their current partner is relatively asymmetrical. These findings were predicted based on the hypothesis that ancestral women may have obtained genetic benefits for offspring through extra-pair sex. Men should possess adaptive design to avoid being cuckolded. Studies have shown that men whose partners are particularly attracted to extra-pair men when fertile are more vigilant and monopolizing of their partners' time during the fertile window of the cycle. Possibly, increases in women's attraction to men other than their partner mid-cycle also lead to increases in both their own and their partners' competition with other, same-sex individuals at this time. We report further analyses of a published study on couples examining men's and women's intrasexual competition and conflict as a function of women's fertility status.

TH 3:40 p.m.

Ovulatory shifts in women's choice of dress: Naturalistic and experimental evidence

Kristina M. Durante, Norman P. Li, and Martie G. Haselton (contact: kdurante@mail.utexas.edu)

We tested the prediction that women would prefer clothing that is more revealing and sexy at the time in their cycles when the probability of conception is highest (confirmed via luteinizing hormone tests), compared to points when fertility is low. Women's (n=88) clothing preferences were measured using clothing sketches drawn by the participant to indicate an outfit selected to wear to a social event, as well as digital photos of the participant. Women selected clothing that was sexier and more revealing near ovulation. Shifts in clothing preference appear to be a function of sexual proclivity and relationship satisfaction. The effect of fertility on clothing choice was strongest for women of lower mate value. Result suggest that clothing preference shifts may not be behavior designed to attract extra-pair mates but rather the expression of a mechanism that enhances female-female competition near ovulation.

TH 4:00 p.m.

Raised salivary testosterone in women is associated with increased attraction to masculine faces

L. L. M. Welling, B. C. Jones, L. M. DeBruine, C. A. Conway, M. J. Law Smith, A. C. Little, D. R. Feinberg, M. A. Sharp, & E. A. S. Al-Dujaili (contact: lisa.welling@abdn.ac.uk)

Women's preferences for masculinity in men's faces, voices and behavioral displays change during the menstrual cycle and are strongest around ovulation. While previous findings suggest that change in progesterone level is an important hormonal mechanism for such variation, it is likely that changes in the levels of other hormones will also contribute to cyclic variation in masculinity preferences. Here we compared women's preferences for masculine faces at two points in the menstrual cycle where women differed in salivary testosterone but not in salivary progesterone or estrogen. Preferences for masculinity were strongest when women's testosterone levels were relatively high. Our findings complement those from previous studies that show systematic variation in masculinity preferences during the menstrual cycle and suggest that change in testosterone level may play an important role in cyclic shifts in women's preferences for masculine traits.

TH 4:20 p.m.

Fluctuation in Female Gonadal Hormones and Individual Differences in Reproductive Strategy

Kikue Sakaguchi, Seijiro Honma, Toshikazu Hasegawa (contact: ksakaguti@bird.zero.ad.jp)

Sixty-two women (18-24yrs) collected daily morning saliva for 10 days including an ovulatory week. Thirty-three participants collected saliva in summer, 5 collected in fall, and 24 collected in winter. Salivary testosterone (T) and estradiol (E2) levels, sociosexual orientation, sexual desire, and self-monitoring (the tendency to self-control one's expressive behavior strongly as effective self-presentations: the behavioral trait co-emerging with unrestricted sociosexuality) were measured. Both T and E2 levels showed midcycle rise across the menstrual cycle, and T levels in winter were significantly higher than in summer or fall. In the summer-fall samples, hormonal indices (peak T, baseline T, and peak E2) showed no significant association with behavioral indices. In the winter samples, women with unrestricted sociosexuality showed high T levels (especially peak T). T levels tended to negatively associate with sexual desire and self-monitoring. The results demonstrated the special association between T levels at the highest phase and women's sociosexuality.

Session B-2 Cultural Development and Cross-Cultural Variations

Tidewater A

Chair: Lisa McAllister

TH 3:00 p.m.

The Effects of Acculturation on Fertility in an Indigenous Population

Lisa McAllister, Jonathan Stieglitz (contact: lisamcallister@umail.ucsb.edu)

In traditional populations individual wealth and reproductive success tend to correlate (Betzig 1986). In post-demographic transition populations, improved healthcare, education and the importance of extra-somatic wealth appear to have severed this link (c.f. Vining 1992; Kaplan 1996). The Tsimane' of Bolivia, an Amazonian forager-horticulturalist society, are undergoing rapid acculturation due, in part, to the influence of government and non-profit organizations, which provide healthcare and education. These influences should, overtime, encourage the Tsimane' to reduce their fertility rates to levels approximating the fertility of other rural Bolivians. However, my research shows that: (1) the Tsimane' are not motivated to reduce their fertility; (2) they do not view their non-Tsimane' neighbors as successful and worth imitating; and (3) many Tsimane' are using the benefits of acculturation to increase their fertility. The Tsimane' appear to leverage the forces of acculturation to increase their fertility rather than, as expected, decrease it.

TH 3:20 p.m.

Contextualizing the Punishment or Toleration of Freeriders: A Cross-Cultural Examination of Cooperation

Christina N. Pomianek, Reed L. Wadley (contact: cnp304@mizzou.edu)

In evolutionary studies, the problem of freeriders—those who routinely fail to reciprocate in social exchanges—has been a persistent problem. Given the obvious benefits of exploiting the generosity of others, preventing,

detecting, and punishing freeriders is an important concern in any cooperative endeavor. However, freeriders are not always deterred and punished, creating a puzzle in studies of cooperative relationships. Theories of kin selection, kinship amity, competitive altruism, and altruistic punishment identify several factors that may promote cooperation and influence decisions to tolerate or punish defectors, such as degree of genetic relatedness and communicative power of altruistic actions. Despite the explanatory potential of these theories, the economic, social, and political context of exchange relationships plays an important role in the treatment of nonreciprocators. We analyze these factors in the 60-Culture Probability Sample from the electronic Human Relations Area Files.

TH 3:40 p.m.

A Holy Grail for Anthropology? Explaining the Latitudinal Gradient in Cultural Diversity

Thomas Currie, Ruth Mace (contact: t.currie@ucl.ac.uk)

It has been known at least since the time of Alfred Russell Wallace that there is a latitudinal gradient in biological species diversity, with greater densities of species nearer the equator than towards the poles. Less well known is the fact that human cultural group diversity also exhibits a similar latitudinal gradient. Relatively little work has been done to explain this pattern. Some authors have proposed that there is direct link between biological and cultural diversity, while others suggest that both are responding to similar underlying variables. Here we present work that uses GIS technology to integrate information about language distributions with environmental, ecological and ethnographic data to test different hypotheses about human cultural group distributions.

TH 4:00 p.m.

Origins of Genital Mutilation Behavior: An Adaptive Approach

Christopher G. Wilson (contact: cgw8@cornell.edu)

Diverse costly behaviours of male and female genital mutilation are important in a substantial minority of human cultures. For different reasons, female genital cutting and male circumcision have drawn great attention in recent medical and policy literature, and various proximate explanations have been advanced by psychologists, anthropologists and doctors. However, we lack an evolutionarily informed analysis of the origins of genital mutilation as a unified and potentially adaptive behavioural phenomenon. I have reviewed and performed comparative tests of several adaptive hypotheses with the potential to address this challenge. I consider hypotheses involving costly signalling and group-recognition, mating systems, hygiene and prophylaxis. Over a century of research is reviewed; data presented include cross-cultural correlations, various anthropological accounts, and comparative physiology from the literature of animal behaviour. Preliminary results point to a unifying adaptive function whose nature may not previously have been appreciated.

TH 4:20 p.m.

Cultural Evolution Following Changes in the Human Social Environment

Lesley Newson (contact: L.Newson@ex.ac.uk)

Social primates live among and preferentially form alliances with kin. Humans are typical in this respect, even though cooperation between non-kin is also common. Within the last three centuries, however, technological change has extended the human social group producing social environments profoundly different from those existing when the human brain and social behaviour evolved. Individuals can be part of many social networks simultaneously, interact with a wide and diverse range of people and be influenced by strangers via communication technology. A far smaller proportion of social interaction occurs between kin. This widening of social networks is associated with the adoption of family limitation and we have proposed that reduced interaction between kin allows the erosion of cultural norms that encourage behaviour consistent with reproductive success (Newson et al, EHB in press). Now we present evidence that other cultural changes associated with "modernization" are linked to this change in social networks.

Session B-3 Behavioral Ecology 2: Violence, Group Size, and Niches Chesapeake B/C
Chair: David Sloan Wilson

TH 3:00 p.m.

Community-Based Research from an Evolutionary Perspective

David Sloan Wilson (contact: dwilson@binghamton.edu)

Evolution is fundamentally about the relationship between organisms and their environment. It follows that evolutionary research on humans should focus on people in their everyday environments, similar to the field studies that form the foundation of animal behavior research. In addition to its importance from a basic scientific perspective, this kind of research can also be used to address practical problems concerning human welfare from an evolutionary perspective. The Binghamton Neighborhood project provides a general infrastructure for community-based research from an evolutionary (or any other) perspective, in conjunction with EvoS, Binghamton University's campus-wide evolutionary studies program. I will describe the project and how it can be used to study a range of topics, from violence reduction to spiritual development, from an evolutionary perspective.

TH 3:20 p.m.

Using Experimental Economics to Explore the Evolutionary-Ecological Paradigm in Human Microsocieties

Daniel Tumminelli O'Brien, Omar Tonsi Eldakar, David Sloan Wilson (contact: dobrien1@binghamton.edu)

During development, individuals may mold certain facets of their behavior to the specific ecology with which they are faced. Diversity in human behavior can thus be seen as distinct responses to a range of environmental inputs, which can be understood by studying people in their everyday habitats. Studies have already been done using economic games to explore inter-societal differences. However, a large human population contains many microsocieties which require different suites of behaviors. The Binghamton Neighborhood Project's newest study involves playing a sequential prisoner's dilemma with high school students. The form of the game used will explore general behavior, behavior when playing with non-neighbors and with neighbors. These results are then analyzed spatially in conjunction with those things discovered in previous BNP studies which allows for an investigation of the relationships between individual expressions of prosociality, trust and reciprocity and neighborhood ecology.

TH 3:40 p.m.

The Trade-off between Number and Size of Offspring in Humans and Other Primates

Robert S. Walker (contact: robert.walker@cudenver.edu)

Life-history theory posits a fundamental trade-off between number and size of offspring that structures the variability in parental investment across and within species. This paper investigates the trade-off across primate clades and presents evidence that a similar trade-off structure is also found across small-scale and industrial human societies. This "quantity-quality" trade-off is approximated by an inverse function and, along with the $-1/4$ scaling relationship between fertility rate and body size, follows directly from theory and holds across increasingly finer scales of analyses (mammals to primates to apes to humans). Our results place the quantity-quality trade-off in humans into a general framework of energetic allocations in fertility rate and offspring investment and suggest that the demographic transition to low fertility in wealthy nation-states is actually a continuum of a more general trade-off common to all animals.

TH 4:00 p.m.

Life history tradeoffs and the health of Shuar juveniles of Morona-Santiago, Ecuador

Lawrence S. Sugiyama, Aaron D. Blackwell, George Pryor, III, Pepe Pozo M.D., Washington Tiwia (contact: sugiyama@uoregon.edu)

Children's Health Diagnostic (CHD) data from 2179 school-children shows variation between individuals, communities, and ethnic groups (Shuar and non-Shuar). Diet and road/medical access account for only a small amount of this variability. According to life history theory, parents face a tradeoff between producing few children

and investing heavily, or producing many and investing less. We therefore predicted additional health differences in Shuar children based on family size and parental strategy. To test this we matched CHD data using age, sex, name, and village, to Shuar census data collected by Ecuadorian colleagues in 2005. Consistent with predictions, children from families with a high ratio of consumers to producers had lower age and sex standardized heights and BMIs. However weight was not significantly affected. We hypothesize that this finding may reflect a tradeoff in types of growth based on consistency of resources, rather than total calories consumed over time.

TH 4:20 p.m.

Whom Do Children Smell Like More?

Alexandra Alvergne, Charlotte Faurie, Michel Raymond (contact: alvergne@isem.univ-montp2.fr)

Odor expression in humans has been found to be implied in social interactions through individual and family recognition. Evolutionary theory predicts that father investment strategies may depend on cues of paternity, such as phenotypic resemblance. Children are therefore expected to show a bias towards their father in their odor resemblance. However, the benefits of revealing paternity might depend on extra-pair paternity rate. A study was conducted with 30 Senegalese families and recognition tests were performed by 300 unrelated judges. Data on parental investment were collected, and the relation between resemblance and father investment was investigated. The results are discussed within an evolutionary context.

Session B-4 Symposium: Evolutionary Psychology and Politics

Commonwealth Auditorium

Chair: Dominic Johnson

TH 3:00 p.m.

Adaptive Politics: Strategic Advantages of Psychological Biases?

Dominic Johnson (contact: dominic@princeton.edu)

Psychological biases—such as overconfidence, cognitive dissonance, the fundamental attribution error, prospect theory, in-group/out-group bias—are generally seen by political scientists as cognitive limitations or mistakes that cause disasters or war. By contrast, evolutionary psychology suggests such biases are adaptations to specific challenges in our evolutionary history. They are therefore far from “mistakes,” but context-specific strategies for survival. An evolutionary approach offers a more sophisticated understanding of: (1) their proximate causes; (2) when these mechanisms will “misfire” in modern circumstances; and (3) when these mechanisms will actually serve their original adaptive function (even in today’s politics). I examine the five major psychological biases noted above, commonly cited as contributory causes of war (e.g., in Iraq). While these biases may cause disasters, at other times they retain their original adaptive advantages, promoting strategic goals, combat effectiveness, and fulfilling the aims of the leaders that hold them—whatever those aims may be.

TH 3:20 p.m.

Natural Defense: Darwinian Perspectives on Security in an Uncertain World

Raphael Sagarin (contact: rafe.sagarin@duke.edu)

Disease, resource scarcity, natural disasters, and conflict have threatened human societies for thousands of years. The rest of the biological world has faced these same threats for over 3.5 billion years. Biological organisms have developed millions of responses to these threats, as evidenced by the incredible diversity of life. There is much that humans can learn from biological organisms (including ourselves) about how to maintain security in a hostile and uncertain environment. I present findings from an interdisciplinary working group that brought ecologists, paleobiologists, psychologists, virologists and security experts together to discuss how natural history might better inform discussions of security in society. Four biologically-inspired themes to guide security systems emerged from our discussions: 1) Evolutionary roots of human behaviors 2) Environmental awareness 3) Organizational structures and 4) An understanding that systems at all levels of complexity go through stages of origination, growth, and senescence.

TH 3:40 p.m.

Evolutionary Psychology and International Relations: Insights for Realism and Nuclear Deterrence Theory
Bradley A. Thayer (contact: BradleyThayer@missouristate.edu)

This paper addresses evolutionary psychology's conceptual insights for the discipline of international relations. Two important insights are advanced. The first is for realist theory. Realist theorists (Morgenthau, Waltz) have made assumptions about human nature without the ability to ground them scientifically. Drawing upon an evolutionary understanding of egoism, and other "realist" human behavior, I am able to accomplish this. Second, the nuclear deterrence literature is unaware of the advances in evolutionary psychology that will assist deterrence theorists better understand an adversary's decision calculus. I use insights from evolutionary psychology, (Anderson, Bothell, et al.; Damasio; and others) to question assumptions of a universal calculus (Schelling) that underpins much of deterrence theory. Lastly, I call for the deeper understanding of evolutionary psychology by international relations theorists and deterrence practitioners and theorists.

TH 4:00 p.m.

Do humans have an evolved 'Theory of Group Mind'?
John Tooby, Leda Cosmides (contact: tooby@anth.ucsb.edu)

Many cognitive scientists are persuaded that humans come equipped with a 'theory of mind' (ToM) built into evolved data formats and procedures specialized for interpreting individual behavior in terms of unobservable mental states. We propose that the enduring fitness landscape produced by the abstract properties of groups selected for evolved formats and procedures that constitute (1) an implicit theory of groups, and (2) a 'theory of group mind' (ToGM) that intersects with and augments ToM. These mechanisms allow individuals to better negotiate the social landscape through improved prediction of group and individual response. In ToGM, groups inherit the general properties of agent representation, plus other spontaneously represented properties and principles individual agents do not have (membership, set inclusion, degrees of cohesiveness and coordination, etc.). With proprietary operations, ToGM uses the acts of individuals to endow groups with shared mental properties, and uses group identity to endow individuals with mental states.

TH 4:20 p.m.

The Evolution of Political Theory
Oliver Curry (contact: o.s.curry@lse.ac.uk)

Political theorists are always arguing about human nature. The positions they take over whether human nature is 'good' or 'bad', fixed or flexible, equal or unequal, influence their view of the desirability of various political institutions and the possibility of political progress. Evolutionary theorists have occasionally contributed to these debates - calling, for example, for a Darwinian Left or Right. In this talk I argue that evolutionary theory has more to offer than this. By revealing the basic principles of social organisation (kinship, coordination, reciprocal exchange, hierarchy), and the evolved intuitions that go with them, evolutionary psychology provides an account of the 'innate-idea space' in which political thought takes place. This framework: provides a principled taxonomy of political '-isms and -ologies'; identifies the dimensions along which they vary; and explains how they change over time and place. A political theory informed by this evolutionary framework would recognise that different political problems require different solutions, and thus avoid the trap of assuming that one-ideology-fits-all. And it would recognise that our evolved political instincts represent only one solution to our political problems, and that we can do better.

Thursday Evening Sessions

Session C-1 *Adaptive Value of Religion*

Chesapeake B/C

Chair: Ingrid K. Storm

TH 5:00 p.m.

Liberal and Conservative Religions as Different Socio-ecological Strategies

Ingrid K. Storm, David Sloan Wilson (contact: istorm1@binghamton.edu)

From an evolutionary perspective, one would expect different environmental and social factors to result in different forms of religion. Unique data collected using the Experience Sampling Method (ESM), where participants report their behaviors and experiences on a moment-by-moment basis, were used to examine differences between liberal and conservative Protestant high school students. The conservative Protestants are generally more satisfied, family-oriented and sociable than liberals, but also more dependent on their social environment, which is reflected in a deterioration of their mood when they are alone. Using an independent set of data, linguistic analysis show that liberal churches refer more to individualism and diversity, whereas conservative churches focus more on authoritarianism and unity. The numerous differences between conservative and liberal Protestant denominations suggest that they cannot be ranked along a single continuum of religiosity. Instead they appear to be qualitatively different socio-ecological strategies, both adaptive in a multiple-niche environment.

TH 5:20 p.m.

Commitment and Cooperation in an Afro-Brazilian Religion

Montserrat Soler (contact: carmin@eden.rutgers.edu)

Evolutionary theorists have suggested that religion promotes social cohesion and cooperation by functioning as a hard-to-fake signal of commitment to a particular group (Irons, 1994; Sosis, 2003). I tested this hypothesis during an investigation of Candomblé, an Afro-Brazilian religion. Subjects participated in an economic game, responded to a religious commitment scale and reported instances of cooperative acts in the context of their own religious congregations. Additional data pertaining to degree of involvement with the religion were also collected. Results show that individuals who display higher religious commitment behave more generously in the game and report more occurrences of both given and received cooperation. These findings support the idea that religiosity can accurately signal willingness to cooperate and, moreover, that signalers receive benefits in the form of increased cooperation from other group members. The study also highlights the value of ethnographic evidence to understand the adaptive significance of religious behavior.

TH 5:40 p.m.

Religious Attachment Theory and the Biosocial Evolution of the Major World Religions

Stephen K. Sanderson (contact: stephen.sanderson@colorado.edu)

Kirkpatrick's religious attachment theory and Sosis's costly signaling theory are used to explain several features of long-term religious evolution, in particular the evolution of the world salvation religions during the Axial Age (600 BCE-100 CE). The monotheistic world salvation religions displaced earlier polytheistic religions largely as the result of new religious needs generated by massive increases in warfare and urbanization. These changes disrupted people's lives and led to heightened levels of ontological insecurity and anxiety. An omnipotent, transcendent God capable of releasing people from earthly suffering replaced the old polytheistic gods when those gods ceased to be adequate solutions to people's religious needs. Although compassionate, the new transcendent God was also capable of imposing severe punishment for religious and other misconduct. This shift was accompanied by a dramatic decline of animal sacrifice common in the old polytheistic religions and represented a new form of religious costly signaling.

Session C-2 Social Exchange and Health
Chair: Annemie Ploeger

Tidewater A

TH 5:00 p.m.

The Origin of Schizophrenia: A View from Evolutionary Developmental Biology
Annemie Ploeger, Frietson Galis, Han L.J. van der Maas, Maartje E.J. Raijmakers
(contact: a.ploeger@uva.nl)

It is well-known that schizophrenia is a multigenic disorder. When more than one gene is involved, the phenotypic effects of genes depend on the interactions among genes during development. Therefore, it is necessary to study the interactions among genes in order to understand the evolution and development of schizophrenia. We review research from an evolutionary developmental perspective that provides evidence for the hypothesis that schizophrenia results from interruptions during a very early phase in embryonic development (early organogenesis), which is characterized by a high level of interactions among cells and low effective modularity. This is a very conserved phase during evolution, because mutations that are expressed during this phase have many phenotypic effects, of which most will be deleterious. Evidence shows that brain areas that are often aberrant in patients with schizophrenia, are established during this phase, as will as other physical anomalies that often co-occur with schizophrenia.

TH 5:20 p.m.

The Apparent Health of Social Partners Biases the Reciprocation of Trust
Daniel Brian Krupp, Lisa M. DeBruine, Benedict C. Jones (contact: kruppdb@mcmaster.ca)

The social exchange of resources is a ubiquitous aspect of human social life. Mechanisms of social exchange, such as reciprocity, rely on an average net return on investments. Phenotypic cues may thus be used to distinguish valuable exchange partners. Health cues are expected to influence exchange decisions: healthy partners are more likely to live to engage in future interactions, and association with healthy partners can bring indirect benefits. However, healthy partners may also demand greater investment in order to reciprocate trust. In a one-shot, anonymous exchange with real monetary payoffs, we examined trust and reciprocation as a function of the apparent health of partners' faces. We find that players do not trust healthy partners more than unhealthy ones, but they do reciprocate the trust of healthy partners more. We discuss the implications of our results for current models of reciprocity and social exchange.

TH 5:40 p.m.

Own Attractiveness Affects Strategies in an Economic Game
Finlay G. Smith, Lisa M. DeBruine, Benedict C. Jones, Daniel B. Krupp, Claire A. Conway & Lisa L. M. Welling (contact: f.smith@abdn.ac.uk)

While the presence of an opponent's face has been shown to influence decisions in experimental economic tasks, the participant's own attractiveness may also be a factor. We examined decisions in 'trust games' with real monetary outcomes as a function of whether the participant believed that their image would be seen by an unfamiliar opponent. Participants who rated themselves as more attractive than average were more likely to trust opponents who they believed would see them than opponents who they believed would not see them. Conversely, participants who rated themselves as less attractive than average were less likely to trust opponents who they believed would see them than opponents who they believed would not see them. We conclude that participants' perceptions of their own attractiveness influences predictive judgments of how others will treat them, and therefore the strategies they employ in economic interactions.

Session C-3 Cooperation in Groups: Punishment
Chair: Timothy Ketelaar

Commonwealth Auditorium

TH 5:00 p.m.

Psychological Mechanisms underlying costly Punishment

Timothy Ketelaar, Bryan L.Koenig, Robert Kurzban (contact: ketelaar@nmsu.edu)

In two experiments, we explore the relation between psychological variables (enjoyment of punishment, self-esteem, perceived fighting ability, perceived coalitional strength, etc.) and the propensity to deliver costly acts of punishment in economic bargaining games. Across two studies, participants were given three different opportunities to punish another agent who had failed to cooperate. Analyses of videotapes of individuals administering costly punishment shows that "punisher types" (individuals who always punish) display more smiling behavior while administering retributive justice compared to "non-punishers" (individuals who rarely punish). We also observe a positive correlation between the propensity to deliver costly punishment and measures of self-esteem, suggesting that individuals who perceive themselves as possessing more social capital (self-esteem) are more inclined to punish non-cooperators. These results are discussed in terms of possible psychological mechanisms underlying the propensity to engage in costly punishment.

TH 5:20 p.m.

Selfishness as second order altruism

Omar Tonsi Eldakar, Dene Leo Farrell, David Sloan Wilson (contact: oeldakar@gmail.com)

Selfishness has rarely been attributed as a group-beneficial strategy. Recently the literature on the evolution of altruism has become dominated by moralistic/altruistic punishment. However, the economics and evolution of this strategy have become somewhat problematic. Altruistic punishers suffer second order cheating from altruistic non-punishers who do not share in the costs of punishment. It has been recently shown in evolutionary computer simulations that punishers that cheat altruistic non-punishers balance the costs of second order cheating and establish a stable equilibrium with altruistic non-punishers. This form of selfish punishment provides a means for 'altruistic punishers' to recoup the costs of punishment to prevent the undermining of social control by second order cheating. I provide an argument utilizing both analytical and simulation models to explore the evolution of punishment in social systems. These results will offer a foundation to make predictions in future empirical research employing experimental games.

TH 5:40 p.m.

Group Size, Equity and Efficiency

Johan Almenberg, Anna Dreber (contact: johan.almenberg@hhs.se)

How is the perception of free-riding - and the impulse to punish free-riders - affected by changes in group size? We use a standard economic game to examine the sensitivity of punishment with regard to inefficiency, for a given level of inequality.

Session C-4 Symposium: Sexual Conflict in Humans
Chair: Aaron T. Goetz and Todd K. Shackelford

Chesapeake A

TH 5:00 p.m.

The Art of Persuasion: It Depends on Your Sex

Alastair P. C. Davies, Todd K. Shackelford (contact: adavies1@fau.edu)

Evolutionary psychological reasoning suggests men more than women have evolved an eagerness to engage in sex, whereas women more than men have evolved a desire to gain economic and other forms of investment from the other sex. In the context of one sex doing favors for the other, this leads to the expectation that one sex will attempt to exploit the other's desire to satisfy its own. Among the predicted findings secured through surveying

undergraduates were: women reported more frequently using their physical attractiveness in attempting to persuade opposite-sex individuals to do favors; women reported a greater success rate in doing so; and women reported more frequently experiencing opposite-sex individuals expressing resentment after doing favors when the individuals discovered they were not physically attracted to them. We conclude that evolutionary psychological reasoning regarding sex differences in mating preferences and inter-sexual competition are borne out in the context of persuasion.

TH 5:20 p.m.

Female Adaptations for Rape Avoidance

William F. McKibbin, Todd K. Shackelford, Valerie Starratt, Aaron T. Goetz (contact: wmckibbi@fau.edu)

Forced copulation, i.e. rape, is a traumatic event for a woman. This trauma may include physical and psychological damage and pain. Given that the costs of being raped are so large, women may have evolved psychological mechanisms that motivate specific behaviors that function to prevent the woman from being raped. We review why rape is so costly to women, and we review research that provides evidence for a female rape avoidance psychology. We conclude by introducing an ongoing rape avoidance research project, and by discussing several important future research directions.

TH 5:40 p.m.

Activating Sperm Competition Psychology: An Experimental Study

Aaron T. Goetz, Todd K. Shackelford, Valerie G. Starratt, William F. McKibbin (contact: agoetz2@fau.edu)

Sperm competition theory states that in species in which females mate with multiple males within a short period of time, males will evolve adaptations to compete for fertilizations. Research in humans has identified proposed psychological mechanisms for sperm competition in men, such as copulatory urgency and copulatory persistence. The current experiment was designed to activate these proposed mechanisms. Participants in the experimental condition read a short vignette depicting infidelity which was designed to activate men's sperm competition psychology. Participants in the control condition read a parallel vignette which did not depict infidelity. Results indicate that participants responded differently to the infidelity and non-infidelity scenarios in line with sperm competition theory.

Friday, June 1

Friday Morning Sessions

Session D-1 *Foraging and Morality*

Tidewater A

Chairs: Andreas Wilke

FR 10:30 a.m.

Fishing for the right words: Human foraging behavior in external and internal search tasks
 Andreas Wilke, Peter M. Todd, John M. C. Hutchinson (contact: wilke@ucla.edu)

When resources are distributed in patches animals must decide when to switch from a depleted patch. The optimal policy is given by the Marginal Value Theorem, which has successfully predicted animal behaviors, but as a mechanism it becomes problematic when each patch contains few discrete prey items. Biologists have proposed simple alternative decision mechanisms and calculated in which environments each works well. Here, we study the mechanisms that underlie human foraging behavior and test whether the strategies directing animals when to leave a food patch also underlie human decision-making when foraging for resources. We present results from two experiments, which differed in whether search was external (i.e. finding physical objects) or internal (i.e. retrieving information from memory), but whose environmental parameters were closely matched. In both tasks, subjects tended to use decision strategies that were appropriate to the type of resource distributions most commonly found in nature.

FR 10:50 a.m.

Foraging Adaptations in Spatial Cognition: Toward a cognitive model
 Max M. Krasnow, Danielle Truxaw, Joshua New, Steven J. C. Gaulin (contact: krasnow@psych.ucsb.edu)

A growing body of evidence supports the theory that human spatial ability includes mechanisms that evolved to support foraging. Outside of foraging contexts men show an advantage in dead-reckoning, but women outperform men when presented cues that are consistent with foraging for plant resources. The focus of the current research is to localize the source of this sex difference within a cognitive model. Across three studies we have found a specific female advantage in memory for plant resource locations compared to (i) location memory for other categories of objects, and (ii) non-spatial memory for object identity. In a fourth study (utilizing an eye-tracker) we additionally test between the hypotheses that 1) this female advantage is localizable in a behavioral rule guiding information acquisition, or 2) must be otherwise localized in more downstream information processing.

FR 11:10 a.m

Implications for Human Cognition from the Evolution of Animal Foraging
 Thomas T. Hills Peter M. Todd Robert L. Goldstone (contact: thills@indiana.edu)

There is compelling molecular and behavioral evidence that human goal-directed cognition is an evolutionary descendent of animal foraging behavior---similar dopaminergic processes both modulate between exploratory and exploitative foraging behaviors and control attention across animal species. Moreover, defects in these processes lead to predictable goal-directed cognitive pathologies in humans, such as ADHD and OCD. However, cognitive relationships between exploration in space and in the mind have not been examined. Here we show that behavioral tendencies during search are conserved within individuals as they switch between literal spatial foraging and abstract cognitive search tasks. Individuals who explore more of the physical space also move more rapidly between clusters in a word puzzle search task, and those subjected to clumpy spatial resource distributions treat the word puzzle mental space as though it is clumpy. Our findings thus provide evidence for an evolved spatial search mechanism influencing cognitive exploration.

FR 11:30 a.m.

Prejudicial Attitudes toward Homosexuals: The Competing Roles of Moral Reasoning and the Moral Emotion of Disgust

John A. Terrizzi Jr., Dr. Larry Ventis (contact: jaterr@wm.edu)

Researchers in the field of moral psychology are currently debating whether moral judgments are formed through moral reasoning or moral intuitions (Hauser, 2006; Haidt, 2001). The purpose of the current study was to determine whether moral reasoning or the moral emotion of disgust was more predictive of prejudicial attitudes toward homosexuals. Participants consisted of 146 college students (99 females, 47 males). Participants completed measures of moral reasoning, disgust sensitivity, and attitudes toward homosexuals. Results indicate that moral reasoning was negatively related to attitudes toward homosexuals and disgust sensitivity was positively related to attitudes toward homosexuals. More importantly, there was an interaction between moral reasoning and disgust sensitivity such that individuals who were high in moral reasoning and disgust sensitivity exhibited comparable levels of prejudice as those who were low in moral reasoning. This finding suggests that, at least for attitudes toward homosexuality, high disgust sensitivity can overwhelm high moral reasoning.

FR 11:50 a.m.

Recalibrational Emotions and Welfare Tradeoff Ratios: Cooperation in Anger, Guilt, Gratitude, Pride, and Shame

Daniel Sznycer, Jade Gibson Price, John Tooby, Leda Cosmides (contact: dsznycer@umail.ucsb.edu)

The adaptive problem of making advantageous cost-benefit tradeoffs selected for a class of internal regulatory variables—welfare tradeoff ratios (WTRs)—that regulate the relative weight the individual places on his/her own welfare versus the welfare of a particular other. The theory investigated is whether specific emotions are designed to recalibrate WTRs functionally in distinct but predictable ways in response to events. Hypotheses derived from WTR logic predict target-specific WTR downregulation in anger-eliciting situations, and WTR upregulation in guilt- and gratitude-eliciting situations. WTR recalibration in pride and shame, on the other hand, is expected to be more computationally contingent. Evidence from three experiments among Argentine undergraduates (N = 1420) that measured changes in willingness to help in response to imagined events supports the recalibrational theory of anger, guilt, and gratitude. Pride and shame data suggest avenues for mapping their distinctive design features.

Session D-2 *Mate Choice: Face, Voice, and Culture*

Chair: Coren L. Apicella

Commonwealth Auditorium

FR 10:30 a.m.

When Hadza Hunter-Gatherers Meet your Average Joe: Cross-cultural preferences for averageness in faces

Coren L. Apicella, Anthony C. Little, Frank W. Marlowe (contact: apicella@fas.harvard.edu)

Preferences for averageness have been found in several types of study using both real and computer manipulated faces. Such preferences have been proposed to be biologically based and thus should be found across human populations, though cross-cultural evidence has been limited. The current study examined preferences for averageness in both the UK and in an isolated hunter-gather society, the Hadza of Northern Tanzania. We show that averageness is generally preferred across faces and cultures except that there was no significant preferences for averageness in European faces by Hadza judges. The different visual experience of the two cultures may explain the differences in preferences. While Europeans have visual experience of both European and African faces, the Hadza are limited in their experience of European faces, potentially leading to a lack of preference for averageness in this group because of the lack of a representation of the 'norm' of European faces.

FR 10:50 a.m.

Voice Pitch, Hunting, Gathering, and Mate Quality Perceptions among Hadza Men and Women

David R. Feinberg, Coren L. Apicella, Frank W. Marlow (contact: dfeinberg@wjh.harvard.edu)

As of yet, there is no record of cross-cultural research in the relatively new, fast-growing field of vocal attractiveness. Here we present data from Hadza men and women's attributions of hunting and gathering skill and quality as potential mates to opposite-sex UK and Hadza voices with raised and lowered pitch. Women thought voices of men with lowered pitch were better hunters than the same voices with raised pitch. Pitch manipulations had no effect on generalized women's mate preferences, but individual differences in preferences may exist. Hadza men thought women with lower-pitched voices would be better gatherers, most likely because gathering is demanding physical labor, to which a masculine physique could aid. Men preferred women with high-pitched voices as potential mates, suggesting adaptive male preferences for cues to female fertility, independent of gathering ability. Collectively, these data demonstrate that voice pitch can be used in mate-choice relevant decisions across cultures.

FR 11:10 a.m.

Cultural Variation in Parental Influence on Mate Choice

Abraham P. Buunk, Justin H. Park (contact: a.p.buunk@rug.nl)

Contrary to what is implied by current theories of human mating, free mate choice was not common throughout much of human evolution, as parents often controlled the mating behavior of their children. We constructed a 10-item scale to assess the degree of parental influence on mating, which we administered to samples of 371 Dutch students, 197 young people from Kurdistan, Iraq, and 80 students from 30 different countries studying in The Netherlands. The scale reliable and largely unrelated to other mating-relevant variables. The Kurdish sample reported higher levels of parental control on mate choice than the Dutch sample. In addition, parental control was found to be higher in countries that were characterized by more ingroup collectivism and, independently thereof, institutional collectivism. We argue that the impact of parents and its cultural variation cannot be ignored in the study of human mating, and may have had consequences for sexual selection.

FR 11:30 a.m.

The effects of skin colour distribution and topography cues on the perception of female facial age, attractiveness, and health

Bernhard Fink, Paul J. Matts, Karl Grammer, Maria Burquest (contact: bernhard.fink@ieee.org)

The preferences for some facial characteristics may reflect adaptations for mate choice because they signal aspects of mate quality. However little is known about skin condition in this context. Fink, Grammer, and Matts (2006) showed that facial skin color distribution significantly influences the perception of age and attractiveness of female faces, independent of skin surface topography cues, though the relative impact of skin color distribution and topography cues on age and health remains to be investigated. We present data showing that both skin color distribution and skin surface topography cues significantly influence the perception of female facial age, attractiveness, and health, but convey differential information with regard to the strength of these effects. The preferences for young and healthy looking skin may offer an explanation as to why women place such an importance on the condition of their skin and its refinement through, for example, cosmetic products.

FR 11:50 a.m.

You Can Judge a Hormonal Surge by its Cover: Testosterone Responses to Competition in Men are Positively Associated with Facial Masculinity

Nicholas Pound, Ian S. Penton-Voak, Alison Surrridge (contact: nicholas.pound@brunel.ac.uk)

Systematic variations in female preferences for male facial masculinity are thought to represent adaptive trade-offs in mate choice between cues to prosociality (indicated by facial femininity) or immunocompetence (masculine faces are a putative 'honest handicap', as testosterone is immunosuppressant). A crucial underlying assumption of this handicap theory is the existence of a relationship between circulating testosterone levels and facial masculinity in men. Previous research investigating relationships between circulating testosterone levels and facial masculinity has focused on only baseline measures, and yielded inconsistent results. Since testosterone levels are dynamic, cumulative exposure to the hormone's masculinising effects may depend on the magnitude of

hormonal responses to events and not just baseline levels. In the present study, we demonstrate that men with more masculine facial structure show higher levels of circulating testosterone after success in competition than men with less masculine faces. Precompetition testosterone measures, however, are not related to facial structure.

Session D-3 Aggression: Hazing, Torture, and Suicide
Chair: Aldo N. Cimino

Chesapeake A

FR 10:30 a.m.

Is Hazing a Byproduct? Testing the Motivational Systems that Underlie the Abuse of New Group Members
Aldo N. Cimino (contact: aldo@aldocimino.com)

Hazing--the abuse of new or prospective group members--has traditionally been examined in specific ethnographic contexts with minimal focus on the possible psychological mechanisms underlying hazing. To the extent that such mechanisms exist, they may a) be designed by selection specifically to produce adaptive hazing, or b) have different functions but produce hazing as a byproduct. Here I explore the second possibility. In particular, the low cumulative labor inputs of new members along with the automatic availability of certain group benefits may trigger anti-free rider punitiveness on the part of veteran members. Results from two laboratory experiments support this theory and suggest that some variables normally involved in regulating anti-free rider sentiment are similarly predictive of hazing behavior. I argue that these motivations for hazing apply across sex and group task domain.

FR 10:50 a.m.

Bullies and Victims in Retrospect: Adult Body Morphology, Self-Reported Aggressive Behavior, Pace of Development, and Popularity in College Students
Daniel D. White, Andrew C. Gallup (contact: dwhite@uamail.albany.edu)

Peer victimization in schools is a cross-cultural epidemiological dilemma. In this country alone, as many as 150,000 students stay home from school daily due to problems with bullying. We attempted to retrospectively investigate bullying and victimization as a function of adult body morphology, aggressive behavior, physical development, popularity, and reproductive opportunities in college students. We surveyed and took anthropometric measurements of 83 males and 65 females between the ages of 18 and 25. Results indicate that aggressive behavior, in the form of physical and relational bullying were positively correlated with number of sex partners in both genders and hand grip strength in males. Victimization was negatively correlated with shoulder/hip ratios in males and self-reported popularity. These results suggest that body morphology in males is an honest signal of social status and potential reproductive quality. In females, aggressive behavior appears to be more highly correlated with competition for dating/reproductive opportunities.

FR 11:10 a.m.

When What's Good for One Isn't Good for All: Maintaining Dominance at the Expense of Group Performance
Nicole L. Mead, Jon K. Maner (contact: mead@psy.fsu.edu)

In humans and other social species, dominant individuals tend to enjoy relatively greater access to social and material resources. As a result, many individuals are highly motivated to strive for, and maintain, positions of dominance within their group. Three experiments tested the hypothesis that, when placed in a position of dominance, people high in dominance striving (HDS) would respond with choices and actions aimed at maintaining their position of dominance, even at the cost of group performance. Two experiments showed that HDS participants shunned highly competent group members when the dominance hierarchy was flexible, and those group members therefore represented a direct threat to the participant's dominance (no such effect occurred when the hierarchy was inflexible). A third experiment showed that HDS participants placed into a position of dominance chose to limit the flexibility of the hierarchy, thereby reducing the chance they would lose their position of dominance.

FR 11:30 a.m.

We Will Hunt Them Down: Social Dominance Orientation, CIRCA, and Ethnic Cleansing

Lotte Thomsen, Jim Sidanius, Alan Fiske, Elizabeth Pillsworth (contact: lthomsen@fas.harvard.edu)

People understand and structure endless social relations by mapping them onto a limited set of spatio-relational conceptual primitives such as UP-DOWN and OVERLAP. The understanding of such spatial-relational primitives is universal, but individual differences in spatio-relational preferences predict a range of social psychological phenomena. Using the Circles In Relational Configuration Arrays (CIRCA) iconic measure, we first demonstrate that spatio-relational primitives have generative properties to create social meaning and retain such meaning in recursive combinations in Inuit, Shuar, and American samples. Next, we explore the spatio-relational processes underlying willingness to participate in ethnic cleansing using a scenario prime experiment. The more participants preferred an icon with overlapping circles in one color to an icon with overlapping circles in two different colors, the more willing they were to help hunt down, torture, and kill immigrants when been primed with a Muslim target who assimilates to American culture. This was mediated by SDO.

FR 11:50 a.m.

Dying to Kill: The Dynamics of Suicide Terrorism

J. Anderson Thomson, Jr. (contact: jat4m@virginia.edu)

Suicide terrorists now strike daily. They account for a majority of all terrorism-related casualties, and the rate of attack continues to escalate. 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 the history of suicide terrorism and details this formulation and the evidence.

Session D-4 *Establishing the Evolutionary Study of Traditional Behavior, Part 1*

Chesapeake B/C

Chair: Craig T. Palmer and Christina N. Pomianek

FR 10:30 a.m.

Traditions: The Missing Link in Evolutionary Explanations of Human Behavior

Craig T. Palmer (contact: palmerct@missouri.edu)

The extent to which cultural behavior has been traditional (i.e., copied from parents and other ancestors) was one of the primary findings of cultural anthropology during the first century of the discipline's existence. Evolutionary psychology, however, has largely ignored traditions because it developed during a more recent period when anthropologists have downplayed the importance of traditions, and in some instances even denied their existence. This paper calls for a renewed focus on traditions by examining some of the aspects of human social behavior that would never have evolved without the passing of traditions over large numbers of generations. So fundamental are traditions to our species that the absence of traditions during our evolution would have altered the evolution of both our brains and genotypes to the extent that we would not recognize the resulting species as human at all.

FR 10:50 a.m.

Traditions as Descendant-Leaving Strategies

Lyle B. Steadman (contact: lyle.steadman@asu.edu)

In this paper, I argue that an understanding of the evolution of culture requires understanding certain key aspects of the concepts of selection, kinship and traditions. First, I argue that the concept of selection, as conceived by Charles Darwin, applies to any inheritable trait. This means both genes and traditions (learned behavior copied from ancestors) are subject to selection. Second, I argue that traditions are an extension of the older and widespread behavior of kinship. An understanding of the evolutionary significance of tradition, thus, requires an understanding of kinship behavior. Finally, as an example, I argue that one tradition of fundamental importance, one that encourages widespread cooperation in every traditional society, is ancestor worship. Ancestor worship has the evolutionary effect of extending close kinship behavior to distant kin.

FR 11:10 a.m.

Judaism as a Tradition-Leaving Strategy

Rick Goldberg (contact: goldberg@io.com)

There is virtually no aspect of the Jewish religion that can be considered non-traditional; in fact, Judaism itself is often referred to as "The Tradition". This paper describes how Judaic traditionalism has organized and commanded Jewish lives over the centuries. Traditions are a generated social product in which the qualities and behaviors of venerated ancestors are considered worthy of emulation. Access to God's assistance in every generation is based on the merit of those ancestors with whom God established a covenantal relationship. As an expression of the Covenant, the "standing" of each Jew is based on a genealogical lineage of ancient origin. Because traditions are copied from ancestors, Jews realized early on that the most reliable tradition-leaving strategy required writing things down. Though at one time Judaism had a written and oral Torah, the oral tradition was redacted to avoid the inevitable errors of memorized repetition.

FR 11:30 a.m.

Traditions and Cooperative Behavior: What Makes People Follow the Rules?

Nancy E. Aiken (contact: aiken@frognet.net)

Human cooperative behavior has been difficult to explain in evolutionary terms. Since kin selection cannot explain cooperative behavior toward others beyond the level of first cousin, answers to why and how humans are such social, cooperative creatures have generally been based on reciprocity and cost analysis. Culture has also been identified as a factor in promoting cooperation. This paper examines the possibility of a complex of human behaviors, based on more ancient behaviors, which promote compliance and interaction with cultural traditions, as the answer to human cooperative behavior. The lines of research presented point to an inherited set of behaviors that encourage cooperation with established cultural traditions, which, if not aberrant, provide an environment for human survival and reproductive success.

FR 11:50 a.m.

Comanche Indian Clans and Traditions

Gerald Betty (contact: g_betty1@yahoo.com)

The Comanche are used to illustrate the importance of traditions in human social organization. Various scholars have argued that the social organizations of indigenous peoples resulted from either around free association, shared communicative competence, or availability of material resources. Such explanations are compatible with the approach of evolutionary psychology that sees social organization as a product of each individual using his or her evolved psychological mechanisms to manipulate the social environment to his or her evolutionary advantage. In contrast, this paper argues that Comanche social organization was based on clans that could only be the result of passing traditions that identified certain individuals as kin, and encouraged specific forms of cooperation with individuals identified as kin, from one generation to the next. Far from being unique to the Comanche, traditions promoting cooperation among individuals identified as co-descendants of a common ancestor may be a species-typical aspect of human social behavior.

Friday Afternoon Sessions

Session E-1 *Reasoning, Language, and Morality*
Chair: Gary L. Brase

Tidewater A

FR 3:00 p.m.

Pictorial Representations and Bayesian Reasoning

Gary L. Brase (contact: braseg@missouri.edu)

An ecological rationality approach claims that pictorial representations help tap into evolved frequency coding mechanisms of the mind, thereby facilitating statistical reasoning. In contrast, others have argued that these tactics only help one to appreciate general subset relationships, and that this is the source of their facilitative effects. To assess how it is that pictorial representations actually improve Bayesian reasoning, a series of studies are reported comparing statistical reasoning tasks aided by systematically varied types of pictorial representations: Iconic symbols, Venn circles, Venn circles with dots, and no picture (as a control). Iconic representations—which provide discrete, individual items more easily coded as frequencies—consistently provided more facilitation than alternative pictorial representations. This finding replicated regardless of whether pictures were simply presented to participants, interactively constructed, or freely developed by participants, and are consistent with an ecological rationality view of how these pictorial representations achieve facilitation.

FR 3:20 p.m.

Differential Inductive Reasoning about Social Categories and Their Members' Traits

Cristina Moya, Francisco Gil-White, Robert Boyd, Daniel Fessler (contact: cmoya@ucla.edu)

Stereotyping is often considered a byproduct of domain general memory and informational constraints about the targets. However, in addition to the benefits of cognitive efficiency, inductive inferences – that is, attributions of one set member's trait to all remaining items in the set – in the social domain can help one predict the behavior of novel others in fitness relevant contexts. This is particularly the case for social categories whose boundaries covary with multiple traits, such as ethnic categories. Additionally, consistent with Error Management Theory, inductive inferences should be particularly favored about traits for which an incorrect generalization is less costly than an incorrect failure to generalize. In vignettes, we varied the cues describing a social category, and used a memory task to measure subjects' inductive inference rates about various traits. We discuss which cues are more likely to trigger inductive reasoning, and about which traits the inferences are made.

FR 3:40 p.m.

Adaptationist Approaches to Consciousness

Francis F. Steen (contact: steen@commstds.ucla.edu)

Evolutionary psychology, along with cognitive science, has largely avoided the topic of consciousness, by implication assuming we can understand core mental functions without taking it into account. It is not obvious why this would be a plausible assumption. Consciousness has the hallmarks of a complex adaptive structure, and is not likely that it serves no significant function. In this talk I propose that consciousness is as an internal communication protocol designed to simplify the task of sensory inference systems, and argue for the evolution of human imaginative capacities as a path-dependent extension of sensory perception. Starting with Fodor and Searle's critique of picture theory, I present evidence consciousness plays a vital role in verbal communication, relying on a suite of impressive adaptations for parsing, morphing, and recombining visual and other sensory memories into mental simulations.

FR 4:00 p.m.

Hazard Management as a Distinct Adaptive Problem

Laurence Fiddick (contact: Larry.Fiddick@jcu.edu.au)

There is a growing interest in hazard management (precautionary actions against potential dangers / hazards) as distinct adaptive problem to which humans have evolved a suite of psychological adaptations (Boyer & Liendard, in press; Fiddick, Cosmides, & Tooby, 2000; Fiddick, Spampinato, & Grafman, 2005). Across a series of studies conducted with American, Australian, Singaporean, and Hindu Indian participants, we used a pile sort methodology to investigate whether people spontaneously distinguish precautionary rules from logically matched social contractual and moral rules. The results suggest that cross-culturally, participants do distinguish between precautions and socio-moral rules, supporting the view that hazard management is psychologically distinct from other normative domains. The results of follow-up questioning also strongly suggest that participants do indeed view precautionary rules as normative, a matter of particular importance in evaluating Cosmides and Tooby's social contract theory that has been disputed by the critics of evolutionary psychology, Buller and Fodor.

FR 4:20 p.m.

Is 'Accent' a Dedicated Dimension of Agent Representation?

David Pietraszewski, Alex Schwartz, Leda Cosmides, John Tooby (contact: pietrasz@psych.ucsb.edu)

Evidence from language acquisition suggests that phoneme repertoires are locally contingent and crystallize roughly around puberty. Thus, shared accents are diagnostic of being raised in the same language community. If immigration and coordination patterns extended across local language communities with sufficient ancestral regularity, and tracking common social origins proved beneficial, then the human cognitive architecture should be designed to represent agents' accents. New studies demonstrate 1) agents' accents are spontaneously represented, 2) this result does not extent to all acoustically-perceptible differences, and 3) accent behaves as a different ontological entry than social alliance or race.

Session E-2 *Sexual Coercion, Exploitation, and Exclusion*

Commonwealth Auditorium

Chair: David M. Buss

FR 3:00 p.m.

Exploitability: From Sexual Deceivability to Competitor Killability

David M. Buss, Joshua D. Duntley (contact: dbuss@psy.utexas.edu)

Human groups contain reproductively-relevant resources that differ greatly in their ease of accessibility. We advance a conceptual framework for the study of two novel classes of adaptations—exploitability and anti-exploitability adaptations—designed to expropriate the resources of others and conversely to circumvent becoming a victim of exploitation. These adaptations include: (1) psychological mechanisms sensitive to cues that signal exploitability; (2) decision rules about circumstances in which to enact an exploitative strategy; (3) adaptations to solve satellite problems created by adopting an exploitative strategy; (4) co-evolved defenses against being exploited; and (5) co-evolved offenses designed to circumvent or deactivate victim's defenses. We present empirical findings from studies on exploiters and their victims (N = 2,431) to document the utility of the exploitability framework. Discussion focuses on the evolution of exploitability adaptations in several key social domains: sexual deceivability, cheatibility, cuckoldability, mate poachability, mate guardability, muggability, sexual assaultability, stalkability, and killability.

FR 3:20 p.m.

The Psychology of Male In-Pair Sexual Coercion in Forensic and Non-forensic Samples

Joseph A. Camilleri, Vernon L. Quinsey (contact: 4jac1@qlink.queensu.ca)

Evolutionary theory has informed the etiological investigation of male sexual coercion but has seldom been applied to sexual coercion among established couples. In two studies we examined whether sexual coercion against partners could be subsumed under etiological paths to violent and sexual offending in general or if

cuckoldry risk better accounts for it. In the first study, we found that convicted partner rapists exhibited a different profile on measures of IQ, developmental instability, psychopathy, criminal history, and victim's age than other sex offenders. We also found that partner rapists experienced more cuckoldry risk events prior to committing their offense than non-sexual partner assaulters. In a second study using a non-forensic sample, we found that indirect cues to infidelity predicted male propensity for sexual coaxing whereas direct cues predicted propensity for sexual coercion. Results provide evidence that cuckoldry risk is a unique determinant of male sexual coercion in established sexual relationships.

FR 3:40 p.m.

Avoidance of Sexual Coercion during the Fertile Window

Diana S. Fleischman, Carin Perilloux, David M. Buss (contact: dfleischman@mail.utexas.edu)

We tested hypotheses regarding adaptive avoidance of sexual coercion during the fertile window. Four women rated 75 activities on perceived risk of sexual victimization, as well as facilitation of short-term and long-term mating. Female participants (n=379) reported on whether they had engaged in or were going to engage in these activities within a 24 hour period. We analyzed composite ratings of activities as a function of menstrual cycle, presence of ovulation as assessed by ovulation tests, and use of hormonal contraception. Unlike the two previous studies of this phenomenon, we found that women did not show a decrease in risky activities around ovulation, but a subset of single women show a trend toward such avoidance at peak fertility. We examined upset evoked by sexual coercion cues, commitment skepticism, men's sexual interest and clothing choice across the menstrual cycle. We discuss the evolved psychology of rape avoidance.

FR 4:00 p.m.

Reducing versus Beating the Competition: Scarce Resources Elicit Differing Forms of Aggression from Females and Males

Joyce Benenson, Timothy Antonellis, Benjamin Cotton, Kathleen Noddin, Kristin Campbell (contact: Joyce.Benenson@gmail.com)

Research on common chimpanzees suggests that females use coalitionary aggression and social exclusion to protect scarce resources, whereas males use it only when individual strategies fail to provide expected payoffs. This may help explain why in both species females form smaller groups than males. To examine early sex differences in the use of social exclusion in humans, young children were formed into triads and asked to play in contexts that varied in the number of resources present (scarce versus plentiful conditions). When resources were plentiful, no sex differences appeared in frequencies of individual-based aggression or in coalitionary aggression. In the scarce resource condition however, males engaged in significantly more individually-based aggression, whereas females used significantly more coalitionary aggression to exclude an individual. Sex differences in the hierarchy of competitive strategies may be related to the greater benefits that females obtain from reducing group size.

FR 4:20 p.m.

Social Dominance and Sexual Orientation

Thomas E. Dickins, Mark J. T. Sergeant (contact: t.dickins@uel.ac.uk)

Heterosexual males are reported to display higher levels of physical aggression and lower levels of empathy than homosexual males (Sergeant et al., 2006). A characteristic linked to both aggression and empathy is social dominance orientation (SDO; Sidanius et al., 2000). A significant sex difference has been reported for SDO, with heterosexual males scoring higher than heterosexual females (Sidanius et al., 1994). The precise relationship between dominance and aggression is currently contested (Archer, 2006; Mazur & Booth, 1998). Given the association between SDO, aggression and empathy, and the differences between heterosexual and homosexual males, an analysis of how sexual orientation co-varies with SDO may help to clarify the association between aggression and dominance. SDO scores were derived from heterosexual males (n = 60), heterosexual females (n = 60) and homosexual males (n = 60). Analysis suggests SDO scores differ significantly between these three groups, and co-vary with other forms of aggression.

Session E-3 Cooperation in Groups: Altruism
Chair: Wesley Allen-Arave

Chesapeake A

FR 3:00 p.m.

An Audience of Social Network Members, But Not Strangers, Promotes Charitable Donations
Wesley Allen-Arave (contact: allenara@unm.edu)

Signaling models propose that generous acts garner favorable attention for altruists. However as protection against “free-riders” that would exploit one’s indiscriminate kindness, donors may not always seek reputations for generosity. I predict that individuals often signal their kindness to valued associates in their social network, but seldom seek out or make wide broadcasts of their kindness. To test this prediction, I collected data on the charitable giving patterns of 506 New Mexican households. I find that donations are typically made through local churches, workplace fund drives, and social groups where members of a valued social network (and only members of the valued social network) are aware of the altruism. Donations are more commonly made when a friend presents a request on behalf of a charity than when a stranger makes a request or no request is made. I find no effect for the presence of strangers on donation behaviors.

FR 3:20 p.m.

Partner Choice Creates Competitive Altruism in Humans
Pat Barclay, Robb Willer (contact: pjb46@cornell.edu)

Reciprocal altruism has been the backbone of research on the evolution of altruistic behaviour towards non-kin, but recent research has applied costly signalling theory to this problem. In addition to signalling resources or abilities, public generosity could function as a costly signal of cooperative intent. When future interaction partners can choose with whom they wish to interact, this could lead to competition to be more generous than others. By using a cooperative monetary game with and without opportunities for partner choice, we show here that people actively compete to be more generous than others when they can benefit from being chosen for cooperative partnerships. We also found evidence for increased skepticism of altruistic signals when the potential reputational benefits for dishonest signalling were high. Thus, this work supports the hypothesis that public generosity can be a signal of cooperative intent, which people sometimes “fake” when conditions permit it.

FR 3:40 p.m.

Acting Like You Mean It: Biological Motion Signals Altruism
Michael E. Price, William M. Brown, Jinsheng Kang, Basil Badi, Yue Zhao, Sulafa Yassin, Dominic Johnson (contact: michael.price@brunel.ac.uk)

Altruism can evolve more easily if cooperators are identifiable. This study investigated whether cooperativeness is detectable from bodily motion during a box-moving task. In one condition thirty men worked for self (earned £1 per box moved), and in another condition the same men worked for a stranger (who earned £1 per box moved). Seven motion-capture cameras recorded movement of 40 infrared markers during box-moving. Motion-capture allowed for the isolation of movement, to the exclusion of other signaller characteristics (e.g. attractiveness, ethnicity). Five-second motion-capture clips were shown to evaluators who rated box-movers’ effort. These evaluators perceived that more altruistic individuals exerted more effort when working for others; further, the specific movement cues to altruistic effort during box-moving were isolated. If body movements reliably signal level of altruism, then the encoding and decoding of these cues could facilitate the evolution of cooperation via partner assortment.

FR 4:00 p.m.

Twenty seconds are enough - identifying other's altruism by thin slices of behavior
Detlef Fetchenhauer, Ton Groothuis (contact: detlef.fetchenhauer@uni-koeln.de)

Relative to other species, humans reveal an exceptionally high degree of altruistic behavior (i.e., giving own resources to others without expecting any material or genetic pay-off). Most theories of altruism are not able to explain why some humans even act altruistically in one-shot interactions under conditions of total anonymity. One

explanation of this “altruism paradox” rests on the commitment model by Robert Frank and its assumption that humans are intuitively able to identify the altruism of others and are thus able to choose altruists as partners for mutual cooperation. To test this theory, 56 target persons were videotaped and asked to divide anonymously some money between themselves and another person. When only 20 seconds of these videotapes (with the tone switched off) were shown to a group of judges, they were indeed able to estimate how much money the target persons had given to the other person (aggregated $r=.41$).

FR 4:20 p.m.

Is human self-sacrifice adaptive? A mathematical examination of cultural, ecological, and demographic variables contributing to suicidal self-sacrifice in humans

Aaron D. Blackwell, Lawrence S. Sugiyama (contact: ablackwe@uoregon.edu)

Why do people engage in willing suicidal self-sacrifice? Kin selection explains self-sacrifice in eusocial insects, but humans self-sacrifice is more complicated because humans: 1) are less related to kin than self; 2) exhibit self-sacrifice when direct kin benefits are unclear and/or benefits accrue to larger group members; and 3) live in a variety of ecological and cultural environments. To understand the conditions promoting self-sacrifice, we mathematically model it in terms of kin selection. As expected, where there are no extrinsic rewards for self-sacrifice it is adaptive only under high sibling resource competition. However, when there are extrinsic gains affecting sibling survival, marriage opportunities, or fertility, self-sacrifice can result in higher inclusive fitness for the self-sacrificer. In particular, in cultural settings in which marriage depends on brideprice or status, families are large, and resources are limited, payments or status benefits from suicide attack are predicted to make such self-sacrifice ultimately adaptive.

**Session E-4 Symposium: Establishing the Evolutionary
Study of Traditional Behavior, Part 2**
Chair: Craig T. Palmer and Christina N. Pomianek

Chesapeake B/C

FR 3:00 p.m.

Moral and Legal Systems: Characteristics, origins, and functions

Kathryn Coe, Craig T. Palmer (contact: kcoe@azcc.arizona.edu)

We use the cross-cultural record to identify behavioral rules of conduct found in traditional tribal societies, and contrast these rules with those rules of conduct found in the early state. We test the proposal that in traditional societies the behavioral rules of conduct and the systems that support them are aimed at promoting enduring, cooperative relationships among individuals identified as kin through common ancestry. These moral codes created a system of extended kin, thus protecting offspring by turning conspecific threats into the protectors, providers, and educators. This kinship-based moral system is significantly different from that found in societies in which the majority of interactions are with non-kin. We refer to this second system as a system of law and argue that this distinction between moral and legal systems has implications for attempts to explain the evolutionary basis of human cooperation.

FR 3:20 p.m.

Incorporating Innovation into Tradition

Reed L. Wadley, Christina N. Pomianek (contact: wadleyr@missouri.edu)

The regular appearance of new cultural behaviors -innovations - in the archaeological and ethnographic record would seem to support the position that creativity has been the hallmark of human culture, at the expense of cultural continuity or tradition. However, as we demonstrate here, innovations are routinely incorporated into traditional patterns of culture and thus rapidly become traditional themselves. Based on ethnographic evidence, we show that innovations are successfully integrated through direct appeals to traditions and to the ancestors who created those traditions. Invariably such innovations are made by elders in small-scale societies, as opposed to youth who have no authority in traditional social structures. We argue further that the innovation must enhance or at least not undermine pre-existing traditions and the social relationships formed through them (i.e., kin groups

and associated political structures), otherwise they are likely to be discarded and discouraged from being replicated.

FR 3:40 p.m.

Kith & Kin: An Extension of the Inclusive Fitness Model

Gordon F.M. Rakita (contact: grakita@unf.edu)

One of the significant advances in evolutionary biology within the last century was W.D. Hamilton's formulation of what later became known as the kin selection (KS) model. Up until that point, biologists had little explanation for the altruistic behaviors of individuals they observed in nature. Eusocial insect societies, in particular, posed a conundrum for Darwin and subsequent evolutionists. Hamilton's model offered a solution to that problem. Recently, in fact, KS has been proffered as an explanation for altruism between related humans. I seek to expand Hamilton's model to include altruistic behaviors occurring between unrelated humans. I propose a model of kith selection that is analogous to KS, but which emphasizes the cultural rather than genetic relatedness of social donors and recipients.

FR 4:00 p.m.

Traditional Stories as Metatraditions

April R. Bass, Todd L. VanPool (contact: arbxrb@mizzou.edu)

World literature is replete with stories that emphasize children's need to listen to and follow their parents' instructions. These stories often use a menacing figure that endangers children when they don't follow their parents' teachings. We illustrate this pattern using several examples from historically unrelated cultures, and argue that the stories' purpose is to reinforce the need to accept parental instruction. This use of stories has profound evolutionary implications, in that it emphasizes to the child the need to gain cultural traits from kin while also reinforcing that variance from these cultural traditions as dangerous. These stories thus act as metatraditions that help ensure successful cultural transmission of traditional traits while discouraging the alteration and replacement of traditional knowledge. Since traditional knowledge reflects previously successful cultural traits, mechanisms enforcing adherence to these traditions are important to the fitness of descendant populations.

FR 4:20 p.m.

Linguistic Traditions and Dialects as a Means of Recognizing Kin

Todd L. VanPool, Christine S. VanPool, April Bass (contact: vanpoolt@missouri.edu)

Dialects are universal linguistic features. Because children learn to speak from those around them, they tend to adopt the dialects of their parents and closely related individuals. Dialects are consequently transmitted through family lines. Dialects can reflect linguistic isolation, but also are universally used to reinforce social distinctions among speakers who interact regularly. In such cases, dialects often reflect close cultural affiliation allowing individuals to determine when and with whom people should cooperate, even if kinship relations are unclear. This reflects the importance of traditions in pre-industrial societies, and the evolution of human language to include the ability to detect subtle differences in dialects that can be used to determine kin affiliation even in contexts where kinship is not apparent. Consequently, dialects would have been an effective means of recognizing kin historically and probably was an evolutionarily significant aspect of language from its inception.

Friday Evening Sessions

Session F-1 *Emotion: Smiles, Surprises, and Schadenfreude*

Chesapeake A

Chair: Jennifer S. Davis

FR 5:00 p.m.

Smiles as Signals of Status: Evidence from Football Players and Fashion Models

Jennifer S. Davis, Timothy Ketelaar, Bryan L. Koenig, L. Wells, M. Klungle (contact: jsdavis@nmsu.edu)

Two studies are presented that provide evidence that smiles convey information about social status. In the first study, photos of college football players were sampled from team websites and rated in terms of their similarity to several prototypical displays of emotion. Degree of smiling was a significant predictor of physical stature: the smallest players were found to exhibit more smiling than the larger players. In a second study, photos of fashion models were sampled from high status (elite) and lower status (folk) brand websites and rated in terms of their similarity to several prototypical displays of emotion. Consistent with the results from the football player study, findings revealed that models for the lower status (folk) brands exhibited more smiling than the models from the higher status (elite) brands. These results suggest that emotional displays may have a more complex function than simply displaying the emotional state of the signaler.

FR 5:20 p.m.

Judgments of Sex and Emotional Expression of Faces are Not Independent at Brief Presentation Times, or in a Speeded Response Task

Ian S. Penton-Voak, N. Wisbey, Nicholas Pound (contact: I.S.Penton-Voak@bristol.ac.uk)

One striking feature of facial expressions of anger and surprise is their similarity to sexually dimorphic characteristics in human faces. Angry expressions resemble the structure of male faces, while surprise shares similarities with female facial characteristics. These similarities could have evolved to exploit differences in the responses that male and female faces typically elicit in observers. In the current study, we demonstrate that angry and surprised facial expressions interfere with judgments of face sex (i.e. angry faces predispose male judgments, and surprised faces predispose female judgments), and, similarly, that face sex interferes with judgments of emotion. These effects were present in both a brief presentation task and in (preliminary) data from a speeded response task. We discuss these findings in terms of cognitive models of face perception that propose invariant (e.g. sex) and variable (e.g. emotional state) properties of faces are processed separately, and from the perspective of animal signaling.

FR 5:40 p.m.

Schadenfreude: An Adaptationist Critique

Bryan L. Koenig, Leisha A. Colyn, Timothy Ketelaar (contact: blkoen@nmsu.edu)

Schadenfreude, a folk concept referring to the experience of pleasure at another's suffering, has yet to be examined from an adaptationist perspective. Previous conceptions of schadenfreude fail to distinguish, for example, between pleasure that occurs when a competitor fails and pleasure that occurs when a third party is punished for violating a social norm. Moreover, previous research assumes that events caused by the pleasure-experiencer activate one psychological process (i.e., gloating); whereas events that are merely witnessed by a third party activate a different psychology (i.e., schadenfreude). In two studies we content analyzed participants' stories about an event when they experienced pleasure at another's suffering. Results confirmed that social norm violations activated a psychology of punishment to a greater extent than did interpersonal competition. Critically, activation of the psychology of punishment occurred irrespective of whether the event was caused by the pleasure-experiencer (gloating) or a third-person (schadenfreude).

Session F-2 *Mate Choice: Preferences and Search Strategies*

Commonwealth Auditorium

Chair: Lynda G. Boothroyd

FR 5:00 p.m.

Facial Correlates of Sociosexuality

Lynda G. Boothroyd, Benedict C Jones, D Michael Burt, David I Perrett (*contact: l.g.boothroyd@dur.ac.uk*)

Observers have been previously found to distinguish sexual strategy from video footage of individuals. In the current study we assess the ability of observers to judge sexual strategy based specifically on cues in facial composite images and how observer's perceptions of the masculinity/femininity and attractiveness of the observed faces related to sociosexual orientation. Observers were able to distinguish between restricted (prefer long-term relationships) and unrestricted (open to short-term relationships) female facial composites and faces of less restricted women were perceived as more attractive. Observers were not always able to identify restricted versus unrestricted male faces but less restricted sociosexuality was associated with a perceived increase in facial masculinity. Finally, women were (perhaps subconsciously) averse to relationships with unrestricted men.

FR 5:20 p.m.

Human Mate Choice Copying

Kelly Asso, Lev Gottlieb, Robert Kurzban (*contact: kurzban@psych.upenn.edu*)

Mate choice copying occurs when the preference for a member of the opposite sex changes as a function of information that a member of one's own sex has selected that individual as a mate. Here we examine this effect using a between-subjects design in which people saw male/female pairs. Participants were told that pairs of people were either dating or randomly matched. We varied the attractiveness of the individuals with whom targets were paired and found that, in the dating condition, there were two-way interactions regarding self-reported desire to have a relationship with the target individual and desire to have sex with the target individual, with desirability on both measures increasing with the attractiveness of the partner. We find no such effect on desire for friendship, suggesting the effect is specific to mating-related preferences. This constitutes the first evidence suggesting male and female domain-specific mate choice copying in humans.

FR 5:40 p.m.

Social Selection: The Invisible Hand that Shaped Altruism

Randolph M. Nesse (*contact: nesse@umich.edu*)

Social selection is the process in which social choices by conspecifics change fitness. Sexual selection is the subtype of social selection in which female mate choice shapes extreme male displays and stronger preferences in a runaway process. Choices of relationship partners can also be potent selection forces. When the number and quality of relationship partners influences reproductive success, displays of resources and generosity towards partners will increase fitness, as will preferences for generous partners with resources. Individuals with strong preferences and extreme displays will selectively associate with each other, gaining fitness benefits that shape otherwise inexplicable prosocial traits. Social selection also should shape motives to please others, negative affects to prevent displeasing others, and capacities for theory of mind. Just as self-interested economic choices give rise to an economy that benefits most, self-interested relationship partner choices are the invisible hand that shapes capacities for genuine altruism.

Session F-3 Cooperation and Reciprocity
Chair: Sarah Mathew

Chesapeake B/C

FR 5:00 p.m.

From asocial to social and back again: Rock-paper-scissor dynamics in the evolution of cooperation
Sarah Mathew, Robert Boyd (contact: smathew@ucla.edu)

Models on the evolution of n-person cooperation usually focus on the dynamics between Cooperator and Defector strategies. More recently it has been shown that Loner strategies that neither contribute nor benefit from the public good create a rock-paper-scissor relationship through which cooperation can evolve. We develop a general analytical framework for n-person cooperation situations and examine the range of conditions in which Loners affect the evolutionary outcome. Strategies are characterized by a solitary production function which is privately consumed, and a joint production function which can be consumed by any group member. Varying the tradeoffs that the different strategies have between private and joint production suggests that the following payoff structures favor the evolution of cooperation through a rock-paper-scissors dynamics: a) the joint production function shows diminishing returns to scale, b) the public good is excludable, and c) defection comes with an opportunity cost relative to the solitary option.

FR 5:20 p.m.

Can two wrongs make a right? Considering the initial viability of (second-order) strategies in models of indirect reciprocity.

Karthik Panchanathan (contact: buddha@ucla.edu)

Indirect reciprocity theory explores the population-level consequences of adding third-party reputation assessments to dyadic reciprocity. Ohtsuki & Iwasa (2004), performing an exhaustive search, found the "leading 8" reputation norms that are evolutionarily stable in simple indirect reciprocity models. Amongst these "leading 8", more recent research finds that so-called "second-order" reputation norms perform best of all. Here, I will show that these analyses are incomplete; while evolutionarily stable, "second-order" norms are unlikely to increase when rare, unlike, for example, "standing" norms. This results from a peculiar feature of the "second-order" norms: individuals that refuse to help a "bad" partner are judged to be good. In general, cooperation can evolve when altruists can assort amongst themselves and limit their exposure to cheats. When considering "second-order" norms in the context of indirect reciprocity, reputation is a good predictor of strategy. When these same strategies are rare, however, reputation becomes a poor predictor of strategy.

FR 5:40 p.m.

Cooperation in Natural Group Tasks is NOT a Social Dilemma: A Marginally-Diminishing Group Return Curve

Tatsuya Kameda, Nobuye Ishibashi, Reid Hastie (contact: tkameda@let.hokudai.ac.jp)

Cooperation in groups has been studied with the social dilemma paradigm whereby group benefit (production) is assumed to increase monotonically with more cooperators while defection is a dominant strategy ("linear public goods provision"). However, most natural group tasks are not social dilemmas. The fundamental structure of many tasks mandates diminishing returns in productivity from later contributions. For example, when information is redundant or task-relevant skills overlap from member to member, diminishing returns are inevitable. When group production increases monotonically but decreases marginally, the group task is better characterized as a producer-scrouter game where no pure strategy is dominant — cooperation should be frequency-dependent on other individuals' choices (Kameda & Tindale, 2005; Kameda, Tsukasaka & Hastie, 2007). This paper reports a series of laboratory experiments on behavioral choices in the producer-scrouter game. The results indicated that participants were classifiable into several types with different sets of beliefs about groups and social order.

**Session F-4 Symposium: The Empathic Brain—Toward the
Social Cognitive Analysis of Moral Behavior**

Tidewater A

Chair: Sven Vanneste

FR 5:00 p.m.

Empathy and altruistic motivation

Jelle De Schrijver (contact: jelle.deschrijver@ugent.be)

Empathy - a sense of similarity between the feelings one experiences and those expressed by others - is commonly regarded as the motivating factor for altruistic behavior. However, an excess of empathy may lead to personal distress, inhibiting an altruistic response. Based upon primate and psychological studies, different models have been introduced to explain this behavior. Top-down models focus on the role played by explicit perspective taking in altruistic behaviour, while bottom-up models stress the role of adaptive automatic emotional responses. Recent fMRI studies on empathy allow a re-evaluation of these models on altruistic motivation. Here, a model is presented where data from current brain science are incorporated to reconcile the former approaches.

FR 5:20 p.m.

Do we simulate?

Farah Focquaert (contact: farah.focquaert@ugent.be)

The origin of human self-awareness reflects our ancestors need to understand, respond to and manipulate each others' behavior. Humphrey's view is in line with recent cognitive neurosciences findings on shared neuronal processing (e.g. MPFC) for self and other-related tasks, as well as recent findings concerning the human mirror neuron system. These findings fit nicely with an introspection-based simulation theory account of human mindreading, contrasting a theory-theory account which traditionally omits the self from third-person mindreading. I will present imaging data on face-based mindreading suggesting that distinct mechanisms for face-based mindreading exist in normal individuals. Whereas individuals with a typically female cognitive style and/or brain type might be more 'simulation-prone' when it comes to mindreading, individuals with a typically male cognitive style and/or brain type might be more 'theorizing-prone'. I will discuss how my findings might contribute to our understanding of certain neuropsychological disorders such as Asperger syndrome and psychopathy.

FR 5:40 p.m.

3. Minimal social cues, explicit incentives and mutual cooperation in repeated mixed-motive games.

Carolyn H. Declerck, Christophe Boone, Sigrid Suetens (contact: Carolyn.Declerck@ua.ac.be)

Social cues and strategic incentives are known to significantly influence the outcome of social dilemmas. This study explores how both these factors interact to affect cooperation in a repeated, dyadic Public Good Game (PGG). The PGG is characterized by either strategic complementarity, where self-interested actors move in the same direction as others, or as strategic substitutability, where self-interested actors move in the opposite direction from others. These PGG's transform the incentives for the players without changing the fundamental mixed-motive nature of the agent's choices. To implement a subtle social cue which is also expected to affect cooperation, half of the players had minimal contact prior to engaging in the dilemma. The results indicate that overall cooperation levels are higher when the PGG is presented as a strategic complement. Prior contact is found to induce trust and to increase initial cooperation and expectations of reciprocity.

Saturday, June 2

Saturday Morning Sessions

Session G-1 *Kinship and Cues to Relatedness*

Chesapeake B/C

Chair: Ilanit Tal

SA 10:30 a.m.

Sibling Kin Recognition: Predicting Altruism and Incest Aversion Among Sibling Pairs

Ilanit Tal, Debra Lieberman (contact: ital@unm.edu)

Researchers investigating kin detection in humans and non-human animals have started to narrow in on the cues that signal relatedness and regulate inbreeding avoidance and kin-directed altruism. Recent evidence suggests that kin detection cues used by humans include coresidence duration, seeing one's own mother caring for a newborn, facial resemblance, and the detection of olfactory signatures. To date, however, no one study has investigated this set of cues simultaneously with actual sibling pairs. Taking all cues together, we can get a better picture of the cues the mind uses to assess relatedness. 29 sibling pairs participated in a t-shirt study and also provided self-photos, completed surveys, and provided saliva samples. Our results support previous reports that sibling coresidence duration and seeing one's mother caring for a sibling as a newborn are the primary predictors of sibling directed behavior.

SA 10:50 a.m.

Facilitating Inclusive Fitness: Proximal Mediators of Kin-Based Altruism and Prosocial Behavior

Gregory D. Webster, Courtney A. Rocheleau, Angela Hendricks, Angela Bryan

(contact: webster3@uiuc.edu)

If inclusive fitness is an ultimate cause of altruism, then what are some of the proximal variables that facilitate the link between genetic relatedness and prosocial behavior? In five studies, we sought to answer this question by examining the extent to which the relationship between genetic relatedness and resource allocation (Studies 1–4), or willingness to donate a kidney (Study 5), is mediated by 1 or more of 6 proximal variables. Multilevel mediation models revealed that, of the 6 proximal variables examined, cohabitation and social interaction each explained 40–50% of the total effect of genetic relatedness on average; emotional closeness, self-other overlap, and felt responsibility each explained 25–30%; and physical distance explained only 3%. The present results suggest that objective measures of living and interacting with kin may be more fundamental in explaining the psychological mechanisms underlying inclusive fitness than subjective measures of closeness, although both are important.

SA 11:10 a.m.

Kin Recognition Signals in Adult Faces

Lisa M. DeBruine, Finlay G. Smith, Benedict C. Jones, S. Craig Roberts, Marion Petrie, Tim D. Spector, L.

Morris Gosling (contact: l.debruine@abdn.ac.uk)

Maloney and Dal Martello (2006 JoV) reported that similarity ratings of pairs of related and unrelated children were very strong predictors of the probability that those children were labeled as siblings by a second group of observers. Surprisingly, similarity ratings did not predict whether sibling pairs were same-sex or opposite-sex, suggesting that people ignore cues that are uninformative about kinship when judging the similarity of faces. Here we replicate this study using two sets of adult sibling pairs. While similarity ratings were also strong predictors of the probability of being labeled siblings, sex cues did influence similarity ratings, potentially reflecting greater sexual dimorphism in adult faces. Additionally, while kinship was more accurately detected from the upper half of child faces, here we find that kinship was more accurately detected from the lower half of adult faces. These findings suggest that strategies for judging kinship from facial appearance are context-specific.

SA 11:30 a.m.

Genetic Relatedness and Sibling Ties

Thomas V. Pollet, Daniel Nettle (contact: T.V.Pollet@ncl.ac.uk)

Research on sibling relationships has focussed on sibling differentiation and sibling rivalry. Few studies have investigated the impact of genetic relatedness on sibling relationships. Maternal half-siblings, unlike paternal half-siblings, are raised together like full siblings. If the relationships of maternal half-siblings differ significantly from those of full siblings, then childhood cohabitation cannot be the only kinship cue affecting adult sibling ties. Using the Netherlands Kinship Panel Study (n= 7,544), we examined the independent effect of relatedness on adult sibling ties. Controlling for educational, age, and other confounding factors we found that maternal and paternal half-siblings were significantly less likely than full siblings to know whether their sibling was still alive or not. Also, both maternal and paternal half-siblings had significantly less face-to-face contact than full siblings. The difference between relationships of maternal half-siblings and of full siblings suggests that childhood cohabitation, while important, is not the sole kinship cue.

SA 11:50 a.m.

Altruism Towards Cousins

Joonghwan Jeon, David M. Buss (contact: joonghwan@mail.utexas.edu)

Recent research on kin investment shows a matrilineal bias as a function of paternity uncertainty. We hypothesize that psychological adaptations have evolved to regulate cousin-directed altruism according to predictably variable levels of paternity uncertainty in different categories of cousins. We develop a formal model that predicts that individuals should be most willing to act altruistically towards their mother's sister's (MoSis) children and least willing to act altruistically towards their father's brother's (FaBro) children. Altruism towards father's sister's (FaSis) and mother's brother's (MoBro) children are predicted to fall in between. An empirical study (N=195) confirmed the predictions. Participants expressed willingness-to-help following the descending order: (i) MoSis children, (ii) MoBro children, (iii) FaSis children, and (iv) FaBro children. The psychological variables of emotional closeness, empathic concern and contact frequency also showed precisely the same pattern across distinct cousins. The results support the hypothesis of cousin-specific adaptations sensitive to varying probabilities of paternity uncertainty.

Session G-2 *Personality and Individual Differences*

Tidewater A

Chair: Randy Thornhill

SA 10:30 a.m.

What is the Relevance of Attachment and Life History to Political Values?

Randy Thornhill, Corey L. Fincher (contact: rthorn@unm.edu)

Conservatives and liberals have markedly different ideologies. Conservatives, in comparison to liberals, are risk-averse and prefer social inequality, traditionally established and familiar in-group values and familial allegiance. Liberals are risk-prone, open to new views and ways, value equality and out-group relations, and exhibit high independence and self-reliance. We hypothesize that this variation was functional and socially strategic in human evolutionary history. Conservatives, we propose, are familial and in-group specialists while liberals are out-group specialists. Furthermore, we hypothesize that the different values are caused proximately by attachment style and associated childhood stresses. Accordingly, low avoidant and high secure attachment and associated low childhood stresses ontogenetically generate conservatives whereas high avoidant and low secure attachment and associated high childhood stresses give rise to liberals. Results from our study of young adults support the hypotheses. We found no evidence, however, that political values relate to present vs. future life history trade-offs.

SA 10:50 a.m.

Sex and Age Differences on Evolutionary Psychology-Based Individual Differences Motives in a U.S. Census Conforming Stratified Sample

Larry C. Bernard (contact: lbernard@lmu.edu)

A new evolutionary psychology theory of motivation posits 15 neuropsychological adaptations (“motives”) mediate purposeful human behavior and are measurable as individual differences variables (Bernard, Mill, Swenson, & Walsh, 2005). These motives have adequate reliability and validity as measured by the Assessment of Individual Motives - Questionnaire (AIM-Q; Bernard, Mills, Swenson, & Walsh, in press). For the present study, participants in an initial sample (N = 742) were compared to 2005 U.S. Census data and eliminated in a stratified backward random procedure until a resulting sample of N = 588 participants (N = 296 males and N = 292 females) closely matched percentages of Sex by Age Group and Sex by Ethnic Group in the U.S. population. Mean differences between Age Groups and Sex on the 15 motives in the final census-matched sample were compared to predictions derived from evolutionary psychology theory. Results largely coincided with predictions from theory. Implications for evolutionary and motivational psychology are discussed.

SA 11:10 a.m.

Prestige and Dominance: Validation of a Self-Report Measure of Two Distinct Pathways to Status

Nicole R. Buttermore (contact: buttermo@umich.edu)

Recently, it has been proposed that individuals gain status via two distinct strategies: dominance, the use of force or the threat of force to gain resources, and prestige, the acquisition and deployment of skills that result in freely-conferred deference by others (Henrich & Gil-White, 2001). This conceptual distinction has recently been successfully operationalized as an individual difference measure using separate scales to measure self-perceived dominance and prestige. Here, these scales – previously shown to assess different and distinguishable constructs – are further validated using confirmatory factor analysis. In addition, the present work seeks to establish the convergent and discriminant validity of the measures. Participants at four universities in the United States and one university in Singapore completed the dominance and prestige scales as well as various personality measures. As evidence mounts that dominance and prestige can be empirically distinguished, the hypothesis that they represent distinct facultative social strategies gains plausibility.

SA 11:30 a.m.

The evolutionary genetics of personality traits and intelligence

Lars Penke, Jaap J. A. Denissen, Geoffrey F. Miller (contact: lars.penke@staff.hu-berlin.de)

Genetic influences on individual differences are ubiquitous, but they are not well integrated into evolutionary psychology. An appropriate theoretical framework can be provided by evolutionary genetics. We assess three evolutionary genetic mechanisms that could explain genetic variance in personality differences: selective neutrality, mutation-selection balance, and balancing selection. Based on evolutionary genetic theory and empirical results from behaviour genetics and personality psychology, we conclude that selective neutrality is largely irrelevant, that mutation-selection balance seems best at explaining genetic variance in intelligence, and that balancing selection by environmental heterogeneity seems best at explaining genetic variance in personality traits. We propose a general model of heritable personality differences that conceptualises intelligence as a fitness component and personality traits as individual reaction norms of genotypes across environments, with different fitness consequences in different environmental niches.

SA 11:50 a.m.

Selective Attention to Threat in the Psychopathic Personality

Eyah Aharoni, Alan J. Fridlund (contact: aharoni@psych.ucsb.edu)

Psychophysiological and neuroimaging studies have suggested that psychopaths are relatively insensitive to threat stimuli, such as threatening words, images, and sounds. From an adaptationist perspective, insensitivity to threats could be disadvantageous. Experiment 1 employed an Emotional Stroop task to discern whether high psychopathy individuals (HPIs) were insensitive to threat in early attentional processing of faces. We found no evidence of this. In fact, HPIs tended to pay more attention to threat faces compared to typical respondents. Experiment 2 examined how HPIs interpret threat within the context of criminal punishment. Contrary to the

threat neglect hypothesis, HPs placed more weight on explicit threat cues than did non-psychopaths. They also ignored criminal intent when determining punishment. We suggest that threat neglect in psychopaths is not attributable to early attentional deficiencies, and that some threat cues may actually receive greater consideration by psychopaths, even at the expense of cues of criminal intent.

Session G-3 *Mating: Hormones, Odor, and Morphology*

Commonwealth
Auditorium

Chair: Emmalyn L. Garrett

SA 10:30 a.m.

A preliminary test of the relative contributions of WHR and BMI assessment psychology to male perceptions of female attractiveness

Emmalyn L. Garrett, Aaron D. Blackwell, Lawrence S. Sugiyama (*contact: egarrett@uoregon.edu*)

In studies where subjects rated photos of reproductive-age females varying in waist-to-hip ratio (WHR) and body mass index (BMI), BMI accounted for much more of the variance in attractiveness than WHR. However, hypothesized WHR assessment functions include body fat distribution (and type) associated with sex, parity, fertility, reproductive age and status (among others): a range of variability not represented in previously studies. We therefore made cards displaying six males and six females, each at three different ages (5-9, 13-16, and 16-18), standardized for height, and with non-body shape related cues to sex and age masked. Twenty-seven male undergraduates sorted the cards on relative attractiveness, perceived age, and sex. Results suggest body shape (e.g., WHR) is used in age and sex assessments, but only accurately so for reproductive aged individuals, such that WHR assessment may account for more of the variance in human attractiveness than previously reported.

SA 10:50 a.m.

Waist-Hip Ratio and Cognitive Ability: Is Gluteofemoral Fat a Privileged Store of Neurodevelopmental Resources?

William D. Lassek, Steven J.C. Gaulin (*contact: gaulin@anth.ucsb.edu*)

Upper-body fat has negative and lower-body fat, positive effects on the supply of long-chain polyunsaturated fatty acids essential for neurodevelopment. Thus, WHR, a useful proxy for the ratio of upper- to lower-body fat, should predict cognitive ability in women and their offspring. Because teenage mothers and their children compete for these resources, their cognitive development should be compromised, but less so for mothers with lower WHR's. All of these predictions are supported by data from the Third National Health and Nutrition Survey (NHANES III). Controlling for other correlates of cognitive ability, women with lower WHR's and their children have significantly higher cognitive test scores, and teenage mothers with lower WHR's and their children are protected from the cognitive decrements associated with teen births. These findings suggest that WHR reflects the availability neurodevelopmental resources and thus offer a new and more convincing explanation for men's low-WHR preference.

SA 11:10 a.m.

Male Body Build Reveals Developmental Stability

William M. Brown, Michael E. Price, Jinsheng Kang, Yue Zhao, Hui Yu

(*contact: william.brown@brunel.ac.uk*)

Fluctuating asymmetry (FA) -- subtle random deviations from perfect symmetry -- may indicate developmental instability. In many species, higher FA is associated with increased morbidity and mortality and decreased reproductive success. However since FA is subtle, studies have been hampered by low repeatability. We introduce a new methodology using 3D body scanning for efficient and precise FA measurement. In a sample of 100 people we demonstrate that 24 bilateral traits exhibit true FA and have high repeatability, and that a characteristic believed to be under sexual selection (waist-to-chest ratio) is positively associated with FA. Further, we presented to female evaluators forty 3D male body models, realistic stimuli that were stripped of potentially confounding cues such as skin colour and facial appearance. As expected, females' attractiveness ratings of

these models correlated negatively with waist-to-chest ratio and FA, suggesting that male body shape is a cue to developmental stability.

SA 11:30 a.m.

Does Illness Affect the Axillary Microflora of Humans? A Possible Opportunity for Pathogen-mediated Sexual Selection.

Amy Cavanaugh, Lee Dugatkin (contact: amy.cavanaugh@louisville.edu)

The Hamilton-Zuk hypothesis of parasite-mediated sexual selection states that individuals should examine traits of potential mates that respond negatively to infection and choose to mate with the individuals who appear to be resistant. Numerous studies in mice have found that females are repulsed by or unattracted to odors of ill males. There is also evidence to suggest that women do not like the odor of ill men. Since human body odor is a result of commensal skin bacteria acting on secretions (i.e. sweat), we examined the axillary microflora of 28 humans over the course of six weeks. Changes in health status had a significant effect on the presence/absence of *Staphylococcus* ($p=0.03$.) Specifically, healthier individuals were more likely to gain *Staphylococcus*. These findings suggest that it may actually be the lack of bacterial contributions to body odor which women are finding unattractive and/or using as a cue to illness.

SA 11:50 a.m.

Additional Cross-Cultural Evidence for the Role of Foot Size Relative to Stature in Judgments of Attractiveness and Age

Daniel M.T. Fessler, Kevin J. Haley, Salomi S. Asaridou, Mark Cravalho, Tiara Delgado, Maryanne L. Fisher, David Frederick, Paulina Geraldo Perez, Cari Goetz, Kevin Lew, Deanne Lucas, Barbara Rupp, Dong Mei Sun (contact: dfessler@anthro.ucla.edu)

Proportionate to stature, women have smaller feet than men, potentially reflecting a history of intersexual selection for cues of youth. Consistent with this hypothesis, previous work (Fessler et al. 2005) revealed that, in many cultures surveyed, participants preferred small feet on women, and average feet on men. However, this research employed unrealistic line drawings and varying sample sizes. Similar tests, using realistic digital images and large sample sizes, were conducted in Austria, Brazil, Cambodia, Canada, China, Columbia, Greece, and the United States. Results replicate earlier findings of a preference for small female feet. Additional investigations reveal a) a negative association between perceived female age and foot size; and b) that men are more likely than women to notice alterations in the size of feet on digital images. Comparisons between anthropometric measurements of the general public and self-reported measurements of fashion models reveal that fashion models exhibit smaller-than-expected relative foot size.

Session G-4 Symposium: Life History Theory and Risk
Chair: Kermyt G. Anderson

Chesapeake A

SA 10:30 a.m.

Life History Tradeoffs and High-Risk HIV/AIDS Risk Behaviors in South Africa

Kermyt G. Anderson (contact: kganders@ou.edu)

Life history theory predicts that when mortality is high, sexual maturation will occur earlier and fertility rates will increase. This prediction has implications for engagement in HIV/AIDS risk behaviors, especially in developing countries where mortality rates are often high and HIV/AIDS is spread primarily through heterosexual intercourse. I test two hypotheses using data from South Africa, a country with high HIV/AIDS prevalence. The first hypothesis is that mortality is positively associated with engagement in HIV/AIDS risk behaviors, measured by such proxies as being sexual active, not using a condom, cumulative and desired fertility, and age at menarche and first sex. The second hypothesis is that life expectancy at birth is negatively associated with engagement in HIV/AIDS risk behaviors. Data come from the Demographic and Health Survey and the October Household Survey, two nationally representative samples providing data on local mortality rates and sexual behaviors for over 11,000 women.

SA 10:50 a.m.***Risk and Long-Range Dispersal: Searching for Natal Sites of 19th Century Colorado Silver Prospectors***
Susan Glover, Mary Towner (contact: smglover@ucdavis.edu)

We investigate the family background of men who migrated from mid-American farms to prospect for silver ore in the mountains of Gunnison County Colorado in the late 19th Century. These men took great personal, financial and reproductive risks for the slim chance of obtaining mineral wealth. Using national genealogy databases to collect information on natal wealth, number of same sex siblings, remarriage of a parent, and family occupation, we find support for the hypothesis that men incur costs of migration when they lack access to critical resources. Gothic men had: (a) high same sex sibling competition, (b) relatively limited economic opportunities, as measured by family and community wealth, and (c) frequently suffered the death of one parent and re-marriage of the other, introducing competition with half siblings. Dispersal to a distant resource frontier is a dramatic life history tactic; we seek to understand whether it is, or is not, adaptive.

SA 11:10 a.m.***Ecological and Cultural Influences on Women's Life Histories: Transnational Data***
Bobbi S. Low (contact: bobbi_low@umich.edu)

Across species, there exist some strong patterns in life history--ones we imagine to be largely or purely cultural in humans. For example: the nastier, more brutish and short life is, the earlier it pays, in biological terms, to reproduce. I examine women's life patterns in more than 170 nations, exploring influences on such variables as age at first birth, age-specific fertility, total fertility rate. Both patterns that 'fit' the general predictions, and those that diverge, are informative. The answers we find may have policy implications for women's lives and fertility.

SA 11:30 a.m.***Testing the Mother versus the Grandmother Hypothesis in the Dogon***
Beverly I. Strassmann, Kathy Welch (contact: bis@umich.edu)

In a longitudinal study of the Dogon of Mali, we tested the effect of various categories of kin on the risk of death and stunting in young children (N = 1700). Our goal was to compare the mother hypothesis against the grandmother hypothesis for the maintenance of menopause. Statistical methods included Cox regression and linear mixed models. If a child's mother was alive, the hazard of death was 77% lower than if she was dead (P = 0.01). If the paternal grandmother was alive, the hazard of death was 92% higher than if she was dead (P = 0.001). These data contribute to a growing body of evidence that in extant patrilineal, patrilocal populations, the adverse effect of paternal grandmothers is more robust than the beneficial effect of maternal grandmothers. Consistent with the mother hypothesis, there is widespread evidence for the beneficial effects of mothers on offspring survival.

SA 11:50 a.m.***An Evolutionary Analysis of Risk Communication: Ambiguity and Ambivalence Hypothesis of Judgmental and Decision Biases*****X.T. Wang (contact: xtwang@usd.edu)**

An evolutionary analysis of risk and risk communication is presented, in which risk is defined not only as variance in monetary payoff but also as variance in biological relatedness, social relations and ultimately reproductive fitness. Decision cues embedded in risk messages are classified according to their adaptive priority (primary cues) and secondary communicational functions. Classical judgmental errors and decision biases (e.g., base rate neglect, framing effects, preference reversal, etc.) are re-visited within an Ambiguity and Ambivalence (AA) framework. The AA hypothesis identifies two key preconditions contributing to inconsistency and biases in making risky choices as a result of cue use in the course of risk communication, where ambiguity in preference is caused by a lack of evolutionary relevance or ecological validity in risk communication and ambivalent preference is caused by conflicting decision cues and mediated by competing emotions or rational-emotional rivalry.

Saturday Afternoon Sessions

Session H-1 *Parent-Offspring Conflict, Influence, and Resemblance*

Tidewater A

Chair: Gabriel L. Schlomer

SA 3:00 p.m.

Mother-Child Conflict in Half-Sibling Families: A Test of Hypotheses from Parent-Offspring Conflict Theory

Gabriel L. Schlomer, Bruce J. Ellis, Judy Garber (contact: schlomer@email.arizona.edu)

Parent-offspring conflict theory (POCT) has been underutilized in studies of human families and development. An implication of POCT is that the presence of siblings will increase conflict in biological parent-child dyads, and that half-siblings will increase that conflict more than full siblings because of lower levels of relatedness to the target child. The current study tests this hypothesis in a community sample of 225 early adolescent children and their mothers. Parent-offspring conflict was assessed prospectively for 3 years. We present a structural model indicating that the presence of maternal half-siblings in the home uniquely increases conflict between mothers and their biological children. This effect persists net of several covariates including the number of co-residing siblings, stepfather presence, and household socioeconomic status. The effect of family disruption on parent-child conflict was mediated by the presence of half-siblings into the home. The unique effect of half-siblings on parent-offspring conflict concurs with POCT.

SA 3:20 p.m.

Maternal Condition and Sex-biased Maternal Investment in a Western Australian Population

Sarah Ward, Debra S. Judge, James S. Chisholm, and Edouard Tursan d'Espaignet (contact: djudge@anhb.uwa.edu.au)

Trivers-Willard predicts that mothers in good condition will bias investment towards offspring with the greatest marginal fitness return. In polygynous mammals this is often sons; mothers in poorer condition bias investment toward daughters. Tests of this hypothesis in humans yield mixed results, particularly in contemporary societies. We use linked medical and behavioural data from Western Australia to examine investment relative to infant sex and maternal condition in 1488 mother-infant dyads. Indices of maternal condition are factor scores derived from measures of mothers' socio-economic status and individual maternal health records; these are related using logistic and linear regression to sex ratio at birth, and to birth weight and duration of breastfeeding by infant sex. Mothers in better health produced more daughters than sons. Daughters and infants of higher SES mothers tended to be breast fed longer. Maternal health is an important aspect of maternal condition at the time of reproduction.

SA 3:40 p.m.

Paternal Harsh Parenting in Relation to Paternal Versus Child Characteristics: The Moderating Effect of Paternal Resemblance Belief

Lei Chang, Hongli Li, Jun Liu (contact: leichang@cuhk.edu.hk)

Paternal resemblance belief as an adaptation could have been selected for, independent of whether the actual resemblance adaptation had taken the route of either "honest resemblance" or "concealed resemblance." In fact, resemblance belief is evolutionarily meaningful when actual father-child resemblance is ambiguous, just as shown by the literature, but not when actual resemblance is unambiguous, either in the direction of the hypothesized honest resemblance or in that of concealed resemblance. Based on a sample of 338 Chinese parents and their only children, paternal resemblance belief was found to attenuate the association between paternal harsh parenting and child characteristics, such as emotion dysregulation and aggression, and to strengthen the association between harsh parenting and such paternal characteristics as depressive affect and marital dissatisfaction. These findings support the evolutionary view that, as an adaptation to calm paternity doubt, paternal resemblance belief leads to improved paternal investment.

SA 4:00 p.m.

The Daughter-Guarding Hypothesis: Parental Influence on Children's Mating Behavior

Carin Perilloux, Diana S. Fleischman, David M. Buss (contact: perilloux@mail.utexas.edu)

Little research has examined how individuals attempt to influence the mating decisions of others. Parents represent prime candidates because of their genetic relatedness to, and potential power over, their children. This paper tests the Daughter-Guarding Hypothesis: humans possess adaptations that motivate them to (1) protect their daughter's sexual reputation, (2) preserve their daughter's mate value, and (3) prevent their daughters from being sexually exploited. Using two separate data sources, participants (N = 173) and their parents (N = 172), we obtained reports about parental behaviors directed towards, and attitudes about, the social and sexual activity of their children. Parents' reports and children's reports converged over multiple measures: parents were more likely to control and report upset over their daughters' sexual behavior than their sons'. Parents' tactics included control over social activities, curfews, clothing and suitors. The results provided evidence for several proposed design features of the evolved psychology of daughter-guarding.

SA 4:20 p.m.

A Twin-Family Study of Social Closeness: Aunts, Uncles, Nieces and Nephews

Nancy L. Segal, James P. Seghers, William D. Marelich, Kevin Chavarria, and Mindy Mechanic (contact: nsegal@fullerton.edu)

A twin-family design was used to social closeness between monozygotic (MZ, N = 248) and dizygotic (DZ, N = 75) twin aunts and uncles and their nieces and nephews. MZ twins' genetic identity makes them the "genetic parents" of their nieces/nephews, and their nieces/nephews their "genetic children." In contrast, DZ twins retain conventional aunt/uncle relationships with their co-twin's children. Hypotheses drawn from Hamilton's inclusive fitness theory were supported: Composite closeness scores derived from the Closeness Questionnaire (CQ) were higher for MZ than DZ twins, and higher for twins with female co-twins than for twins with male co-twins. Factor analysis of the CQ yielded three factors: comparative closeness, perceived closeness and perceived similarity. Step-down analyses showed that zygosity had significant effects on perceived closeness and perceived similarity; co-twin sex had significant effects on all three factors. Twins and other genetically informative kinships offer informative tests of evolutionary-based hypotheses.

Session H-2 Symposium: The Father Effect—Motivations and Investment Across Child Life Histories

Chair: Brooke Scelza

Chesapeake A

SA 3:00 p.m.

Neuroendocrinology of Human Fatherhood

Peter B. Gray (contact: peter.gray@unlv.edu)

The neuroendocrine system plays an important role in the articulation of human life histories, including male allocation toward mating and parenting effort. Here, we review our understanding of the neuroendocrine mechanisms underlying human fatherhood. Several seminal studies conducted on North American subjects have implicated lower testosterone levels and elevations in prolactin and estradiol levels as correlates of paternal care. More limited cross-cultural findings have also observed lower testosterone levels among Beijing fathers compared with married non-fathers and unmarried men. I highlight new data on the hormonal correlates of fatherhood in Jamaica: these implicate prolactin and lower testosterone levels but not cortisol or oxytocin during behavioral interactions between fathers and their partners (mates) and youngest children. As shown in this review, the intersection of proximate and ultimate perspectives in the creation of "local biologies" of fatherhood represents an exciting area of research and recommends a wealth of future research avenues.

SA 3:20 p.m.

Paternal Investment and Constrained Mating Opportunity among the Khasi

Donna L. Leonetti (contact: leonetti@u.washington.edu)

Paternal effort often conflicts with mating effort for men. Men with more mating opportunities may neglect paternal investment. Mating opportunities within monogamous marriage can also be constrained by the reproductive value of the wife. As she ages, odds of fertilization become lower. The question is as follows: Are paternal investment effects altered by the mating opportunity represented by the wife. If relatively less time is remaining in her reproductive life, is there a trade-off to speed up pace of fertility and reduce investment? Data from the Khasi tribe of N.E. India are examined by looking at fertility pacing (birth intervals) as well as child mortality data, in comparisons made between offspring of women's first and second marriages, given that the latter provide a constrained mating opportunity to the husband. Shorter birth intervals in second marriages appear to be related to the higher child mortality in these marriages.

SA 3:40 p.m.

Post-Pubescent Paternal Investment: The importance of Martu fathers at initiation time

Brooke A. Scelza (contact: bscelza@u.washington.edu)

To date, the great majority of human paternal investment studies have focused on the effects that fathers have on pre-pubescent children, mainly in terms of child-care and provisioning. A separate body of literature, however, posits that men tend to be status-driven and that many of the behaviors which appear to be parenting are actually done to acquire increased mating opportunities. The very nature of this trade-off between mating and parenting suggests that one of the most critical ways fathers might be affecting their children's success is by assisting their sons in navigating men's status hierarchies, thereby improving their reproductive access and subsequent reproductive success. A secondary implication is that paternal investment will be especially critical after adolescence when sons become men. This paper identifies one such status transfer and investigates whether having a father present in the household accelerates the timing of initiation for young men in an aboriginal society.

SA 4:00 p.m.

Do Hadza Children Benefit from their Father's Foraging?

Brian M. Wood, Frank W. Marlowe (contact: bmwood@fas.harvard.edu)

In societies of human foragers males may share the products of their foraging effort with a mate, offspring, other kin, non-kin, and even visitors from other camps. Their food provisioning might represent paternal investment or investment in reputation. If paternal investment motivates men's foraging, we should expect offspring of successful male foragers to receive an absolutely greater amount of food than offspring of less successful men. We might also expect men who have young children to be more motivated to acquire more food than those who do not. We test these predictions using data on Hadza men's food distributions. We find that married men with dependent children directed more food by far to their own households than to any other household. These results show that men typically share more food with their own family than with that of other families, resulting in an immediate consumptive advantage for his children.

SA 4:20 p.m.

Fatherhood and Testosterone in Hadza Hunter-Gatherers and Neighboring Datoga Pastoralists

Martin M. Muller, Frank W. Marlowe, Revocatus Bugumba, Peter E. Ellison (contact: fmarlowe@fsu.edu)

In the ethnographic record, men tend to be more involved with their children among foragers, such as the Hadza, than pastoralists, such as the Datoga. Datoga men rarely engage in direct paternal care, their work takes them away from their homesteads, and they eat and sleep in separate rooms from their wives and young children. Hadza men carry their infants more than 5% of the day, interact with them frequently in camp, and sleep at the same hearth. If, as proposed by the challenge hypothesis, testosterone (T) levels play a critical role in modulating male mating effort, then (1) high levels of paternal investment among Hadza fathers should be associated with decreased T, whereas (2) no such difference should be evident among the Datoga. Measurements of salivary testosterone confirmed these predictions, adding further support to the hypothesis that paternal involvement is associated with decreased testosterone production in men.

Session H-3 *Jealousy: Relatives, Rivals, and Mate Guarding*

Chesapeake B/C

Chair: Achim Schuetzwohl

SA 3:00 p.m.

The Intentional Object of Romantic Jealousy

Achim Schuetzwohl (contact: achim.schuetzwohl@brunel.ac.uk)

Theories of jealousy either simply ignore or considerably disagree about the intentional object (the target) of romantic jealousy which impedes the proper understanding of romantic jealousy because (a) any such jealousy theory is necessarily incomplete and (b) its identification helps understanding the primary target of jealous behavior. Thus, three studies tested the evolutionary psychological hypothesis of sex differences in the intentional object of romantic jealousy in response to both actual (Studies 1 and 2) and suspected (Study 3) emotional vs. sexual infidelity using forced-choice and rating scales response formats. As predicted, the clear majority of women reported that their jealousy would be primarily directed towards (potential) rivals, whereas men indicated that their jealousy would be primarily directed towards the partner. Implications of the findings especially with respect to alternative models of jealousy and mate retention strategies will be discussed.

SA 3:20 p.m.

Love, Lust, and Loyalty: Sex Differences in Responses to and Reasons for Infidelity among 65,029 Online Participants.

David A Frederick, Martie G. Haselton (contact: enderflies1@aol.com)

Evolutionary psychologists have proposed that men are more upset than women by sexual infidelity and women are more upset than men by emotional fidelity. Most studies, however, have relied on small college student or community samples, and few have examined moderators or the extent to which different motives contribute to infidelity. We investigated these issues among 65,029 online participants. Heterosexual men were more likely than heterosexual women to be upset by sexual infidelity (53% vs. 35%) and less likely to be upset by emotional infidelity (47% vs. 65%). Among heterosexuals, sex was strongest predictor of upset by sexual infidelity ($\beta = .21$) compared to 18 other demographic and attitudinal factors (β s $< .07$). Only two factors erased the sex difference: sexual orientation and participation in swinging. Compared to women, men were more likely to be motivated to cheat by desires for sexual variety and less by desires for emotional intimacy.

SA 3:40 p.m.

The Impact of Genetic Relatedness on Distress from Infidelity

Ashley Hoben, Melissa Gray, Loriann Williams, Angel McGee, Anthony Cox, and Maryanne Fisher (contact: ashley.hoben@smu.ca)

Many studies have investigated the existence of sex differences in feelings of distress as a consequence of sexual and emotional infidelity. However, we are unaware of any examination on variance in distress in response to the genetic relatedness of the individual with whom one's partner is having an extradyadic relationship. We explored participants' distress when their mate hypothetically engaged in sexual and emotional relationships with various kin and acquaintances. Our results indicated that regardless of participants' sex or the type of infidelity, individuals were the most distressed by partner's infidelity with close kin and least distressed by infidelity with strangers. This disparity in distress may result from the perceived breaches in trust among family members, or because the individual is concerned that kin have entered a relationship with a person who is disloyal. These points will be discussed, along with ideas for future research on infidelity.

SA 4:00 p.m.

Sex Differences in Response to an Imagined Partner's Homosexual or Heterosexual Affair

Mark D. Cloud, Jaime C. Confer, and Tatiana Patakyova (contact: mcloud@lhup.edu)

Based on sexual strategies theory, we predicted that male participants would be less likely to continue an imagined relationship following a partner's heterosexual affair compared to homosexual affair. For female participants, we predicted both affair types would result in low willingness to continue but even more so for homosexual affairs. We further predicted that the results would be similar whether or not participants self-report having experienced real instances of sexual infidelity. The 718 participants were randomly assigned to read one of eight scenarios and estimate the likelihood they would continue the relationship. Our analyses of the data confirmed all three predictions. A significant crossover interaction between participant sex and affair type was found both for participants who have and have not experienced real sexual infidelity. Men who experienced real infidelity, however, were more willing to continue following a partner's homosexual affair, and women were more willing following a heterosexual affair.

SA 4:20 p.m.

Jealousy, Mate-guarding, and Vigilance to Intrasexual Rivals

Jon K. Maner, Saul L. Miller, & Matthew T. Gailliot (contact: maner@psy.fsu.edu)

In humans and other pair-bonding species, reproductive success often hinges on one's ability to guard one's mate from intrasexual rivals. When intrasexual threats are salient, one ought to be especially attuned to physically attractive members of one's sex, who can pose particular threats to reproductive well-being. The current research tested the hypothesis that priming a mate-guarding motive would increase participants' basic perceptual attunement to attractive same sex targets. In Study 1, a jealousy priming procedure designed to activate a mate guarding motive led participants' attention to persist on images of attractive same sex targets at an early and automatic stage of visual processing. This effect was especially pronounced in people with chronic concerns about infidelity. In Study 2, a similar prime increased memory for attractive same sex targets. This research bridges evolutionary theories of mating and mate-guarding with theories of basic, early stage social cognition.

Session H-4 *Film: Kindness of Strangers*

**Commonwealth
Auditorium**

Chair: Lynn E. O'Connor

SA 3:00 –4:40 p.m.

Kindness of Strangers: A documentary film with commentary by

Lynn E. O'Connor, David Sloan Wilson, and Herb Gintis (contact: lynnoc@aol.com)

This symposium presents the documentary "Kindness of Strangers" written and directed by Australian film-maker, Rhian Skirving, with "talking heads" Lynn O'Connor, David Sloan Wilson, Herb Gintis, and Richard Dawkins. Set in Sri Lanka immediately after the Asian tsunami, Skirving and crew followed a small group of individuals who came long distances to help in the relief effort. Capturing remarkable images of Sri Lanka post-tsunami, and the extraordinary acts of altruism toward strangers, Skirving set out to include the science of compassion and human altruism. She traveled to the US with cameraman, interviewing O'Connor, Wilson and Gintis, and to England interviewing Dawkins. The made-for-TV documentary was produced by Prospero Productions and was viewed on ABC TV in Australian, August 2006. After showing of the film, O'Connor, Wilson, and Gintis present briefly, highlighting their research on the evolution of altruism. The symposium concludes with questions and discussion with the audience.

Sunday, June 3

Sunday Early Morning Sessions

Session I-1 *Emotion: Anger, Disgust, and Distress*

Commonwealth
Auditorium

Chair: Aaron N. Sell

SU 9:00 a.m.

Violent Yells Dissected: Physical Strength is Revealed in the Voice and Enhanced during Anger.

Aaron N. Sell, John Tooby, Leda Cosmides (contact: sell@psych.ucsb.edu)

Anger can be conceptualized as an adaptation designed to negotiate mental representations of acceptable resource division points. Many non-human animals have been shown to respond to cues of fighting ability during conflict and also to enhance or exaggerate those cues in order to win such contests. Vocal changes that accompany violent anger (i.e. yelling) are hypothesized to be enhancements of auditory features that are predictive of physical strength (a proxy for fighting ability). Three predictions were derived and tested: 1) strength must be detectable from recordings of normal speaking voices, 2) strength should be detectable across cultures and languages, and 3) an individual's violent yell will be rated as physically stronger than their speaking voice and non-violent yell. All three predictions were supported.

SU 9:20 a.m.

Exploring three domains of disgust

Joshua M. Tybur, Debra Lieberman (contact: tybur@unm.edu)

Social scientists have traditionally portrayed disgust as fulfilling symbolic functions (e.g., protecting the soul or spirit; defending humans from being reminded that they are animals). We suggest that disgust instead functions in three adaptively relevant domains: pathogen disgust, which motivates avoidance of infectious microorganisms; sexual disgust, which motivates avoidance of costly mating behaviors; and moral disgust, which motivates punitive behavior across a number of social domains (e.g., exchange, collective actions). We provide evidence from multiple populations that sensitivity to these three domains is statistically distinct. Further, we put forth a new measure of disgust sensitivity that includes reactions to all three functional domains.

SU 9:40 a.m.

A Developmental Perspective on the Role of the Recognition of Facial Expressions of Emotions and Group Living

Julie Coultas, Nicola Yuill, Rebecca Susenbach, Vanessa Howard, Tori Carter
(contact: julie.coultas@gmail.com)

Recognition of facial expression of emotions is important for the universal phenomenon of group living. But the developmental trajectory for emotion recognition and understanding is not straightforward. Recent research suggests that neural changes during adolescence has a negative influence on various social cognitive skills, e.g. in emotion recognition (Blakemore and Choudhury, 2006). This present study has two aims. Firstly, is there evidence of a dip in the recognition of facial expressions of emotion between the ages of 9 to 13 years? Secondly, what are the implications of poor emotion recognition for adolescent experience in the social group? Those adolescents who show the highest emotion recognition (for some facial expressions of emotion) also show increased sensitivity to social rejection by the group. We discuss how both the physical and social aspects of development can inform us about the coevolution of emotional processes and group living.

SU 10:00 a.m.

Feeling Alone: Do Emotions Orchestrate Responses to Different Social Exclusions?

Theresa E. Robertson, Andrew W. Delton, Stanley B. Klein (contact: robertson@psych.ucsb.edu)

Exclusion from social relationships is universally practiced and is universally painful. Any given exclusion event may result from one of several qualitatively distinct psychological motivations (e.g., avoidance of poor exchange partners, avoidance of pathogen-infected individuals). We hypothesize that these qualitatively distinct exclusion motivations have led to the co-evolution of qualitatively distinct exclusion-response mechanisms. These response mechanisms determine the nature of the exclusion and then generate an appropriate emotional response. This emotional response, in turn, orchestrates behavioral responses. In the present research, participants imagined being excluded from a coalition for either free-riding or pathogen infection, rated to what extent they would feel various emotions in this situation, and rated tactics they might use to regain acceptance in the group. As predicted, different types of exclusion a) led to distinct patterns of emotions, b) led to distinct patterns of behavioral tactics, and c) caused predictable links between emotional responses and behavioral tactics.

SU 10:20 a.m.

An Evolutionary Psychological Investigation of Parental Distress and Reproduction Coercion during Gay Sons' 'Coming Out'

Timothy J. Wisniewski, Thomas Robinson and Robert Deluty (contact: tjw327@comcast.net)

The inability of coming-out models to explain and predict parental responses motivated an evolutionary psychological re-conceptualization. According to this re-conceptualization, it was predicted that (a) biological mothers ought to experience more distress and apply more pressure on gay sons to change than biological fathers, regardless of parental ethnicity; (b) biological parents ought to react more negatively than stepparents. In contrast, cultural hypotheses predicted that fathers ought to react more negatively, especially among Latinos/African-Americans. The predictions were tested with 891 participants. As predicted by the evolutionary hypothesis, biological mothers were reported to have been more distressed and coercive than biological fathers, in spite of a strong, societal expectation to the contrary. Moreover, this pattern was indeed evident across ethnicities and, as expected, biological parents reacted more negatively than stepparents. Results and clinical ramifications were discussed in the context of a reproductive coercion module operating in the evolved psychologies of parents.

Session I-2 *Game Theory, Risk-Taking, and Testosterone*
Chair: Terry Burnham

Chesapeake A

SU 9:00 a.m.

IQ, genes, and economic behavior

Terry Burnham, David Cesarini, Björn Wallace, Magnus Johannesson, Paul Lichtenstein (contact: terry@post.harvard.edu)

“Beauty contests” are well-studied economic games that generate two interesting results. First, contrary to economic theory, most play does not conform to Nash Equilibrium. Second, there is considerable heterogeneity in behavior that is unexplained. In this work, we analyze IQ and beauty contest play with a sample of 329 pairs of twins. We report two main findings. I) high IQ is correlated with play that is closer to Nash Equilibrium, II) monozygotic twins’ play is more similar than that of dizygotic twins, but this difference between is not statistically significant.

SU 9:20 a.m.

Nature, Nurture and the Ultimatum Bargaining Game

Björn Wallace, David Cesarini, Paul Lichtenstein, Magnus Johannesson (contact: cesarini@mit.edu)

We report results from an ultimatum bargaining game using twins recruited from the population-based Swedish Twin Registry as our subject pool. Employing standard structural equation modeling techniques, we estimate that more than 40 percent of the variation in subjects’ rejection thresholds is explained by additive genetic effects. Our estimates also suggest a very modest role for common environment as a source of phenotypic variation. Based

on these findings, we argue that any attempt to explain observed ultimatum bargaining game behavior which ignores genetic factors is incomplete.

SU 9:40 a.m.

Choosing Gambles in Utero: Prenatal Environment Shapes Economic Risk Preferences.

Anna Dreber, Moshe Hoffman (contact: anna.dreber@hhs.se)

Risk preferences play a central role in economic theories of behavior. Significant individual differences have been documented, yet little is known about evolutionary significance, mechanism, or ontogeny. In this study, we report significant correlations between 2D:4D digit ratios and standard measures of risk preferences. We find that low 2D:4D men and women display greater appetite for risk.

SU 10:00 a.m.

A subordinate Status Position Increases the Present Value of Financial Resources for Low 2D:4D Men

Kobe Millet, Siegfried Dewitte (contact: Kobe.Millet@econ.kuleuven.be)

Low 2D:4D has been associated to a number of fitness related factors, such as high status in competitive sports and in music. Recent evidence suggests that 2D:4D is also related to economic decision making. We combine both streams of research. In two studies we manipulated status in two different ways. We found that a subordinate position raises discount rates, consistent with the reasoning that the present utility of money is higher for men in this position. Moreover, the effect was more pronounced for low 2D:4D men. There was a significant negative relationship between 2D:4D and level of discounting in a subordinate position, but no significant relationship emerged in the dominant position. Our studies add evidence to the recent line of research associating 2D:4D and economic decision making. Moreover, these studies show that future 2D:4D research should focus on plausible interactions between 2D:4D and context cues rather than on linear relations.

10:20 a.m.

Fear of Punishment: Testosterone Elicits Trustworthiness in Trust Games

Michael R. Stirrat, Jamie F. Lawson, Martin A. Sharp, Emad A.S. Al-Dujali, Ian D. Stephen, David I. Perrett (contact: mrs4@st-and.ac.uk)

There is reliable consensus upon who looks trustworthy. Individuals with high basal testosterone tend to be more aggressive and are more likely to punish unfair ultimatum game offers. Therefore economic game players with access to facial information should be both less willing to play games with high testosterone counterparts and also less willing to play unfairly with higher testosterone counterparts. We tested this prediction in 'trust games' where participants decided whether or not to trust and to reciprocate the trust of counterparts depicted as static faces. As predicted we found participants' decisions whether or not to trust counterparts were related to counterpart's testosterone; high testosterone faces were trusted less frequently than low testosterone counterpart faces. Also as predicted, participants more frequently reciprocated the trust of counterparts with high salivary testosterone than that of counterparts with lower salivary testosterone.

Session I-3 *Mating Strategies and Attraction Tactics*

Chair: Peter M. Todd

Chesapeake B/C

SU 9:00 a.m.

How Well can People Judge Another's Courtship Interest in Them?

Peter M. Todd, Claire Tramm, Lars Penke, Jens Asendorpf (contact: pmtodd@indiana.edu)

Making an accurate judgment of how interested someone is in oneself as a potential mate can guide appropriate responses to that interest—whether to reciprocate or rebuff. According to Error Management Theory (Haselton/Buss), there should also be sex-differentiated biases in this ability. But how good are people at such judgments? To find out in a real mate-choice context, we used a set of speed-dating sessions in which individuals were asked not only whether they were interested in each other person they met, but also to predict whether the

other person was interested in them. Across hundreds of date encounters, both men and women were only slightly above chance on these predictions, and only older individuals reflected the sex differences predicted by Error Management Theory. Those who were interested predicted reciprocal interest about 70% of the time, though the causal direction of this link—whose interest comes first—is unclear.

SU 9:20 a.m.

Adaptive Variation in the Intensity of Mate Attraction Tactics

Bram Van den Bergh, Siegfried Dewitte (contact: bram.vandenbergh@econ.kuleuven.be)

The present research is an investigation into the cognitive aspects of mate attraction. Three experiments demonstrate that exposure to opposite sex individuals leads to variation in the intensity of mate attraction tactics. Following exposure to potential mates, men report a higher willingness to invest in a romantic relationship, while women expose more body skin. Furthermore, sociosexuality moderates the effect of mating primes. For unrestricted individuals, the effect of short-term mating (i.e., genetic viability) primes is stronger than the effect of long-term mating (i.e., parenting) primes, while the opposite holds for restricted individuals. Results are discussed in light of the basic cognitive model of mate attraction, which posits that sensory stimuli from opposite sex individuals primes a psychological orientation directed toward mate attraction.

SU 9:40 a.m.

Social Transmission of Face Preferences Among Humans

Benedict C. Jones, Lisa M. DeBruine, Anthony C. Little, Robert P. Burriss, David R. Feinberg (contact: ben.jones@abdn.ac.uk)

Although it has been suggested that social learning may influence mate preferences in humans, there is little empirical support for such effects. Here we show that observing other women with smiling (i.e. positive) expressions looking at male faces increased women's preferences for those men to a greater extent than did observing women with neutral (i.e. relatively negative) expressions looking at male faces. By contrast, the reverse was true for male participants (i.e. observing women with neutral expressions looking at male faces increased male participant's preferences for those men to a greater extent than did observing women smiling at male faces). This latter finding suggests that within-sex competition promotes negative attitudes among men towards other men who are the target of positive social interest from women. Our findings demonstrate that social transmission of face preferences influences judgments of men's attractiveness, potentially demonstrating a mechanism for social transmission of mate preferences.

SU 10:00 a.m.

Amplified Signals of Mating Interest and Unwanted Attention

Morgan Duggan, Joshua D. Duntley (contact: stk29213@loki.stockton.edu)

Men and women employ a variety of behaviors to attract potential mates. To take advantage of desirable mating opportunities, it is important that mating availability and interest are perceived by members of the opposite sex. This can be achieved through the amplification of signals of interest and availability. Indeed, competitive mating environments may demand the amplification of signals of availability in order for the signaler to stand out among competitors. Such amplified signals, however, may be more prone to be perceived by members of the opposite sex for whom they are not intended. This could result in an increase in unwanted mating attention among other costs. We conducted two studies (total N=203) to explore the attraction tactics that men and women are most likely to amplify and the strategies they use to deal with unwanted mating attention. Results are consistent with specific hypotheses derived from Darwinian Sexual Selection.

SU 10:20 a.m.

Women's preferences for male body types in long term and short term mating contexts

Megan E. McClellan, Aaron D. Blackwell, Lawrence S. Sugiyama (contact: mmcclel2@uoregon.edu)

Several studies have examined women's context sensitive preferences for male faces, but few have tested whether female preferences for male bodies vary with long- or short-term mating context or fertility status. We created cards displaying images of six males and six females at three different ages: 5-9, 13-16, and 16-18. We then recruited 101 female undergraduates to rank-sort the cards based on long term attractiveness, short term attractiveness, perceived age, and perceived gender. For the figures on the cards, a number of factors are known, including actual age, waist size, hip size, waist-to-hip ratio, body fat percentages, genital development, arm circumference, thigh circumference, weight, height, BMI, and shoulder width. We therefore performed multiple regression analysis to determine which factors best predict female rankings of long term and short term attractiveness and the impact of menstrual cycle effects, birth control, and the subject's waist-to-hip ratio and BMI on these preferences.

Session I-4 *Symposium: Correlates of Life History Strategy*

Tidewater A

Chair: Aurelio José Figueredo

SU 9:00 a.m.

How Individual Differences in Reproductive Strategy and Sexual Attractiveness Influence Affective and Punitive Intentions to Sexual and Emotional Infidelity

Aurelio José Figueredo, Daniel N. Jones, Erin D. Dickey, W. Jake Jacobs (contact: ajf@u.arizona.edu)

We examined relations among Mating Effort, Mate Value, and Sex and individuals' self reported responses to either sexual or emotional infidelity. We asked participants to describe the: (1) distress ("how upset..."), (2) aversive emotional reactions, (3) punitive impulses, and (4) punitive intentions that they would experience in response to sexual or emotional infidelity. The results replicated previously documented sex differences in jealousy. Reports from both forced choice and Likert scale measures demonstrated that sexual infidelity upset individuals higher in Mating Effort more than those lower in Mating Effort. Higher Mating Effort also predicted greater temptation, intention, and likelihood to engage in punitive behaviors in response to sexual or emotional infidelity. We discuss the importance of: (1) understanding systematic variations in romantic jealousy in relation to individual differences in reproductive strategy, (2) controlling co-linearity between reactions to sexual and emotional infidelity, and (3) addressing related methodological issues within jealousy research.

SU 9:20 a.m.

Life History Strategy, Competitive Disadvantage, or By-Product: A Test of Multiple Evolutionary Hypotheses of Sexual Coercion

Paul Gladden, Melissa Sisco, Aurelio Jose Figueredo (contact: pgladden@email.arizona.edu)

A sample of undergraduate students responded to a battery of questionnaires on sexually coercive behavior, life history strategy, mating effort, instrumental aggression, and personality. Sexually coercive behavior was measured using the SAPI, a comprehensive measure of the occurrence of coercive behaviors and the perception of consent. A general sexual coercion factor was created, which showed high internal consistency. As expected, Life History Strategy (LHS) predicted lower sexual coercion. The interaction between instrumental aggression and short-term sexual orientation predicted higher sexual coercion. The Competitively Disadvantaged Male (CDM) hypothesis was also tested, using mate value (MVI) as an inverse indicator, but low mate value did not predict sexual coercion. These results are consistent both with the LHS hypothesis of sexual coercion (Thornhill & Palmer, 2004) and with the by-product hypothesis of rape (Thornhill & Palmer, 2000), but not with the CDM hypothesis (Figueredo & McCloskey, 1993; Figueredo et al., 2000).

SU 9:40 a.m.

Ethnocentrism and Life History Strategy

Dok J. Andrzejczak , Daniel N. Jones, Vanessa Smith, Eiliana Montero, & Aurelio José Figueredo
(*contact: andrzejd@email.arizona.edu*)

Theory and evidence predict that in-group altruism should correlate with out-group intolerance. A "slow" (higher-K) life history strategy emphasizes both kin-selected and reciprocal altruism as a means of investing heavily in offspring, relatives, and cooperative social relationships. We therefore hypothesized that a higher-K reproductive strategy should predict out-group hostility. However, the Mini-K short form correlated positively with both tolerance towards other social groups in general and tolerance towards Arabs in particular. In contrast, higher levels of Mating Effort (MES) correlated negatively with both. These findings were replicated using a version of the Modern Racism Scale adapted for Arabs. Higher MES was also positively correlated with high external motivation to appear non-prejudiced, and was negatively correlated with internal motivation, suggesting that higher-MES individuals were self-presenting as less prejudiced. Emotional Intelligence also predicted both general and specific tolerance. These predictors formed a single Protective Factor correlating $-.50$ with a common Ethnocentrism Factor.

SU 10:00 a.m.

Life History Strategy, Executive Functions, and Personality

Kevin MacDonald Aurelio José Figueredo Christopher J. Wenner (*contact: kmacd@csulb.edu*)

A sample of undergraduate students responded to a battery of questionnaires about their life history strategy, executive functions, and personality. Life History Strategy was measured by using both the full K-Factor Battery and the 20-item Mini-K. Self-reported Executive Functions were assessed using the Adult Behavior Rating Inventory of Executive Functions (BRIEF-A), the Dysexecutive Questionnaire (DEX), and the Executive Functions Questionnaire (EFQ). The Big Five Personality Factors were measured using the Revised Interpersonal Adjectives Scale (RIAS). Both the full K-Factor and the Mini-K were significantly correlated with a general Executive Functions (EF) factor, composed of the BRIEF-A, DEX, and EFQ, and with each other. Both K and EF were also significantly correlated with general Personality factor composed of higher Openness to Experience, Conscientiousness, Agreeableness, Surgency, and Emotional Stability. This suggests that the key mental abilities in the development of a "slow" life history strategy are executive functions rather than general intelligence.

SU 10:20 a.m.

Reproductive Value as a Proximate Measure of Marginal Inclusive Fitness Returns

David A. Nolin (*contact: dnolin@u.washington.edu*)

Inclusive fitness theory predicts that an individual should allocate aid to that relative on whom it will have the greatest marginal benefit, discounted by the degree of genetic relatedness between the donor and the recipient. Tests of the kin selection hypothesis must therefore be sensitive to the marginal benefits to all potential recipients and not simply the coefficients of relatedness. While marginal returns to potential recipients are difficult to measure directly, marginal fitness benefits are expected to covary with expected future reproduction (reproductive value or RV). This paper presents tests of the Inclusive Fitness hypothesis using estimates of RV as one possible proximate measure for marginal fitness benefits. The results are compared to those obtained using coefficients of relatedness alone. The hypothesis is tested using data on a social network of between household food-sharing in the fishing and whaling community of Lamalera, Indonesia.

Sunday Late Morning Sessions

Session J-1 *Arts and Literature*

Tidewater A

Chair: Joseph Carroll

SU 11:00 a.m.

Author Sex Bias in the Depiction of Mate Selection Preferences in Victorian Novels

Joseph Carroll, John A. Johnson, Jon Gottschall, Daniel Kruger (contact: jcarroll@umsl.edu)

Research participants completed a web-based questionnaire on 435 characters in Victorian novels, allowing us to examine whether male and female authors depict male and female characters differently. Participants described characters' motives, long- and short-term mate preferences, and personalities. They also described their own emotional responses to the characters. A series of 2x2x2 ANOVAs employing author sex, character sex, and valence (whether a character is a protagonist or antagonist) revealed systematic tendencies in both male and female authors to mute or minimize sex-specific aspects of identity in characters of the other sex. Cross-sexed depictions seem to be influenced by the ways in which each sex preferentially envisions the other sex.

Protagonistic male characters in female authors are more nurturing and care less for physical attractiveness in a mate. Female characters in male authors are less demanding in their criteria for selecting mates.

SU 11:20 a.m.

Evolutionary Phenomena in Contemporary Romance Literature

Maryanne Fisher, Anthony Cox (contact: mlfisher@smu.ca)

The newly developing area of Darwinian literary studies has made strides to document a variety of evolutionary psychological phenomena in an assortment of genres. However, one area that has been neglected is popular contemporary fiction, and particularly, the romance novel. One publisher of these novels, Harlequin, publishes specifically to appeal to a primarily female market and to be widely available at a low cost to the consumer. As a consequence, Harlequin has a large audience, producing over 115 titles a month in 25 languages with 94 international markets. Given the popularity of these novels, we predicted that they should include a variety of evolutionary relevant themes for women, such mate selection and preferences, intrasexual competition, paternity certainty, incest avoidance, informational warfare, and mate guarding. Our prediction was supported using a random longitudinal sample of Harlequin novels. We will discuss our findings as well as plans for future work.

SU 11:40 a.m.

State of the arts: Missing links in evolutionary explanations of art behavior

Michelle Scalise Sugiyama, Lawrence S. Sugiyama (contact: Michelle_Scalise@hotmail.com)

Evolutionary theories posit a single function for art behavior, yet the ethnographic record indicates that this behavior has multiple fitness-promoting applications. We suspect that researchers have been looking for design at the wrong level, and propose the cognitive niche hypothesis as an alternative theoretical foundation for this phenomenon. Tooby and DeVore (1987) argue that humans are characterized by a highly elaborated ability to make, deploy, and communicate cognitive cause-and-effect models of their environment. Whether directed at prospective mates, coalition partners, or co-descendants, art behaviors involve the generation and transmission of information-rich models (i.e., representations) of the physical, social, and/or psychological environment. We thus argue that the study of art behavior should be grounded in an information-based conceptualization of the human ecological niche, and that instances of art behavior should be parsed as expressions of adaptations that subserve the generation and transmission of cognitive cause-and-effect models of the environment.

SU 12:00 p.m.

Darwinists Assemble!: An Evolutionary Analysis of Comic Books

Terry L. Duehr, Craig T. Palmer (contact: terry-duehr@uiowa.edu)

There has been a growing interest in examining narratives from within a Darwinian framework. The forms of narrative of narrative have included folktales, epic poems, classic works of literature, romantic novels and other popular genres. One medium of narrative that has been overlooked is comics. If the predictions of Darwinian Literary theory are correct then comics, as a medium for narrative, should also reflect our evolved psychology and/or contain messages that influence the future behavior of readers in ways consistent with evolutionary theory. A sample of American super-hero comics (from 1960-today), and of several Japanese manga comics are examined from an evolutionary perspective. In general, the findings supported predictions made by evolutionary theory regarding female mating preferences towards dads and cads, altruism, reciprocal altruism, and moralistic punishment. The comics also reflected cultural and temporal variation that will be the focus of future studies.

Session J-2 *Friendship and Loyalties*

Chesapeake B/C

Chair: Peter DeScioli

SU 11:00 a.m.

Divided Loyalties and Rank-masking Among Friends

Peter DeScioli, Robert Kurzban (contact: desciola@psych.upenn.edu)

People's loyalties to different friends vary in strength, although individuals often report valuing all friends equally. We hypothesize that people are motivated to obscure their loyalties, a tactic termed "rank-masking." Participants were asked to allocate across their top friends a fixed budget of "friendship points" to reflect relative closeness to each individual. Participants repeated this procedure while imagining that point distributions would be made public among friends. As predicted, rank-masking was observed: Variance in point distributions decreased in the public condition. We further examined correlations between friend rank and participants assessments of each friend on several dimensions. Friend's rank of oneself was the best predictor, stronger than previously investigated determinants of friendship including similarity, economic benefits, duration, frequency of interaction, as well as personal qualities such as attractiveness and intelligence. The fact that people rank friends highly who rank them highly suggests advantages to obscuring divided loyalties.

SU 11:20 a.m.

Friend Matching: A Test of Genetic Similarity Theory

**April Bleske-Rechek, Sarah Hubert, Stephanie Maves, Lindsay Matteson
(contact: bleskeal@uwec.edu)**

According to genetic similarity theory (Rushton, 1989), people prefer those individuals who are genetically similar to them. In accord with this theory, same-sex friends are similar in attitudes, values, and (particularly for males) level of attractiveness. We designed this study to determine whether outside raters can match pairs of same-sex friends on the basis of their physical appearance. We took a facial shot and a full-body shot of each member of close same-sex friendship pairs. Then, raters attempted to match pairs of female same-sex friends and pairs of male friends, in either a full-body or face-only condition. Raters subsequently judged each person's picture for attractiveness and apparent friendliness and attention to appearance. We predict that raters will match friends at above-chance levels, that raters will perform better with full-body shots than with facial shots, and that raters will match on the basis of similar levels of attractiveness and clothing choice.

11:40 a.m.

Schadenfreude as a Mate-Value Tracking Mechanism Within Same-Sex Friendships

Leisha A. Colyn, Anne K. Gordon (contact: leishaw@bgsu.edu)

Our same-sex friends may compete with us for mates. In this study, we examined schadenfreude as a psychological mechanism that helps solve the problem of intrasexual competition among same-sex friends. Within this context, we conceptualized schadenfreude as a mate-value tracking mechanism and hypothesized that

undergraduates would experience schadenfreude over events that reduce their same-sex friends' mate value. To examine this hypothesis, 288 undergraduates described a time when they felt pleasure in response to a same- or opposite-sex friend's misfortune and completed surveys regarding how likely it would be that they would feel pleasure over a friend's experiencing 23 different misfortunes (e.g., weight gain, sports injury). Results indicated that experiencing schadenfreude toward friends is a ubiquitous experience among college students. We will discuss the most and least common sources of schadenfreude among friends. Moreover, several of our predictions regarding sex differences in the elicitors of schadenfreude within same-sex friendships were supported.

SU 12:00 p.m.

Friendship and inequity aversion in humans

Rita C. Smaniotto, Liesbeth H.M. Sterck, Abraham P. Buunk, Henk de Vos, Jorg J.M. Massen (contact: r.c.smaniotto@rug.nl)

Recently it has been argued that inequity aversion, or sense of fairness, is also present in non-human primates (e.g., Brosnan & de Waal 2003), but that it may be weakened by social closeness (Brosnan et al. 2005). In a cross-species research project, involving humans and non-human primates, we compare the effect of relationship quality on negative reactions to inequitable distributions. Here we present results of the human experiment. Individuals participated in the experiment together with a friend or someone they did not know. They were confronted with unequal rewards for participating in a follow-up experiment. Negative reactions were measured by webcam images and self-reported emotions towards the other person and the experimenter. In contrast to our expectations, the results show that friends are less tolerant towards inequity than non-friends. However, intolerance is not expressed in negative emotions towards their friends, but in negative emotions towards the experimenter.

Session J-3 *EPCs, Hook-ups, and Mate Searching: Perceptions and Motivations*

Chair: Paul W. Andrews

Commonwealth Auditorium

SU 11:00 a.m.

Sex Differences in Detecting Sexual Infidelity

Paul W. Andrews, Michael C. Neale, Geoffrey F. Miller, Martie G. Haselton, Randy Thornhill, Steven W. Gangestad (contact: pandrews@vcu.edu)

Despite the importance of extra-pair copulation (EPC) in human evolution, almost nothing is known about the design features of EPC detection mechanisms. We tested for sex differences in EPC inference-making mechanisms in a sample of 203 young couples. Consistent with our predictions, men made more accurate inferences, ϕ -men=0.66, ϕ -women=0.46, and the ratio of positive errors to negative errors was higher for men than for women, 1.22 vs. 0.18. Some people may have been reluctant to admit EPC behavior, so we modeled how socially desirable responding (SDR) could have influenced these results. These analyses indicated that it would take relatively high levels of SDR by unfaithful women with trusting partners for there to be no real sex difference. We also found evidence that men may be more motivated than women to resolve uncertainty about the EPC behavior of their partners, and this may explain why men were more accurate than women.

SU 11:20 a.m.

Looking for Mr Right: Experiments in Mate Search

Edward R. Morrison, Andrew P. Clark, Ian S. Penton-Voak (contact: Ed.Morrison@bris.ac.uk)

Mate search can be considered as a process of deciding which individuals to court and which to reject from a set of potential partners. We investigated mate search behaviour in an experimental adaptation of the secretary (or Sultan's Dowry) problem, which is well studied in probability theory (Ferguson 1989). In abstract versions of the task, participants tried to choose the highest number from a series, and in the mate search versions, the aim was to choose the most attractive face. We varied the mean values and variability of the series in the two tasks. Performance in the abstract version was suboptimal but was better when variability was high. In the mate search version, search times were shorter when the faces were more attractive, and when variability in attractiveness

was lower. High sociosexuality was associated with longer search for faces, suggesting these individuals are less cautious in this condition.

SU 11:40 a.m.

Gender Differences and Hooking Up: Comfort Level of Self and Others

Chris Reiber (contact: creiber@binghamton.edu)

“Hooking up” is a sexual encounter between people who are not dating, with no relationship on offer. Gender differences predicted by sexual selection theory were tested in a pilot study assessing how common various sexual behaviors are, and the comfort levels of self and others of each gender. About 85% of participants had hooked up. Gender differences in comfort levels with the various behaviors supported predictions. Men were more comfortable than women with all types of behaviors during hook ups. Women attributed higher comfort levels to men, overestimating men’s comfort with all behaviors. Men attributed lower comfort levels to women, overestimating women’s comfort with some behaviors and underestimating women’s comfort with other behaviors. Both genders attributed higher comfort with all behaviors to others of their own gender, creating a pluralistic ignorance effect that might contribute to the high frequency of hook-up behaviors in spite of the low comfort levels reported.

SU 12:00 p.m.

Back-Up Mates

Joshua D. Duntley, David M. Buss (contact: joshua.duntley@stockton.edu)

Humans possess adaptations to select the best attainable long-term mates. Factors such as disease, infertility, and infidelity, however, may render chosen mates less desirable. Furthermore, chosen mates also may defect or die, creating uncertainty about mateship duration. Time spent out of romantic relationships creates mating opportunity costs and potential loss of investment in offspring. We hypothesized that the combination of these factors selected for adaptations in individuals to cultivate and maintain back-up, replacement mates. Adaptations to form back-up mates would function to shorten or eliminate the time interval between mateships, reducing or eradicating mating opportunity costs. In three studies (combined N=419), we explored: (1) adaptations to maintain back-up mates; (2) adaptations to prevent partner defection to back-up mates; and (3) adaptations in back-up mates to ascend to primary mate status. Evidence suggests adaptive design resulting from triadic coevolutionary arms races between individuals, current mates, and back-up mates.

Session J-4 *Groups, Coalitions, and Conflicts*

Chair: Elsa Ermer

Chesapeake A

SU 11:00 a.m.

Regulation of Resource Division by Coalitional Status

Elsa Ermer, Leda Cosmides, & John Tooby (contact: ermer@psych.ucsb.edu)

The logic of animal conflict predicts that organisms should assess cues of formidability to mitigate the costs of escalated contests. Individual fighting ability has been shown to regulate the outcomes of contests. More generally, the mind should be designed to compute the abilities of others to affect one’s fitness. These assessments are theorized to be computed and summarized by the mind as internal regulatory variables, termed welfare tradeoff ratios (WTRs), which in turn govern decision-making about resource division. Coalitional support should be another input into the computation of WTRs such that individuals with greater coalitional support are granted higher WTRs. Experiments using economic games were employed to test this coalitional support hypothesis. Results were consistent with this idea for men’s economic decisions when individuals played against teams of four, suggesting that coalitional support is an important regulator of resource division.

SU 11:20 a.m.

Making Faces Erases Races: The Effects of Emotional Expression on Memory for Group Members

Joshua M. Ackerman, Jenessa R. Shapiro, Steven L. Neuberg, Douglas T. Kenrick

(contact: joshua.ackerman@asu.edu)

People often find it easy to remember specific individuals from their ingroup and difficult to remember specific individuals from outgroups – the ubiquitous outgroup homogeneity effect. A functional perspective on person perception suggests that important signals of interpersonal affordance may eliminate this bias. In three studies, we tested the impact of angry (Study 1), happy (Study 2), and fearful (Study 3) expressions on memory for Black, White and Asian faces. Results indicate that while homogeneity is universal for neutral outgroup faces, anger improves recognition of outgroup members stereotypically associated with physical safety threat (Black) but not other outgroup members (Asian). Happiness and fear instead impair recognition of ingroup members. Interestingly, memory for neutral faces changes depending on the signal value of the accompanying expressive faces. Thus, emotional expressions can obviate homogeneity effects by moderating the functional importance of individuals, as well as the importance of the surrounding social environment.

SU 11:40 a.m.

Intergroup Vigilance: Effects of Self-Protective Motivation on Racial Categorization

Saul L. Miller, Jon K. Maner (contact: smiller@psy.fsu.edu)

Threats from competing groups have been a recurrent problem throughout evolutionary history. As a result, humans are thought to possess cognitive mechanisms designed to facilitate avoidance of potentially hostile outgroup members. These mechanisms should become especially active when one is motivated to protect oneself from physical harm. Two studies tested the hypothesis that a self-protective motive, induced through the salient experience of fear, would increase perceptual sensitivity to the presence of outgroup members (operationalized as members of a racial outgroup). Findings indicated that fear increased the tendency for White participants to 1) categorize White and Black target faces based on their race; 2) perceive racially ambiguous faces as Black (as opposed to White), but only when those faces exhibited an angry facial expression (a heuristic sign of physical threat). Effects were especially pronounced among participants with chronic concerns about threat. Results suggest adaptive biases in intergroup categorization processes.

SU 12:00 p.m.

The Role of Race and Gender in the Persistence of Conditioned Fear

Carlos D. Navarrete, A. Olsson, Arnold Ho, W. Mendes, L. Thomsen, Jim Sidanius

(contact: cdn@wjh.harvard.edu)

Research in aversive conditioning demonstrates that fears towards evolutionarily “prepared” targets such as spiders and snakes resist extinction. More recently, studies have observed that race bias and fear conditioning may indeed rely on overlapping neural systems, suggesting a similar mechanistic link and the opportunity to use a fear conditioning model. Employing this paradigm we investigate the interactive nature between gender and race and their relevance to the persistence of anxious arousal in a fear conditioning procedure directed towards an outgroup. Preliminary analyses show that fear towards an outgroup target conditioned by electric shock resists extinction when paired with a male member of the outgroup. Conditioned arousal returned to baseline for all other race/gender targets. Potential moderators of conditioned fear such as intergroup contact, ethnic identity, and explicit/implicit intergroup bias are explored. The results are consistent with the notion that outgroup males may have posed persistent fitness threats to ingroup individuals throughout our evolutionary history.

Poster Abstracts: Thursday

Thursday Poster #1

Women in the American Southwest: Adaptations to Warfare

Chet R. Savage (contact: rscm4@mizzou.edu)

Archaeological evidence is examined to evaluate the hypothesis that small-scale warfare in tribal societies reflects evolved psychological mechanisms in females. Evidence from a Basketmaker II site in Southeastern Utah indicates a massacre in which adult male casualties far outnumber females, and children are completely absent, suggesting that women were captured or turned into refugees. Further evidence from the Grasshopper region of Arizona shows the effects of predominantly female refugees. This supports the hypothesis that males have evolved psychological mechanisms for increasing fitness during warfare situations. It is also consistent with the hypothesis that females would have evolved specialized psychological mechanisms for dealing with warfare situations because both captive and refugee status would have potentially reduced fitness due to the likelihood of rape and/or marginalized status. Using evidence from the American Southwest, I argue that females have evolved behavioral mechanisms to deal with these consequences of warfare.

Thursday Poster #2

An Evolutionary Perspective On The Effect of Terrorist Incidents on Presidential Approval in the Years Following September 11, 2001

Kenneth A. Letendre (contact: kletendr@unm.edu)

Following the attacks of September 11, 2001, President Bush's public approval climbed from the mid-50's to the high 80's. Common wisdom held that President Bush enjoyed a boost in approval whenever terrorism was in the news. I hypothesized that people experience increased positive regard for leaders during times of threat in order to facilitate an effective, unified response. I aggregated the results of eight public opinion polls from September 11, 2001, until November 2, 2004, and used cubic polynomial regression to examine trends in approval following terrorist events. Unlike the boost President Bush experienced following 9/11, terrorist events during this period caused approval to decline. Rather than feeling threatened by terrorism and increasing their regard for President Bush, Americans may have regarded successful acts of terrorism as failures on the part of the Bush administration to prevent them.

Thursday Poster #3

Digit Ratio Moderates the Impact of an Aggressive Music Video on Aggression

Kobe Millet, Siegfried Dewitte (contact: Kobe.Millet@econ.kuleuven.be)

Digit ratio (2D:4D) is a sexually dimorphic trait. Men have relatively shorter index fingers (2D) compared to ring fingers (4D) than women. Evidence suggests that more masculine ratios are influenced by higher prenatal testosterone levels. Testosterone and aggression are related and accordingly evidence suggests that male 2D:4D is related to physical aggression (Bailey and Hurd 2005) and female 2D:4D is related to reactive aggression (Benderlioglu and Nelson 2004). As it has been shown that violent media have an impact on aggressive behavior, we predict that the relationship between 2D:4D and aggression should be stronger after exposure to an aggressive than to a non-aggressive music video. Accordingly, we show that 2D:4D and aggression (as measured by two different measures) are related, but only after exposure to the aggressive video. We suggest that future 2D:4D research should focus on plausible interactions between 2D:4D and context cues rather than on linear relations.

Thursday Poster #4***The Myth of the Alpha Male: Aggression, Competition, and Social Reception of Dominant Females***

Patricia H. Hawley (contact: phawley@ku.edu)

Evolutionary approaches tend to suggest that social dominance is predominately as aspect of male social organization. Consistent with these perspectives, feminist researchers claim that when females behave aggressively, they are less positively evaluated than males engaging in the same behavior. Alternate, less familiar models of females and dominance/aggression (e.g., Hrdy, 1999; Maslow, 1940) underlie the present study which proposes that dominant males and females are more similar than commonly believed. Adolescents self-rated aggression, social motivations, and strategies and beliefs associated with interpersonal influence. Peer ratings of strategies of influence, aggression, and peer regard were also obtained. Results demonstrated that socially dominant males and females balance prosocial and coercive strategies and win positive peer regard, their aggressiveness notwithstanding. These findings highlight competitiveness in females and provide insights into the paradoxical relationship between positive peer regard and aggression.

Thursday Poster #5***Models of Aggression at Home and Aggressive and Ludic Behavior of Pre-School Boys During Free-Play Activities***

Timóteo Madaleno Vieira; Leonardo Conceição Guimarães & Francisco Dyonísio Cardoso Mendes (contact: francisco@ucg.br)

We investigated the relationship between models of aggression at home and the aggressive and ludic behavior of 15 pre-school boys attending a childcare unit in the city of Goiânia, Brazil. Demographic data and information on the exposure to aggressive models at home were obtained through structured interviews with the subjects. Behavioral data were collected during twelve 60 minutes periods of free play activities. Boys exposed to adult aggressive interactions and to toy guns participated more in rough and tumble play than other subjects. Children exposed to physical punishment, to adult aggression and to violent TV programs emitted more real aggression. The proportions of rough play and real aggression gradually decreased through the 12 periods of observation. Overall, our results indicate a cumulative effect of aggressive models in ludic and aggressive behavior, although this effect may change with the increasing familiarity of subjects with free-play activities.

Thursday Poster #6***Psychological Mechanisms Designed to Regulate Assertiveness Signaling in Human Males during Courtship Interactions***

Aaron W. Lukaszewski, James R. Roney (contact: lukaszewski@psych.ucsb.edu)

The present research built on previous findings to test whether exposure to potential mates causes self-conceptual changes in men that function to increase attractiveness to potential mates. Women should prefer mates who exhibit behavioral traits associated with the ability to compete directly with other men for status and resource access. Therefore, the present experiments tested the hypothesis that exposure to interactions with potential mates would cause men to conceive of themselves as more intrasexually assertive and dominant, and that this effect would be larger for men who are dispositionally less assertive toward other men. Indeed, men low on basal testosterone and trait dominance who were exposed to interactions with women (as opposed to other men) conceived of themselves as bolder and more assertive (Experiment 1) and reported feeling more aggressive, assertive, competitive and dominant (Experiment 2); however, such effects did not emerge among men with higher testosterone or dominance.

Thursday Poster #7***Attractiveness in flux: Predicting preferences via facial motion depends on dating context and cues to prosociality***

Andrew P. Clark, Vienna Jack, Edward R. Morrison, Hippolatus Jones, Ian Penton-Voak (contact: A.P.Clark@bristol.ac.uk)

Like facial structure, facial motion is a rich source of information for potential mates, but some of this information may be more relevant in some contexts than in others. We showed female participants wire-frame animations of

shape-standardized faces paired with personal statements displaying prosocial or antisocial attitudes and asked the participants to rate the faces for attractiveness in both a long- and short-term mating contexts. As expected, women prefer stimuli presented with prosocial statements, and this preference is stronger in the context of long-term attractiveness judgments. The weight placed on physical (e.g. movement, pre-rated attractiveness) and social properties (personal statements) of the stimuli vary across conditions. Physical properties predicted participants' ratings more strongly in short-term judgments and when personal statements displayed antisocial tendencies. In long-term judgments, cues to prosociality outweigh physical characteristics, indicating that the information value attached to some stimulus characteristics of moving faces is context-dependent.

Thursday Poster #8

Menstrual Phase Shift for Male Attractiveness Based on Body Parts
Devendra Singh, Drew Bailey (contact: singh@psy.utexas.edu)

Most research to date on menstrual phase shift uses facial photographs as stimuli. As facial features depict both level of developmental testosterone exposure and personality attributes, it is not clear whether menstrual cycle shift is due to testosterone markers or personality indicators. Two bodily features - shoulder breadth and waist-to-hip-ratio (WHR) - are affected by testosterone exposure but do not have any associated personality stereotypes. We will present data showing that women, whether ovulating or not, judge men with medium shoulder breadth and lower WHR (around .9) as attractive. Failure to observe a menstrual phase shift suggests that simultaneous information about personality attributes and testosterone levels is essential for menstrual phase shift effect.

Thursday Poster #9

Female physical characteristics and intrasexual competition
Dominique Klappauf, Bernhard Fink, Peter M. Kappeler (contact: bernhard.fink@ieee.org)

It has been suggested that women compete for access to high quality men, particularly when such males are scarce. However, there is little empirical evidence for this assertion. Given males' consensus on preferences for certain females physical characteristics, it is likely that competition amongst women is highest in intrasexual encounters with rivals who display such traits. We examined how (i) facial femininity, (ii) breast size, and (iii) waist-to-hip ratio (WHR) affect competition and perceived attractiveness in a sample of German undergraduates. Thirty-five women were asked to rank five images of each stimulus type, varying in apparent femininity (i) and size (ii, iii), according to sensed competition, and rate them for attractiveness. Feminine faces, large breasts, and low WHRs were ranked highest in competition and received higher attractiveness ratings. Our findings provide further support to the notion of female intrasexual competition with respect to attractiveness.

Thursday Poster #10

The Mane Event: the Influence of Hair Length and View on Perceptions of Female Attractiveness
Kelley Knapp-Kline, Yahira Lugo Lugo, Melissa Hennion, Ursula Y. Backus, Sabrina L. Washington, Jamie-Ann U. Tedtaotao, Cesley Santos, and Stephanie Holt (contact: chrismom928@yahoo.com)

As hair tends to be thicker, healthier, and grows more quickly in younger women of reproductive age than in older women (Hinsz, Matz, & Patience, 2001), hair length may signal female fecundity, and consequently, attractiveness. If hair length provides a unique signal of a woman's attractiveness, independent of facial cues, then it may be expected that a woman adorned with different hair lengths (short, long) presented in different views (frontal, back), would be rated as significantly more attractive when presented with long hair than short hair regardless of the view. We tested this hypothesis by requiring participants (N=134) to examine the same woman's face presented with various hair lengths in different views: a frontal view (both hair and facial cues visible) and a back view (only hair visible). Results were mixed indicating that both hair length and view influenced participants' attractiveness ratings.

Thursday Poster #11***Hands As Fitness Indicators: Seinfeld Was Right About Man Hands!***

Laura K. Dane, Levente Orban, Aman Bassi, Geoffrey F. Miller (contact: laura.dane@kwantlen.ca)

Person perception and mate choice researchers have investigated the face as an indicator of fitness, attractiveness, dominance, sex typicality, personality and intelligence. Next to the face, human hands are major sources of communication. They are morphologically complex, highly sexually dimorphic and highly visible. Since features of hands and arms, like some facial features, are sex differentiated they may reflect organizational or activational levels of sex hormones. We hypothesize, that similar to faces, hands and arms may be fitness indicators, which carry reliable information regarding sex typicality, developmental stability, dominance, and even trustworthiness. In the present study we investigated whether hands and faces convey similar, mate choice relevant, information. Ratings of the attractiveness and sex-typicality of hands and faces were predicted, to varying degrees, by percentage of body fat, symmetry, digit ratio and finger-ridge count. Judgments of attractiveness and aggressiveness also each predicted unique variation in ratings of trustworthiness of hands.

Thursday Poster #12***Male Facial Attractiveness Predicts Body Morphology and Strength: Additional Evidence***

Melanie L. Shoup, Gordon Gallup Jr. (contact: melshoup@gmail.com)

This study is an extension of a series of studies we have been conducting to investigate the relationship between sexual experience and phenotypic markers of testosterone. Forty-six males provided information regarding their sexual history and agreed to let us take facial photographs, hand photographs, hand grip strength measurements, and shoulder and hip circumference measurements. Independent female raters who did not know the male subjects assessed the hand photographs for attractiveness, dominance, and masculinity. Females also rated each face for attractiveness. Preliminary data suggest that facial attractiveness predicts grip strength and shoulder to hip ratio (SHR). Furthermore, grip strength predicted the number of sexual partners and SHR.

Thursday Poster #13***Can Same Sex Behavior Have Contributed to Human Paedomorphosis?***

P.D. Moncrief, Jr. (contact: pd_moncrief@yahoo.com)

Neoteny has been called a major key to human evolution. We resemble, at least morphologically, the children of our ancestors. Selection pressures leading to paedomorphosis via neoteny are not completely understood. The attempt here is to suggest a role for sexual selection, specifically, same-sex. The anthropological and historical literature contains, to a puzzling extent, accounts of (non-exclusive) same sex attraction and behavior. If this tendency is a species specific trait, an explanation is needed. Even if this provocative and (hopefully) controversial suggestion is not ultimately successful, more attention to the implications of our neotenus development should be profitable. Much was written on this topic by writers such as Gould and Montagu (following Bolk and others), but insufficient attention has been given recently, with some notable exceptions, such as an editorial/essay in *_Medical Hypotheses_* concerning "psychological neoteny" last year.

Thursday Poster #14***Facial Paedomorphosis in Hominid Evolution and the Preference for Truncated Facial Development (TFD)***

Paul Wehr, Michael Torp (contact: Paul.Wehr@kwantlen.ca)

Over the last 100,000 years of hominid evolution, descendant populations have come to possess relatively more gracile facial structures compared to ancestral populations. This trend towards reduced facial development is at odds with the dominant trend in hominid evolution, which is primarily a function of extended development. Interestingly, a parallel preference for Truncated Facial Development (TFD) appears to exist for both male and female target faces in contemporary human populations, often discussed under the rubric of "feminization". Two experiments are presented to demonstrate the attractiveness of TFD: the first manipulates soft tissue features (eyes, nose, and mouth) to either reduce or extend the degree of apparent development in the face; the second manipulated a hard tissue feature (jaw shape). Results indicated a clear preference for TFD over extended development in samples from California, Canada, and Japan. It is argued that TFD is a better operationalization of this preference than feminization.

Thursday Poster #15***Frequency and Intensity of Post-Relationship Grief in University Students*****Craig Eric Morris (contact: craig.eric.morris@gmail.com)**

Post-relationship grief (PRG), the combination of physical and emotional trauma following the termination of a romantic relationship, is difficult to amalgamate with one of evolutionary psychology's boldest claims: that men and women have incongruent relationship goals. For if that is the case, then theoretically, PRG levels should be disparate as well. The following study addresses this specific query: are there quantifiable gender differences in frequency, intensity, and expression of PRG? Data collected from 1433 university students indicated that the experience of PRG was a common one: over 90% of all respondents reported at least one breakup with concurrent PRG. Emotional trauma was experienced by 99% of all respondents, while physical trauma was experienced by over 75%. High intensity levels were reported for both, an average of 6.8 on a ten-point scale. Significantly, the results suggest that there is no observable trend of variation in PRG frequency and intensity between genders.

Thursday Poster #16***Could Blushing be a Socio-Sexual Signaling for Mate Attraction?*****PengKwei Chang, Erica S. Rutters, Kevin G. Byrnes, Anthony C. Torres (contact: pchang2@ycp.edu)**

Darwin referred blushing as "the most human of all expression", yet, blushing remained as a puzzler in term of its adaptive function. In this study, 191 participants completed a battery of self-reported measures on temperament, Sociosexuality, blushing propensity, and their reactions to scenarios depicting other's facial expressions during social encounters. The results suggested that a sexual dimorphic reaction pattern toward blushers. Participants reported positive reactions toward those with happy expression; and less affirmative reactions to those expressing anger regardless of genders. Their responses to opposite sex blusher were as positive as to happy scenarios, but not to same sex blushers. This sexual dimorphic pattern to blushing was also reinforced by analysis of the aforementioned measures of individual differences. The findings will be discussed in the context with current literature on blushing, evolutionary significances of human color perception, especially, Darwin's ambivalence to suggest that blushing could serve functions in sexual selection.

Thursday Poster #17***Deadly Sin or Functional Adaptation? An Evolutionary View of Envy*****Rachael G. Falcon (contact: rfalcon@unm.edu)**

Envy is the emotional experience that occurs when your possessions, qualities or achievements are inferior to those of another, and you desire to achieve what the other has. The emotional experience of envy may have evolved as an adaptation for choosing an effective behavioral response to the adaptive problem of being inferior to conspecific competitors in some fitness relevant domain. The present study was designed to determine whether different types of envy situations evoke specific emotions which are related to specific behavioral responses. If participants report experiencing different sets of emotions to different types of envy evoking situations, and if the behavioral responses they report are related to the specific emotional set, then the results would be consistent with the above adaptationist hypothesis.

Thursday Poster #18***Relief over a Partner's Infidelity*****Achim Schuetzwohl (contact: achim.schuetzwohl@brunel.ac.uk)**

Typically, unfaithful partners do not deliberately disclose their infidelity but rather try to veil any infidelity cues. Thus, the jealousy mechanism which evolved to counter threats to individual reproductive success emanating from a partner's infidelity functions as a monitoring device registering cues to infidelity but also cues to fidelity. An obvious ensuing prediction is that the evolved jealousy mechanism responds with jealousy to infidelity cues and with relief to fidelity cues. Interestingly, the evolutionary psychological analysis of jealousy assuming that men are more jealous about sexual infidelity whereas women are more jealous about emotional infidelity predicts sex differences in the relief over a mate's infidelity. Specifically, men should be more relieved when finding out that the partner has been emotionally but not sexually unfaithful, whereas women should be more relieved when finding out that the partner has been sexually but not emotionally unfaithful. Two studies tested and confirmed this prediction.

Thursday Poster #19***Are Socially Dominant Men More Facially Dominant and More Prone to Sexual Jealousy?*****Chawki A. Belhadi, Roger L. Mellgren (contact: belhadi@uta.edu)**

Previous studies show that men with masculine facial characteristics are perceived as more dominant than men with less masculine facial characteristics. This study investigated whether facially dominant men behaved more dominantly and were more prone to sexual jealousy. Participants were 115 males enrolled in UTA introductory psychology classes. Dominant behavior constituted the number of times participants stuck to their position in a series of cooperative decision making trials; sexual jealousy was measured using a modification of Buss et al's. (1992) jealousy scenario, and facial dominance was measured using subjective ratings. Results indicated a significant positive correlation between facial dominance and sexual jealousy but no equivalent correlation between facial dominance and behavioral dominance. Associated findings revealed significant positive correlations between facial dominance and each of the four variables of trait dominance, height, self-presentation bias, and directional asymmetry. Results were discussed in the context of measurement validity and androgen exposure.

Thursday Poster #20***The Roots of Sexual Jealousy and Aggression*****Chelsie L. Connolly, Joshua D. Duntley (contact: chelsie.connolly@gmail.com)**

Both men and women display signs of distress when they discover or perceive cues that their romantic partner is cheating with someone else. However, research has not directly examined how different contexts of infidelity may influence people's specific affective and behavioral reactions. We hypothesized that factors such as the type of sex act, the duration of the infidelity, and the identity of the rival or rivals with whom partners cheated would influence affective and behavioral reactions to a romantic partner's infidelity. For example, sex acts associated with greater conception risk should be more upsetting than those with lower conception risk because they were recurrently associated with an increased risk of paternity uncertainty for men and loss of spousal support for women. Two studies (N=117) were conducted to evaluate the specific hypotheses. Results suggest that evolutionary theory provides a rich source of novel hypotheses for the exploration of responses to partner infidelity.

Thursday Poster #21***Knowing the Triggers of Jealousy in Mates: A Facet of Mating Intelligence*****Glenn Geher, John L. Johnson (contact: geherg@newpaltz.edu)**

Male (N = 127) and female (N = 329) participants were presented with 10 items – each with three infidelity scenarios as options (some were emotional in nature while others were sexual). In a prior phase, members of the opposite-sex had indicated which option would be most distressing to them. In a cross-sex mind-reading task, participants were asked to guess which infidelity options were most rated by opposite-sex individuals as distressing. Mating intelligence scores were calculated for each participant based on how well he or she accurately guessed the responses of the opposite-sex. Response were also coded for the tendency to overestimate the degree to which the opposite-sex was distressed by sexual infidelity. Participants also completed a measure of general intelligence. Generally, both sexes were accurate. General intelligence predicted this skill for both sexes. For females, general intelligence also corresponded to overestimating distress to sexual infidelity by males.

Thursday Poster #22***Acts of Infidelity*****Laurence Fiddick (contact: Larry.Fiddick@jcu.edu.au)**

Studies of jealousy have tended to focus on a single written scenario contrasting sexual infidelity and emotional infidelity. Across a series of studies conducted in the USA, Australia, and Singapore, we investigated perceptions of and reactions to 80 different acts of potential infidelity. The results suggest that the immorality of infidelity (and third party reactions to infidelity) is an important but neglected aspect of the psychology of infidelity. The results also suggest that in addition to sexual and emotional infidelity, participants distinguish a third type of infidelity involving nonsexual physical contact.

Thursday Poster #23***Jealousy Toward Outgroup Rivals***

Liga Klavina, Abraham P. Buunk, Justin H. Park (contact: L.Klavina@rug.nl)

Some characteristics evoke jealousy more strongly than others. Group membership of rivals can be one such characteristic. We investigated the relationship between cultural background of rivals, perceived characteristics of those rivals, and jealousy. As encounters between groups are usually short-term oriented, we predicted that members from groups with traits suggesting prospects of short-term mating (e.g. seductiveness, attractiveness and promiscuity) and having high social status (e.g. successfulness) may be especially jealousy evoking. 109 Dutch students were presented with jealousy-evoking scenario, and they rated how jealous they would feel towards outgroup rivals of different cultural backgrounds and evaluated the outgroups on a number of characteristics. We used outgroups that have real-life relevance for the Dutch participants (e.g., Moroccan, Indonesian, German). As predicted, jealousy was highest for outgroup rivals that were perceived as attractive, promiscuous, seductive, and successful. Additionally, gender differences and 2D4D ratio differences in jealousy toward particular outgroups were found.

Thursday Poster #24***Jealousy, Accusations, and Shifts in Assurance Tactics in College Students***

William Von Dollon, Rebecca L. Burch (contact: rburch@oswego.edu)

In a sample of over seven hundred and fifty undergraduate men and women we examined the paternal assurance tactics used in response to suspicions and accusations of infidelity. For males, just having suspicions of infidelity increased only mate guarding behavior. The percentage of arguments caused by jealousy correlated with mate guarding, physical abuse, and emotional abuse, but not sexual coercion. When males found enough evidence to accuse their partners of infidelity, mate guarding increased dramatically along with physical and emotional abuse and sexual coercion. This illustrates the shifting from insemination prevention strategies to counter insemination strategies when men become more sure of their partner's infidelity. Females did not show these patterns.

Thursday Poster #25***Paternal Assurance Tactics in Convicted Spouse Abusers***

Sara Rassing, Rebecca L. Burch (contact: rburch@oswego.edu)

Utilizing a sample of over two hundred and fifty convicted spouse abusers, we examined the patterns in types of assurance tactics (insemination prevention, counter insemination, pregnancy termination, and postpartum investment) in response to suspected infidelity, pregnancy, and presence of children in the home. The majority of men engaged in mate guarding, some physical violence and sexual coercion and reported high levels of sexual jealousy. When the men suspected infidelity, they engaged in more sexual coercion and counter insemination strategies. When the female partner became pregnant, these men shifted to much greater physical violence that would result in pregnancy termination. Previous data also show that these men engage in postpartum investment strategies including using paternal resemblance to determine investment and increasing violence toward unrelated and dissimilar looking children.

Thursday Poster #26***Sex Differences in Unemployment Predict Divorce across Cultures: Support for Sexual Strategies Theory***

Gregory D. Webster (contact: webster3@uiuc.edu)

Does unemployment lead to divorce? If so, do sex differences in unemployment matter? Although economists and sociologists have often studied the relationship between divorce and unemployment, it remains largely unexamined by evolutionary psychologists. Drawing on sexual strategies theory (SST; Buss & Schmitt, 1993), which posits that women seek men with resources for long-term mates, it was hypothesized that men's unemployment would temporally precede increased divorce rates, holding women's unemployment constant. Divorce rate (1996–2004) and unemployment-by-sex (ca. 1995 & 2004) data from 92 countries were obtained via the United Nations (unstats.un.org). Multilevel models revealed results consistent with SST: On average, men's unemployment was significantly related to increased divorce rates. More importantly, men's unemployment around 1995 significantly predicted divorce rates in 1996, whereas men's unemployment around 2004 did not significantly predict divorce rates during that same year. These findings suggest that sex differences in resource acquisition may be vital to long-term pairbonding.

Thursday Poster #27***Cues for Paternal Investment: Physical or Psychological ?*****Heather R. Coffin, Marjorie L. Harper, Monica McNeeley, Sun-Mee Kang****(contact: heather.coffin.74@csun.edu)**

Previous research suggests that women are able to detect cues that signal men's genetic quality and likely paternal investment from photographs of neutral faces (Roney, 2006). This study attempted to replicate and extend these findings by controlling for the valence of facial expressions and by adding personality traits as another factor that accounts for perceived paternal investment. Male participants (N = 30) assumed neutral, smiling, and frowning faces for stimulus photos, completed a personality inventory and an interest in infants test. Women raters (N = 171) were asked to evaluate men's photographs for physical attractiveness, liking children, personality traits, and facial features in either a neutral, smiling, or frowning condition. Results showed that women were unable to predict men's interest in infants regardless of expression; instead, women's ratings of "likes children" were consistently associated with their ratings for positive personality traits and physical attractiveness across three different facial expressions.

Thursday Poster #28***Adaptive Shifts in Female Mate Preferences as a Function of Declining Reproductive Value*****Judith A. Easton, Jaime C. Confer, David M. Lewis, David M. Buss****(contact: jeaston1@mail.utexas.edu)**

Women face the adaptive problem of selecting and securing a mate to reproduce and invest in offspring. We hypothesized this problem would be especially acute for women approaching menopause due to a time urgency not faced by younger women. Maintaining high standards impedes successful solution of this problem. One means of expediting reproduction would be to lower preference thresholds for potential mates. To test the preference-shift hypothesis, 213 female participants (ages 18 to 65) identified the minimum acceptable percentile in both potential long-term and short-term mates for a series of characteristics. Women approaching a steep declination of reproductive value decrease their minimum requirements for some mate characteristics, such as being a college graduate. Unexpectedly, these women also increase their minimum thresholds for other characteristics, such as "good heredity." Discussion focuses on shifts in mate preferences and other potential solutions to the problem of declining reproductive value.

Thursday Poster #29***Age and Attraction in the Ecuadorian Amazon*****Michelle Escasa (contact: michelle.escasa@gmail.com)**

The evolutionary psychology literature suggests that females prefer mates that are older than themselves. It is suggested that because older males have greater status and access to resources, women find older men preferable to younger men who typically have less status and fewer resources. These studies of age preference have focused on women's long-term mating strategies. In this paper, I will examine data collected in the Ecuadorian Amazon concerning women's age preference for mates. Women were asked to rank men in the community in terms of their current sexual attractiveness, a better assessment of their short-term mate value. I will test the hypotheses that women will find men in the age cohort associated with the greatest productive and reproductive fitness as more sexually attractive, regardless of the age of the women doing the ranking.

Thursday Poster #30***GayDar: Another Tool for the Choosier Sex*****Patricia Hall, Cathy Schaeff (contact: trish.hall@american.edu)**

We tested, using color photographs of models, the concept of GayDar: the ability to correctly identify individuals' sexual orientation (SO). The best GayDar scores were obtained by straight women when evaluating heterosexual models and lesbian women when evaluating homosexual models. These results are consistent with the hypothesis that women are the choosier sex and with the idea that straight women must evaluate both potential mates and potential competitors, however, lesbians' competitors and potential mates tend to come from the same pool. SO ratings provided by female raters were correlated with models' sex typicality (heterosexual with typical,

homosexual with atypical). Both male and female homosexual models tended to be more sex atypical (FLR measurements and masculinity and 'butchness' ratings) which could explain why lesbians excelled at identifying both sexes. Interestingly, although sex atypicality may be an important cue when identifying potential mates, neither lesbians nor gays associated atypicality with increased attractiveness.

Thursday Poster #31

Mate Preferences of Younger and Older Adults

Richard L. Michalski, Vandhana Ramadurai, Todd K. Shackelford, Catherine A. Salmon
(*contact: rmichalski@hollins.edu*)

Using responses provided by younger adults and older adults across two Western countries, we document sex differences in mate preference characteristics. We found that men, more than women, preferred the characteristics good cook and housekeeper, chastity, and good looks. Women, more than men, preferred characteristics like similar educational background, good financial prospects, emotional stability, ambition and industriousness, and love. We also document sample differences in mate preference characteristics. Younger adults, more than older adults, preferred characteristics such as good cook and housekeeper, similar education background, good financial prospects, chastity, desire for home and children, good looks, ambition & industriousness and education and intelligence. Older adults, relative to younger adults, placed greater weight on the pleasing disposition of a potential partner. Discussion highlights the importance of understanding possible developmental shifts in mate preferences.

Thursday Poster #32

Gender Differences in Young Brazilians' Mate Choice: A Test of Evolutionary and Romantic Market Theories

Rogério Ferreira Marquezan; Francisco Dyonísio Cardoso Mendes (*contact: francisco@ucg.br*)

We tested hypotheses related to the evolutionary and the romantic market theories about gender differences in human mate preferences. Our sample consisted of 200 males and 200 females that answered to a questionnaire about personal data and about how they choose their partners. Our results were consistent with previous research in respect to a greater interest for beauty in men, and for socioeconomic status in women. Our data also resulted in ranks of preferences for men and women similar to previous studies, with honesty and fidelity considered the most important attribute for both male and female prospective partners. The hypothesis that men and women with attributes valued in the romantic market are more demanding was not supported. However, the great variability in both men and women responses suggest a great interaction between biological and sociocultural factors in human mate preferences.

Thursday Poster #33

Parent-Offspring Conflict in Mate Preferences

Shelli L. Dubbs, Abraham P. Buunk, Justin H. Park (*contact: sld13@cox.net*)

Extending the previously documented parent-offspring conflict, we hypothesized that parents may especially prefer children's mates with characteristics suggesting high parental investment and cooperation with the ingroup (e.g., common religious beliefs), whereas children may especially prefer mates with characteristics that signal heritable quality (e.g., attractiveness). We employed the following methodology to test this hypothesis across culturally diverse samples: 858 individuals of mating age were presented with a list of traits, formulated to represent the undesirable variant of trait variables (e.g., unattractive, different religious beliefs) and were asked to indicate whether this would be more unacceptable to themselves or to their parents. As predicted, most of the undesirable variants of mate characteristics indicating a lack of heritable quality were considered more unacceptable to the participants themselves, and most of the undesirable variants of mate characteristics that connote parental investment and cooperation with the ingroup were considered more unacceptable to the parents.

Thursday Poster #34***Observer Ratings of Human Mating Interactions*****Skyler Place, Peter Todd, Lars Penke and Jens Asendorpf (contact: ssplace@indiana.edu)**

It is adaptively important for an individual to be able to evaluate the interest level of a potential mate. Discerning the mate-interest levels between others in observed interactions is also important for building knowledge of the surrounding social network and the availability and desirability of future potential mates. We tested this third-party judgment ability by having US students watch videos of German participants involved in a controlled speed-dating event and then predict the interest each dater has for each other. We found that females were best able to predict the interest level of the male speed-daters. Video presentation time had no effect; ten seconds of observation was enough for successful predictions. Overall, observers predicted greater interest than actually present on the dates—perhaps an adaptive bias. Our results indicate that the evolved ability to read social cues in potential mates may carry over to judging the courtship interactions of others.

Thursday Poster #35***Deficits in Emotional or Sexual Access and Relationship Termination Decisions*****T. Joel Wade, Ryan Palmer (contact: jwade@bucknell.edu)**

Evolutionary theory-based research has examined how sexual access and emotional access affect mate selection. However, how sexual and emotional access affect relationship termination decisions has not been examined. The present research sought to fill this void by examining the question of whether or not a lack of emotional or sexual access is likely to lead men and women to end a relationship. Based on prior research investigating sexual behavior and sexual infidelity, a lack of sexual access was expected to be selected more often as the reason to end a relationship. The results were consistent with the hypothesis. Individuals were more likely to terminate their relationship due to lack of sexual access rather than due to a lack of emotional access. These results are discussed in terms of prior research on mate selection criteria, intra and intersexual competition, and infidelity and short term mating.

Thursday Poster #36***Population Heterogeneity and Individual Search Behavior in a Foraging-based Model of Marriage and Divorce*****Thomas Hills, Peter M. Todd (contact: thills@indiana.edu)**

Marriage and divorce are observable outcomes of biological and cultural mate selection and rejection processes that operate over the course of the human reproductive lifespan and differ systematically across societies. To explore the extent to which population heterogeneity and individual search behavior influence marriage and divorce, we developed an agent-based model in which individuals search for mates using a process similar to a common foraging behavior called area-restricted search, moving smoothly from local to global search as needed. The Marriage And Divorce Area-restricted search Model (MADAM) assumes individuals start searching for partners similar to themselves, but relax their expectations as they age. Divorce is allowed when individuals find a partner who shares more traits with them than their current partner does. MADAM accurately predicts demographic marriage and divorce data (including age distributions) across cultures, and thus demonstrates the potential commonality of search behaviors across spatial resource and social environment contexts.

Thursday Poster #37***Perceptual Policy Capturing: highlighting differences between implicit and explicit mating preferences*****Zachary L. Simmons (contact: simmons@psych.ucsb.edu)**

The balance of human mating literature relies on self-report methods, which assume subjects possess declarative knowledge of the traits they prefer in a mate. One alternative methodology for assessing mate preferences is the use of a 'policy-capturing' approach, in which subjects evaluate opposite-sex individuals on a number of traits as well as how attractive they are as a potential mate. Subject's implicit mating preferences are inferred from correlations between perceived traits and judgments of mate attractiveness. In the current study, subjects rated facial photographs on a number of theoretically salient dimensions in addition to mate attractiveness. Implicit mate preferences calculated from these ratings were compared with subject's explicit mate preferences (assessed by

distributing a fixed budget of points to the same traits, based on the relative importance of each). Results suggest that explicit policies strongly overestimate the importance of kindness and understate the importance of physical attractiveness in mate judgments.

Thursday Poster #38

Adaptationist Accounts of the Origin and Ontogeny of Menopause

Barry X. Kuhle (contact: kuhleb@dickinson.edu)

I put forward the “absent father hypothesis” proposing that reduced paternal investment linked with increasing maternal age was an additional impetus for the evolution of menopause. Reduced paternal investment was linked with increasing maternal age because men died at a younger age than their mates and because some men were increasingly likely to defect from their mateships as their mates aged. I close with a novel hypothesis for the ontogeny of menopause. According to the “adaptive onset hypothesis,” the developmental timing of menopause is a conditional reproductive strategy in which a woman’s age at onset is influenced by the likelihood that any children she could produce would survive to reproductive age. Twelve variables predicted to be associated with age at onset and evidence that bears upon the predictions are discussed.

Thursday Poster #39

Salience of emotional displays of danger and contagion in faces is enhanced when progesterone levels are raised

C. A. Conway, B. C. Jones, L. M. DeBruine, L. L. M. Welling, M. J. Law Smith, D. I. Perrett, M. A. Sharp, E. A. S. Al-Dujaili (contact: c.conway@abdn.ac.uk)

Findings from previous studies of hormone-mediated behavior in women suggest that raised progesterone level increases the probability of behaviors that will reduce the likelihood of disruption to fetal development during pregnancy (e.g. increased avoidance of sources of contagion). Here, we tested women’s sensitivity to potential cues to nearby sources of contagion (disgusted facial expressions with averted gaze) and nearby physical threat (fearful facial expressions with averted gaze) at two points in the menstrual cycle differing in progesterone level. Women demonstrated a greater tendency to perceive fearful and disgusted expressions with averted gaze as more intense than those with direct gaze when their progesterone level was relatively high. These findings suggest women are more sensitive to facial cues signalling nearby contagion and physical threat when raised progesterone level prepares the body for pregnancy.

Thursday Poster #40

Rape may be less frequent during the ovulatory phase of the menstrual cycle after all

David M. Lewis (contact: david.lewis@mail.utexas.edu)

Chavanne and Gallup (1998), Petralia and Gallup (2002), and Broder and Hohmann (2003) found evidence of menstrual cycle-based, anti-rape adaptations in women. Surprisingly, Fessler (2003) concluded that rape is not less frequent during ovulation; if rape were less frequent during the ovulatory phase, conception rates following rape would be less than those following consensual sex. For Fessler’s data, the relative fertility (age-based) of the women pregnant by rape differed from that of the women pregnant by consensual sex. Correcting for this using a factor of .34 – the correct factor is .52 – Fessler concluded that rape conception rates are higher. When the correct factor is employed, the rape conception rate is not higher. Furthermore, the sampled rape victims likely overestimated the conception rate, and evidence from other species suggests that rapists’ ejaculate may be more likely to result in conception. These, and other factors, are used to reconsider rape and ovulation.

Thursday Poster #41

Differences in Meat Consumption as a Function of Sexual Activity and Hormonal Contraception

Diana S. Fleischman, Daniel M. T. Fessler (contact: dfleischman@mail.utexas.edu)

As a consequence of the need to downregulate some maternal immune responses so as to tolerate the blastocyst following conception, the luteal phase of the menstrual cycle is associated with increased susceptibility to infection. Because meat was one of the primary sources of foodborne pathogens throughout our evolutionary history, Fessler (Fessler, 2001) predicted a decrease in meat intake during the luteal phase; the current research

provides the first test of this prediction. We also examine dietary intake in women using hormonal contraceptives (HCPs). Because immunomodulation is unnecessary when there is no chance of conception e.g in women who are not sexually active, luteal phase compensatory behavioral prophylaxis was predicted to be absent in this context. Although we find that women who are sexually active eat less meat than those who are not, we do not find support for predictions regarding effect of cycle phase or exogenous progesterone on meat consumption.

Thursday Poster #42

Cyclic Shifts in Jealousy Across the Menstrual Cycle

Jason Lyons, Roger Mellgren (contact: lyons@tarleton.edu)

Distress due to physical and emotional infidelity has been studied in both men and women. The findings suggest an evolved adaptation in which men are more likely to show distress towards physical infidelity while women are more likely to show distress towards emotional infidelity. Due to evidence of shifts in female adaptations across the menstruation cycle (i.e. face preferences) this study examines reports of physical and emotional distress by women across 4 stages of the menstruation cycle (menstrual, follicular, ovulatory, and luteal) for both heterosexual and homosexual incidents of infidelity. The results of a forced choice test showed no significant changes across the menstrual cycle. However, reductions in distress to emotional infidelity and increases in distress to physical infidelity during the ovulatory phase of the menstruation cycle were observed. For forced choice situations involving homosexuality, physical infidelity was significantly more distressing across all 4 stages of the menstruation cycle.

Thursday Poster #43

rescheduled as oral presentation, Session B-1

Thursday Poster #44

Attractiveness Ratings of Point-light Displays of Female Gaits Across the Menstrual Cycle

Meghan P. Provost, Vernon L. Quinsey, Nikolaus F. Troje (contact: 1mpb@qmlink.queensu.ca)

Previous research using point-light displays of biological motion has demonstrated that women walk differently at times of high compared to periods of low conception probability. In two independent studies, men indicated their attraction to point-light displays of female gaits across the menstrual cycle. In one study, men rated walkers varying on conception probability individually, and in the second study, men indicated a walker most attractive to them from a continuum of female walkers varying in conception probability. Contrary to previous research investigating facial attractiveness across the menstrual cycle, men in both studies indicated higher rates of attraction to non-fertile women.

Thursday Poster #45

Menstrual Cycle Effects on Attention to Mate-relevant Information

Maya Rosen, Hassan H. Lopez (contact: m_rosen@skidmore.edu)

The current study investigated whether women show an attentional bias towards mate-relevant information during the fertile portion of their menstrual cycle. Thirty heterosexual women (15 naturally-cycling, 15 on oral contraceptives) completed two attention tasks during their late follicular and mid-luteal phases. In a dichotic listening task, participants repeated a neutral passage played in one ear while a neutral or sexual distracter was played in the other ear. In a modified Stroop task, participants named the color of neutral and mate-relevant words. It was hypothesized that naturally-cycling women would be more distracted by mate-relevant stimuli in their follicular phase compared to their luteal phase, as reflected by increased errors in the dichotic listening task and increased reaction time in the Stroop task. Saliva samples were taken to determine if levels of estradiol, progesterone and/or testosterone correlated with performance on either of the tasks.

Thursday Poster #46***Seminal Compounds, Routes of Administration, and Mood***

Steve Kempa, Rebecca L. Burch (contact: rburch@oswego.edu)

The seminal compounds which affect mood are reviewed as well as the comorbidity of depressive and anxious symptoms. Given this information, it is expected that seminal compounds administered through vaginal, anal and oral sex would result in alleviation of mood symptoms. Questionnaires were administered undergraduates at SUNY Oswego that included several questions regarding sexual behaviors, semen exposure, and the Beck Anxiety Inventory. Frequency of unprotected vaginal or anal intercourse showed similar patterns in anxious symptoms as previous studies have shown in depressive symptoms. Those who engaged in more unprotected sex, and therefore, more semen exposure showed lower levels of Anxiety Inventory Totals. These shifts in mood are most likely a by product of seminal compounds intended to shift female ovulation to correspond with insemination.

Thursday Poster #47***Birth Order and Number of Older Male Siblings: Evidence of a Downstream Intrauterine Testosterone Effect***

Andrew C. Gallup, Daniel D. White, Gordon G. Gallup Jr. (contact: andyalbany07@yahoo.com)

We present evidence to support a downstream effect of testosterone for individuals having one or more older brothers. Data from two independent samples in two separate studies show that birth order and number of older male siblings play a significant role in the development of specific behavioral and biological characteristics. Number of older brothers was positively correlated with handgrip strength (HGS) in females (p

Thursday Poster #48*rescheduled as oral presentation, Session C-2***Thursday Poster #49*****High-K Reproductive Strategy: A Negative Predictor of Depressive Symptomatology***

Cezar Giosan, PhD (contact: cezar@giosan.com)

The present study examined the associations between a high-K reproductive strategy and depressive symptomatology. Participants were a sample of 515 utility workers who underwent psychological evaluations. They completed a series of self-reports (High-K Strategy Scale, Beck Depression Inventory, Life Events Scale), and were also assessed for past depression and prior trauma by doctoral level clinical psychologists. It was hypothesized that high-K will correlate negatively with, and be a negative predictor of, depressive symptomatology. The results confirmed the predictions, showing that high-K accounts for an important 20% of the variance in depressive symptomatology, after controlling for risk factors in depression such as demographics, prior traumatic experiences, past depression, and recent negative life events. This study offers support to the emerging evolutionary view that depression may have an adaptive function.

Thursday Poster #50***The Canary in the Coal Mine: Does High Stress Vulnerability Have Adaptive Value***

Jack A. Palmer, Linda K. Palmer (contact: palmer@ulm.edu)

MRI studies indicate that the dorsolateral prefrontal cortex and anterior cingulate are involved in moral reasoning. Individuals with reactive sympathetic nervous systems who undergo stress may quickly fatigue these areas, resulting in decreased resources for altruistic cognition. The Eysenck Personality Questionnaire-Revised (EPQ-R) measures lack of conscientiousness (psychoticism scale) and emotional reactivity (neuroticism scale). In this study, split halves of the EPQ-R served as pre- and posttests (n=167) of conscientiousness. The experimental group received a cognitively stressful intervention; the control group received a non-stressful placebo. Analysis of data from participants scoring in the highest decile of the neuroticism scale (n=12) revealed posttest psychoticism scores were significantly elevated from pretest scores in the experimental group compared to the control group. This supports the idea that emotionally reactive individuals experience a decrease in conscientious and altruistic cognition after exposure to stress. Potential adaptive significance is discussed.

Thursday Poster #51 (Male) Narcissists Don't Just Think They're More Attractive – They ARE More Attractive

Jonathan P. Baker, Mark W. Remiker, April Bleske-Rechek (contact: bakerjp@uwec.edu)

Narcissism is characterized by an inflated sense of beauty and dominance and a willingness to exploit others. Accordingly, narcissistic individuals have a more unrestricted sexual strategy and lower levels of commitment to their romantic partners. Further, they enjoy looking at themselves more than others do. Given the links between narcissism, self-aggrandizement, and the pursuit of an unrestricted sexual strategy, which men can pursue more easily if they are highly attractive, it is possible that narcissistic men actually are more physically attractive than other men are. We tested this prediction with a sample of 51 dating couples. Men who scored high in narcissism rated themselves as more attractive and as more desirable sex partners, but not as more desirable long-term partners. These men also scored higher on behavioral measures of sexual unrestrictedness. As predicted, narcissistic men (but not narcissistic women) were rated by outside judges as more attractive.

Thursday Poster #52

The Effect of Computer Anxiety and Enneagram on Behavioural Intention

Marianne S.M. Too, Hishamuddin B. Ismail, Nor'ain M. Yusoff (contact: smtoo@mmu.edu.my)

This study reports on the investigation of different personality traits of working professionals that influenced how they perceived anxieties and their coping behaviours in the computing environment. Thus, the primary objective is to explore the interaction between different computer stressors and the coping behaviours of users as moderated by their personality type. The Enneagram was employed to measure the personality traits, while the coping behaviours of each type under stress were measured through their behavioural intentions. The results showed significant interaction effect, besides significant effects of computer stressors on personality type, and personality type on behavioural intentions. Differences in the level of anxiousness experienced were also observed for the types within the same behavioural intention. The differences in the reactions due to the different traits were attributable to the components of the Enneagram. Lastly, implications for management and individuals were highlighted, with suggestions to reduce anxiety for different personality types.

Thursday Poster #53

Assortative Mating: A Prospective Investigation of Individual and Relationship Predictors of Couple Stability

Mark W. Remiker, Jonathan P. Baker, April Bleske-Rechek (contact: remikemw@uwec.edu)

We report on the results of a prospective study of assortative mating among dating couples. In accord with the proposal that humans seek relationship partners who are similar to themselves, rather than converge over time, at Time 1 we found that dating couples are as similar to each other as are married couples. Further, stronger couple assortment on political and religious attitudes, self-esteem, envy, and sexual strategy was associated with individuals' commitment to the relationship. At Time 2, 11 months later, we obtained data on 47 of 51 couples. Over 40% of the couples were no longer dating. We report on individual predictors of couple status at Time 2, including narcissism, sexual strategy, self-esteem, and dispositional jealousy. Further, we investigate the utility of (1) couple assortment on enduring personal attributes and (2) couple agreement on sexual satisfaction and relationship commitment as predictors of couple dating status at Time 2.

Thursday Poster #54

Adaptive Value of Extraversion: Short and Long Term Mating Strategy Differences

Naomi C. Pike (contact: lopez097@csusm.edu)

Previous personality research has conflicting findings on whether people are attracted to others who are different or similar in extraversion. Natural selection may have equipped people to be attracted to extraverts or introverts depending on their mating strategy (i.e. short-term or long-term tactics). Extraversion has been linked to higher achievement, but also to risky behaviors that result in less availability to invest in offspring long-term. In this study the extraversion facets of excitement-seeking and gregariousness are manipulated by description, along with measuring similarity (NEO) and strategy proclivity (SOI). It is expected that males depicted as extraverts will rate more attractive for short-term mating, whereas males depicted as introverts will rate more attractive long-term.

Females presented as gregarious are expected to rate more attractive for short-term mating, while female excitement-seekers are expected to be less attractive, regardless of mating strategy, due to the increased risks that could interfere with raising offspring.

Thursday Poster #55

Humor Appreciation is Inhibited by Self-deception and Augmented by Implicit Preferences

Robert Lynch (contact: robertlynch66@yahoo.com)

A racially and sexually diverse group of fifty-nine undergraduate Rutgers anthropology students were filmed while watching a white stand-up comedian for thirty minutes. Positive emotional expression was later scored in a frame-by-frame analysis using the facial action coding system (FACS) (1). Subjects who scored higher on a self-deception questionnaire (2) laughed significantly less than those who scored lower on the test. In addition computer timed implicit association tests (IAT)(3) were used to measure a subjects implicit preferences for traditional gender roles and racial preference (blacks vs. whites). Results show that the magnitude of the laughter response was context specific so that subjects laughed more in response to comedic bits, which matched their implicit preferences. This study provides novel evidence that laughter may, in part; function to signal unconscious preferences and self-deception may inhibit ones ability to respond positively to humor.

Thursday Poster #56

The Impact of Self-perception on Sociosexuality

Sarah L. Strout (contact: s.strout@snhu.edu)

Over thirty years of research has shown that people differ in how much their feelings are based on cues from their bodies (personal cues) or the situation (situational cues) (see Laird, 2007 for a review). Previous research has shown that compared to personal cuers, situational cuers are more likely to eat in response to external stimuli, change their attitudes in response to conformity pressures, and feel better about themselves after viewing pictures of attractive models, suggesting a social comparison. In this study, we explored the impact of self-perception on sociosexuality in college age adults. We hypothesized that situational cuers, influenced by the social pressures of college would have less restricted sociosexuality than personal cuers. The results support our hypothesis: Situational cuers' sociosexuality (measured by the Sociosexuality Orientation Inventory, Simpson & Gangestad, 1991) was less restricted than personal cuers'. These results suggest that to some extent social conformity may impact sociosexuality.

Thursday Poster #57

Birth order and face-to-face contact with a sibling: Firstborns have more contact than laterborns

Thomas V. Pollet, Daniel Nettle (contact: T.V.Pollet@ncl.ac.uk)

Kin selection theory predicts that individuals may invest time and resources in their siblings, but also that older siblings will invest more in younger ones than vice versa. Therefore firstborns should be more likely to keep in touch with their sibling(s) than middleborns or laterborns. We analyzed sibling relations of respondents with two siblings from a large-scale Dutch dataset (n= 1,558). Firstborns were indeed found to have significantly more frequent face-to-face contact with a sibling than middle- or lastborns. This effect was found using multinomial logistic regression in which we controlled for other factors (educational attainment, age, and gender). The finding that firstborns are significantly more likely to keep in touch with their sibling than laterborns remained unaltered after controlling for geographical distance between siblings. Middleborns did not differ significantly from lastborns in contact with their sibling. Findings are discussed with reference to research on birth order and family relationships

Thursday Poster #58

"Who wears Cosmetics?" Individual Differences and their Relationship with Cosmetic Usage

Julia M. Robertson (contact: jrober01@bcuc.ac.uk)

What personality variables predict cosmetic usage, and why? In this correlational study 30 female participants, predominantly undergraduate students from a range of ethnic backgrounds (age 18-55, M age 28.66) answered questionnaires regarding 16 personality variables and regarding their cosmetic usage. A multilinear regression

analysis indicated that anxiety (.008) self-presentation ($p=.045$) and conformity ($p=.007$) were positively correlated, and social confidence ($p=.032$), emotional stability ($p=.037$), self-esteem ($p=.003$), and physical attractiveness ($p=.006$) were negatively correlated to cosmetic usage. The model, as a predictor of cosmetic usage, was highly significant; $R^2 = 0.555$, Adjusted $R^2 = 0.413$ [$F(7,22) = 3.921$, $p=.006$]. It is proposed that cosmetics are utilised primarily as a psycho-physical 'mask' in order to promote a desired image.

Thursday Poster #59

Historically normative patterns of childhood punishment reflected within religious belief systems

Benjamin J. Abelow, M.D. (contact: benjamin.abelow@yale.edu)

Scholars from a variety of disciplines have noted that religious salvational and narrative traditions often form operational and thematic parallels with historically widespread patterns of childhood corporal punishment. On examination, it becomes clear that many core religious beliefs metaphorically portray pre-existing, cross-culturally normative patterns of coercively enforced filial obedience. Such portrayals, which are most striking with respect to Christianity, are evident also in Islam, Judaism, and many other belief systems. Building on work previously presented to the Society of Biblical Literature (2006) and the American Historical Association (2007), I argue that important religious teachings were fundamentally shaped as epiphenomenal reflections of normative childhood experience. I describe how these aspects of religion may have developed through a process of cultural evolutionary selection operating among variant religious traditions. I argue that metaphorical reflections of childhood must be considered when formulating models that describe the development of the structure of religion.

Thursday Poster #60

Supernatural Niche Construction Incubates Brilliance and Governs the Ratchet Effect

David Kydd (contact: kydd@mindspring.com)

Just as 'the fire-making niche' from 1,640,000 years ago exerted selective pressure for a smaller gut and a larger brain in hominins, so too I hypothesize that the supernatural niche exerted selective pressure for what I call 'the brilliant-prone spectrum' of cognitive traits. (This spectrum is superordinate to the psychosis-prone spectrum). Evidence suggests a unique evolutionary footprint among *Homo sapiens*: a gene-culture coevolutionary loop whereby dopaminergic and serotonergic systems amplify the salience of counterintuitive religious concepts. For presumably the first time in history the salience of an idea — the immortals, the supernatural — displaces the salience of perception as 'the really real.' This inversion enables the presence of absence to motivate behavior and channel the experience of meaning, thereby providing the platform upon which other functional attributes of religious systems build, such as intensified group cohesion, enhanced memory transmission, and plausibly the bootstrapping of protolanguage to fully symbolic language.

Thursday Poster #61

rescheduled as oral presentation, Session C-1

Thursday Poster #62

Wife beating, nature or nurture?

Jelena Cvorovic (contact: cvorovic@eunet.yu)

The question this paper seeks to answer is why the Muslim Serbs beat their wives far more than the Orthodox Serbs, both living in the same mountainous region of southwestern Serbia. It is proposed that the combination of Islam and polygyny has led to this violence, in contrast to the monogamy of the Orthodox Serbs.

Thursday Poster #63

The Evolution of Moral Rules from Natural Laws

John A. Johnson (contact: j5j@psu.edu)

Wolpert (2006) has argued that, in our species, causal thinking associated with tool use drove the evolution of the brain. In that vein, I propose a theory to explain how moral rules developed from our understanding of natural

laws of cause-and-effect. Our intuitions about moral goodness originated in what an action was "good for" (i.e., its ability to cause certain effects). Yet instead of grasping that acts are only good for particular purposes, we are often fooled by powerful moral emotions into believing that a moral action is absolutely good in itself. This absolutist perspective manifests itself as moral realism in children (Piaget, 1932) and deontological moral reasoning in adults (Power, Higgins, & Kohlberg, 1989). Placing moral truths in the same category as objective scientific truths confuses moral rules with natural laws. Although technically a category mistake, this confusion is extremely pervasive (Gabennesch, 1990) and probably represents an evolutionary adaptation.

Thursday Poster #64

Fear Wears A Cheap Tuxedo: The Cognitive Similarities of Creationism and Intelligent Design
Kilian J. Garvey (contact: kgarvey@une.edu)

Two studies explore the possible affective motivations to claim that "intelligent design" is a scientific hypotheses and legitimate alternative to the so-called gaps in evolutionary theory and not just creationism in a cheap tuxedo. In the first, an obviously religious questionnaire exploring attitudes concerning human origins was strongly correlated with an intelligent design questionnaire making no mention of any specific religious deity. In the second study, affective and cognitive characteristics (as measured by the Disgust Scale, the Fear Perception Index and the Right Wing Authoritarian Scale) not related to either science or religion were found to be strongly correlated with creationist and intelligent design positions. It will be suggested that the motivation to avoid anxiety provoking thoughts (i.e., the world is a chaotic place, life has meaning and is not random) may be a compelling factor in rejecting biological evolution in place of a specific creator.

Thursday Poster #65

Rationology 101: How the Author of Genesis Got It Right (and the Golden Rule Got It Wrong)
Phil Roberts, Jr. (contact: philrob@ix.netcom.com)

It is often taken as a given that rationality is strictly a matter of adjudicating means to ends. Based on the premise that 'feelings of worthlessness' are a maladaptive byproduct of the evolution of rationality, I forego this convention by proposing a theory of rationality that encompasses the rationality of ends. One of the more interesting implications of this approach is that the moral maxim, 'Love (intrinsically value) your neighbor as you love (intrinsically value) yourself' can be construed as 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 address various rationality paradoxes and evolutionary enigmas, its epistemic credentials can be shown to surpass those of competing theories. In the final section of the paper I employ some of these insights to derive a moral 'ought' from an epistemic 'is'.

Thursday Poster #66

Emotional Self-Deception Facilitates Sexually Antagonistic Optimal Mating Strategies
Christopher G. Eppig (contact: ceppig@unm.edu)

Emotions function in part to communicate internal state to one's social partners. This information allows conspecifics to tailor their own responses accordingly. The parts of the brain not involved in consciousness will manipulate the emotional state of an individual in order to manipulate the responses of social partners that benefit the sender of the emotional signals disproportionately. While these signals are expressed dishonestly, the emotive individual experiences the emotions as if they were genuine and is unaware of the deception. Men use dishonest expression of love to manipulate women into facilitating their optimal fitness strategy of high partner number, while women use expression of love and orgasm to cause an incorrect assessment of paternity in their male partners, and to allow for more successful cuckoldry.

Thursday Poster #67

Improvised Rhythmic Creativity and Measures of Accuracy in Beat Synchronization and Continuation
Christopher O. E. Jenkins, Geoffrey F. Miller (contact: chrisoej@unm.edu)

Precise measurements of accuracy in beat synchronization and continuation using computer-controlled electronic drum pads are used frequently in studies of music cognition, but have not yet been used toward efforts to

understand what honest signaling functions, if any, are served by rhythmic synchronization abilities and musical displays invoking them. This is not a straightforward task, because simple equal-interval tapping performances are presumably not sexually or otherwise attractive regardless of accuracy; but to the extent that this accuracy predicts capacity to layer and combine rhythms in an impressively creative manner, it could provide interval-scale measures of skills partially underlying the hard-to-quantify concept of musical creativity. The present study measured participants' deviations from perfect synchrony with target beats and from equal-interval tapping across several simple rhythmic tasks of varying difficulty. Outcomes were compared with ratings of participants' improvised creative drum output and with self-reported rhythmic display tendencies and musical interests.

Thursday Poster #68

Intentional Humor as a Mental Fitness Indicator

Daniel P. Howrigan, Kevin B. MacDonald (contact: howrigan1980@gmail.com)

The pervasive role of intentional humor in human social interaction as well as in mating preferences show signs that humorous behavior may be a product of sexual selection (Miller, 2000a). Recent models of sexual selection in human evolution hypothesize that intentional humor works as a mental fitness indicator that reliably reflects mate value, especially for females evaluating male humor (Miller, 2000b). The current study used 150 subjects (50 male) to examine intentional humor as a phenotypic trait that operates as a signal of general intelligence (from a short form of the Ravens Progressive Matrices), life history strategy (from the Arizona K Battery), and the personality traits of extraversion and openness (from the International Personality Item Pool scale). Intentional humor is measured by rating humor production tasks. Analysis of these results will elucidate the model that the effectiveness of intentional humor is a reliable indicator of mate value, especially in males.

Thursday Poster #69

Facial Redness, Blood Colouration and Apparent Health

Ian D Stephen, David I Perrett, Jamie F Lawson, Michael R Stirrat (contact: is77@st-and.ac.uk)

Colour is sexually selected in many species and often indicates health. Facial skin appearance is associated with apparent health and attractiveness in humans. Increased reddening is associated with increased dominance rank and reproductive status in non-human primates. The skin vasodilator mechanism that reddens human skin is increased in responsiveness by physical training and with hormonal contraception, but resting skin blood flow is higher in hypertension. We hypothesised that increasing redness and blood colouration increases apparent health up to a point, and thereafter decrease apparent health. We found that rated health shows a quadratic relationship with facial redness in Caucasian faces, with very low and very high redness appearing unhealthy. Interactive transforms manipulating apparent blood colouration in faces show participants increasing blood colouration in faces with low initial blood colouration, and removing blood colouration from faces initially high in blood colouration. From these findings, we conclude that blood colouration signals health.

Thursday Poster #70

A Dress to Impress or a Toy to Enjoy? Exploring Consumer Motivations for Luxury Consumption

Liselot Hudders, Patrick Vyncke (contact: Liselot.Hudders@Ugent.be)

Many people are willing to spend their hard-earned money on luxury products. Approaching the phenomenon of luxury consumption from a classical economic perspective, it is unclear why people would waste their money on, for instance, expensive caviar while their appetite could equally well be satisfied by eating a cheap slice of bread. An explanation that has been given for the 'irrational' behaviour of luxury consumption is often grounded in the theory of costly signalling. This is, many luxury products are overtly displayed by their owners, to signal their wealth status to others, in order to impress them. However, this theory cannot explain why people buy luxury products for private consumption. In this paper, we conducted two studies to empirically test a more comprehensive framework that captures at least four basic motivations for luxury consumption, both for privately and publicly consumed luxury goods. Furthermore, we investigated possible interactions between these motivations.

Thursday Poster #71***Costly Apology Appeases a Victim's Anger More Effectively Than No-Cost Apology*****Yohsuke Ohtsubo (contact: yohtsubo@nifty.com)**

The purpose of the present study was to explore whether the principle of costly signaling would apply to the apology research. Two versions of interpersonal transgression were given to 90 participants. The version of scenarios was a within-participant factor, and the order was counterbalanced. Each scenario was followed by one of three apologies offered by the transgressor: (1) no apology, (2) sheer apology, (3) apology accompanied by costly compensation. Participants rated their angry from the victim's perspective on a 5-point scale before and after reading the apology. Mean appeasement scores (the first angry rating minus the second angry rating; the two scenarios were combined) were .-.22, .75, and 1.48 for conditions (1), (2) and (3), respectively: $F(2, 87) = 42.21, p < .001$. Post hoc tests revealed that the three means significantly differed from each other. Therefore, costly apology more effectively appeased the victim's angry.

Poster Abstracts: Friday

Friday Poster #1

Altruism and Currency-Free Resources: General Intelligence Moderates the Association between Body Fat and Altruism

Barbara Briers, Kobe Millet, and Siegfried Dewitte (contact: briers@hec.fr)

The present paper introduces a resource explanation for human unconditional altruism. Four studies demonstrate that general intelligence, as a proxy for future financial resources, and body-mass index, as a proxy for current caloric resources, are predictive for people's likelihood to act altruistically. Consistent with the resource explanation, we illustrate that possessing either high levels of intelligence or a high body mass index is sufficient for increasing the likelihood of altruistic decisions.

Friday Poster #2

Classmates and lovers can detect each other's level of altruism

Julia Pradel, Detlef Fetchenhauer (contact: Julia.Pradel@uni-koeln.de)

One way to explain altruistic behavior of humans lies in the assumption that altruists are chosen more often than egoists as interaction partners because humans are able to identify each other's level of altruism (Robert H. Frank, Geoffrey Miller). We tested this hypothesis in two studies. In both studies, subjects were asked to play a dictator game (i.e., to divide some money between themselves and another person anonymously) and later had to estimate other's behavior in the same game. In Study 1, pupils (N=122, age between 11 and 19 years) were asked to predict their classmates' behavior. In Study 2, intimate couples (N=120) had to predict their partner's behavior and the behavior of a strange couple that they had met for a period of 30 minutes. In both studies, estimates were better than chance and were the more valid, the more judges and target persons knew each other.

Friday Poster #3

Evolution of parochialism requires group competition

Julian Garcia, Jeroen C.J.M. van den Bergh (contact: j.garcia@feweb.vu.nl)

We develop a multilevel evolutionary model of parochialism, which is altruistic behavior specifically targeted towards ingroup members. Traditional models of multilevel or group selection cannot explain parochialism, since either intergroup interaction is limited or individuals employ the same strategies towards insiders and outsiders. Here we allow individuals to behave differently towards in- and outgroup members in the context of a prisoner's dilemma. Interaction between four strategies is studied: egoists, altruists, parochialists and traitors. First, a replicator dynamics model is formulated to study individual selection. We show that parochialism is not a stable outcome. Next, we propose two simulated evolutionary games with selection occurring at the level of groups and individuals. Here, group selection operates by selective proliferation of successful groups and direct conflict among groups. We derive conditions for the evolution of parochial behavior and show that parochialism is more likely to evolve in a group competition setting.

Friday Poster #4

Survivor Guilt and Altruism: Responses to Inequity in the Workplace

Lynn E. O'Connor, Jack W. Berry, & Patrice Crisostomo (contact: lynnoc@aol.com)

An experimental online study of 242 participants investigated differences in responses to a story, representing four randomly assigned conditions. In each, the main character was a manager at a hi-tech corporation during the 1990's financial crisis. Conditions changed in regard to the relationship between the main character and a co-worker: a sibling, a friend, an acquaintance, and a rival. Then the manager was informed that she was promoted,

while her co-worker was laid off. Participants wrote narratives expressing what they believed the manager might think, feel and do. Raters provided scores on emotions and proneness to helping in the narratives. Guilt was expressed across conditions, demonstrating that inequity leads to feelings of guilt in those who are successful, regardless of the relationships. Significant differences in helping behavior were found. As in prior studies, we found survivor guilt proneness predicted acts of altruism towards strangers, represented here by an unethical rival.

Friday Poster #5

Helping others to find long-term and short-term mates: A test of inclusive fitness, reciprocal altruism, and parental investment theories

Peter K. Jonason, Pamela L. Izzo, and Sam E. Mono (contact: pjonason@nmsu.edu)

Individuals have preferences for whom they help. One domain of helping was explored here: helping others find both long-term and short-term mates. The current study (N = 108) examined three theoretical frameworks (inclusive fitness, reciprocal altruism, and parental investment) for understanding why individuals would be more willing to help some individuals over others. College participants reported how willing they were to help a number of different types of individuals (sister, stranger, etc.). When considering willingness to help others find a long-term mate, an inclusive fitness model was appropriate: with preferences for kin over nonkin. However, when considering willingness to help others find short-term mates, a reciprocal altruism model was more appropriate: with preferences for those of similar age-cohort those in a distant one. As a rule however, rates of willingness to help others find mates were rather low, with helping others find a long-term mate being generally higher.

Friday Poster #6

Co-Evolution of Environment Structure and Foraging Strategies

Anske van Luijtelaaar, Peter M. Todd (contact: anske.vanluijtelaaar@phil.uu.nl)

People and other animals must forage for resources (whether food in a spatial environment, information on the Web, words in memory, etc.) that occur in patches. To solve the adaptive problem of how much time to spend in any particular patch before moving on, many species use simple rules of thumb. Different rules are adapted to different distributions of resources among patches. But in many situations, such as food items growing in different places or information placed on websites, the environment is not static but is also created by adaptive agents. We explored the co-evolution of different environment structures and corresponding appropriate strategies for patch-time allocation in an agent-based simulation model. The dynamics of this system produced a cyclic pattern leading to evolved environments with randomly distributed resources on the one hand, as the best response to co-evolved strategies with parameters yielding something like a fixed-time-per-patch rule.

Friday Poster #7

The evolution of visualization

Bence Nanay (contact: nanay@syr.edu)

It is not obvious whether visualizing (seeing something in the mind's eye with one's eyes closed) has significant selective advantage. Action planning does have some selective advantage, but action planning may happen in an entirely non-perceptual manner. If visualization has an evolutionary explanation, it is likely to lie elsewhere. Notice, however, that amodal perception, that is, being aware of, and being able to localize, things that are (partly) occluded from us, has huge selective advantage. Being able to localize the unseen parts of an animal hiding in a bush is an extremely survival-enhancing skill. Thus, if, as I argued elsewhere, amodal perception is nothing but visualization, then we can say that as amodal perception have a considerable selective advantage and amodal perception is a version of visualization (another variant of which is visualizing with one's eyes closed), visualizing with one's eyes closed could be thought of as an evolutionary exaptation.

Friday Poster #8

Foraging Memory: Landscape Cues Activate Memories of Foraging Episodes

Brian Bergstrom, Pascal Boyer (contact: bergstrom@wustl.edu)

In many species, domain-specific associations between places and particular events serve to regulate appropriate behavior in foraging, predator-prey relations, mating, and social relations. We examined here the question of whether humans' ancestral foraging heritage might have produced psychological capacities designed to facilitate successful foraging. Specifically, we test associations between landscapes and foraging. For a place memory system to be evolutionarily advantageous, such associations should be "smart." Their activation should depend on the nature of the events and their connection to the place, as well as on species-specific adaptive criteria. We hypothesize that modern humans will be able to retain relevant associations between various landscapes on the one hand, and their value in terms of food and resources, on the other hand. Four free recall studies showed that modern humans are able to retain foraging-related associations better than others, e.g. between landscapes and non-foraging events, or non-landscape cues and foraging events.

Friday Poster #9

Uncertainty as a Moderator of the Influences of Social Stimuli on Fertility Behavior: A Study of Human Adolescents

Jeff Davis, Daniel Werre (contact: jdavis@csulb.edu)

Variation in perceptual processes among individuals possibly accounts for the variable impact of environmental conditions on life history behaviors. In this paper, we examine one aspect of perception, uncertainty, and its potential for moderating the effects of agonistic threat on long-term fertility behavior. We develop a simple mathematical function of uncertainty (u) which consists of three dimensions: uncertainty about resource acquisition; uncertainty about status attainment; and uncertainty about changes in intergenerational fitness. In a large longitudinal sample of adolescents, our measure of uncertainty moderates the association between exposure to agonistic threat and fertility behavior among males. Males who experience great uncertainty about status attainment and high exposure to threats have higher fertility over a ten-year period. Among females, uncertainty about resources and exposure to threat have positive, independent associations with fertility. We discuss the relevance of our findings for Darwinian analyses of human social cognition and human social problems.

Friday Poster #10

Positive Illusions in the Mating Domain

Jessica A. Pass, Justin H. Park, Siegwart M. Lindenberg, Abraham P. Buunk (contact: j.a.pass@rug.nl)

Positive illusions have been proposed to be adaptive. In particular, fitness-relevant self-evaluative positive illusions (e.g., "I am desirable as a mate") may be essential for motivating functional approach behavior (Haselton & Nettle, 2006). We hypothesized that maintaining such positive illusions about the self is particularly important when individuals' fitness-relevant beliefs are threatened. We conducted an experiment in which participants completed a personality inventory. Then, participants randomly assigned to the threat condition were told that they were likely to end up without a partner later in life; participants assigned to the control condition received no threatening feedback. Participants who received negative feedback experienced negative affect and lowered self-esteem; however, as expected, positive illusions about their mate-value and social functioning remained high. In addition, consistent with the implications of error management theory (Haselton & Buss, 2000), the results revealed that males have stronger positive illusions about their mate value than do females.

Friday Poster #11

No Lifeguard on Duty: Do Humans Exhibit Aquatic Distance Estimation Adaptations?

Kristin M. Goodwin, Russell E. Jackson, Lawrence K. Cormack (contact: k.goodwin@mail.utexas.edu)

Humans overestimate terrestrial surfaces that pose falling risks (Jackson, 2005; Jackson & Cormack, 2006). Because humans need water and often live around bodies of water, we wondered if this overestimation persisted for vertical surfaces above water, rather than land. We tested competing hypotheses suggesting that, compared to terrestrial environments, distance estimation over water might be 1) greater, due to poor visibility of underwater hazards, 2) lower, due to deceleration provided by water that decreases fall risk, or 3) absent, due to insufficient genetic variance, selection pressure, or time. Participants viewing landscape photographs in Experiment 1 did not estimate greater distance over either land or water. Participants also estimated no greater distance from photographs of either land or water in Experiment 2, nor estimated greater distance in a forced choice procedure.

These data suggest that human distance estimation in aquatic environments may lack adaptive mechanisms known to exist in terrestrial environments.

Friday Poster #12

withdrawn

Friday Poster #13

Snake in the Grass Revisited: Further Tests of an Evolved Attentional Bias for Threatening Stimuli
Suzanne M. Mahoney, Corinne Y. Ostrock, and Mark D. Cloud (contact: smahoney@lhup.edu)

In two experiments, we tested the ability of evolutionary relevant threatening stimuli (snakes or spiders), non-evolutionary relevant threatening stimuli (needles or knives), and neutral stimuli (leaves or mushrooms) to capture the attention of participants during a perceptual search task. We expected evolutionary relevant threatening stimuli to be detected more quickly and to be less affected by target location and search array size than non-evolutionary threatening or neutral stimuli. In experiment 1, participants searched for a discrepant threatening stimulus in a grid-pattern display of four or eight neutral stimuli and the reverse. We found both types of threatening stimuli to elicit a significant detection advantage independent of target location. Even though the height and width of each stimulus was held constant, the stimuli varied in density. In experiment 2, we addressed this issue by repeating the study holding density constant by equating the number of pixels occupied by each stimulus.

Friday Poster #14

The Sun is Out Because It's Happy: Children's Immature Cognition as An Ontogenetic Adaptation
Virginia A. Periss, Micah Joy Stranger, Carlos H. Blasi, David F. Bjorklund (contact: vperiss@fau.edu)

Two studies investigated the hypothesis that cognitive immaturity serves an adaptive function for young children. In study 1, parents and nonparents were presented paired scenarios in which 3- and 9-year-old children expressed either immature or mature cognition. Participants selected the child who best reflected each of 17 different traits, grouped into 3 dimensions: cute, deceptive, and smart. Participants selected the immature child as being more cute and less deceptive than the mature child for vignettes reflecting intuitive (agentive) cognition. Results suggest that some forms of immature cognition bias adults to feel favorably toward children who express them and may be adaptive as a means of eliciting caregiving behavior. A similar procedure will be followed in Study 2 with children in grades 5 through 9. We anticipate that children will have similar biases toward immature cognition, with females presenting these biases at a younger age than males.

Friday Poster #15

Empathy in Third Party Interventions: Does Feeling their Pain make you Inflict Pain?
Alex W. Shaw, Sarah S. Gilbert, Robert O. Kurzban (contact: ashaw@sas.upenn.edu)

A current debate that crosses disciplines (economics, psychology, etc.) is the nature of the psychology that underpins reactions to moral transgressions. In response to such transgressions, individuals can: compensate the victim, punish the "wrongdoer", do both, or do nothing. Here we investigate whether people give more money to compensate cooperators or punish defectors and the effect empathy has on these tendencies. We induced participants to commit a moral transgression against other participants. Then, we gave other uninvolved individuals, third parties, the opportunity to give part or all of their ten dollar endowment to punish the wrongdoer and/or compensate the person who was wronged. These participants were randomly assigned to a Low or High empathy condition. We found that participants gave more money to punish and to compensate in the High empathy condition and that, across conditions; participants gave more money to compensate than to punish.

Friday Poster #16

Is gossip about cheaters trusted?
Daisuke Nakanishi, Yohsuke Ohtsubo (contact: nakanisi@shudo-u.ac.jp)

At the 2006 HBES meeting, we reported that people behave more cautiously in social risk situations (e.g., being cheated by others) than in natural risk situations (e.g., damages incurred by natural disasters). Employing the modified Iowa Gambling Task, we further investigated the social/natural difference in a social learning context. In this experiment, before the task of 60 risky choices, participants were given a piece of advice indicating that choices A and B are less profitable in the long run than choices C and D. Participants would actually be better off by following it than otherwise. The results indicated that those who were informed that A and B were cheaters (i.e., social risk condition) were prone to discredit the advice. A 2 (natural vs. social risk) x 6 (trial blocks) ANOVA revealed significant interaction.

Friday Poster #17

Female Adolescent Antisocial Behavior: Is Poor Health a Motivation to Defect?

Daniel J. Duhigg, Kathleen Pajer (contact: duhigg.4@osu.edu)

Female antisocial behavior is difficult to treat, costly to society, and has a direct impact on the subsequent generation, but is poorly understood. An intriguing finding is that women with antisocial behavior have high rates of somatic complaints without physical findings. Applying game theory principles, we propose that if this state is chronic, then it could be a motivational factor to defect. Perceived poor health could foreshorten the opportunity horizon for a player, inviting a sense of urgency to win. We studied 175 girls, ages 15-16 years, with and without antisocial behavior to determine if perceived poor health was present as early as adolescence and replicated the earlier findings from adult women. Implications for a game theory perspective and future research goals will be discussed.

Friday Poster #18

Comparison of the Role of Intentions in Second-party and Third-party Punishment.

Haruto Takagishi, Toshio Yamagishi (contact: takagishi@lynx.let.hokudai.ac.jp)

A series of studies employing the ultimatum game have shown that the perception of unfair intentions plays an important role in second-party punishment (SPP), and people retaliate against the unfair intentions of the proposer. Recently, however, attention is being directed not only to second-party, but to third-party punishment (TPP). Punishment of those who make unfair distributions by third-parties is essential for the maintenance of social order. However, no study has examined the role of intentions in TPP. Using a dictator game with an option to punish the dictator, we compared the role of intentions in SPP and TPP. Whether unfair intentions of the dictator affected punishment by either the second-party or the third-party depended on the type of punishment. TPP as well as SPP was directed to dictators with unfair intentions when the punishment was binary, but the intentions of the dictator had no effect when punishment was continuous.

Friday Poster #19

Constrained Maximization: A Naturalistic Defense

Joseph S. Simonian (contact: jsslog@aol.com)

'Constrained maximization' as explicated by David Gauthier, is the idea that although individuals are concerned with satisfying their preferences, they differ from the ideal 'straightforward maximizer' found in contemporary economic theory by at times rationally making choices while acting under moral constraints. An important consequence of Gauthier's view is that cooperative behavior is often prudentially justified because it makes individuals better off from the standpoint of their self-interest. This paper will draw on biological and anthropological research to provide a naturalistic explanation of constrained maximization and defend Gauthier's position as the most scientifically plausible theory of cooperation.

Friday Poster #20

Welfare Tradeoff Ratios and Social Support

Julian Lim, Daniel Sznycer, Jade Gibson Price, John Tooby, Leda Cosmides

(contact: julianlim@umail.ucsb.edu)

A long history of competitive and cooperative social interactions has selected for human adaptations to regulate decisions about when to incur costs to benefit others, and when to impose costs on others to benefit oneself.

These adaptations compute a Welfare Tradeoff Ratio (WTR), an internal regulatory variable specifying the degree to which one is willing to trade off one's welfare against that of another individual. We hypothesized that a higher level of social support may afford greater investment in building cooperative relationships, and lead to upregulation of WTRs. Conversely, people with higher WTRs may acquire larger, stronger social support networks. These hypotheses were tested in four studies in Buenos Aires and Santa Barbara involving a total of 1602 subjects. We found positive correlations between WTRs and social support. We also found that females are more likely than males to trade off their own welfare for that of others.

Friday Poster #21

Latter-Day Saints Childcare Networks in Boise, Idaho

Kersti Harter, Dr. John Ziker (contact: kerstiharter@mac.com)

This study of Mormon childcare networks examines four evolutionary models that have been proposed to account for costs related to devout religious behavior: signaling, inclusive fitness, reciprocal altruism, and tolerated theft. The project studies how the Mormon community has created a strong network of shared childcare. The goal of this project was to identify variables that influence women's decisions to participate in these collectives. The methods used include key informant surveys and network analysis using a version of snowball sampling method called Respondent Driven Sampling. Over fifty women were interviewed and preliminary findings point toward reciprocal altruism. It appears that women who are close in age and who live in the same neighborhood are baby-sitting for each other several hours a few times a week. This allows the women to have breaks for personal activities including volunteering in elementary schools and shopping.

Friday Poster #22

Social niche cultivation among the Shiwiar of Ecuador

Lawrence S. Sugiyama, Michelle Scalise Sugiyama, Aaron D. Blackwell, H. Clark Barrett (contact: sugiyama@uoregon.edu)

We hypothesize that humans have adaptations motivating cultivation of valuable, difficult-to-replace social niches, because this encourages beneficiaries to provide health care to benefactors when the latter are sick or injured: an evolutionarily relevant "bankers' paradox" (e.g., Sugiyama & Scalise Sugiyama 2003). Here we ask whether Shiwiar cultivate social niches reflected in their reputations. Seventeen Shiwiar ranked others on 12 factors associated with valuable social benefits. Individual reputations varied less between rankers than they did between individuals, indicating consistency across rankers. Hierarchical cluster analysis suggested that 5 male niches and 4 female niches would capture the broad patterns of niche construction. We then used a K-means cluster analysis to group individuals into these niches. Final niches varied significantly in ranked factors and correspond to ethnographically identifiable strategies, including: shaman, broad/strong political alliance cultivation, narrow/core alliance cultivation, and work party investment.

Friday Poster #23

Human Societies as Complex Adaptive Systems

Marcus J. Hamilton, Robert S. Walker (contact: robert.walker@cudenver.edu)

Human societies are embedded within complex ecologies, systems that are organized at multiple scales by the flux of energy between organisms and their environment. Subsistence-based economies rely on this energy flux in order to harvest resources and meet metabolic demands. We show that territory size, the space required to meet these demands, scales as approximately the 0.75 power of population size, an increase of resource use efficiency in larger populations. This sublinear scaling likely results from the complex structure of underlying social networks, which serve to efficiently distribute energy, materials and information to group members. Hunter-gatherer societies throughout the world exhibit remarkably similar hierarchical organization characterized by group sizes that scale at a constant ratio of approximately 4 across all successive levels. This self-similar population structure, along with increasingly efficient use of space in larger populations, point to the complex adaptive nature of human sociality.

Friday Poster #24***Chaos and oscillation in the evolution of indirect reciprocity in n-person games*****Shinsuke Suzuki, Eizo Akiyama (contact: suzuki92@sk.tsukuba.ac.jp)**

Reputation building plays an important role in the evolution of reciprocal altruism when the same individuals do not interact repeatedly because, by referring to reputation, a reciprocator can know which partners are cooperative and can reciprocate with a cooperator. This reciprocity based on reputation is called indirect reciprocity. Previous studies of indirect reciprocity have focused only on two-person games in which only two individuals participate in a single interaction. In this study, we examine the evolution of indirect reciprocity in $n(>2)$ -person games, and reveal that indirectly reciprocal cooperation can be formed and maintained as oscillation or as chaotic oscillation in n -person games.

Friday Poster #25***On the Origin of Collective Action*****Susanne Rebers (contact: s.rebers@fsw.vu.nl)**

Although many evolutionary scientists have studied the evolution of all kinds of social phenomena, collective action has not received that much attention. Collective action, the the cooperation of a large group of individuals in pursuing a goal that is characterized by impossibility of exclusion, is interesting because it plays a big role in everyday human life (e.g. demonstrations, warfare, tax payments), while it is non-existing in other animal species. In this paper, I will analyse whether or not, or to what extent, existing theories on the evolution of cooperation can explain the evolution of collective action. Both genetic and cultural evolutionary theories will be reviewed. Main conclusion is that both 'cultural group selection' and 'cultural kin selection' can explain its evolution.

Friday Poster #26***Attention bias towards non-cooperative people. A dot probe classification study in cheating detection*****Sven Vanneste, Alain Van Hiel (contact: sven.vanneste@ugent.be)**

Evolutionary inspired research assumes the existence of brain mechanisms that scan for information that might signal non-cooperative behavior. In this study we demonstrate an automatic attention bias for threatening social interactions involving untrustworthy partners. Using a dot probe classification task, we found that, compared to unknown cooperators, attention was oriented significantly more towards the faces of unknown players who decided not to cooperate during a Prisoner's Dilemma Game. The present results thus suggest that an automatic, preconscious focus of attention underlies our ability to identify non-cooperative players in social exchange situations.

Friday Poster #27***Sensitivity to Perception of Interpersonal Relationship Can Affect Rejection Rate in an Ultimatum Game*****Toko Kiyonari, Carolyn H. Declerck, Christopher Boone, Griet Emonds (contact: Toko.Kiyonari@ua.ac.be)**

We show that identical offers in an Ultimatum Game (UG) generate different rejection rates depending on whether the decision is made before or after being matched with a partner. In the "partner-specified condition," which is the method used in the standard UG, participants designated as "recipients" are first matched with a proposer of unknown identity, and then decide if they accept or reject this proposer's offers. In the "partner-unspecified condition", participants designated as recipients decide on the outcome before they are matched with a particular proposer. Regardless of this seemingly very minor difference, our participants accepted unfair offers (8 for the proposer vs. 2 for themselves) more in the partner-specified condition than in the partner-unspecified condition (44.4% vs. 22.7%). Although it is still controversial what rejection in the UG measures, our result shows that rejection behavior is very sensitive to perceiving subtle differences of interpersonal relationships.

Friday Poster #28***Birth Order Affects Cooperation Between Unrelated Adults: Firstborns are Less Trustful and Reciprocate less***

Alexandre Courtiol, Michel Raymond, Martin Daly, Charlotte Faurie
(contact: courtiol@isem.univ-montp2.fr)

The extent of cooperation and parental investment are two specificities of humans. Access to parental investment is a strong selective pressure leading to important birth order effects on behaviours. Indeed, birth order explains many physical and cognitive differences among sibs. It follows an inequitable competitive ability between siblings for parental investment. These birth order differences could account for individual differences in cooperative behaviours. 510 unrelated students played an anonymous investment game. Results show that firstborns are less trustful and reciprocate less than others. It suggests an important role of the family in the evolution of human cooperation.

Friday Poster #29***Intergenerational Transfers and Reproduction in Western Australian Women***

Debra S. Judge (contact: djudge@anhb.uwa.edu.au)

Western Australian women (45-70 yrs) completed a questionnaire detailing family structure and intergenerational transfers. Of 124 respondents, 80.5% grew up in 2-parent households. 25% experienced co-resident, non-parental adults during childhood. Sixteen percent had a grandmother co-residing during their childhood, 3% of grandmothers were in the absence of one or both parents. Ninety five percent of all respondents produced ($x = 2.7$, $SD=1.3$) children. Pro-family support from parents was associated with increased numbers of children (F_3 , $120 = 4.4$, $p=.006$). Educational support had no effect on fertility. Respondents who received help were more likely to help their children ($r=0.182$, $p=.047$). Pro-family support to adult children was positively associated with more grandchildren (F_2 , $247=6.96$, $p=.001$) through younger age at 1st birth, whereas educational support to children was associated with fewer grandchildren.

Friday Poster #30***Pathogen Salience Amplifies Incest-Avoidance Responses***

Justin H. Park, Ron Visser, Mark Schaller (contact: j.h.park@rug.nl)

Offspring of incest have depressed immunocompetence, and so the fitness costs of incest may be especially great when pathogens are especially prevalent. At a psychological level of analysis, one implication is that individuals may be especially repulsed by incest when pathogens are especially salient. This hypothesis was supported in an experimental test: Experimentally induced pathogen salience amplified aversion to incestuous (but not non-incestuous) sexual acts. This conceptual analysis has another implication: Pathogen salience may lead people to be more wary of sexual relationships with individuals who have superficial features that heuristically connote possible kinship. One such feature is self-other similarity in attitudes (perhaps especially highly heritable attitudes). This hypothesis also was supported in an experimental test: Pathogen salience led to a lower level of desired attitude similarity in a short-term sexual partner (but not long-term relationship partner), and this occurred only for high-heritability attitudes.

Friday Poster #31***Dynamics of Parent-Child Cultural Transmission***

Kathryn Demps, Richard McElreath (contact: kedemps@ucdavis.edu)

In 1982, Cavalli-Sforza et al. published a groundbreaking article describing cultural transmission patterns to college students from their parents and peers. While it is not possible to replicate the peer results, their data allows predictions for sex-biased patterns of parental transmission to be made. By analyzing the responses of the undergraduate student body of the University of California at Davis and their parents, this project tests the results gathered from the 1982 study and looks at the predicted patterns in depth. Early results indicate that certain habits, such as superstitions and food preparation (e.g. salt use), are more like to be inherited from mom, while others, including listening to classical music and visiting museums, are more likely to be inherited from dad.

Friday Poster #32***From Womb to Tomb: Filial Piety as Parental Manipulation in the Continuing Negotiation of Parent-Child Conflict***

Lei Chang (contact: lihongli@cuhk.edu.hk)

As part of socialization especially in Chinese and Asian cultures, filial piety demands obedience of and respect for one's parents often at the sacrifice of one's self-interest. Taking an evolutionary view, we conceptualize filial piety as a psychological and individual-level variable that represents the extent to which children are psychologically manipulated by their parents in the long-lasting negotiation of parent-child conflicts. We hypothesize that the psychological manipulation works by strengthening the contingency between parental behavior and child response. Based on a sample of 569 Hong Kong children (mean age = 11.50) and their parents, filial piety was found to moderate the relations of parental warmth and harshness to child assertiveness and submission in that, among children scoring high on filial piety, the associations were stronger than those among low filial scorers. These and other results support the view that, like in vitro hormonal manipulations, socialization ideologies and behaviors including filial piety may represent continuing parental effort to negotiate parent-child conflict and that parents may have the upper hand in this long negotiation from the womb to the tomb.

Friday Poster #33***What Doggerel may say about Motherese***

Siamak T. Naficy (contact: siamaknaficy@yahoo.com)

People regularly use "baby talk" or "motherese" to speak to dogs, but only recently have studies explored how dog-directed speech (DDS) and infant-directed speech (IDS) are both similar to, and yet different from, each other. This study examines the other side of the coin. Do dogs understand the intentions of human vocalizations? Using categories derived from research comparing mothers' and fathers' talk to infants, people were videotaped whilst interacting with their own dog, and the responses of the dogs were codified. Features of the voice allow humans to convey intentions to domestic dogs, and dogs can respond appropriately, but there are many ways this could be happening. This work sheds light on questions such as to what extent does motherese (IDS) involve adaptations in mothers and infants, and are these adaptations specifically for infant-directed speech?

Friday Poster #34***Does Embodied Capital Theory Explain Urban-Rural Differences in Indo-Fijian Child Productivity?***

Siobhan M. Mattison, Dawn B. Neill (contact: smc56@u.washington.edu)

The extent to which children engage in productive activity varies according to social and ecological context. We suggest that in urban environments, increased investment in skills acquisition, in conjunction with residential constraints on available work, may explain reduction in child productivity. Following embodied capital theory, we expect parents in urban areas to invest more per child, resulting in fewer children overall; these children are released from productive chores to engage in skill-building activities that produce higher long-term fitness returns. We examine whether self-reported frequency of engaging in productive activities differs among rural and urban Indo-Fijian children, controlling for important confounders using multivariate analysis. We find that urban children engage less frequently in productive activities overall, principally through a reduction in outdoor work. Residency does not significantly affect participation in childcare or household chores. Increased participation by children in childcare is positively correlated with age- and income-adjusted fertility of their mothers.

Friday Poster #35***Variation in Reproductive Success in a 19th Century Amish Settlement: The Effect of Spouse Relatedness***

W. Thomas Conelly (contact: tconelly@iup.edu)

In the early 19th century, Amish settlers in Pennsylvania's fertile Kishacoquillas valley in Mifflin County were a small, struggling minority. Within a century, however, the Amish had expanded to become the dominant ethnic group in the valley. Despite the stereotype of uniformly high Amish fertility, census and genealogical data show that there was much variation in reproductive success among Amish women in the community. Likewise, clear differences in demographic success among different family lines had emerged by the end of the century. Based on a preliminary analysis of the available data, this paper looks at the question of whether close spouse relatedness (frequent marriages to kin as close as second cousin) had a significant effect on fertility and mortality rates in the community. Alternative hypotheses will also be briefly discussed.

Friday Poster #36***The Relationship between Hypothesized Psychological Genetic Fitness Indicators and Indices of Mating Success*****Camargo, M. A., Geher, G., Sheldon, M., & Coombs, M. (contact: camarg99@newpaltz.edu)**

Previous studies have shown that measuring the actual number of offspring an individual produces in modern, post-contraceptive societies is not a valid measure of reproductive success. Instead, researchers have created diverse measures of mating success; a proxy for reproductive success. This study is attempting to create a valid measure of mating success, which asks participants about the quality of their most recent long-term and short-term sexual relationships from an evolutionary perspective. Although this study is still in progress, it is anticipated that approximately 100 males and 100 females will participate in this study. Measures of intelligence, humor, self-esteem, theory of mind, fluctuating asymmetry and currently accepted measures of mating success will be used to assess the validity of this new measure.

Friday Poster #37***Evolutionary Perspectives on the Content Analysis of Heterosexual and Homosexual Pornography*****Catherine Salmon, Kathryn Satava, Amy Diamond (contact: catherine_salmon@redlands.edu)**

This study focuses on the relative frequencies of various sexual activities and the ways in which those activities are portrayed in homosexual and heterosexual pornographic films. Many anti-pornography arguments are based on the alleged oppression and degradation of women in pornography. Others (Salmon & Symons, 2001) have suggested that the main focus of pornography is not about contempt for women and that if it was, gay pornography should differ dramatically from heterosexual pornography. Twenty films that ranked amongst the most popular in these two categories were examined with regard to this issue and the results and their implications will be discussed.

Friday Poster #38***The Relationship between First Sexual Intercourse, and Sexual Attitudes and Behaviours*****Charlotte J. Clements, Mark J. T. Sergeant (contact: mark.sergeant@ntu.ac.uk)**

Much of the literature concerning female experiences of their first sexual intercourse (FSI) focuses on affective perceptions (Sprecher et al. 1995), experiences of pain (Weis, 1985) and possible experiences of coercion (Houts, 2005). There is comparatively limited research on how experiences of FSI may influence sexual functioning later in life (i.e., Sobolewski, 2000). The current study sought to examine if FSI experiences were related to sociosexuality and the possible approach to sexual relationships (“communal” vs. “exchange”) adopted by a female. Data was collected from a sample of heterosexual females (N = 57) who completed the First Coital Affective Reaction Scale (Schwartz, 1993), the Sexual Relationship Scale (Hughes & Snell, 1990) and the Sociosexual Orientation Inventory (Simpson & Gangestad, 1991). Findings suggest that experiences of FSI are linked to adult sexual relationship types (“communal” and “exchange”), but not to sociosexuality. The implications of these findings and relevant methodological issues are discussed.

Friday Poster #39***Reproduction Expediting: How Women Solve Adaptive Problems Linked with Declining Reproductive Value*****Jaime C. Confer, Judith A. Easton, David M. Lewis, David M. Buss (contact: jconfer@mail.utexas.edu)**

Women who have reproductive potential but reach an age when their reproductive value is sharply declining face acute adaptive problems-- inducing fruitful sexual unions and securing the commitment of an investing mate before the window of reproductive opportunity has closed. We hypothesized that women have evolved specialized adaptations to solve these problems, such as a heightened motivation to engage in sex with a committed mate, in order to obtain last-chance reproductive opportunities. Two-hundred thirteen female participants (age 18-65) completed an instrument that assessed behaviors and attitudes designed to test predictions based on the reproduction expediting hypothesis. Women surveyed immediately before the onset of menopause reported the greatest willingness to engage in intrapair and extrapair sexual relations. Discussion focuses on shifts in sexual motivation and other potential adaptations to a “ticking biological clock.”

Friday Poster #40***Homosexual Mating Strategies: Testing the Hypermasculine/Hyperfeminine Hypothesis***

Jennifer R. Wiley (contact: jenniferwiley1@gmail.com)

Symons (1979) hypothesizes that homosexuals may more clearly highlight sex-differentiated mating strategies, in that gay and lesbian mating strategies are not constrained by the countervailing strategies of the opposite sex. Thus the mating preferences, strategies, and tactics of homosexuals may conform to predictions derived from the theory of relative parental investment (Trivers 1972) even more closely than those of heterosexual men and women. In this paper I conduct an analysis of 2003 NSFG survey data concerning the topics of mate selection, duration of sexual relationships, frequency of sex, and number of sexual partners. Preliminary analysis supports that gay men have more sex partners and more frequent sex, while lesbian women tend to form long-term pair bonds and have fewer sexual partners. This analysis is the first of its kind to use a national large-scale data source and adds substantially to the sparse quantitative literature documenting homosexual behavior.

Friday Poster #41***Head and Neck Circumferences and Head-to-Neck Ratio: Size AND Ratio matter when predicting sexual behaviors***

Jeremy A. Atkinson (contact: ja391266@albany.edu)

This study presents evidence that the size and ratio of both the head and neck act as honest signals of fitness. Thick necks could signal muscle mass in males while thin necks could signal that the adipose tissue storage pattern of a female is honest. Large heads could signal bigger brains. These hypotheses were tested by measuring head circumference (HC), neck circumference (NC) and head-to-neck ratio (HNR) in heterosexual males (n=53) and females (n=19) and comparing them to standard ratios and measures (eg: WHR, SHR) as well as to sexual behaviors. HC, NC and HNR were found to correlate with various sexual behaviors [eg: age-of-first-sex in males:HC $r=-0.462$, NC $r=-0.555$, HNR $r=+0.498$, EPC's in females:NC $r=+0.692$, HNR $r=-0.834$].

Friday Poster #42***Beyond BMI: Skeletal Morphology is a Better Predictor of Sexual Behaviour***

Jeremy A. Atkinson (contact: ja391266@albany.edu)

BMI (body mass index) and ratios calculated from circumferences are questionable fitness measure because they can spuriously correlates with phenotypic fitness in healthy populations (i.e., muscular men aren't necessarily attractive). Here we present evidence that BMI-independent (eg: skeletal) measurements are better predictors of sexual behavior. Heterosexual men (n=54) had standard (e.g., shoulder and waist circumferences) and skeletal (e.g., wrist, ankle and shoulder widths) measurements taken. SHR using circumference and skeletal width measurements and frame size (FS), an anthropometric measure of skeletal mass, were also taken. Most BMI-dependent measures and circumference based ratios lost significance after Bonferonni-Sidak correction. Many skeletal measures remained significantly correlated to various sexual behaviors. For example FS was related to age of first sex ($r=-.452$, $p=0.002$) and current relationship status ($r=+0.335$, $p=0.006$). These findings suggest that BMI-independent measurements are better predictors of evolutionary salient behaviors and should be used in future EP research.

Friday Poster #43***The revised SOI: A more differentiated look at sociosexuality and its effects on courtship and romantic relationships***

Lars Penke, Jens B. Asendorpf (contact: lars.penke@staff.hu-berlin.de)

Mating strategy is usually assessed as global sociosexuality, the overall orientation towards uncommitted sex. This approach masks the theoretically meaningful, unique contributions of its components. In a large online study (N = 2,708) and a detailed behavioral assessment of 282 young adults (both singles and couples) with a 1-year follow-up, we showed that the sex differences in and many established correlates of global sociosexuality go back to past behavioral experiences, attitudes towards uncommitted sex, and sociosexual desire (as measured by a new revised version of the Sociosexual Orientation Inventory, the SOI-R) in a highly differentiated manner. Furthermore, these three facets played unique roles in the predictions of the number of sexual partners and changes in romantic relationship status over the next year, as well as the flirting behavior displayed when getting acquainted with an attractive opposite-sex stranger, even down to the level of objectively coded behaviors.

Friday Poster #44***The Impact of Sex, Sexual History and Relationship Expectation on Attractiveness and the Recall of Sexual Strategies*****Loriann Williams, Maryanne Fisher (contact: loriann.williams@smu.ca)**

There exists a plethora of studies on the determinants and consequences of facial attractiveness. However, there seemingly exists no research on how within-individual evaluations of facial attractiveness are impacted by knowledge of the model's sexual history and the duration of the relationship they are seeking. Using a pre-post design, participants rated individual faces, and then re-evaluated the faces accompanied by a fictitious online dating advertisement, manipulated for the models' sexual history and the duration of the relationship they were seeking. Participants decreased ratings for individuals who had high levels of sexual experience and who were seeking short-term relationships. Also, women's evaluations of men who had little experience and who were seeking long-term relationships increased. One week later, participants were presented with the same faces and asked to recall the prior information. Men recalled more correct information about sexual history of both women and men, particularly for those seeking short-term relationships.

Friday Poster #45***When you know you are the other man...*****Erica Princiotta, Rachel Olson, Rebecca L. Burch (contact: rburch@oswego.edu)**

We examined frequency of extra pair copulations in college couples, how this intercourse differs from "typical" intercourse with their partners, and how knowledge of the intrapair partner shifts sex during an extra pair copulation. Well over one quarter of both men and women reported engaging in an extra pair copulation at least once. Men and women 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 differed when engaging in an overt 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 and attempting to prolong intercourse for as long as possible when having sex with someone in a relationship. Females did not.

Friday Poster #46***Changes in mate retention, safe guarding, and sexual behaviors during pregnancy*****Richard L. Michalski (contact: rmichalski@hollins.edu)**

I predict numerous evolved psychological mechanisms will become activated in response to the physiological and social changes that accompany pregnancy. I predict that the temporary, infertile state of women during pregnancy posed a set of adaptive problems that needed to be successfully solved over human evolutionary history. Using reports provided by a sample of 32 pregnant women, I test several predictions including changes in mate retention, safe guarding, and sexual behaviors relative to pre-pregnancy levels. The data support several key predictions. Pregnant women perceive a decrease in their partner's mate retention, report an increase in safe guarding, and report lower self and partner sexual interest and behaviors. I also present data suggesting that concern over their child's physical similarity is predictably linked to parity. Evolved psychological mechanisms triggered in response to pregnancy and future directions on the psychological changes accompanying pregnancy are discussed.

Friday Poster #47***Rape Fantasies*****Victoria Ackroyd, Joshua D. Duntley (contact: victoria.ackroyd@gmail.com)**

Sexually coercive behavior was likely a recurrent feature of human ancestral environments. There is wide disagreement among evolutionary scholars about whether rape is an adaptation or the byproduct of adaptations. The costs to women of being sexually coerced are high. Regardless of the origins of rape and even if it was a low frequency ancestral event, selection pressures probably were adequate enough to shape an array of female psychological adaptations devoted to problems associated with sexual victimization. We conducted two studies to explore the psychologies of rape and sexual victimization. Study 1 (N=122) examined participants' fantasies

involving sexual coercion. Study 2 (N=87) asked participants to consider specific sexually coercive scenarios. We hypothesized that a number of ancestrally relevant contextual factors would affect the content of rape fantasies, ratings of distress over being victimized, and likelihood of committing rape. Results will be used to evaluate adaptation and byproduct explanations of sexual coercion.

Friday Poster #48

Are Men More Love-Prone Than Women?

Andrew Galperin, Martie G. Haselton (contact: andrew_galperin@yahoo.com)

Many theorists have proposed that love functions to signal and facilitate commitment to a particular partner. Because women are initially more skeptical of their partners' commitment than are men, it follows that men should be more likely than women to fall in love with their partners first. Undergraduate participants (N=171) reported their past romantic love experiences and completed a variety of biographical measures. As predicted, a greater proportion of men than women reported falling in love before their partner reciprocated. In contrast, men did not report having been in love more times than did women. For both sexes, low attractiveness was associated with falling in love earlier, and in men it was associated with staying in love longer when their love was not reciprocated. An internet survey targeting a wider demographic population is underway. Along with previous research, our initial results suggest that men may be the more "love-prone" sex.

Friday Poster #49

Sex Differences in Attitudes Towards Familial Relations, Relationship Dissolution, and Intrasexual Competition

Angel McGee, Ashley Hoben, Loriann Williams, Melissa Gray, Anthony Cox, and Maryanne Fisher (contact: angel.mcgee@smu.ca)

Given that women are thought to rely upon others more than men, such as for resources, child care assistance, or to support indirect aggression, we proposed that there will be sex differences in attitudes towards interpersonal relationships. Using surveys completed by 275 women and 121 men, we tested this hypothesis in three ways. We examined whether men would seek an emotional or sexual relationship with the partner of kin or friends, and whether they would interfere by attempting to breakup a bad relationship. Seeking a relationship with someone who was already involved could be deleterious to that dyad. Likewise, allowing a poor relationship to continue could also be harmful to those involved. Third, we examined men's distress if their mate was to leave and her new partner was more or less athletic, wealthy, intelligent, or younger. In all cases, compared to women, men's attitudes reflected less concern about other individuals.

Friday Poster #50

Nipple Erection as a Sexual Signal

Gordon G. Gallup, Jr (contact: rburch@oswego.edu)

Female breasts serve a sexual function in addition to their value for sustenance (Levin 2006). However, whether nipple erection also serves as a signal is unclear. Participants were asked to rate pictures of women with and without salient nipple erection. The faces were obscured to prevent using the face to indicate emotional states. Males rated themselves as more excited, affectionate and sexy than did females when viewing women with salient nipple erection. Furthermore, when the subjects were asked to respond how they thought the person in the image was feeling, they rated images with nipple erection as being more excited, sexy and friendly. Women did not show reactions to the pictures with nipple erection. Men were also more likely to help the women with nipple erection, but only in ways that would increase contact between the two.

Friday Poster #51

withdrawn

Friday Poster #52***Sex Differences in Object Location Memory: Fixed versus moving through Space***

Jose A. Velarde, Roger. Mellgren (contact: jvelarde10@yahoo.com)

While object location memory has been tested under directed and incidental conditions with mixed results, almost all past research has been conducted using static tasks where the individual is stationary. The present study investigated object location memory utilizing both static and dynamic tasks under naturalistic conditions. In addition, we examined the correlation between other variables such as mental rotation test (MRT), finger length ratio (2D:4D), and spatial self-ratings. Participants were 136 undergraduate students. Object location memory results indicated only one significant main effect for sex in the static task. As predicted, males rated their sense of direction, and way finding abilities significantly superior to those of females. 2D:4D ratios showed no significant sex differences. However, in males the left and mean 2D:4D did correlate significantly with number of correctly located objects. Furthermore, significant correlations were observed between males' self-ratings of sense of direction, and correctly located objects in the static and dynamic tasks.

Friday Poster #53***Different Strokes: Sex Differences in Competitiveness Have Disappeared in Swimming But Not in Running***

Robert O. Deaner (contact: robert.deaner@gmail.com)

Sex differences in competitiveness and related attributes are well established. Nevertheless, the extent to which such differences originate from social conditions or evolved predispositions remains fiercely debated. To address this issue, I have shown that population-level analyses of relative sports performance can estimate sex differences in competitiveness. Furthermore, I have demonstrated (1) a robust sex difference in running, 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 athletic 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.

Friday Poster #54***Is The Preference For Holding Infants On The Left A Female Adaptation?***

Rodrigo Andrés Cárdenas, Jason B. Almerigi, David A. Puts, & Lauren Julius Harris (contact: carden18@msu.edu)

The majority of people, left- and right-handers alike, hold infants with the head to the left of the holder's midline. Because the left-bias is stronger in women and girls than in men and boys, it has been called a "female adaptation" and, by implication, another sign of women's and girls' greater interest in and responsiveness to infants. Our study, now in progress, examines this relationship by comparing young men's and women's side-of-hold of an infant doll with their interest in infants based on looking times at images of infants and adults. Subjects' explanations of their holds also are being recorded on the premise that, if the left-bias reflects greater responsiveness to infants, left-holders' explanations will focus more on the infant's needs than on their own. Finally, subjects' handedness is being measured to further assess its role. Results will be discussed in the context of evolutionary theories about infant-care.

Friday Poster #55***Sex Differences in Endocrine Response to Physical Competition***

Sharp, M.A., Al-Dujaili, E.A.S. (contact: m.sharp@wlv.ac.uk)

With its emphasis on male competition and female choice, sexual selection theory has driven patriarchal research agendas, where women's biology can be viewed as a convenient self-justification for their secondary social position (Fausto-Sterling, 1992). Subsequently, this study examined the extent to which males and females experience a comparable endocrine response under the same competitive conditions. Sixteen participants (8 females, 8 males) competed in a same-sex dyad, three-round knockout tournament. They collected multiple salivary samples for baseline, pre- and post-competition phases of all rounds. Compared against baseline, T at 15 mins to immediately pre-comp appeared significantly differently in both males and females. Post-comp T levels

were significantly different by outcome in both groups. Our data support the hypothesis that the female endocrine system is responsive to competition involving status. Findings are discussed in relation to the issue of situational context and its importance in the expression of any hormonal relationship.

Friday Poster #56

Sex Differences in Fat-Free Mass, Muscle Mass, and Strength Place Humans among the More Sexually Dimorphic Primates

William D. Lassek, Steven J.C. Gaulin (contact: gaulin@anth.ucsb.edu)

Human sex differences in stature (8%), weight (15-20%), and canine size (0%) are modest compared to other extant primates and Australopithecines. This apparent low level of dimorphism has influenced the analysis of human mating systems and dynamics. However, such measures ignore the much higher average percentage of fat (20-30%) in women compared with men (9-14%) which produces dramatic sex differences in fat-free mass. In 220 population samples, adult men had an average of 40+/-8% more fat-free mass than women with an average effect size of 2.9. Differences are even greater for skeletal muscle mass (66%, $d=3.8$) and upper body strength (80-150%, $d=2.6-3.9$). Large sex differences in body fat are not seen in non-human primates, and the unique human pattern has thus confounded cross-species comparison. This suggests that humans should be placed among the more dimorphic primates and that a reanalysis of human mating and competitive systems may be in order.

Friday Poster #57

Are Highly Masculine Brains Doomed to Behave Out of Sync With Their Partner's Behavior?

Alita J. Cousins, Melissa Franklin (contact: cousinsa@easternct.edu)

A typical masculine second to fourth digit ratio (2D:4D) indicates a testosterone dominated intra-uterine environment while a typical female 2D:4D is indicative of estrogen domination (Manning, 2002). Data were gathered from couples reported to be in an exclusive relationship with each other for an average duration of 18 months. Most notably, males with a highly masculine 2D:4D state that they are more likely to threaten male competitors and become violent toward their partners compared to less masculinized males. Highly masculinized men also state that their female partners solicit violence toward male competitors and toward females themselves while women do not indicate that they solicit these behaviors. Masculinization appears to be driving overall male behavioral tactics, not female behavior, in this sample of exclusive couple relationships.

Friday Poster #58

The Effects of Conspicuous Consumption on Testosterone

Gad Saad, John Vongas (contact: j_vongas@jmsb.concordia.ca)

Males of sexually reproducing species employ ostentatious mating signals (Zahavi 1975) and experience testosterone fluctuations with changes in social status (Mazur and Lamb 1980). We proposed that testosterone should rise when males engage in sexual signaling via conspicuous consumption, whereas it should drop when they witness other males' conspicuousness. Study 1 had 40 males drive an exotic sports car and an old sedan in leks and non-leks. As expected, testosterone levels were significantly higher when driving the exotic car, with the lowest levels occurring with the sedan in the lek. In Study 2, 40 males were each paired with a higher-status male confederate in a focus group whose moderator, either male or female, questioned them on specific consumption activities. Contrary to our expectation, testosterone levels significantly increased in the female condition only, suggesting that an interaction with a female (cf. Roney, Mahler, and Maestripieri, 2003) overrode any perceived intra-sexual "defeats."

Friday Poster #59

Hormones, facial morphology, and trust game play

Helen Wasielewski, Lee Cronk (contact: helewasi@eden.rutgers.edu)

In human males, circulating testosterone levels have been shown to be positively associated with dominance behavior, and negatively associated with pro-social behavior. In addition, recent work has clarified the relative roles that prenatal testosterone and pubertal testosterone have in shaping facial architecture. To test the possible

relationship between prenatal and pubertal testosterone exposure on behavior, subjects ($n = 150$) in our study played the trust game and were measured for facial masculinity. The results of the study revealed a significant negative association between player transfers and measures of facial masculinity; this relationship was specific to those facial features that have been linked to testosterone exposure in utero. These results suggest that exposure to testosterone during different developmental stages may have behavioral, as well as morphological, effects.

Friday Poster #60

Early puberty males have low 2D4D

Jamie F. Lawson, Miriam J Law Smith, Lisa M. Debruine, David I. Perrett (contact: jfl4@st-and.ac.uk)

Second to fourth digit length ratio (2D:4D) is a sexually dimorphic trait putatively linked to exposure to prenatal androgens, with low 2D:4D indicating exposure to high levels of testosterone and low levels of oestrogen in utero. Here, we present data showing that 48 adult males with low 2D:4D report earlier pubertal development, suggesting that high uterine testosterone is associated with earlier development in human males. There are a variety of possible explanations for this, including maternal stress elevating uterine testosterone and thereby preparing the offspring for rapid postnatal development. Such a mechanism could underpin life history predictions that environmental stress promotes fast development.

Friday Poster #61

Finger morphology, physical attractiveness, and the use of hierarchy negotiation tactics

Sim, Kyungok & Gallup, G. G., Jr. (contact: simkyungok@yahoo.com)

We examined the relationship between tactics of hierarchy negotiation individuals use to achieve their goals of getting ahead, and prenatal sex hormones and physical attractiveness. We also assessed the association of tactic use with leadership, Masculinity-Femininity, and demographic information in a sample of 73 female and 46 male undergraduates. Testosterone correlates with personality traits, such as aggression, dominance, status striving, and leadership. The second to fourth digit ratio (2D:4D) was used as a proxy for prenatal testosterone levels. Waist-to-hip ratios (WHR) and shoulder-to-hip ratios (SHR) were used as measures of physical attractiveness. 2D:4D ratios correlated negatively with Aggress tactics for both sexes, indicating individuals exposed to high prenatal testosterone are more likely to use aggressive tactics to maintain or improve their status or goals for getting ahead. Females with small WHR and males with low 2D:4D ratios also tended to use Attract Opposite Sex tactics to get ahead.

Friday Poster #62

Independent Voice Ratings and Digit Ratio (2D:4D) in Children.

Susan M. Hughes, Dinna V. Pich, & Shevon E. Nicholson (contact: shughes@alb.edu)

It is well known that the development and modification of the human voice is influenced by sex hormones at puberty (Abitbol, et al., 1999), however, there is considerably less information regarding the role that prenatal hormone exposure may have on the human voice. Therefore, in order to assess whether voice may be affected by prenatal hormones, we compared independent voice ratings to a known morphological marker of prenatal hormone exposure, the second to fourth digit ratio (2D:4D), in a sample of children who have yet been exposed to pubescent hormones. Male child voices rated as approachable, attractive, healthy, and honest were negatively correlated to 2D:4D (suggesting an effect of higher prenatal androgen levels), whereas female child voices rated as intelligent and mature positively correlated with 2D:4D (suggesting an effect of greater prenatal estrogen levels). These findings implicate the perceptual qualities of voice as a salient marker of underlying developmental fitness.

Friday Poster #63

Yawning and Multiple Sclerosis: Further Support for the Brain Cooling Hypothesis

Andrew C. Gallup, Gordon G. Gallup Jr. (contact: andyalbany07@yahoo.com)

Recent evidence shows that yawning may play a key role in thermoregulation serving as a brain cooling mechanism (Gallup & Gallup, 2007). Nasal breathing and forehead cooling greatly diminish the incidence of contagious yawning. Multiple Sclerosis (MS), an inflammatory, demyelinating disease of the central nervous

system has been extensively linked to thermoregulatory dysfunction (Baker, 2002). Cooling of the body improves the negative symptoms of MS while heat worsens them. Temperature differences involved with seasonal variation have even been shown to affect the severity of MS symptoms. Interestingly, excessive yawning has been implicated as a common symptom of MS (Postert et al., 1996). Consistent with the notion that yawning may be a brain cooling mechanism, evidence also shows that excessive yawning is a common response to drugs that raise brain temperature (Beale & Murphree, 2000), while neuropeptides that inhibit yawning produce hypothermia (Xin, Geller, & Adler, 1997).

Friday Poster #64

Extending Knowledge of Behavior: Understanding Evolved Behaviors, Human Drives, and Technology Acceptance

D. Chon Abraham (contact: Chon.Abraham@mason.wm.edu)

This paper explores why people accept technologies differently even within similar contexts. We conducted a qualitative multi-case study in four hospital sites and report extensions to knowledge of human behavior. We show how human drives (i.e., adaptations to timeless problems associated with survival and reproduction) influence decisions regarding the acceptance of ubiquitous information systems (IS) access for patient care tasks. Based on the findings, we integrate models and extend a seminal theory - The Theory of Planned Behavior (TpB) (Ajzen 1991), to account for how evolved behaviors, which developed over time to promote our survival and influence actions under certain circumstance, (1) moderate the intention/behavior relationship, (2) are antecedents to attitude towards a behavior, and (3) influence subjective norms.

Friday Poster #65

Some Potential Benefits of Applying Evolutionary Theory to Educational Issues

Fred Kuch, Keith Zvoch (contact: kuch@unlv.nevada.edu)

David Berliner recently wrote that perhaps the time is at hand to “revitalize educational psychology.” (Berliner, 2003) Evolutionary theory and its consilience (Wilson, 1998) with previous educational theories may be how to accomplish the revitalization. In this paper, the main principles of evolutionary theory as they relate to education are presented, including several frequent concerns and common misconceptions. Then, evolutionary theory is presented as a means for improving learning metatheory. Several illustrative examples are presented, such as a reinterpretation of Piaget’s stages of development, a reinterpretation of sociocultural phenomena such as the “street math” practiced by Brazilian street children, as well as the work of educational scholars such as Ginsburg who found that children at a very early age exhibit many “natural” math abilities. Finally, reading is used as example to illustrate how our view of “traditional” educational issues might be seen differently through the lens of evolutionary theory.

Friday Poster #66

Testing the Controversy: An Empirical Examination of Adaptationists' Political Attitudes

Joshua M. Tybur, Geoffrey F. Miller, Steven W. Gangestad (contact: tybur@unm.edu)

Critics of evolutionary psychology and sociobiology have vigorously suggested that adaptationists use their research to support a right-wing political agenda. We report the first quantitative test of this hypothesis based on an online survey of political and scientific attitudes among 168 U.S. psychology Ph.D. students, 31 of whom self-identified as adaptationists and 137 others who identified with another non-adaptationist meta-theory. Results indicate that adaptationists are much less politically conservative than typical U.S. citizens and no more politically conservative than nonadaptationist graduate students. Also, contrary to the ‘adaptationists-as-pseudo-scientists’ stereotype, adaptationists endorse more rigorous, progressive, quantitative scientific methods than non-adaptationists in the study of human behavior.

Friday Poster #67***A Model of Human Consciousness (Global Cultural Evolution)*****Marcus Abundis (contact: marcus@cruzio.com)**

Evolutionary efficacy is measured in how a species adapts to environment. In applying this to humanity, a model of global human cultural evolution is hypothesized. Development begins with the organism that births humanity, Earth. Earth's geologic record shows five episodes of mass extinction and recovery. Study of "recurrent extinction-cycles" yields five nameable Earthly evolutionary dynamics, the stage upon which human consciousness awakens. Humanity's adaptive psychology (consciousness) is "sparked aware" by these dynamics in an "adverse environmental relationship"— a proving of evolutionary fitness. Consciousness expands as humanity adaptively/expansively mirrors Earth's five evolutionary dynamics with five gender-based archetypes (bio-cultural dynamics); an unfolding "mythology of natural adversity" as foundation for all knowledge/civilization. This exploration focuses on: - emergence of humanity's direct conscious sense (personal ego) - the field of reasoning from which this conscious-sense arises (imagination) - the field of reasoning that follows (knowledge) - the system where all is bound together (evolution).

Friday Poster #68***A Functional Taxonomy of Human Evolved Psychological Adaptations*****Niruban Balachandran (contact: niruban25@gmail.com)**

The evolutionary psychologists Leda Cosmides and John Tooby speculated in 1992, "Just as one can now flip open Gray's Anatomy to any page and find an intricately detailed depiction of some part of our evolved species-typical morphology, we anticipate that in 50 or 100 years one will be able to pick up an equivalent reference work for psychology and find in it detailed information-processing descriptions of the multitude of evolved species-typical adaptations of the human mind, including how they are mapped onto the corresponding neuroanatomy and how they are constructed by developmental programs." Fortunately, the velocity at which research in the evolutionary social sciences has proceeded since Cosmides' and Tooby's prediction 15 years ago has created the conditions for developing such a classification system possible at this time. The proposed taxonomy of evolved psychological adaptations (EPAs) detailed in this paper synthesizes findings from over 130 years of research in the evolutionary social sciences since Darwin's publication of *The Expression of the Emotions in Man and Animals*. EPA units are organized in this taxonomy according to their functions (e.g. survival, mating, emotion, resource/status acquisition, etc.), divided into ten functional classes. Space is also included each EPA unit's neuroanatomical, neurochemical and genetic substrates. Schmitt and Pilcher's interdisciplinary diagnostic criteria for evaluating evidence of psychological adaptation are also utilized in this taxonomy to describe each EPA's corresponding evidentiary breadth and depth. Comparisons against other scientific disciplines' classification systems, as well as arguments for starting such a taxonomy at this time instead of decades from now, are also presented.

Friday Poster #69***Exploring Genetic and Protein Databases of Interest to Evolutionary Psychologists: Using Alzheimer's Disease as a Case Study*****Tanja Bekhuis (contact: tbekhuis@drexel.edu)**

Evolutionary psychologists interested in the genetics of disease typically rely on Medline when reviewing the literature. However, other databases exist that integrate bibliometric (text-based), genetic, and protein information. This paper introduces psychologists to Entrez, the life sciences search engine at the National Center for Biotechnology Information (NCBI). Relevant resources at NCBI are then explored, such as Online Mendelian Inheritance In Man (OMIM) for information about inherited diseases, OMIM Morbid Map for finding cytogenetic loci of related disease genes, and BLink for taxonomic comparisons. GeneReviews, an NIH resource for up-to-date reviews of disease, and GeneCards, an Israeli tool for simultaneously mining many resources around the world, are then discussed. The usefulness of these resources is demonstrated by searching for information about Alzheimer's disease (AD), inherited forms of AD, and related mutations of SORL1, a gene coding for the sortilin-receptor protein.

Friday Poster #70***Evolution from a Complexity Perspective*****Ton Jörg (contact: A.G.D.Jorg@ivlos.uu.nl)**

A trans-disciplinary approach will be sketched, integrating the evolutionary and the complexity paradigm. It takes complexity as complexity of the actual not for granted but seeks a real explanatory account. This implies a description of the generative principles and the causally generative mechanisms involved in causal interaction, as a form of mutual shaping in and over time. They may show their emergent nonlinear effects over time. The process of causal interaction shows a clear correspondence with the phenomenon of 'mutual entrainment' of coupled generators, and the slaving principle for reduction of complexity. It can be shown that interaction between entities has the intrinsic capacity to produce emergent coherence in the absence of any blueprint or program. There is no need for a separate agency. The key of evolution is really in the interaction. The modelling of causal interaction shows a fluid dynamics with nonlinear effects as emergent over time.

Author Index for Abstracts

- Abelow, 106
 Abraham, 126
 Abundis, 127
 Ackerman, 89
 Ackroyd, 121
 Aharoni, 71
 Aiken, 58
 Akiyama, 116
 Al-Dujaili, 41, 44, 101, 123
 Al-Dujali, 82
 Allen-Arave, 62
 Almenberg, 51
 Almerigi, 123
 Alvergne, 47
 Anderson, 57, 73
 Andrews, 88
 Andrzejczak, 85
 Antonellis, 61
 Apicella, 54, 55
 Asaridou, 73
 Asendorpf, 82, 100, 120
 Asso, 66
 Atkinson, 120
 Backus, 93
 Badi, 62
 Bailey, 93
 Baker, 104
 Balachandran, 127
 Balshine, 41
 Barclay, 62
 Barrett, 115
 Bass, 64
 Bassi, 94
 Bekhuis, 127
 Belhadi, 96
 Bell, 38
 Benenson, 61
 Bergstrom, 111
 Bernard, 71
 Berry, 110
 Betty, 58
 Bjorklund, 35, 113
 Blackwell, 46, 63, 72, 84, 115
 Blasi, 113
 Bleske-Rechek, 87, 104
 Boone, 68, 116
 Boothroyd, 66
 Boyd, 59, 67
 Boyer, 111
 Brase, 59
 Bressler, 41
 Briers, 110
 Brown, 62, 72
 Bruce, 39
 Bryan, 69
 Bryant, 37
 Bugumba, 77
 Burch, 97, 103, 121
 Burnham, 81
 Burquest, 55
 Burriss, 37, 83
 Burt, 66
 Buss, 60, 61, 70, 76, 89, 98, 119
 Butovskaya, 42
 Buttermore, 71
 Buunk, 55, 88, 97, 99, 112
 Byrnes, 95
 Camargo, 119
 Camilleri, 60
 Campbell, 42, 61
 Cárdenas, 123
 Carroll, 86
 Carter, C, 35
 Carter, T, 80
 Cavanaugh, 73
 Cesarini, 81
 Chang, L, 118
 Chang, P, 95
 Chavarria, 76
 Chisholm, 75
 Cimino, 56
 Clark, 88, 92
 Clements, 119
 Cloud, 79, 113
 Coe, 63
 Coffin, 98
 Colyn, 65, 87
 Conelly, 118
 Confer, 79, 98, 119
 Connolly, 96
 Conway, 44, 50, 101
 Coombs, 119
 Cormack, 112
 Cosmides, 48, 54, 60, 80, 89, 114
 Cotton, 61
 Coultas, 80
 Courtiol, 117
 Cousins, 70, 124
 Cox, 78, 86, 122
 Cravalho, 73
 Crisostomo, 110
 Cronk, 124
 Currie, 45
 Curry, 48
 Cvorovic, 106
 d'Espaignet, 75
 Daly, 117
 Dane, 94

- Davies, 51
 Davis, Jeff, 112
 Davis, Jennifer, 65
 De Schrijver, 68
 de Vos, 88
 Deaner, 123
 Debruine, 125
 DeBruine, 44, 50, 69, 83, 101
 Declerck, 68, 116
 Delgado, 73
 Delton, 39, 81
 Deluty, 81
 Demps, 117
 Denissen, 71
 DeScioli, 87
 Dewitte, 82, 83, 91, 110
 Diamond, 119
 Dickey, 84
 Dickins, 61
 Dreber, 51, 82
 Dubbs, 99
 Duehr, 87
 Dugatkin, 73
 Duggan, 83
 Duhigg, 114
 Duntley, 60, 83, 89, 96, 121
 Durante, 43
 Easton, 98, 119
 Efferson, 38
 Eldakar, 46, 51
 Ellis, 75
 Ellison, 77
 Emonds, 116
 Eppig, 107
 Ermer, 89
 Escasa, 98
 Ewald, 33
 Falcon, 95
 Farrell, 51
 Faurie, 47, 117
 Feinberg, 44, 55, 83
 Fessler, 59, 73, 101
 Fetchenhauer, 62, 110
 Fiddick, 60, 96
 Figueredo, 84, 85
 Fincher, 70
 Fink, 55, 93
 Fisher, 73, 78, 86, 121, 122
 Fiske, 57
 Fleischman, 61, 76, 101
 Focquaert, 68
 Franklin, 124
 Frederick, 73, 78
 Fridlund, 71
 Gailliot, 79
 Galis, 50
 Gallup, A, 56, 103, 125
 Gallup, G, 38, 94, 103, 122, 125
 Galperin, 122
 Gangestad, 43, 88, 126
 Garber, 75
 Garcia, 39, 110
 Garrett, 72
 Garver-Apgar, 43
 Garvey, 107
 Gaulin, 41, 53, 72, 124
 Gavrilets, 39
 Geher, 96, 119
 Gilbert, 113
 Gil-White, 59
 Gintis, 79
 Giosan, 103
 Gladden, 84
 Glover, 74
 Goetz, 52, 73
 Goldberg, 58
 Goldstone, 53
 Goodwin, 112
 Gordon, 87
 Gosling, 69
 Gottlieb, 66
 Gottschall, 86
 Grammer, 55
 Gray, 76, 78, 122
 Greaves, 40
 Greengross, 42
 Groothuis, 62
 Guimarães, 92
 Haley, 73
 Hall, 98
 Hamilton, 115
 Harper, 98
 Harris, 123
 Harter, 115
 Hasegawa, 44
 Haselton, 37, 43, 78, 88, 122
 Hastie, 67
 Hawley, 92
 Hendricks, 69
 Hennion, 93
 Hillis, 38
 Hills, 53, 100
 Ho, 90
 Hoben, 78, 122
 Hodges, 41
 Hoffman, 82
 Holt, 93
 Honma, 44
 Howard, 80
 Howrigan, 108
 Hubert, 87
 Hudders, 108
 Hughes, 125
 Hutchinson, 53
 Imamoglu, 42
 Ishibashi, 67
 Ismail, 104
 Izzo, 111

- Jack, 92
 Jackson, 112
 Jacobs, 84
 Jenkins, 107
 Jeon, 70
 Johannesson, 81
 Johnson, D, 47, 62
 Johnson, J, 86
 Johnson, JA, 106
 Johnson, JL, 96
 Jonason, 111
 Jones, B, 37, 44, 50, 66, 69, 83
 Jones, D, 84, 85
 Jones, O, 34
 Jörg, 128
 Judge, 75, 82, 117
 Kameda, 67
 Kang, J, 62, 72
 Kang, S, 98
 Kappeler, 93
 Kempa, 103
 Kenrick, 89
 Ketelaar, 51, 65
 Kiyonari, 116
 Klappauf, 93
 Klavina, 97
 Klein, 81
 Klungle, 65
 Knapp-Kline, 93
 Koenig, 51, 65
 Koff, 38
 Kramer, 40
 Krasnow, 53
 Kruger, 86
 Krupp, 50
 Kuch, 126
 Kuhle, 101
 Kurzban, 51, 66, 87, 113
 Kydd, 106
 Kyungok, 125
 Lassek, 72, 124
 Lawson, 41, 82, 108, 125
 Lei, 75
 Leonetti, 77
 Letendre, 91
 Lew, 73
 Lewis, 98, 101, 119
 Li, H, 75
 Li, N, 43
 Lichtenstein, 81
 Lieberman, 69, 80
 Lim, 114
 Lindenberg, 112
 Lipson, 34
 Little, 37, 44, 54, 83
 Liu, 75
 Lopez, 102
 Low, 74
 Lubell, 38
 Lucas, 42
 Lucas, D, 73
 Lucas, M, 38
 Lugo, 93
 Lukaszewski, 92
 Lynch, 105
 Lyons, 102
 MacDonald, 85, 108
 Mace, 45
 Mahoney, 113
 Maner, 56, 79, 90
 Marelich, 76
 Marlow, 55
 Marlowe, 54, 77
 Marquezan, 99
 Massen, 88
 Mathew, 67
 Matteson, 87
 Mattison, 118
 Matts, 55
 Maves, 87
 McAllister, 44
 McClellan, 84
 McElreath, 38, 117
 McGee, 78, 122
 McKibbin, 52
 McNeeley, 98
 Mead, 56
 Mechanic, 76
 Mellgren, 96, 102, 123
 Mendes, 90, 92, 99
 Michalski, 99, 121
 Miller, G, 42, 71, 88, 94, 107, 126
 Miller, S, 79, 90
 Millet, 82, 91, 110
 Moncrief, 94
 Mono, 111
 Montero, 85
 Morris, 69, 95
 Morrison, 88, 92
 Moya, 59
 Muller, 77
 Naficy, 118
 Nakanishi, 113
 Nanay, 111
 Navarrete, 90
 Neale, 88
 Neill, 118
 Nesse, 66
 Nettle, 70, 105
 Neuberg, 89
 New, 53
 Newson, 45
 Nicholson, 125
 Noddin, 61
 Nolin, 85
 Nowak, M, 36
 Nowak, N, 42
 O'Connor, 79

- O'Brien, 46
 O'Connor, 110
 Ohtsubo, 109, 113
 Olson, 121
 Olsson, 90
 Orban, 94
 Ostock, 113
 Pajer, 114
 Palmer, C, 57, 63, 87
 Palmer, J, 103
 Palmer, L, 103
 Panchanathan, 67
 Park, 55, 97, 99, 112, 117
 Parkhill, 42
 Pass, 112
 Patakyova, 79
 Patton, 40
 Penke, 71, 82, 100, 120
 Penton-Voak, 55, 65, 88, 92
 Perez, 73
 Perilloux, 61, 76
 Periss, 113
 Perrett, 41, 66, 82, 101, 108, 125
 Petrie, 69
 Pich, 125
 Pietraszewski, 60
 Pike, 104
 Pillsworth, 40, 57
 Pipitone, 38
 Place, 100, 124
 Ploeger, 50
 Polimeni, 42
 Pollet, 70, 105
 Pomianek, 44, 63
 Pound, 55, 65
 Pozo, 46
 Pradel, 110
 Price, J, 54, 114
 Price, M, 62, 72
 Princiotta, 121
 Provost, 102
 Pryor, 46
 Puts, 41, 123
 Quinsey, 60, 102
 Raijmakers, 50
 Rakita, 64
 Ramadurai, 99
 Raymond, 47, 117
 Reader, 39
 Rebers, 116
 Reiber, 89
 Reiss, 42
 Remiker, 104
 Ressing, 97
 Richerson, 38
 Roberts, P, 107
 Roberts, S, 69
 Robertson, J, 105
 Robertson, T, 39, 81
 Robinson, 81
 Rocheleau, 69
 Roney, 37, 92
 Rosen, 102
 Rupp, 73
 Rutters, 95
 Saad, 124
 Sagarin, 47
 Sakaguchi, 44
 Salmon, 99, 119
 Sanderson, 49
 Santos, 93
 Satava, 119
 Savage, 91
 Scelza, 77
 Schaeff, 98
 Schaller, 117
 Schlomer, 75
 Schuetzwohl, 78, 95
 Schwartz, 60
 Segal, 76
 Seghers, 76
 Sell, 80
 Sergeant, 61, 119
 Shackelford, 51, 52, 99
 Shapiro, 89
 Sharp, 41, 44, 82, 101, 123
 Shaw, 113
 Sheldon, 119
 Shen, 42
 Shoup, 94
 Sidanius, 57, 90
 Simmons, 37, 100
 Simonian, 114
 Singh, 93
 Sisco, 84
 Skeath, 38
 Smaniotto, 88
 Smith, F, 50, 69
 Smith, M, 41, 44, 125
 Smith, V, 85
 Soler, 49
 Spector, 69
 Sperber, 33
 Starratt, 52
 Steadman, 58
 Steen, 59
 Stephen, 49, 82, 108
 Sterck, 88
 Stieglitz, 44
 Stirrat, 82, 108
 Stirrat, 41
 Storm, 49
 Stranger, 113
 Strassmann, 74
 Strout, 105
 Suetens, 68
 Sugiyama, L, 46, 63, 72, 84, 86, 115
 Sugiyama, M, 86, 115

- Sun, 73
SurrIDGE, 55
Susenbach, 80
Suzuki, 116
Szyner, 54, 114
Takagishi, 114
Tal, 69
Tedtaotao, 93
Terrizzi, 54
Thayer, 48
Thomsen, 57, 90
Thomson, 57
Thornhill, 43, 70, 88
Tiwia, 46
Todd, 53, 82, 99, 100, 111
Toelch, 39
Too, 104
Tooby, 48, 54, 60, 80, 89, 114
Torp, 94
Torres, 95
Towner, 74
Tramm, 82
Troje, 102
Truxaw, 53
Tybur, 80, 126
Van den Bergh, B, 83
van den Bergh, J, 39, 110
van der Maas, 50
Van Hiel, 116
van Lujtelaar, 111
Vanneste, 116
VanPool, C, 64
VanPool, T, 64
Velarde, 123
Ventis, 54
Vieira, 92
Visser, 117
Von Dollon, 97
Vongas, 124
Vose, 39
Vyncke, 108
Wade, 100
Wadley, 44, 63
Walker, 46, 115
Wallace, 81
Wang, 74
Ward, 75
Waring, 38
Washington, 46, 93
Wasielewski, 124
Webster, 69, 97
Wehr, 94
Weisfeld, 42
Welch, 74
Welling, 44, 50, 101
Wells, 65
Wenner, 85
Werre, 112
White, 56, 103
Wilbur, 42
Wiley, 120
Wilke, 53
Willer, 62
Williams, 78, 121, 122
Wilson, C, 45
Wilson, D, 46, 49, 51, 79
Wisbey, 65
Wisniewski, 81
Wood, 77
Yamagishi, 114
Yassin, 62
Yu, 72
Yuill, 80
Yusoff, 104
Zhao, 62, 72
Ziker, 115
Zvoch, 126

University Center Map

