

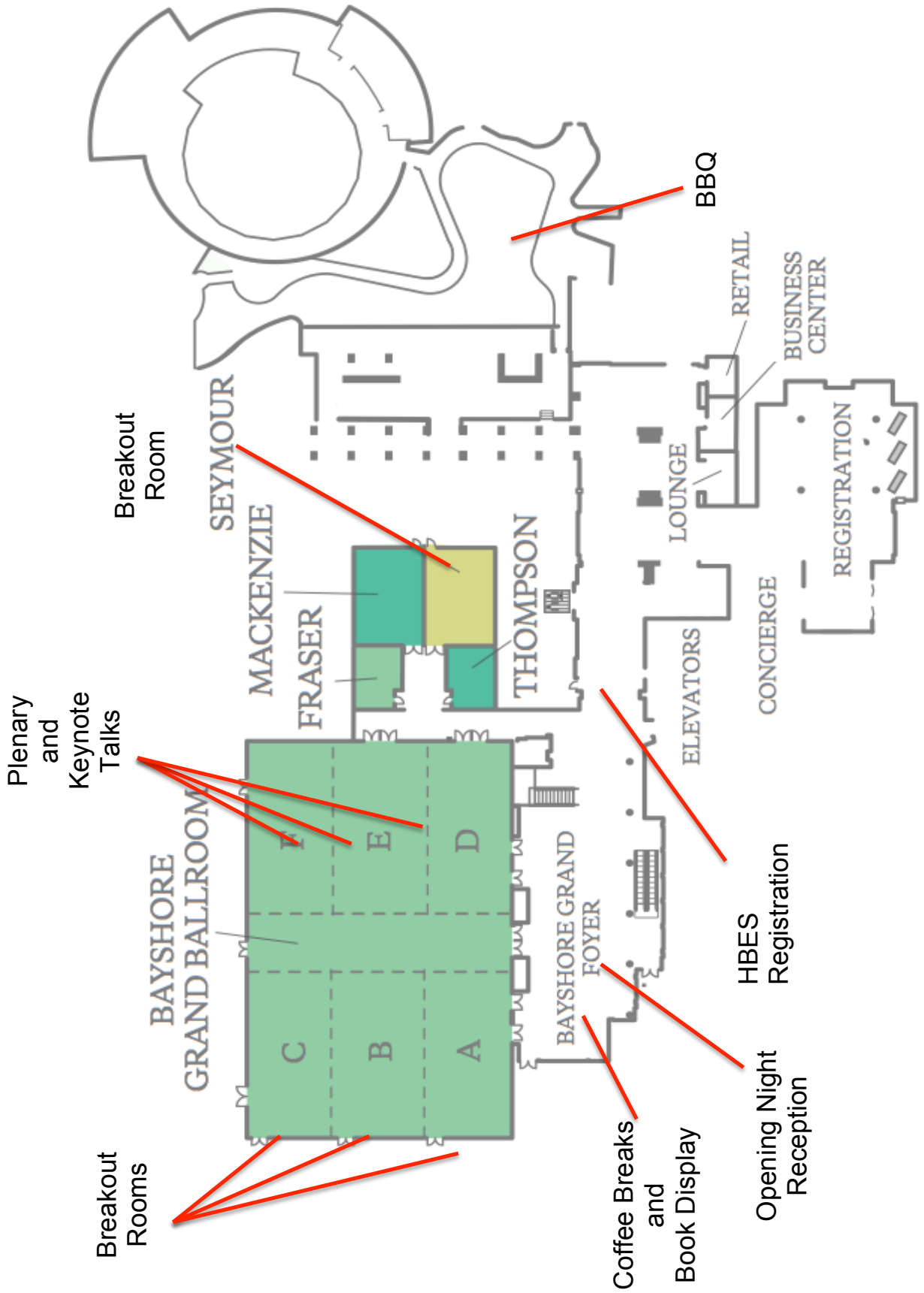


28th Annual Meeting



June 29 – July 2, 2016
Vancouver, BC, Canada





Plenary and Keynote Talks

Breakout Rooms

Breakout Room

Coffee Breaks and Book Display

Opening Night Reception

HBES Registration

ELEVATORS

CONCIERGE

LOUNGE

RETAIL

BUSINESS CENTER

REGISTRATION

BBQ

BAYSHORE GRAND BALLROOM

SEYMOUR

MACKENZIE

FRASER

THOMPSON

BAYSHORE GRAND FOYER

Welcome to HBES 2016

Welcome to the 28th Annual Human Behavior and Evolution Conference at the Westin Bayshore Hotel in Vancouver, Canada. Douglas College, Simon Fraser University, the University of British Columbia, Kwantlen Polytechnic University and the University of Idaho are excited to be joint hosts of this event.

In keeping with the past few years, the conference will begin with a plenary talk on Wednesday afternoon and will end with the Keynote on Saturday night. We have continued the tradition of holding conference-wide New Investigator and Post-Doctoral Competition sessions on Friday afternoon to highlight the work of the next generation of HBES researchers. The poster session will be held on Thursday evening in the Stanley Park Ballroom, with the posters being displayed through Friday (6pm). This year the BBQ falls on Canada Day, so after dinner we will have the pleasure of enjoying the annual fireworks display that will be held at 10:15pm over the harbor behind the hotel. We are also pleased to continue the tradition of hosting a Graduate Student Mentor Lunch on Thursday. Given the enormous interest in one of the mentor sessions: “Evolutionary Psychology: The future of the field”, we have arranged to video-record this panel. For the second year, there will also be a “Women of HBES” gathering on Thursday (6-7:30pm) at The Park at English Bay. Sadly, this year we note the passing of one of the pioneers in the field, Henry Harpending and we would like to recognize his contributions to the study of human evolution at the Banquet. Finally, we would like to mention a special symposium on Thursday afternoon in honour of Vancouver’s longest and most controversial scholar of evolution and human behavior, Charles Crawford.

New this year we are excited to announce that we will be video recording all of the Keynote and Plenary talks for those who were not able to make it to the conference. Also new, and exciting, HBES has helped fund two pre-conferences: Cross-cultural and developmental perspectives on the evolution of human behaviour and cognition to be held on Tuesday at SFU Harbour Center, and Connecting Minds in Social Neuroendocrinology and Evolution on Wednesday morning at the Westin Bayshore Hotel.

We are grateful to the many people who volunteered their time to make this conference happen (see next page for full acknowledgements). Greatest thanks to Catherine Salmon for remotely helping to co-organize and to Steve Gaulin and Russell Jackson on the program committee. Thank you to all of the committee members (Poster, New Investigator and Post-Doctoral) and to the HBES mentors for volunteering their time and wisdom. We would like to thank the HBES council, in particular Elizabeth Cashdan and Lisa DeBruine. Thank you to past organizers Karthik Panchanathan and Robert Kurzban for their advice, and to Tessa Cappelle for her work on the Student Lunch.

This year’s conference would not be possible without the interdisciplinary collaboration of faculty and host institutions. We would like to acknowledge **Douglas College**, **Simon Fraser University** (VP Academic and Provost), SFU Archaeology (Mark Collard), SFU Biology (Bernie Crespi), SFU Health Sciences (Pablo Nepomnaschy), SFU Psychology (Neil Watson), **University of British Columbia** Department of Psychology, and the Center for Human Evolution, Cognition and Culture (Ara Norenzayan), the **University of Idaho** (Russell Jackson), and **Kwantlen Polytechnic University** (Farhad Dastur).

We sincerely hope that you enjoy the conference intellectually and socially. If you have any questions please contact one of the Host Committee Volunteers who will be identified with coloured name-tags.

Laura Dane
Chair Host Committee HBES 2016
Douglas College

Acknowledgements

HOST COMMITTEE: Laura Dane, Mark Collard, Bernie Crespi, and Pablo Nepomnaschy

PROGRAM COMMITTEE: Catherine Salmon, Steve Gaulin, and Russell Jackson

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PRE-CONFERENCE ORGANIZERS: Jaime Palmer-Hague, Sam Zilioli and Bailey House

ART WORK AND PHOTOGRAPHY: Maria Janicki, Marina Elliot, and David Froc

BOOK VENDOR: Hugh Galford (Library of Social Science), Jennifer Cawsey (Macmillan/Worth Publishers), and Noy Leksinski (Pearson Canada)

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Douglas College- Kathy Denton (President), Thor Borgford (VP Academic), John Fleming (Dean HSS), Dave Taylor (Marketing), and Normita Nuval (Finance)

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University of British Columbia - Geoff Hall (Department Head, UBC Psychology), Social & Personality Area at UBC; Centre for Human Evolution, Cognition & Culture at UBC; John Templeton Foundation

Kwantlen Polytechnic University - The Office of Research & Scholarship

University of Idaho - Todd Thorsteinson (Psychology Department Chair); Andrew Kersten (College of Liberal Arts and Social Sciences)

HBES SUPPORT: Elizabeth Cashdan, Catherine Salmon, Lisa DeBruine, Tessa Cappelle, Gretchen Perry, and Katie Starkweather

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COUNCIL MEMBER AT LARGE (2021)	Maryanne Fisher
Publication Committee Meeting: Wednesday June 29	9-11am Prospect Room
Executive Council Meeting: Wednesday June 29	11-2pm Prospect Room
Business Meeting: Friday July 1	12:30-2pm Salon A

REGISTRATION

Wednesday June 29:	8:30 AM – 10:00 PM
Thursday June 30:	8:00 AM – 7:30 PM
Friday July 1:	8:00 AM – 7:00 PM
Saturday July 2:	8:00 AM – 8:00 PM

POSTER SET UP

The poster session will be held in the Stanley Park Ballroom, the floor above the main conference area. Posters can be set up starting at 8:30 AM on Thursday and must be removed by 6 PM on Friday.

SESSIONS AND SYMPOSIA

All general session talks will be 15 minutes in length with an additional 5 minutes for questions. Speakers, please have your talks downloaded onto the desktops of the computer in your conference room BEFORE your session begins. Please take note of the light to indicate when time is up.

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**SCHEDULE AT A GLANCE
Wednesday, June 29th**

9-12pm	Connecting Minds in Social Neuroendocrinology and Evolution Pre-conference, Salon D, E			
	Publication Committee Meeting 9am - 11am Prospect Room		Executive Council Meeting 11:00am - 2pm Prospect Room	
2:30-2:40	HBES BEGINS: Announcements, Introduction, Salon D, E			
2:40-3:40	Afternoon Plenary, Salon D, E Louise Barrett: Super-sized minds versus super-charged apes: how to embrace continuity while accepting difference.			
3:40-4:10	COFFEE BREAK W/FOOD			
Room	Salon F	Salon A	Salon B	Salon C
Session TITLE	The Behavioral Immune System and its Relation to Social Attitudes	Evolutionary Criticism of Fiction	Fathers and Paternal Effects	Cooperation, Compassion, and Morality
4:10-4:30	The Paradoxical Relation between Dispositional Contamination Aversion and Attitudes about Vaccines <i>Russ Clay</i>	Evolved Human Sociality and Literature <i>Joseph Carroll</i>	Pair Bonding, Fatherhood, and the Role of Testosterone: A Meta-Analytic Review <i>Chance R. Strenth, Ruth E. Sarafin, Nicholas M. Grebe</i>	How Personal Trust Evolves: The Case Of Vye-gwa-Gika Pygmies From Burundi <i>Cristina Acedo-Carmona, Enric Munar, Antoni Gomila</i>
4:30-4:50	The Behavioral Immune System as a Predictor of Interpersonal Attitudes <i>John A. Terrizzi, Jr, Natalie J. Shook</i>	In the Jaws of Death: An Evolutionary Approach to Horror Films <i>Mathias Clasen</i>	Men's testosterone and oxytocin levels in response to romantic partners' hormone levels and relationship features <i>Nicholas Grebe, Steven W. Gangestad, Melissa Emery Thompson</i>	Welfare, compassion, and evolved heuristics of caring: Why it's better to have been rich than to be vulnerable <i>Andrew W. Delton, Michael Bang Petersen, Peter DeScioli, Theresa E. Robertson</i>
4:50-5:10	Too Risky a Gamble? Disease Threats Decrease Risk Tolerance and Risk-Taking <i>Marjorie L. Prokosch, Joshua M. Ackerman, Sarah E. Hill</i>	Imagining a Place in Nature <i>Emelie Jonsson</i>	Paternal age negatively predicts offspring physical attractiveness: Replicating Huber and Fieder (2014) using two, large, nationally representative datasets. <i>Michael A. Woodley of Menie, Satoshi Kanazawa</i>	Is it good to cooperate? Testing the theory of morality-as-cooperation in 60 societies <i>Oliver Scott Curry, Daniel Austin Mullins, Harvey Whitehouse</i>
5:10-5:30	Infections and Elections: Did an Ebola Outbreak Influence the 2014 U.S. Federal Elections (and, If So, How)? <i>Alec T. Beall, Marlise Hofer, Mark Schaller</i>	The good ended happily and the bad unhappily": An Evolutionary Approach to Narrative Agonistic Structure <i>Jens Kjeldgaard-Christiansen</i>	Paternal age at conception predicts offspring telomere length in chimpanzees to a greater degree than in humans <i>Dan T.A. Eisenberg, Justin Tackney, Richard M. Cawthon, Christina Theresa Cloutier, Hilary Bethancourt, Kristen Hawkes</i>	Can a multi-modular mind produce consistent moral judgments? <i>Ricardo Andrés Guzmán, María Teresa Barbato, Leda Cosmides</i>
5:30- 7pm	DINNER ON OWN			
7-8pm	Evening Plenary, Salon D, E Aubrey de Grey: Do We Have Genes that Exist to Hasten Aging? New Data, New Arguments, But the Answer is Still No			
8-10pm	WELCOME RECEPTION (light appetizers), Bayshore Grand Foyer			

Thursday, June 30th

8:15-8:30	Announcements, Introduction, Salon D, E, F				
8:30-9:30	Morning Plenary, Salon D, E, F Peter K Jonason: Using Life History Theory to clean-up personality psychology				
9:30-10:00	COFFEE BREAK W/FOOD				
Room	Salon D, E, F	Salon A	Salon B	Salon C	Seymour
Session TITLE	Current Developments in Human Mating Research	Testosterone and Social Behavior	Perception and Cognition	Marco-evolutionary Approaches to the Evolution of Technology	Familial Relations 1
10:00-10:20	Are Mate Preferences Valid? <i>Norman P. Li, Katherine A. Valentine, Jose C. Yong</i>	Functional Significance of Testosterone Reactivity to Social Contexts in Humans <i>Samuele Zilioli</i>	Agency perception in human infants reflects constrains of anteroposterior body-organization on animal behavior <i>Mikolaj Hernik</i>	Computational Methods for Identifying Metapopulation Interaction Patterns From Seriation Solutions <i>Mark Madsen</i>	Coresidence Duration and Cues of Maternal Investment Regulate Sibling Altruism Across Cultures <i>Joseph Billingsley, Daniel Sznycer, Delphine de Smet, Debra Lieberman</i>
10:20-10:40	Pair-bonds and adaptations to ovulation: Integrating evolutionary psychology and relationship science to guide future research <i>Kristina M. Durante, Paul W. Eastwick, Eli J. Finkel, Steven W. Gangestad, Jeffry A. Simpson</i>	Exogenous testosterone increases men's perceptions of their own physical dominance <i>Lisa Welling, Benjamin J.P. Moreau, Brian M. Bird, Steve Hansen, Justin M. Carré</i>	Detecting patterns of food availability as an efficient way to minimise costs in virtual reality foraging <i>Melissa Kirby, Carlo De Lillo</i>	Continuity-based approaches and the study of patterns of cultural inheritance <i>Carl Lipo, Mark Madsen</i>	Sex-Biased Parental Investment in a Southern California Population <i>Amanda Barnes-Kennedy</i>
10:40-11:00	The Implications of Sociosexuality for Long-Term Relationship Outcomes <i>Andrea L. Meltzer</i>	Attitudinal trust but not trust/cooperation behavior correlates with baseline salivary testosterone level <i>Yang Li, Yoshie Matsumoto, Toshio Yamagishi</i>	Evolutionary mechanisms test the validity of behavioral research methods <i>Russell Jackson</i>	Analyzing cultural change in sparse population data <i>Anne Kandler</i>	Does Genetic Relatedness Affect Social Closeness Toward Nieces and Nephews? A Twin-Family Study <i>Nancy L. Segal, Sevim Mollova, William D. Marelich, Kathleen Preston</i>
11:00-11:20	The Mate Switching Hypothesis <i>David M. Buss, Dan Conroy-Beam, Cari Goetz, Kelly Asao</i>	The link between testosterone and Ultimatum Game behavior varies according to player seniority in a Japanese university sports team. <i>Toko Kiyonari, Taiki Takahashi, Robert Burriss, Arai Sakura, Yukako Inoue, Toshio Yamagishi</i>	Instinctive drifts in object recognition: The illusory perception of animate objects in random noise <i>Joshua J New, Sarah Lazarsfeld, Mary Seo, Melyssa Luxenberg</i>	Modeling diversification dynamics in the pharmaceutical drug industry <i>Erik Gjesfjeld, Jonathan Chang, Daniele Silvestro, Michael Alfaro</i>	Mothers and Fathers Perform More Mate Retention than Individuals without Children <i>Nicole Barbaro, Todd K. Shackelford, Viviana Weekes-Shackelford</i>

11:20-11:30	QUICK BREAK				
Room	Salon D, E, F	Salon A	Salon B	Salon C	Seymour
Session TITLE	Sexual Psychology	Vocal Signalling	Cultural Evolution 1	Social-partner Choice	Evolutionary Approaches to Understanding Forgiveness
11:30-11:50	The Object of (Sexual) Fantasy <i>Robert Kurzban, Katrina Fincher, Alexandra Barasch</i>	Voice pitch is not related to physical dominance <i>David R Feinberg, Kelyn J Montano, Sari GE Isenstein, Julian A Bastone</i>	Introducing “Seshat”, a Global History Databank for testing cultural evolutionary hypotheses <i>Thomas Currie, Kevin Feeney, Pieter Francois, Peter Turchin, Harvey Whitehouse</i>	Female voice pitch as an honest cue to trustworthy behaviour <i>Jillian O'Connor, Pat Barclay</i>	People Selectively Forgive Valuable Transgressors and Low-Risk Transgressors <i>Michael E. McCullough, Jennifer Burnette, Eric J. Pedersen</i>
11:50-12:10	Do sexually transmitted pathogens manipulate human sexual behavior? <i>Geoffrey Miller, Diana Fleischman</i>	Are men’s perceptions of sexually dimorphic vocal characteristics related to their testosterone levels? <i>Michal Kandrik, Amanda Hahn, Joanna Wincenciak, Claire Fisher, Katarzyna Pisanski, David Feinberg, Lisa DeBruine, Benedict Jones</i>	One concern regarding the use of phylogenetic methods to study transmitted culture <i>Michael Barlev, Rachel Grillot</i>	Ineffective Charitable Altruism Suggests Adaptations for Partner Choice <i>Jason Nemirow, Max Krasnow, Rhea Howard, Steven Pinker</i>	Why we forgive our valuable partners: Rational calculation, emotional adaptation, or a mixture of both? <i>Adam Smith, Ayano Yagi, Kazuho Yamaura, Hiroshi Shimizu, Yohsuke Ohtsubo</i>
12:10-12:30	Casual Sex, Motives, & Sexual coercion: sex differences in outcomes <i>John M. Townsend, Catherine Salmon, Timothy Wasserman, Jessica Hehman</i>	Are there acoustic cues to human developmental stability? Relationships between facial fluctuating asymmetry and vocal attractiveness <i>Alexander Hill, Rodrigo Cárdenas, John Wheatley, Lisa Welling, Robert Burriss, Peter Claes, Coren Apicella,; Michael McDaniel, Anthony Little, Mark Shriver, David Puts</i>	Simulation models uncover processes driving geographic patterns of language diversity <i>Michael C. Gavin, Thiago F. Rangel, Claire Bower, Robert K. Colwell, Kathryn R. Kirby, Carlos A. Botero, Michael Dunn, Robert R. Dunn, Joe McCarter, Russell D. Gray</i>	Social and non-social influences on prosocial donating in young children. <i>Emily Messer, Nicola McGuigan</i>	Forgiveness implies restored trust and cooperation <i>Daniel E. Forster, Michael E. McCullough</i>
12:30-2:00	LUNCH- ON OWN GRADUATE STUDENT MENTOR LUNCH Salon D, E, F; Salon A; Salon B; Salon C				
2:00-3:00	Afternoon Plenary, Salon D, E, F Vlad Griskevicius: Can Stressful Childhood Environments Enhance Cognitive Abilities in Adulthood?				

3:00-3:10	QUICK BREAK				
Room	Salon D, E, F	Salon A	Salon B	Salon C	Seymour
Session TITLE	Life History, the Dark Triad and Aggressive Behavior	Social Signaling	Familial Relations 2	Resource Harvesting	Domain Specificity
3:10-3:30	Childhood Stress, Life History, Psychopathy, and Sociosexuality <i>Emily Anne Patch, Aurelio José Figueredo</i>	Signal Police: The Social Punishment of Unwarranted Expansive Postural Displays <i>Conor M. Steckler, Jessica L. Tracy</i>	Investment in kin and non-kin: The role of status and cost of help <i>Sara Kafashan, Pat Barclay</i>	Energetic trade-offs and physical activity through reproductive maturation among the Tsimane' of lowland Bolivia <i>Ann E Caldwell, Paul L Hooper</i>	Employing fMRI to characterize the "proper" and "actual" domain of the theory of mind system <i>Adam Cohen, Michael Miller, Tamsin German, Scott Grafton</i>
3:30-3:50	Examining Intelligence, Health, and Life History Correlates of the Dark Inventory: The MIDUS-DI <i>Tomás Cabeza de Baca, Emily Anne Patch, Aurelio José Figueredo</i>	The Communicative Functions of Fear Expressions <i>Lawrence Ian Reed, Peter DeScioli</i>	Who invests in children in non-intact families in rural Bangladesh? <i>Gretchen Perry</i>	Diet composition and the sexual division of labor among the Hadza: Differential adaptations to diet and their role in cooperative breeding <i>Alyssa Crittenden</i>	A Meta-Analysis of Blood Glucose Effects on Human Decision Making <i>Jacob L. Orquin, Robert Kurzban</i>
3:50-4:10	The Dark Inventory and Interpersonal Aggression: Constructive Cross-Cultural Replications in the United States and Mexico using College Student and Community Samples <i>Aurelio José Figueredo, Emily Anne Patch, Marisol Perez-Ramos, Gabriela Jacqueline Cruz</i>	A computational approach to gratitude: The roles benefit delivery and welfare valuation <i>Eric J. Pedersen, Daniel E. Forster, Michael E. McCullough, Debra Lieberman</i>	Affinal Inclusive Fitness <i>Tamas David-Barrett</i>	Mushroom gatherers' patch visiting and leaving times: a marginal value theorem approach <i>Luis Pacheco-Cobos, Marcos F. Rosetti, Robyn Hudson</i>	Fresh Fruit or French Fries? Attractive Individuals Produce Sex-Specific Food Preferences <i>Tobias Otterbring</i>
4:10-4:40	COFFEE BREAK W/FOOD				

Room	Salon D, E, F	Salon A	Salon B	Salon C	Salon Seymour
Session TITLE	Charles Crawford Honorary Session	Evolutionary Cognitive Psychology: From argument to mechanism	Mating Strategies 1	Geography and Evolution of Cultural Diversity: New Tools and Applications	Female Mate Choice and Attraction
4:40-5:00	Evolutionary Psychology, An Environmentalist Discipline: Revisiting Crawford & Anderson (1989) <i>Maria Janicki</i>	A Euclidean Algorithm Predicts Short- and Long-term Attraction to Potential Mates <i>Daniel Conroy-Beam, David M. Buss</i>	Women's fear of crime and preference for formidable mates: How specific are the underlying psychological mechanisms? <i>Hannah Ryder, John Maltby, Lovedeep Rai, Phil Jones, Heather Flowe</i>	D-PLACE: A Database of Global Cultural, Linguistic, and Environmental Diversity <i>Fiona M. Jordan, Kathryn R. Kirby, Russell D. Gray, Simon J. Greenhill, Michael C. Gavin, Stephanie Gomes-Ng, Hans-Jorg Bibiko, Damian Blasi, Carlos A. Botero, Claire Bowers, Carol R. Ember, Dan Leehr, Bobbi S. Low, Joe McCarter, William Divale</i>	Strategic Flexibility in Women's Mating: Economic Recessions and Women's Sexual Strategies <i>Jaimie Arona Krems, Keelah E. G. Williams, Douglas T. Kenrick, Steven L. Neuberg</i>
5:00-5:20	A Life History Study of the Left-Behind Children in Rural China <i>Lei Chang</i>	An evolutionary domain-specific risk scale <i>Andreas Wilke, Amanda Sherman, Bonnie Curdt, Sumona Mondal, Carey Fitzgerald, Daniel J. Kruger</i>	Fear of family violence promotes preference for feminine faced men in Colombian women. <i>Martha Lucia Borrás Guevara, Carlota Batres, David Ian Perrett</i>	The global geography of subsistence strategies <i>Patrick Kavanagh, Michael Gavin, Claire Bowers, Bobbi S. Low, Carlos A. Botero, Hannah Haynie, Geoff Kushnick, Carol R. Ember, Fiona M. Jordan, Russell D. Gray</i>	Do Women with Children Exploit Male Sexual Psychology? <i>Viviana A. Weekes-Shackelford, Zachary Willockx, Maria Jovanovski, Giovanni Randazzo, Todd K. Shackelford</i>
5:20-5:40	Contempt, Klutzes and Rightwing Authoritarians: Is the Community Code Really Moral? <i>Laurence Fiddick, Stephanie Bushell</i>	Non-compensatory integration of memory cues in evolutionary domains of risky choice <i>Jana B. Jarecki, Andreas Wilke</i>	Going all-in: Unfavorable sex ratios attenuate choice diversification <i>Joshua Ackerman, Jon Maner, Stephanie Carpenter</i>	Do Natural Hazards Transform Culture? Some Preliminary Results <i>Carol R. Ember, Teferi Abate Adem, Ian Skoggard</i>	No, seriously... What do women want?? Rethinking the underlying constructs of male mate value. <i>Elizabeth G. Pillsworth</i>
5:40-6:00	Integrating social exchange and sexual selection in the study of mating interactions. <i>Charles Crawford</i>	Toward a computational grammar of coalitional conflict <i>David Pietraszewski</i>	Perspectives Shape Perceptions: Sex Differences in the Strategic Use and Implications of Relative Physical Position <i>Anastasia Makhanova, James K. McNulty, Jon K. Maner</i>	The evolution of complex stratified societies: testing causal hypotheses with phylogenetic methods <i>Russell D. Gray, Joseph Watts</i>	Cue-based estimates of reproductive value explain women's body attractiveness <i>Talbot M. Andrews, Aaron W. Lukaszewski, April Bleske-Rechek, Zach L. Simmons</i>
6:00-7:30	DINNER ON OWN Women of HBES Networking event (The Park at English Bay)				
7:30-10:30	POSTER SESSION Stanley Park Ballroom: Dessert Reception				

Friday, July 1st

8:15-8:30	Announcements, Introduction, Salon D, E, F			
8:30-9:30	Morning Plenary, Salon D, E, F Athena Aktipis: Cooperation from cells to societies			
9:30-10:00	COFFEE BREAK W/FOOD			
Room	Salon D, E, F	Salon A	Salon B	Salon C
Session TITLE	Pedagogy in Evolutionary Psychology: Excitement, Obstacles, and Strategies in Teaching	Mediators of Sociality	Development	Strategic Sexuality
10:00-10:20	Why Students Love Evolutionary Psychology and How to Teach It <i>David M. Buss</i>	Prestige, dominance, or intelligence? A cross-cultural analysis of leadership in the ethnographic record <i>Zachary H. Garfield, Edward H. Hagen</i>	Cheerful infants of energetic mothers – association between mother energetics, milk composition and infant temperament <i>Anna Ziolkiewicz, Magdalena Babiszewska, Boguslaw Pawlowski</i>	Coy or not in naturally occurring encounters? Biases in sexual misperception <i>Mons Bendixen, Leif Eward Ottesen Kennair, Robert Biegler</i>
10:20-10:40	Bringing Evolutionary Psychology to Life by Bringing Popular Culture into the College Classroom <i>Barry X. Kuhle</i>	Disgust and Status Hierarchy <i>Joonghwan Jeon, Chorong Kim, Jae C. Choe</i>	What Evolutionary Theory Can Teach Us About Pubertal Development <i>Jennifer Kotler, David Haig</i>	Forgiving the unforgivable: Biases in infidelity forgiveness <i>Leif Edward Ottesen Kennair, Mons Bendixen, Trond Viggo Grøntvedt</i>
10:40-11:00	You Must Unlearn What You Have Learned: Pre-existing Concepts that Make Teaching Evolutionary Psychology a Challenge <i>Jeffrey L. Niehaus</i>	Listen, follow me: Dynamic vocal signals of dominance predict emergent social rank in humans <i>Joey T. Cheng, Jessica L. Tracy, Simon Ho, Joseph Henrich</i>	Evolution of Sex Differences in Trait- and Age-Specific Vulnerabilities <i>David C. Geary</i>	Using lies to find out the truth about who suppresses sexuality and manipulates the price of sex? <i>Dax Kellie, Barnaby Dixson, Robert Brooks</i>
11:00-11:20	The Adaptive Assignment: Replacing the Required Essay with a Peer Reviewed Assignment in EP Courses <i>Martin S. Smith</i>	Social Bonds and Exercise: Evidence for a Reciprocal Relationship <i>Jacob Taylor & Arran Davis</i>	Differential Susceptibility to the Environment: Theoretical and Methodological Advances <i>Marco Del Giudice</i>	Experimentally Inducing Disgust Reduces Desire for Short-Term Mating <i>Laith Al-Shawaf, David M.G. Lewis, David M. Buss</i>
11:20-11:30	QUICK BREAK			

Room	Salon D, E, F	Salon A	Salon B	Salon C
Session TITLE	Mating Strategies 2	Cultural Evolution 2	Strategic Interactions	Digging at the roots of religion: How mentalizing abilities and group processes at the heart of religious beliefs and rituals help sustain human cooperation
11:30-11:50	Duration of Cunnilingus Predicts Estimated Ejaculate Volume in Humans: A Content Analysis of Pornography <i>Todd K. Shackelford, Michael N. Pham, Austin John Jeffery, Yael Sela, Justin T. Lynn, Sara Trevino, Zachary Willcockx, Adam Tratner, Paul Itchue, Bernhard Fink, Melissa M. McDonald</i>	Modeling cultural evolution requires evolutionary psychology <i>Leda Cosmides, John Tooby</i>	Infants' developing social evaluations and social preferences in the context of resources distributions <i>Jessica Sommerville</i>	Content and Correlates of Belief in Karma <i>Cindel White, Ara Norenzayan</i>
11:50-12:10	Nonverbal cues of high quality romantic relationships: women's courtship as an efficient relationship maintenance strategy <i>Jitka Lindova, Katerina Klapilova, Devin Johnson, Jan Havlicek</i>	Prosocial preferences and the social function of religion on Tanna Island, Vanuatu. <i>Tom Vardy, Quentin Atkinson</i>	Judgments of moral punishment are based on harm caused, not benefits gained <i>Kristopher M Smith, Robert Kurzban</i>	Connecting bodies and minds: Behavioral synchrony in collective ritual <i>Adam Baimel, Rita McNamara, Ara Norenzayan</i>
12:10-12:30	Solutions to the mating 'problem': Narcissism, psychopathy and men's reproductive output <i>Gregory Carter</i>	Can social learning favour altruism in the public goods game? <i>Maxwell Burton-Chellew, Claire El-Mouden, Stuart A. West</i>	Reputation effects in public and private interactions <i>Hisashi Ohtsuki, Yah Iwasa, Martin A. Nowak</i>	God's Mind on Morality: How core cognition and culture combine to shape expectations of supernatural punishment <i>Rita Anne McNamara</i>
12:30-2:00	LUNCH ON OWN HBES Business Meeting			
2:00-3:00	New Investigator Competition Talks, Salon D, E, F			
3:00-4:00	Post Doctoral Competition Talks, Salon D, E, F			
4:00-4:30	Coffee Break w/food			

Room	Salon D, E, F	Salon A	Salon B	Salon C
Session TITLE	Social and Biological Underpinnings of Affiliative Behaviours	Developing best practices for teaching evolution	Female-Female Competition	Psychopathology 1
4:30-4:50	Oxytocin, vasopressin, and the evolution of sex differences in affiliation <i>Tanya Procyshyn, Mika Mokkonen, Bernard Crespi</i>	Children can learn evolutionary explanations for biological adaptation as well as adults can <i>Andrew Shtulman</i>	Do women slut-shame women who are not sexual rivals? Testing the coordinated condemnation and direct threat models of women's competition <i>Jessica Ayers, Aaron T. Goetz</i>	Evolutionary Psychopathology of Comorbid Social Anxiety Disorder and Alcohol Use Disorder <i>Adam Bulley, Beyon Miloyan, Ben Brilot, Thomas Suddendorf</i>
4:50-5:10	Why hormones matter <i>Mark V Flinn</i>	Anthropomorphizing science: How does it affect the development of evolutionary concepts? <i>Cristine H. Legare</i>	Women's Intrasexual Competition: Social Information and Reputational Attacks <i>Tania Reynolds, Roy Baumeister</i>	From PTSD to Moral Injury: The Gene-culture Coevolution of Combat Stress <i>Matthew R Zefferman, Sarah Mathew</i>
5:10-5:30	Parenting and attachment in a small-scale, non-Western society <i>Tanya Broesch</i>	Catalyzing cultural change in W. Texas: Reducing teachers' anxiety and increasing their efficacy about teaching evolution <i>Patricia H. Hawley</i>	Mating Intelligence and Intrasexual Competition: The Interesting Case of Mate Manipulation <i>Maryanne L. Fisher, Brittany T. Cormier</i>	Life history orientation and individual differences in psychopathological traits: An examination of autism, anxiety, and depression <i>Priya Parmar, Sandeep Mishra</i>
5:30-5:50	Reproductive events, life history traits, the hypothalamic-pituitary-adrenal axis and cellular aging in women <i>Pablo Nepomnaschy, Cindy K Barha, Katrina G Salvante, Courtney W Hanna, Samantha L Wilson, Wendy P Robinson, Rachel M Altman</i>	Teaching evolution through transformative experience: Promoting positive affect and conceptual change <i>Gale M. Sinatra, Benjamin C. Heddy</i>	Women fight and lose an imaginary sexual competition against female advertising models <i>Sylvie Borau, Jean-François Bonnefon</i>	Life History Strategies and Psychopathology: The Faster the Life Strategies, the More Symptoms of Psychopathology <i>Phil Kavanagh, Jessie Hurst</i>
5:50-6:00	QUICK BREAK			

Room	Salon D, E, F	Salon A	Salon B	Salon C
Session TITLE	Mating and Hormones	Policing and Punishment	The Behavioral Immune System	Cooperation and Competition 1
6:00-6:20	Social interactions with attractive confederates trigger multiple hormone increases in both men and women <i>James R. Roney, Rachel L. Grillo, Adar B. Eisenbruch</i>	Guarding the Guardians: will asymmetries in resource holding potential promote the policing of anti-social punishment and intra-group feuds? <i>David Gordon, Mikael Puurtinen</i>	The Parasite-Stress Theory of Sociality, the Behavioral Immune System, and Human Social and Mental Uniqueness <i>Randy Thornhill, Corey L. Fincher</i>	Heuristic and Deliberative Prosociality in Four Economic Games: How Decision Time Is Related to Two Types of Prosocial Behaviour <i>Toshio Yamagishi, Yoshie Matsumoto, Yang Li, Toko Kiyonari</i>
6:20-6:40	Hormone levels predict women's response to self-resembling faces <i>Iris J Holzleitner, Amanda C Hahn, Claire I Fisher, Anthony J Lee, Benedict C Jones, Lisa M DeBruine</i>	Local competition promotes costly policing against cheating <i>Jessica Barker, Pat Barclay</i>	Why Does the Behavioral Immune System Relate to Conservatism? Testing Competing Hypotheses Across 30 Nations <i>Joshua M. Tybur</i>	Local competition amplifies the corrosive effects of inequality <i>Daniel Brian Krupp, Thomas R. Cook</i>
6:40-7:00	Mate-Guarding and Preferences for Self-Resemblance Across the Menstrual Cycle in Women and Their Male Partners <i>Sarah Donaldson, Lisa Welling</i>	Asymmetric power and cooperation in social dilemmas: Does power influence the use of punishment and gossip strategies to promote cooperation? <i>Catherine Molho, Daniel Balliet</i>	The quantitative genetics of disgust sensitivity <i>James Sherlock, Brendan P. Zietsch, Joshua M. Tybur, Patrick Jern</i>	Social signal detection: Adaptive logic for social exchange <i>Jolene H. Tan</i>
7:00-10:00	BBQ: 7pm – Cocktails 7:30 - 9pm – Dinner is Served			
10:15-10:45	Fireworks in the Harbour behind the Hotel			

Saturday, July 2nd

8:15-8:30	Announcements, Introduction, Salon D, E, F			
8:30 – 9:30	Morning Plenary, Salon D, E, F Mark Collard Palaeoanthropology: New developments and challenges			
9:30 – 10:00	COFFEE BREAK W/FOOD			
Room	Salon D, E, F	Salon A	Salon B	Salon C
Session TITLE	Inequality and Aggression	Psychopathology 2	Intergroup Conflict	Leadership in Mammalian Societies
10:00-10:20	Upper-Body Strength and Human Egalitarianism: Six Conceptual Replications <i>Michael Bang Petersen, Lasse Laustsen</i>	The sex difference in depression is explained by the sex difference in physical formidability <i>Edward Hagen, Tom Rosenström</i>	A Cross-Cultural Test of the Imbalance-of-Power Hypothesis <i>Michelle Scalise Sugiyama</i>	Leadership solves collective action problems in small-scale societies <i>Chris Von Rueden, Luke Glowacki</i>
10:20-10:40	Killing the competition: Is the inequality-homicide connection peculiar to modern nation states? <i>Martin Daly</i>	Repetitive thinking in a normal population: responses to negative events <i>Simen Mjøen Larsen, Thomas H. Kleppestø, David M. Buss, Leif Edward Ottesen Kennair</i>	Relationship of women’s marital surname change with (1) age, income, and perceived female-female competition among brides-to-be, and (2) duration of marriage and number of children among divorcées <i>Melanie MacEacheron</i>	Leadership in Mammalian Societies: Emergence, Distribution, Power, and Payoff <i>Jennifer Smith, Sergey Gavrilets, Monique Borgerhoff Mulder, Paul L. Hooper, Claire El Mouden, Daniel Nettle, Christoph Hauert, Kim Hill, Susan Perry, Anne E. Pusey, Mark van Vugt, Eric Alden Smith</i>
10:40-11:00	Guns, Concerns, and Zeal: The Evolutionary Psychology of Gun Ownership (with apologies to Jared Diamond) <i>Aaron Goetz</i>	Suicidal Behavior as a Costly Apology: Results from a test of multiple models of suicidal behavior against the ethnographic record <i>Kristen Syme, Zachary H. Garfield, Edward H. Hagen</i>	Extrinsic religious belief predicts hostility directed towards out-groups while religious devotion predicts willingness to sacrifice for one’s in-group in rural Jamaica <i>Robert Lynch, Robert Trivers</i>	The many distinctive faces of leadership: An evolutionary psychology perspective <i>Mark van Vugt, Allen Grabo</i>
11:00-11:20	Ritual human sacrifice and the evolution of stratified societies <i>Quentin Atkinson, Joseph Watts, Oliver Sheehan, Joseph Bulbulia, Russell D. Gray</i>	A symptom-based approach to investigating the adaptive significance of postpartum depression in a longitudinal cohort <i>Molly Fox, Laura Glynn</i>	The Strategic Use of Outrage in Intergroup Conflict <i>Dylan M. Tweed, Danielle Truxaw, Max Krasnow</i>	Conflict Activates Preferences for Dominant Leaders: Investigating Preferences for Dominant Leaders across Behavioral, Experimental and Real-World Indicators of Conflict <i>Lasse Laustsen, Michael Bang Petersen</i>
11:20-11:30	QUICK BREAK			

Room	Salon D, E, F	Salon A	Salon B	Salon C
Session TITLE	Foundations of Cooperation	Explaining Modern Fertility	Life History Effects	The evolutionary origins of music: communicating attention and regulating arousal
11:30-11:50	Chimpanzees return favors even at a personal cost <i>Martin Schmelz, Sebastian Grüneisen, Alihan Kabalak, Jürgen Jost, Michael Tomasello</i>	“Expect the unexpected”: human physiological, psychological and cultural, responses to urbanization in Papua New Guinea. <i>Djuke Veldhuis</i>	Can race be replaced? Life history stereotyping and race categorization <i>Oliver Sng, Keelah E. G. Williams, Steven L. Neuberg</i>	On the origin of music: Parent-offspring conflict and the evolution of infant-directed song <i>Sam Mehr, Max Krasnow</i>
11:50-12:10	The development and evolution of the capacity to prepare for future uncertainty: Children and apes' performance on a minimalist paradigm <i>Jonathan Redshaw, Thomas Suddendorf</i>	Waiting for Go: A genetic entropy theory of the demographic transition <i>John Tooby</i>	Life History Strategy and Human Cooperation <i>Junhui Wu, Daniel Balliet, Joshua M. Tybur, Sakura Arai, Paul A. M. Van Lange, Toshio Yamagishi</i>	Mommy sings because you cry: testing the Attentional Investment Theory of music evolution <i>Max Krasnow, Sam Mehr, Jennifer Kotler, Rhea Howard, David Haig</i>
12:10-12:30	The Nature of My Game: Sociality and Playfulness in Wild Bonobos <i>Isabel Behncke</i>	Understanding the reproductive ecology of industrial society <i>Gert Stulp, Rebecca Sear, Louise Barrett</i>	Life history strategy and the major dimensions of personality: data from free-ranging college students <i>Joseph H. Manson</i>	Physiological and subjective responses to the sound of arousal in music <i>Greg Bryant, Dan Blumstein, Vinicio Zanon Santon</i>
12:30-2:00	LUNCH ON OWN			
2:00-3:00	Afternoon Plenary, Salon D, E, F Bernard Crespi: Darwin's DSM and the Emergence of Applied Human Behavior and Evolution			
3:00-3:10	QUICK BREAK			
Room	Salon A	Salon B	Salon C	Seymour
Session TITLE	Sexual Variation	Facultative Aspects of Personality	Mating Strategies 3	Evolution of Cooperation Pt. I: Social Dynamics of Group Boundaries & Reputation
3:10-3:30	Sex difference in attractiveness perceptions of strong and weak male walkers <i>Bernhard Fink, Selina André, Johanna S. Mines, Bettina Weege, Todd K. Shackelford, Marina L. Butovskaya</i>	The relative state model: Integrating need-based and ability-based pathways to risk-taking <i>Sandeep Mishra, Pat Barclay, Adam Sparks</i>	The Facultative Influence of Personality and Culture on Men's and Women's Short-Term Mating Strategies <i>David P. Schmitt</i>	Reputation is an honest signal of cooperative strategy in partner choice <i>Gilbert Roberts</i>
3:30-3:50	The Relative Importance of Sexual Dimorphism, Fluctuating Asymmetry, and Color Cues to Health During Evaluation of Potential Partners' Facial Photographs: A Conjoint Analysis Study <i>Justin Magilski, Lisa Welling</i>	Risk and relative deprivation <i>Dallas Novakowski, Sandeep Mishra</i>	Kindness is sexy: Findings from an experimental, policy-capturing approach to human mate preferences <i>Rachel Grillo, James Roney</i>	Big Gods, Insecurity and Outgroups: the Role of Belief in Promoting Cooperative Behavior in Northeastern Brazil <i>Montserrat Soler</i>
3:50-4:10	Using the full evolutionary toolkit to understand variation in gender <i>Robert Brooks</i>	Personality differences as facultative adaptations: Naturalistic evidence from online behavior <i>Kyle Thomas</i>	Male choice in humans: Cross-cultural comparison <i>Jun-Hong Kim</i>	Measuring Communitas: Collective Worship and Social Networks in Rural South India <i>Eleanor Power</i>

4:10-4:40	COFFEE BREAK W/FOOD			
	Salon A	Salon B	Salon C	Seymour
Session TITLE	Pathogen-related Adaptations	Molecular Genetics and Human Mating Behavior	Cooperation and Competition 2	Evolution of Cooperation Pt. II: Environmental Dynamics of Risk-pooling & Social Networks
4:40-5:00	Sex differences in pathogen disgust as a form of hazard avoidance <i>Adam Sparks, Daniel M.T. Fessler, Kai Qin Chan, Ashwini Ashokkumar, Colin Holbrook</i>	Evidence for MHC-Based Genetic Compatibility in Long-Term Relationships? <i>Shimon Saphire-Bernstein, Christina M. Larson, Kelly A. Gildersleeve, Martie G Haselton</i>	Social Networks, Rather than Cultural Differences, Predict Ultimatum Game Offers: a case from the Ecuadorian Amazon. <i>John Q. Patton, James Zerbe, Mateo Peñaherrera Aguirre</i>	Ecologies of Risk-Pooling: An agent-based modeling approach to model social behavior in volatile environments. <i>Marco Campenni, Lee Cronk, Athena Aktipis</i>
5:00-5:20	Pathogen disgust is related to patterns of cellular immunity <i>Aaron Blackwell, Angela Garcia, Nikka Keivanfar, Sarah Bay</i>	MHC Homozygosity is Associated with Fast Sexual Strategies <i>Kelly A. Gildersleeve, Damian R. Murray, Melissa R. Fales, Martie G. Haselton</i>	Cooperation and Coalitional Competition: Public Goods Game Data from the Ecuadorian Amazon <i>James Zerbe, Mateo Peñaherrera Aguirre, John Q. Patton</i>	The role of livestock exchange relationships in pastoralist risk reduction in Karamoja, Uganda <i>Padmini Iyer</i>
5:20-5:40	Pathogens, sex and health: Pathogen-Avoidance Motives and Health-Protective Behavior <i>Stefan Gruijters, Joshua M. Tybur, Robert A.C. Ruiter, Karlijn Massar</i>	Genetic analysis of human extrapair mating: heritability, between-sex correlation, and receptor genes for vasopressin and oxytocin <i>Brendan P. Zietsch, Lars Westberg, Pekka Santtila, Patrick Jern</i>	Third party coordination key to norm enforcement <i>Cristina Moya, Dan Fessler, Joe Henrich, Wanying Zhao, Clark Barrett, Alex Bolyanatz, Helen Davis, Mike Gurven, Martin Kanovsky, Geoff Kushnick, Anne Pisor, Brooke Scelza, Chris von Rueden, Steve Laurence</i>	Indirect Reciprocity, Risk-pooling, and Environmental Dynamics: Economic Games in Siberia and Alaska <i>Drew Gerkey</i>
5:40-6:00	Baseline inflammation predicts higher disgust sensitivity but stronger inflammation in response to disease cues predicts lower disgust sensitivity: insights into evolved disease avoidance mechanisms from IL-6 levels <i>Diana Fleischman, Abbey R. Woods, Susan S. Girdler</i>	How does variation in the oxytocin receptor gene translate to behavioral differences? <i>Hasse Walum, Larry J. Young</i>	Gendered outgroup prejudice: an evolutionary threat management perspective <i>Tingting Ji, Joshua M. Tybur, Mark van Vugt</i>	Wealth inequality can promote the resilience of informal lending networks within small-scale societies <i>Mark A. Caudell, R. Kyle Bocinsky</i>
	6 pm Cocktail Reception Grand Foyer 6:45 pm Banquet Salon D, E, F			
8:00-8:30	Announcements and Keynote Introduction – All attendees welcome			
8:30-9:30	Keynote: Helen Fisher: The Drive To Love And Who We Choose			

Keynote Address**Saturday July 2, 2016 8:30 pm - 9:30 pm****Dr. Helen Fisher**, Department of Anthropology, Rutgers University.**The Drive To Love And Who We Choose**

Biological anthropologist Helen Fisher discusses three brain systems that evolved for mating and reproduction: the sex drive; feelings of intense romantic love; and feelings of deep attachment. She then focuses on her brain scanning research (using fMRI) on romantic rejection and love addiction. Also using fMRI data, she discusses four broad basic styles of thinking and behaving associated with four primary brain systems—the dopamine, serotonin, testosterone and estrogen systems—to propose an additional aspect of mate choice. And she concludes with discussion of the brain circuits associated with long-term partnership happiness and the future of relationships in the digital age—what she calls “slow love.”

**Plenary Speakers****Wednesday June 29, 2016 2:40pm – 3:40 pm****Louise Barrett**, Professor of Psychology and Canada Research Chair in Cognition, Evolution and Behaviour, University of Lethbridge**Super-sized minds versus super-charged apes: how to embrace continuity while accepting difference**

4E cognition brings body, brain and world together, and offers new ways to conceive of mind in both human and non-human animals. Evolutionary schools of thought in both comparative and human psychology have yet to embrace these ideas fully, remaining committed to an anthropocentric computational model, and emphasising the continuity between humans and other species, where our own capacities are 'nothing but' those of other species writ large. Here, I aim to show how Clark's ideas of embodied and extended cognition can be adapted to provide a more satisfactory evolutionary psychology that is both grounded in biology and embraces continuity, but which recognises the biocultural nature of the human adaptation. Incorporating ideas of embodied and extended cognition allows us to avoid the standard tropes of reducing human capacities or unfairly anthropomorphising the capacities of other species in an attempt to level the playing field in human/non-human comparisons. It also recognises that some of the views that are often dismissed within the evolutionary human sciences might bear some reconsideration.



Wednesday June 29, 2016 7:00pm – 8:00 pm

Aubrey de Grey, Chief Science Officer, SENS Research Foundation

Do We Have Genes that Exist to Hasten Aging? New Data, New Arguments, But the Answer is Still No

In the 60 years since Medawar questioned the assumption that aging is a selected trait with a fitness benefit, mainstream biogerontology has overwhelmingly adopted the view that aging is a product of evolutionary neglect rather than evolutionary intent. Recently, however, this question has come to merit further scrutiny, for three reasons: a variety of new ways in which aging could indeed be “programmed” have been proposed, several phenomena with superficial similarities to programmed aging have been suggested to offer evidence for it and against the mainstream consensus, and above all it has become appreciated that the existence or otherwise of “pro-aging genes” has enormous implications for determining our optimal strategy for the medical postponement of age-related ill-health. Accordingly, it is timely to revisit the arguments and data on this topic. In this talk I will discuss difficulties in reconciling the programmed-aging concept with existing data, flaws in various arguments given by others that existing data prove aging to be programmed, and extensions of these considerations to various phenomena that in one or another way resemble programmed aging. I conclude that, however much we might wish that aging were programmed and thus that the ill-health of old age could be greatly postponed just by disabling some aspect of our genetic makeup, the unfortunate truth is that no such program exists, and thus that our only option for substantial extension of healthspan is a divide-and-conquer panel of interventions to repair the damage that the body inflicts upon itself throughout life as side-effects of its normal operation.



Thursday June 30, 2016 8:30 am – 9:30 am

Peter Jonason, Personality or Individual Differences, Psychology, Western Sydney University

Using Life History Theory to clean-up personality psychology

The field of personality psychology has been rather resistant to the formulation of large, structural theories meant to organize the field. For over 60 years researchers have focused on amassing data on the cross-temporal consistency, measurement, and predictive validity of personality traits but the field has remained rather descriptive and agnostic to strong theoretical paradigms. This has led the field to (1) focus on mid-level traits (e.g., extraversion, psychopathy), (2) implicitly treat all personality traits as existing at the same level in theoretical space, and (3) investigate an apparent proliferation of traits (e.g., the Sexy Seven). In this talk, I sketch out (my emerging thoughts on) how a two dimensional (i.e., fast *and* slow), (reasonably) orthogonal hierarchical system of personality and individual differences based on Life History Theory might organize the field. This is done by, for instance, conceptualizing some traits on generality-specificity and distal-proximal dimensions and drawing something of an atomic theory of personality that treats basic units (i.e., lower order traits/facets) of personality like chemical elements from the periodic table of elements. In principle, such a framework might enable quasi-causal statements to have some theoretical heft behind them, to better highlight the importance of psychological adaptations, bridge the gap between socio-cognitive (e.g., Dark Triad) and neurological models (e.g., Approach-Avoidance) of personality, and ultimately impose an order on modern personality psychology.



Thursday June 30, 2016 2:00pm – 3:00 pm

Vladas Griskevicius, Carlson School of Management, University of Minnesota

Can Stressful Childhood Environments Enhance Cognitive Abilities in Adulthood?

Can growing up in a stressful childhood environment enhance certain mental abilities? Most evidence thus far suggests the answer is no. People who grow up in stressful environments tend to score lower on tests of intelligence, memory, and other important cognitive abilities. This reduced performance is often assumed to imply that exposure to early-life stress impairs general mental functioning. But rather than impairing cognitive functioning, another possibility is that childhood adversity could be shaping cognition in adaptive ways. I present experimental evidence showing that growing up in unpredictable childhood environments can improve some types of executive functioning in adulthood. Importantly, these positive effects of adverse childhood environments emerged only when adults were tested in uncertain contexts. This catalyst suggests that some individual differences related to early-life experience manifest themselves under conditions of uncertainty. These findings indicate that adverse childhood environments do not universally impair mental functioning, but can actually enhance specific mental abilities in the face of uncertainty.



Friday July 1, 2016 8:30 am – 9:30 am

Athena Aktipis, Department of Psychology, Arizona State University

Cooperation from cells to societies

Are there general principles that underlie cooperation across systems? What do these principles tell us about the evolution of multicellular life and human society? In this talk I will discuss my work on human sharing in The Human Generosity Project, which incorporates computational modeling, human subjects experiments and work at 8 fieldsites around the world to understand human sharing. I will also discuss my work on cooperation and cheating in the evolution multicellularity, focusing on the question of how large multicellular bodies can evolve cooperation among trillions of cells despite the constant threat of cellular cheating, i.e., cancer. In both human societies and cellular societies, cooperation at higher levels of organization can be exploited by lower levels of organization, such as cheaters in human societies or cancer cells in a multicellular body. Societies (whether composed of humans or cells) are stable only when the strength of selection at the higher level is stronger than the strength at the lower level. In other words, the forces behind societal cooperation must be stronger than those behind individual exploitation for higher-level systems such as multicellular life and human societies to be viable. In this talk I will discuss similarities and differences between cooperation and exploitation in human and cellular societies, with an eye to how we can leverage this knowledge towards a deeper understanding of fundamental principles shaping the evolution of life.



Saturday July 2, 2016 8:30 am – 9:30 am

Mark Collard, Professor of Archaeology and Canada Research Chair in Human Evolutionary Studies, Simon Fraser University; Chair in Archaeology, University of Aberdeen.



Palaeoanthropology: New Developments And Challenges

It is an exciting time in palaeoanthropology. In the last couple of decades, we have accumulated a huge amount of new evidence about human evolution. Fieldwork projects have located numerous new sites and greatly increased our sample of hominin fossils and artifacts, while technological advances have enabled us to extract a number of novel types of data from those specimens. In this talk, I will discuss what are arguably the most important of these discoveries. One of the species I will consider is the so-called hobbit, *Homo floresiensis*. I will also talk about the East African species *Ardipithecus ramidus*, and the newly discovered species from South Africa, *Homo naledi*. The fourth and final species I will discuss is *Homo neanderthalensis*. What I will try to show is that recent findings about these species challenge the existing picture of human evolution in profound ways. If the results in question withstand scrutiny, we will need to revisit some very basic issues, including what makes a hominin a hominin.

Saturday July 2, 2016 2:00pm – 3:00 pm

Bernie Crespi, Department of Biological Sciences, Simon Fraser University



Darwin's DSM and the Emergence of Applied Human Behavior and Evolution

Academic study of the evolution of human behavior has traditionally remained largely separate from its applications in medicine, societal functioning, and individual well-being. I describe a research program focused on the integration of behavioral-evolutionary approaches and insights with proximate genetic, epigenetic, endocrine and neurological mechanisms, with the goal of enhanced human physical and mental health. In this context, I provide examples from the study of psychiatric conditions, personality variation, religion, genomic conflict, and neuropeptide hormone functions, in each case showing how applications follow directly from theory. These approaches extend the growing field of evolutionary medicine to encompass a broader evolutionary and behavioral approach to understanding and fostering optimal development in all human cognitive and physical endeavors.

**General Session Talks
WEDNESDAY**

Wednesday June 29, 2016 4:10 pm - 5:30 pm

The Behavioral Immune System and its Relation to Social Attitudes

Chair: Russ Clay

Wednesday June 29, 2016 4:10 pm - 4:30 pm

The Paradoxical Relation between Dispositional Contamination Aversion and Attitudes about Vaccines

Russ Clay (City University of New York, College of Staten Island, russ.clay@csi.cuny.edu)

In what is believed to be the first work on the topic, two studies examined the relation between dispositional aversion to perceived sources of contamination and attitudes about vaccines. Overall, people who reported being more averse to sources of contamination paradoxically reported more negative attitudes about vaccines. In Study 1, participants reporting higher contamination disgust tended to report more negative attitudes about vaccines. Study 2 replicated this result using additional measures of aversion to perceived sources of contamination. Study 2 also revealed that participants' beliefs about the likelihood that they would contract an illness at some point in the future were unrelated to attitudes about vaccines. This suggests that the relation between contamination aversion and vaccine attitudes is associated with an intuitive aversion to vaccines rather than reasoned beliefs about the likelihood of contracting an illness. The results are likely to have important implications for public health research associated with vaccines, and next steps in this research program will be discussed.

Wednesday June 29, 2016 4:30 pm - 4:50 pm

The Behavioral Immune System as a Predictor of Interpersonal Attitudes

John A. Terrizzi, Jr (Texas Woman's University, JTerrizziJr@twu.edu), Natalie J. Shook

The behavioral immune system (BIS) is a suite of cognitive mechanisms (e.g., disgust) that protect individuals from the adaptive challenge of infectious disease. Because person-to-person contact is a common route of infectious disease, people should be prepared to be cautious with their social interactions. This evolutionarily prepared disease-avoidance strategy should play an important role in mating behavior and the formation and maintenance of interpersonal attitudes. Across two studies, a university sample and a community sample, participants exhibited more disgust toward strangers relative to partners and those who were less disgusted by their partners relative to strangers reported investing more in their relationships and reported being more securely attached to their partners. In a third study, females who reported higher levels of disgust sensitivity reported more negative attitudes toward novel faces of potential dating partners. In a fourth study, interpersonal disgust (i.e., less disgust toward partners relative to strangers) predicted female orgasm frequency and intensity. Together, these results suggest that the BIS plays an important role in the maintenance of interpersonal attitudes, encouraging individuals to avoid mating with potential contaminated others.

Wednesday June 29, 2016 4:50 pm - 5:10 pm**Too Risky a Gamble? Disease Threats Decrease Risk Tolerance and Risk-Taking**

Marjorie L. Prokosch (Texas Christian University, m.prokosch@tcu.edu), Joshua M. Ackerman, Sarah E. Hill

Researchers have long been interested in factors that influence individuals' tolerance for risk. Although frequently characterized as undesirable, some risk-taking is necessary for economic growth and in modern social interactions. Here, we draw from research on the behavioral immune system to examine the role that illness and disease threats play in modulating risk tolerance, testing the hypothesis that disease threats bias human decision-making towards risk aversion. Across six studies, we examined the impact of disease cues on individuals' risk tolerance and risk-taking. Results revealed a consistent pattern whereby people were less risky when the threat of disease was high. This shift was found using both self-report and behavioral measures and was eliminated in response to a hand-washing manipulation. The current research provides evidence of a novel conceptual link between environmental pathogen load and risk tolerance, demonstrating a tendency to play it safe when the threat of disease is high.

Wednesday June 29, 2016 5:10 pm - 5:30 pm**Infections and Elections: Did an Ebola Outbreak Influence the 2014 U.S. Federal Elections (and, If So, How)?**

Alec T. Beall (University of British Columbia,), Marlise Hofer, Mark Schaller

Longitudinal analyses of pre-election polls tested whether perceived threat of Ebola predicted voting intentions preceding the 2014 U.S. federal elections. Analyses included: comparisons of polling results before and after news of the first U.S. Ebola case; and correlations between polling trends and Google searches for "Ebola." Two consistent results emerged: First, when polling results were aggregated nationwide, the salience of Ebola predicted increased support for conservative candidates. (E.g., news of the first Ebola case was followed by a significant change in polling trajectory in House races, favoring Republican over Democratic Party candidates). Second, this effect was moderated by a tendency to conform to local voting norms. (Increased support for Republican candidates emerged in traditionally Republican states, but this effect was not noted in traditionally Democratic states.) Results are consistent with experimental evidence linking disease threat to conservative political attitudes and conformity behavior, and suggest implications for actual political outcomes.

Wednesday June 29, 2016 4:10 pm - 5:30 pm
Evolutionary Criticism of Fiction*Chair: Joseph Carroll***Wednesday June 29, 2016 4:10 pm - 4:30 pm**
Evolved Human Sociality and Literature*Joseph Carroll (University of Missouri, jcarroll@umsl.edu)*

Much Darwinist literary scholarship has concentrated on reproductive themes such as mate selection, parenting, and kinship. Since humans are ultra-social, even basic reproductive motives are embedded in social contexts. Darwinist efforts to interpret specifically social themes in literature have been hampered by the confused state of evolutionary theories about sociality. However, recent evolutionary thinking on human sociality has moved beyond the inconclusive debate between proponents of “inclusive fitness” and proponents of “group selection.” We now have a usable model of evolved sociality. In this talk, I identify seven concepts minimally necessary for constructing that model: (1) dominance, (2) egalitarianism or reverse dominance (3) leadership, (4) internalized norms, (5) strong reciprocity or third-party enforcement of norms, (6) legal institutions, and (7) legitimacy in the exercise of power. Those seven concepts can be reduced to four underlying elements: individuals, groups, power, and values. I explain how these ideas can be used to analyze social themes in literature and compare them with the Foucauldian political theory that currently prevails in the academic literary establishment. I argue that the evolutionary model is more complex, more subtle, and more true.

Wednesday June 29, 2016 4:30 pm - 4:50 pm
In the Jaws of Death: An Evolutionary Approach to Horror Films*Mathias Clasen (Assistant Professor, Department of English, Aarhus University, Denmark, engmc@hum.au.dk)*

The horror film *Jaws* (Spielberg, 1975) terrified millions of movie-goers and continues to resonate with audiences, despite its implausible premise and zoologically dubious depiction of a vengeful great white shark. An evolutionary approach explains why the film captured audiences’ imaginations and produced in thousands an abiding, profound terror of the sea. *Jaws* gets its peculiar power from successfully immersing its audience in a primal scenario of predation by a malevolent animistic agent, the shark. The representation of the shark exploits the structure of evolved hazard-precautionary cognitive architecture. The shark is salient and narratively dominant, yet it has very little screen time. By shrouding the shark and its whereabouts in uncertainty, Spielberg amalgamates the evolved fear of predation with the evolved fear of the unknown. That joint fear response is compounded by sympathetic anxiety for vulnerable characters in peril. *Jaws* fulfills the function of horror, which is to provide consumers with an occasion for imaginative immersion in a fear- and anxiety-provoking scenario. The film derives its power from effectively engaging ancient, evolved defense mechanisms in human nature and from satisfying an adaptive desire for extreme vicarious experience.

Wednesday June 29, 2016 4:50 pm - 5:10 pm
Imagining a Place in Nature

Emelie Jonsson (Doctoral Student, Department of Languages and Literatures, University of Gothenburg, Sweden, jonemchris@gmail.com)

During the latter part of the 19th century, literary authors engaged with Darwinism in children's fairytales, adventure stories, political allegories, science fiction, social realism and existential meditations. I argue that their fascination came from a unique stimulation of the human imagination. Darwin's account differs radically from all self-authored origin stories in history: it does not portray us as chosen by cosmic forces; it does not prescribe any particular lifestyles or ultimate goals; it does not feature a history of great symbolic events and adventure stories; and it does not envision the universe as guided by human social categories such as karma, sin, sacrifice, or the personal intrigues of pantheons. Simply understanding Darwinian nature challenges our evolved minds. It requires us to think statistically, absorb the geological time scale and see all human concerns as the result of our ecological niche. But Darwinian evolution also provides satisfaction by revealing patterns of causal explanation in a world of ancient, varied and interconnected life. Some literary authors openly reintroduced elements of mythology, portraying natural selection as a cosmic force for good or evil. Others used powerful imagery to access its counter-intuitive realities. Most were imaginatively suspended between challenges and satisfactions of Darwin's theory that remain with us today.

Wednesday June 29, 2016 5:10 pm - 5:30 pm
"The good ended happily and the bad unhappily": An Evolutionary Approach to Narrative Agonistic Structure

Jens Kjeldgaard-Christiansen (School of Communication and Culture, Aarhus University, Jenslynkc@jubii.dk)

Why are our stories, including those of literature, film, and video games, crowded with good guys and bad guys, heroes and villains? Why do we care if the hero wins? In this paper I explore the connection between evolved human moral sentiment and narrative preference. Building on Carroll and colleagues' research on fictional agonistic structure, I contend that we may understand the makeup and interrelations of good and bad fictional characters with reference to moral psychological research, much of which today is grounded in evolutionary theory. Protagonists, I argue, are strong altruists. They affirm the prosocial ethos of society in their constructive pursuits. Antagonists are cheating, anti-social individualists. They threaten to unravel the social order. This organizing binary reflects ancestral social conditions under which humans evolved, suggesting that evolutionary theory may supply a useful conceptual framework with which to understand our moral engagement with fictional stories and characters. I conclude that, for ultimately evolutionary reasons, relatively stable agonistic patterns characterize our narratives globally, even if they are always subject to local, cultural channeling.

Wednesday June 29, 2016 4:10 pm - 5:30 pm**Fathers and Paternal Effects***Chair: Chance R. Strenth***Wednesday June 29, 2016 4:10 pm - 4:30 pm****Pair Bonding, Fatherhood, and the Role of Testosterone: A Meta-Analytic Review***Chance R. Strenth (University of New Mexico, cstrenth@unm.edu), Ruth E. Sarafin, Nicholas M. Grebe*

The Challenge Hypothesis (CH) proposes that testosterone mediates an energetic life-history trade-off in males between mating effort and paternal care. Within the non-human literature, studies provide extensive (though not universal) support for the CH in species that provide paternal care to their young: endogenous testosterone levels, as well as exogenous supplementation, associate negatively with measures of parenting effort, and positively with mating effort. In the last fifteen years, behavioral endocrinologists have investigated whether predictions of the CH extend to men. In particular, a number of studies test whether fatherhood and/or romantic relationship status predicts differences in men's testosterone levels. In spite of many findings consistent with the CH in men, file-drawer effects and heterogeneity in study procedures introduce uncertainty regarding the true strength of such effects. We present results of a comprehensive meta-analysis (covering over 70 effects) to address this question. We find effect sizes across domains that, by convention, range from 'small' to 'medium'; however, we frame these effect sizes in terms of other factors known to influence testosterone (e.g., aging, illness, antagonist administration). We conclude with recommendations for future studies testing predictions of the CH.

Wednesday June 29, 2016 4:30 pm - 4:50 pm**Men's testosterone and oxytocin levels in response to romantic partners' hormone levels and relationship features***Nicholas Grebe (University of New Mexico, grebe@unm.edu), Steven W. Gangestad, Melissa Emery Thompson*

Scholars debate whether men can detect cues of women's ovarian hormone levels (and, thus, conceptive status) and, relatedly, whether men hormonally respond to these cues. Some research suggests, for instance, that men's testosterone increases after exposure to cues of conceptive status (i.e., relatively high estradiol) from unfamiliar women, perhaps reflecting adaptive facultative adjustments in mating effort. But do men in relationships adjust levels of testosterone or other hormones involved in mating in response to partners' hormonal status? This question has received little attention. We examined changes in men's testosterone and oxytocin levels as a function of partners' estradiol, progesterone, and testosterone levels (N = 33 couples, 2 samples per couple, hormonal predictors centered within women). (a) Contrary to findings using unfamiliar women, men's testosterone levels relate negatively to partners' estradiol levels. One of two prior data sets detects a similar pattern in relation to partners' conceptive status. (b) Women's progesterone and estradiol levels (the latter in interaction with women's sexual passion/responsiveness in the relationship) predict men's oxytocin levels, which may function to orient men's psychological resources towards relationships that are particularly vulnerable. We discuss findings in light of the broad roles hormones play in adaptively allocating energetic resources and effort.

Wednesday June 29, 2016 4:50 pm - 5:10 pm

Paternal age negatively predicts offspring physical attractiveness: Replicating Huber and Fieder (2014) using two, large, nationally representative datasets.

Michael A. Woodley of Menie (Technische Universität Chemnitz, michael.woodley@vub.ac.be), Satoshi Kanazawa

The effect of paternal age on the attractiveness of offspring has recently been investigated. Negative effects are predicted on the basis that paternal age is a strong proxy for the numbers of common *de novo* mutations found in the genomes of offspring. As an indicator of underlying genetic quality or fitness, the attractiveness of offspring should decrease as paternal age increases, evidencing the fitness-reducing effects of these mutations. Thus far the results are mixed, with one study finding the predicted effect, and a second smaller study finding the opposite. Here the effect is investigated using two large and representative datasets (Add Health and NCDS), both of which contain data on physical attractiveness and paternal age. The predicted effect is present in both datasets, even after controlling for maternal age at subject's birth, age of offspring, sex, race, parental and offspring (in the case of Add Health) socio-economic characteristics, parental age at first marriage (in the case of Add Health) and birth order. The apparent robustness of the effect to different operationalizations of attractiveness furthermore suggests high generalizability, however the results must be interpreted as being merely indicative of the effect, as these datasets are not amenable to sibling-comparison approaches which are necessary for properly partitioning within- and between-family variance.

Wednesday June 29, 2016 5:10 pm - 5:30 pm

Paternal age at conception predicts offspring telomere length in chimpanzees to a greater degree than in humans

Dan T.A. Eisenberg (Department of Anthropology, University of Washington, dtae@dtae.net), Justin Tackney, Richard M. Cawthon, Christina Theresa Cloutier, Hilary Bethancourt, Kristen Hawkes

Telomeres are repeating non-coding DNA sequences at chromosome ends. Telomere length (TL) is of growing interest because of its potential role in senescence, life history allocations, and intergenerational plasticity. TL declines with age in most human tissues, and shorter TL is thought to cause earlier senescence. Surprisingly, older men have sperm with longer TL; correspondingly, older paternal age at conception (PAC) predicts longer TL in offspring. The multi-generational effect of PAC on TL could contribute to a unique form of transgenerational genetic plasticity that modifies physiologic function in response to a relatively stable cue of recent ancestral experience and behavior (Eisenberg, 2011 in AJHB). The PAC-effect has not been examined in any mammals aside from humans. Here we examine the PAC-effect in captive chimpanzees. The PAC-effect on TL is thought to be driven by the continual production of sperm. Since chimpanzees are thought to have considerably greater sperm production rates, we predict that the PAC-effect on TL will be greater in chimpanzees than it is in humans. Preliminary analyses of 40 chimpanzees and 144 humans showed that the PAC-effect on TL is an estimated 5.67x greater in chimpanzees than in humans ($p=0.003$).

Wednesday June 29, 2016 4:10 pm - 5:30 pm**Cooperation, Compassion, and Morality***Chair: Oliver Scott Curry***Wednesday June 29, 2016 4:10 pm - 4:30 pm****How Personal Trust Evolves: The Case Of Vyegewa-Gika Pygmies From Burundi***Cristina Acedo-Carmona (University of the Balearic Islands , cristina.acedo@uib.es), Enric Munar, Antoni Gomila*

Trust attitudes towards known people (personal trust) seem to be a very effective mechanism to ensure altruistic behaviors. This psychological mechanism could have evolved very early in human evolutionary history, given that our ancestors socialized within small groups. If this claim is true, personal trust networks would be very robust, and would hardly change in the short term even when individuals faced sudden changes in their cultural and environmental contexts. To test this prediction, we studied how personal trust networks of Pygmies have changed, after being forced to migrate from rainforests to the settlement of Vyegewa-Gika in the savanna of Northern Burundi. First, we analyzed the social, economic and cultural changes adopted by Pygmies with this migration, and then compared them with their current networks of personal trust and patterns of altruistic behavior using an experimental trust game with some variations. We found (i) small networks of personal trust, similar to those in rainforests that continue to drive altruistic exchanges among Pygmies, despite cohabitating in larger groups; and (ii) a very strong altruistic behavior towards trustees, despite their situation of poverty. The results support the view that personal trust networks are very robust and change more slowly than cultural practices.

Wednesday June 29, 2016 4:30 pm - 4:50 pm**Welfare, compassion, and evolved heuristics of caring: Why it's better to have been rich than to be vulnerable***Andrew W. Delton (Stony Brook University, andrew.delton@gmail.com), Michael Bang Petersen, Peter DeScioli, Theresa E. Robertson*

How does the evolved psychology of risk pooling—sharing resources whose acquisition is high variance—affect support for modern welfare systems? Drawing on evolutionary and social psychological research, we study two heuristics of caring that might provide a psychological underpinning for welfare support, generated in part as the emotion of compassion. One heuristic is activated by absolute need or vulnerability (e.g., to the poor). The other is activated by reversals of fortune (e.g., to sudden job loss). First, in two US samples and a Danish sample we show that compassion and welfare attitudes are independently affected by vulnerability and reversals of fortune. This can lead to social inefficiency: People who have fallen far—but are not in an absolute sense vulnerable—elicit more compassion and more access to welfare than the truly vulnerable. In a fourth study, we rule out the possibility that reversal of fortune effects are merely due to demographics (for instance, it is not limited to liberals or Democrats). In a final study, we test whether reversals of fortune can persuade people to support welfare who are typically ideologically opposed. Modern attitudes about redistribution appear to be shaped in part by a psychology designed for small-scale sharing.

Wednesday June 29, 2016 4:50 pm - 5:10 pm**Is it good to cooperate? Testing the theory of morality-as-cooperation in 60 societies**

Oliver Scott Curry (University of Oxford, oliver.curry@anthro.ox.ac.uk), Daniel Austin Mullins, Harvey Whitehouse

The theory of morality-as-cooperation argues that morality consists of a collection of biological and cultural solutions to the problems of cooperation and conflict recurrent in human social life. This theory uses the mathematics of cooperation derived from evolutionary biology and nonzerosum game theory to identify distinct problems of cooperation and their solutions, and from there makes principled predictions about the structure and content of human morality. For example, morality-as-cooperation predicts that specific forms of cooperative behaviour – helping kin, helping your group, reciprocating, being brave, deferring to superiors, dividing disputed resources, and respecting prior ownership – will be considered morally good wherever they arise. We test this prediction by surveying the moral valence of these cooperative behaviours in the ethnographic records of 60 cultures, drawn from the Human Relations Area Files. We find that, as predicted, the moral valence of these behaviours is uniformly positive. And we find that the majority of these cooperative moral values appear in the majority of cultures, in all regions of the world. We discuss how the theory of morality-as-cooperation might be further tested and developed.

Wednesday June 29, 2016 5:10 pm - 5:30 pm**Can a multi-modular mind produce consistent moral judgments?**

Ricardo Andrés Guzmán (Centro de Investigación en Complejidad Social UDD, ricardo.andres.guzman@gmail.com), María Teresa Barbato, Leda Cosmides,

The human cognitive architecture should contain multiple moral systems, because different types of social interaction require different concepts, inferences, sentiments, and judgments to regulate behavior adaptively (consider, e.g., exchange, kin altruism, mating, cooperative foraging, warfare). But what happens when a situation elicits conflicting moral sentiments? (E.g., your sibling cheats you, or one individual must be harmed to save many.) Has selection produced adaptations designed to weight conflicting moral sentiments to produce judgments? If so, subjects choosing which option they “feel is morally right” will produce judgments that are internally consistent, as defined in economics by the generalized axiom of revealed preferences (GARP). Using two moral dilemmas involving warfare, we quantitatively varied morally-relevant parameters: Each dilemma presented 21 scenarios in which sacrificing C civilians would save S soldiers ($0 \leq C < S$), varying S , C , and S/C (soldiers saved per civilian sacrificed). Judgments were highly consistent ($N=343$). Random choices would violate GARP 82 times, yet there were no GARP violations for 49% and 64% of subjects (conditions: unwilling conscripts vs. willing warriors). Of the >250 who sacrificed some, but not all, civilians, 55% and 62% made 3 or fewer GARP violations. GARP provides a new criterion of good design.

THURSDAY**Thursday June 30, 2016 10:00 am - 11:20 am**
Current Developments in Human Mating Research*Chair: Norman P. Li***Thursday June 30, 2016 10:00 am - 10:20 am**
Are Mate Preferences Valid?*Norman P. Li (Singapore Management University, normanli@smu.edu.sg), Katherine A. Valentine, Jose C. Yong*

Although it has been established across decades and cultures that men, more than women, value physical attractiveness and women, more than men, value social status in potential mates, recent research on speed-dating and relationships has failed to find sex differences in actual mate choice, as well as links between mate preferences and choices. These findings challenge the validity of mate preference and the evolutionary mating theories that have been proposed as explanations for these preferences. Here, we consider reasons for the disconnect between mate preferences and actual choices, and discuss the mate preference priority model, which indicates that mate preferences evolved to consist of reproductive screening mechanisms. From this evolutionary perspective, although the sexes may be similar in what high-end qualities they ideally like in a partner, they should have evolved to differ the most on the low-end traits they avoid. Consistent with this perspective, results of several studies indicate that when a mating pool includes people at the low end of social status and physical attractiveness – those who may have been reproductive dead ends in the ancestral past, actual mate choices are indeed both sex-differentiated and linked to people's mate preferences.

Thursday June 30, 2016 10:20 am - 10:40 am
Pair-bonds and adaptations to ovulation: Integrating evolutionary psychology and relationship science to guide future research*Kristina M. Durante (Rutgers University, kdurante@business.rutgers.edu), Paul W. Eastwick, Eli J. Finkel, Steven W. Gangestad, Jeffrey A. Simpson*

Relationship researchers and evolutionary psychologists have been studying mating for decades, but these two perspectives often yield fundamentally different images of how people mate. Relationship science frequently emphasizes ways in which partners are motivated to maintain their relationships, whereas evolutionary science frequently emphasizes ways in which individuals are motivated to seek out their own reproductive interests at the expense of partners'. In ovulatory cycle research, evolutionary psychologists hypothesize that adaptations to ovulation function to secure genetic benefits from men other than one's partner and relationship scholars suggest that adaptations to ovulation may function in opposite ways. Rather than being incompatible, the frameworks that guide each perspective have different assumptions that can generate contrasting predictions and lead researchers to study the same behavior in different ways. We introduce a new theoretical framework—the conflict-confluence model—that characterizes evolutionary and relationship science as being arranged along a continuum reflecting the extent to which mating partners' interests are misaligned versus aligned. We illustrate the utility of this framework to uncover hidden moderators and discuss why a consideration of the tension between the desire to maintain a partnership versus seek out alternatives may help remedy some of the non-replication issues in ovulatory cycle research.

Thursday June 30, 2016 10:40 am - 11:00 am

The Implications of Sociosexuality for Long-Term Relationship Outcomes

Andrea L. Meltzer (Florida State University, meltzer@psy.fsu.edu)

Prior research has demonstrated that an individual's early childhood environment has implications for their sociosexual orientation in adulthood. And prior research has demonstrated that adults with greater unrestricted sociosexual orientations report more sexual partners and are more likely to engage in relationships characterized by short-term commitment. But what implications does such an unrestricted sociosexual orientation have for those individuals who become involved in long-term, committed relationships? Given their prior experience with a greater number of sexual partners, such unrestricted individuals may perceive more alternatives to their relationships that may have negative implications for their current long-term relationship satisfaction. I tested this possibility in a sample of 113 first-married newlywed couples. Specifically, husbands and wives completed measures of sociosexual orientation, perceived relationship alternatives, and marital satisfaction. Results demonstrated that, consistent with predictions, individuals with a greater unrestricted sociosexual orientation were more likely to perceive a greater number of relationship alternatives and this increased perception of alternatives was associated with lower marital satisfaction. Notably, these effects did not differ across husbands and wives. This research demonstrates that unrestricted sociosexuality in adulthood has important, and potentially detrimental implications for long-term, committed relationship outcomes.

Thursday June 30, 2016 11:00 am - 11:20 am

The Mate Switching Hypothesis

David M. Buss (University of Texas at Austin,), Dan Conroy-Beam, Cari Goetz, Kelly Asao

Leaving one mating relationship and entering another, serial mating, is commonly observed in many cultures. An array of circumstances can prompt a mate switch. These include (1) an unanticipated 'relationship load' not apparent on the initial mate selection; (2) changes in the mate value of either partner, creating discrepancies where none previously existed; (3) the arrival of a new and interested potential mate of sufficiently incremental value to offset the costs of a breakup; and (4) getting ejected or 'dumped' by a current mate, necessitating re-mating. The Mate Switching Hypothesis suggests these circumstances created adaptive problems throughout human evolution that forged adaptations to anticipate and appraise opportunities to mate-switch, implement exit strategies, and manage challenges confronted in their aftermath. We review several studies that support various aspects of the Mate Switching Hypothesis: The cultivation of 'back-up mates,' assessing mate-inflicted costs that comprise 'relationship load,' monitoring selfishly-skewed welfare tradeoff ratios in a partner, gauging mate value discrepancies, and anticipating sexual, emotional, and economic infidelities. The Mate Switching Hypothesis provides a competing explanation to the 'good genes' hypothesis for why women have sexual affairs, and parsimoniously explains a host of other mating phenomena that remain inexplicable on alternative accounts.

Thursday June 30, 2016 10:00 am - 11:20 am

Testosterone and Social Behavior

Chair: Chair: Samuele Zilioli

Thursday June 30, 2016 10:00 am - 10:20 am

Functional Significance of Testosterone Reactivity to Social Contexts in Humans

Samuele Zilioli (Wayne State University , sam.zilioli@gmail.com)

Rapid fluctuations in testosterone in response to social stimuli are observed across a wide range of species, including humans, and the highly conserved nature of these fluctuations suggests an adaptive function. Life-history theory can provide an adequate theoretical framework to interpret the extant empirical findings and derive falsifiable empirical predictions. In a nutshell, I propose that situations directly (i.e., interactions with a mate) or indirectly (i.e., intrasexual competition) implicated in mating effort are generally associated with a brief elevation of testosterone, while situations implicated in parenting effort (i.e., nurturant interactions with offspring) are generally associated with a testosterone decline. Similarly, changes in testosterone in response to evolutionary salient social contexts are positively associated with behaviors either indirectly (i.e., aggression, competitive motivation, strength, mistrust, learning, and risk-taking) or directly (i.e., courtship behavior) implicated in mating effort as well as negatively associated with nurturance parenting (i.e., responsive parenting). Four empirical studies will be presented to support these claims and directions for future research will be discussed.

Thursday June 30, 2016 10:20 am - 10:40 am

Exogenous testosterone increases men's perceptions of their own physical dominance

Lisa Welling (Oakland University, welling@oakland.edu), Benjamin J.P. Moreau, Brian M. Bird, Steve Hansen, Justin M. Carré

Men's testosterone is associated with several constructs that are linked to dominance rank, such as risk-taking, mating success, and aggression. However, no study has directly tested the relationship between men's self-perceived dominance and testosterone using an experimental design. We employed a within-subjects, double-blind, placebo-controlled paradigm to assess whether testosterone influences men's self-perceived dominance. Exogenous testosterone or a placebo was administered to healthy adult men and self-perceptions of physical dominance were subsequently assessed by having participants select what they believed to be their true face from an array of images digitally manipulated in masculinity. Men picked a more masculine version of their own face after testosterone versus placebo—an effect that was particularly pronounced among men with relatively low baseline testosterone. These findings indicate that a single administration of testosterone can rapidly modulate men's perceptions of their own physical dominance, which may explain links between testosterone and dominance-related behaviors.

Thursday June 30, 2016 10:40 am - 11:00 am**Attitudinal trust but not trust/cooperation behavior correlates with baseline salivary testosterone level**

Yang Li (Tamagawa University, noahcatlee@gmail.com), Yoshie Matsumoto, Toshio Yamagishi

Testosterone (T), a steroid hormone, has received attention on its relationship with human behaviors in social context. Although many studies have focused on aggression/dominance-seeking behavior, a growing attention is placed on T's influence on trust and other cooperation behaviors. In this study, we examine the relationship between baseline T level and behavioral trust in trust game, as well as cooperation behaviors in 2 prisoner's dilemma games (PDG), social dilemma game (SDG), and attitudinal trust scales among 95 Japanese young males (aged 22 to 41, mean=33, SD=5.05). Correlation analysis controlling for age found that attitudinal trust measures consistently show negative correlation with T (-.26, $p=.01$; -.31, $p=.003$; -.24, $p=.02$), while behavioral trust in TG ($r=-.15$, n.s.) or cooperation in PDGs (-.11, n.s.) / SDG (-.05, n.s.) failed to show any significant relationship with T. Our results indicate that baseline T level affects human's general psychological state rather than particular behaviors that are under strong influence of situational factors. /

Thursday June 30, 2016 11:00 am - 11:20 am**The link between testosterone and Ultimatum Game behavior varies according to player seniority in a Japanese university sports team.**

Toko Kiyonari (Aoyama Gakuin University, kiyonari@si.aoyama.ac.jp), Taiki Takahashi, Robert Burriss, Arai Sakura, Yukako Inoue, Toshio Yamagishi

A seniority norm that maintains hierarchical relationships is ubiquitous in Japanese university sports teams. The 4th year students are the most senior and enjoy strong social power within their teams. We examined the relationship between real social status and salivary testosterone level using a series of one-shot anonymous Ultimatum Games (UG). Members of a cohesive rugby team in a Japanese university played the UG both as proposer and responder a total of four times. Before each game, participants were informed of their partner's grade. We analyzed participants' levels of acquiescence versus assertiveness (how much more they offer as proposers beyond the minimal offer they would accept as responders). The results showed that, among the 4th year students, higher levels of testosterone were related to less acquiescent or more assertive behavior (offering close to what they would accept). Conversely, higher levels of testosterone among the lower-status students (i.e., the 1st to 3rd year) were associated with more acquiescent or less assertive behavior, with offers higher than their acceptance threshold. Our results suggest that testosterone may enhance social dominance among high status group members, but may enhance submission to seniority among lower status members.

Thursday June 30, 2016 10:00 am - 11:20 am

Perception and Cognition

Chair: Joshua J New

Thursday June 30, 2016 10:00 am - 10:20 am

Agency perception in human infants reflects constraints of anteroposterior body-organization on animal behaviour

Mikolaj Hernik (Central European University, HernikM@ceu.edu)

Majority of biological agents have bodies with anteroposterior organization, which constrains their ability to locomote and act (e.g. locomotion tends to be forward-facing and axis-aligned). These behavioural invariants are reflected in perceptual adaptations across the animal kingdom yet their effects on human perception are rarely studied. The current series of studies demonstrates that human infants as young as 6-month-olds readily infer body-direction of a novel agent (3D-animated elongated box-like shape on a computer screen) from its behaviour and later rely on it when anticipating the agent's further actions. Crucially, 12- and 6-month-olds infer and encode body-directions of agents whose end-features are equated for novelty and perceptual complexity and show no resemblance to human faces. Thus, disambiguation of the agent's body-direction may be guided solely by the agent's actions. Results from follow-up studies suggest that 18-month-olds and adults may also rely on another strategy: assigning front on the basis of relative perceptual complexity – perhaps reflecting the prevalence of cephalized animal bodies with sensory organs at the anterior head. Altogether, these results suggest that from early on in human infancy agency perception and action anticipation are supported by adaptations that reflect constraints of the anteroposterior body organization on animal behaviour.

Thursday June 30, 2016 10:20 am - 10:40 am

Detecting patterns of food availability as an efficient way to minimise costs in virtual reality foraging

Melissa Kirby (University of Leicester, mk217@le.ac.uk), Carlo De Lillo

Foraging on ephemeral fruit resources is believed to have led to the emergence of higher cognitive skills in primates. We assessed humans in conditions with pressures similar to those encountered by common ancestors of humans and frugivorous primates, by simulating the requirements of foraging as described for chimpanzees in forest environments. Participants searched for rewards within a virtual reality environment displaying coloured poles representing fruiting trees of different species. The poles yielded rewards according to spatio-temporal patterns representing the fruiting synchrony of the tree species, whilst trials represented foraging bouts. Two experiments manipulated the number and predictability of patterns of reward availability. Participants relied on long term memory to avoid never fruiting species and working memory to track locations explored within a foraging bout, and learned to monitor multiple patterns of fruiting in order to search correctly at the outset of trials. A third experiment showed that participants acquired spatial knowledge of the rewards within the environment. These results are suggestive of adaptive traits to reduce memory costs, and help characterise the claim that foraging for ephemeral resources in the forest canopy triggered primate brain expansion by providing a taxonomy of measures for cognitive assessment in an evolutionarily-relevant task.

Thursday June 30, 2016 10:40 am - 11:00 am**Evolutionary mechanisms test the validity of behavioral research methods**

Russell Jackson (University of Idaho, rjackson@uidaho.edu)

The current research utilized an evolved function of vision in order to measure the generalizability of behavioral science methods. The expanding technological sophistication and novelty of modern research methods pose an increasing risk that findings will fail to generalize to natural behavior. In particular, virtual-reality methods regularly fail to replicate real-world behavior and the means for testing their generalizability are flawed. Participants in the current study completed virtual and real-world tasks proposed under Evolved Navigation Theory. Data suggest that these tasks induced evolved visual illusions. Further, these illusions indicated the extent to which virtual environments evoked real-world psychological processes. Evolutionary predictions identified a novel method for measuring and improving the generalizability of findings from virtual reality research. The evolved nature of cognition provides a guiding process for circumventing the trivial effects provided by increasingly diverse research methods.

Thursday June 30, 2016 11:00 am - 11:20 am**Instinctive drifts in object recognition: The illusory perception of animate objects in random noise**

Joshua J New (Barnard College, Columbia University, jnew@barnard.edu), Sarah Lazarsfeld, Mary Seo, Melyssa Luxenberg

Pareidolias are the illusory perception of meaningful objects – often faces – in random, unpatterned stimuli. We evaluated the hypothesis that a biological preparedness for detecting animate objects (people and animals) makes their illusory experience especially likely and explored which manners of visual noise and features might contribute to their occurrence. In Experiment I, participants were asked to trace and label any objects appearing in a Perlin noise display – a gradient noise which approximates the natural phenomena in which pareidolias are commonly experienced (e.g. clouds). Nearly half of the pareidolias reported were of people, followed in frequency by animals, then artifacts, then plants and other inanimate objects. In Experiment II, participants experienced more illusory objects when many small curvilinear, or rectilinear segments, or both, were embedded in slowly changing Gaussian noise. Animals were reported most frequently, driven largely by their frequent perception amongst curvilinear segments. These preliminary studies 1) confirm that neurologically-typical individuals will readily and illusorily experience complex and meaningful objects in random noise, 2) suggest that animate objects are especially likely to be illusorily perceived and 3) constitute a novel approach for uncovering the fundamental visual features (e.g. curvilinearity) involved in the perception of animate objects and other natural categories.

Thursday June 30, 2016 10:00 am - 11:20 am

Macro-evolutionary Approaches to the Evolution of Technology

Chair: Carl Lipo

Thursday June 30, 2016 10:00 am - 10:20 am

Computational Methods for Identifying Metapopulation Interaction Patterns From Seriation Solutions

Mark Madsen (University of Washington, mark@madsenlab.org)

Many questions about cultural evolution are best addressed at macroevolutionary scales. Patterns of inheritance are frequently addressed through phylogenetic methods, but questions concerning the spatiotemporal history of populations and their interaction require ways of fitting metapopulation models to regional scale data. Directly fitting any but the simplest cultural transmission models to trait frequency data is impossible, particularly when sampling, time averaging, and metapopulation dynamics are part of our modeling. Instead, Approximate Bayesian Computation (ABC) allows likelihood-free model selection, and is increasingly used in evolutionary studies with great success. In previous work, Carl Lipo and I have explored new ways of constructing seriations from frequency data such that the solutions track the major spatiotemporal "directions" in which cultural traits originate and then flow through metapopulations. In this paper I show that it is often possible to identify the class of regional interaction pattern (expressed as temporal network models) within a metapopulation which gives rise to an observed seriation. The method employs graph-theoretic properties of seriation solutions as input to random forest classifiers, following Pudlo et al's (2015) approach to reliable ABC model selection. Beyond our specific application, the method provides a strong framework for fitting complex dynamic models at macroevolutionary scales.

Thursday June 30, 2016 10:20 am - 10:40 am

Continuity-based approaches and the study of patterns of cultural inheritance

Carl Lipo (Binghamton University, clipo@binghamton.edu), Mark Madsen

At the core of all methods for studying inheritance is a focus on the identification of continuous distributions of traits over space and time, with differences between methods largely a matter of attention to the way in which traits change. Examples include cladistics-based methods, occurrence seriation and frequency seriation. A fourth approach results from focusing solely upon the degree of trait continuity between assemblages. The principle applied is that the diffusion of traits over space and through time will possess continuity, and thus we expect that small differences in space or time should reflect relatively small differences in trait occurrence or frequency, at least most of the time. This approach is somewhat similar to occurrence seriation but can be measured using abundance in addition to simple presence or absence. It is also similar to cladistics but rather than using derived traits to generate branches in a tree, we focus on the patterns shown by the sharing of traits. In this paper, we explore how this approach can be used to build models of inheritance that contributes complementary information when used in conjunction with more traditional approaches.

Thursday June 30, 2016 10:40 am - 11:00 am
Analyzing cultural change in sparse population data

Anne Kandler (City University London, Anne.Kandler.1@city.ac.uk)

Cultural change can be quantified by temporal frequency changes of different cultural artifacts and it is one of the central question of cultural evolution to identify what underlying transmission processes could have caused the observed frequency changes. Observed changes, however, often describe the dynamics in samples of the population of artifacts whereas transmission processes act on the whole population. Here we develop a modeling framework aimed at addressing this inference problem. This framework firstly generates theoretical patterns of temporal frequency change conditioned on a specific process of cultural transmission and under consideration of the sample-population problem mentioned above. Secondly, we use statistical comparisons (in form of approximate Bayesian computation) to establish which transmission processes could have produced the observed frequency data. In this way we infer underlying processes directly from the available data without any equilibrium assumption. Additionally, this framework allows us to explore the theoretical limits of inferring processes from (sparse) population-level frequency data. We apply our model to a dataset describing pottery from settlements of some of the first farmers in Europe (the LBK culture) and conclude that the observed frequency dynamic of different types of decorated pottery is consistent with pro-novelty selection.

Thursday June 30, 2016 11:00 am - 11:20 am
Modeling diversification dynamics in the pharmaceutical drug industry

Erik Gjesfjeld (University of California, Los Angeles,), Jonathan Chang, Daniele Silvestro, Michael Alfaro

Humans have shown a remarkable ability to create an amazingly diverse set of technologies; however, our understanding of how technologies originate, diversify over time and go extinct remains poor. We argue here that estimating the origination and extinction dynamics of material objects is an important but often neglected component for assessing the mode and tempo of technological evolution. This research presents a flexible Bayesian estimation approach for investigating patterns of origination and extinction within a diverse technological system. This approach implements a birth-death model of diversification to model the rates of diversification through time. As a demonstration of our approach, we examine the diversity of pharmaceutical drugs through time and address the reality of the “innovation crisis”. Results of our research highlight the broader historical decline of drug innovation and indicate that competition between drug companies has played a more significant role in shaping drug diversification than competition between therapeutic drug classes.

Thursday June 30, 2016 10:00 am - 11:20 am**Familial Relations 1***Chair: Joseph Billingsley***Thursday June 30, 2016 10:00 am - 10:20 am****Coresidence Duration and Cues of Maternal Investment Regulate Sibling Altruism Across Cultures***Joseph Billingsley (University of Miami, wjb16@miami.edu), Daniel Sznycer, Delphine de Smet, Debra Lieberman*

Genetic relatedness is a fundamental determinant of social behavior across species. Over the last few decades, researchers have investigated the proximate psychological mechanisms that enable humans to assess their genetic relatedness to others. Much of this work has focused on identifying cues that predicted relatedness in ancestral environments and on examining how they regulate kin-directed behaviors. Despite progress, many questions persist. Here we address three. First, we examine the replicability of the effect of two association-based cues to relatedness—maternal perinatal association (MPA) and coresidence duration—on sibling-directed altruism. MPA, the observation of a newborn being cared for by one's mother, strongly signals relatedness, but is only available to the older sibling in a sib-pair. Younger siblings, to whom the MPA cue is unavailable, appear to fall back on the duration of their coresidence with an older sibling. Second, we determine whether the effects of MPA and coresidence duration on sibling-directed altruism obtain across cultures. Last, we explore whether Paternal Perinatal Association (PPA) informs sibship. Data from six studies conducted in California, Hawaii, Dominica, Belgium, and Argentina support past findings regarding the role of MPA and coresidence duration as cues to sibship. By contrast, PPA had no effect on altruism.

Thursday June 30, 2016 10:20 am - 10:40 am**Sex-Biased Parental Investment in a Southern California Population***Amanda Barnes-Kennedy (California State University, Fullerton, msamanda@csu.fullerton.edu)*

The Trivers-Willard Hypothesis predicts that maternal investment in male or female offspring will be mitigated by maternal condition. Testing this hypothesis in modern human populations has yielded mixed results. We hypothesize that this is due to the fact that large-scale societies, such as the U.S., are comprised of multiple, semi-overlapping mating markets. To appropriately assess the reproductive potential of offspring, we must compare individuals within a mating market. Furthermore, the ways that both maternal condition and maternal investment have been operationalized have varied widely between studies, with many using sparse measures, such as child BMI. We have constructed and validated a new measure of maternal investment that includes measures of time allocation, financial investment, educational investment, and social investment, as well as child outcomes. Maternal condition was measured as both physical and social condition. Using elementary school boundaries as a proxy for realistic social subpopulations, we tested three groups of mothers in Fullerton, California. These school neighborhoods are representative of the lowest, mid-range, and highest socioeconomic populations in the city, and comprise broadly different ethnic populations. We report the results of our validity test as well as the results of the test of the Trivers-Willards Hypothesis.

Thursday June 30, 2016 10:40 am - 11:00 am**Does Genetic Relatedness Affect Social Closeness Toward Nieces and Nephews? A Twin-Family Study**

Nancy L. Segal (CSU-Fullerton, nsegal@fullerton.edu), Sevim Mollova, MA, William D. Marelich, Ph.D., Kathleen Preston, Ph.D.

Twin-family designs create a series of genetically and environmentally informative kinships that are well suited to assessing evolutionary-based hypotheses regarding social relatedness. Monozygotic (MZ) twins become the “genetic parents” of their nieces/nephews, whereas dizygotic (DZ) twins retain conventional aunt/uncle relationships with their co-twin’s children. Previous studies (Segal et al., 2007; Segal & Marelich, 2011) found that MZ twin aunts/uncles who completed a Social Closeness Questionnaire (SCQ) expressed greater closeness toward nieces/nephews than did DZ twin aunts/uncles, consistent with predictions from inclusive fitness theory. Greater social closeness was expressed toward children of female co-twins than male co-twins. These issues and others were revisited in a larger sample of 470 individual twins (362 MZ, 108 DZ). The new results parallel those from the initial studies; i.e., the effects of zygosity [$F(1, 466) = 10.85, p = .001$] and co-twin sex [$F(1, 466) = 17.26, p < .001$] were significant for social closeness toward nieces and nephews. Three factor scores (comparative closeness, perceived closeness and perceived similarity) derived from the SCQ showed the expected directionality (MZ > DZ). The value of assessing evolutionary psychological questions via behavioral-genetic methods is discussed.

Thursday June 30, 2016 11:00 am - 11:20 am**Mothers and Fathers Perform More Mate Retention than Individuals without Children**

Nicole Barbaro (Oakland University, nbarbar@oakland.edu), Todd K. Shackelford, Viviana Weekes-Shackelford

Human life history is unique among primates, most notably the length of infant dependency and the formation of long-term pair-bonds. Men and women are motivated to remain pair-bonded to maintain the distribution of male-provisioned resources to a woman and their offspring, and to protect offspring from infanticide. Men and women can employ individual mate retention (behaviors performed alone) and coalitional mate retention (behaviors performed by an ally) to retain their mate. The current research investigates whether men and women with children perform more frequent mate retention behaviors than men and women without children. Participants ($n=1,003$) in a heterosexual romantic relationship completed a survey, reporting whether they had genetic children with their current romantic partner, and reported how frequently they performed various mate retention behaviors. The results indicate that men ($n=262$) and women ($n=234$) who share genetic children with their partner performed more frequent individual mate retention and requested more frequent coalitional mate retention than men ($n=280$) and women ($n=227$) who do not share genetic children with their partner. We interpret the results in light of hypotheses concerning the evolution of pair-bonding in humans and mate retention behaviors, and we suggest profitable avenues for future research in this domain.

Thursday June 30, 2016 11:30 am - 12:30 pm

Sexual Psychology

Chair: Robert Kurzban

Thursday June 30, 2016 11:30 am - 11:50 am

The Object of (Sexual) Fantasy

Robert Kurzban (University of Pennsylvania, kurzban@psych.upenn.edu), Katrina Fincher, Alixandra Barasch

People spend considerable time fantasizing, imagining events that are unlikely ever to come to pass; the value of doing so is unclear. While it is possible that fantasizing reflects adaptation, functioning to plan for possible future events, as some have proposed, here we explore the possibility that sexual fantasies emerge as a byproduct of reward systems. Six studies investigated this possibility, focusing on the point of view people take when they engage in sexual fantasies. Drawing on an argument that how rewarding a fantasy will be to members of each sex might depend on the details of how they imagine the fantasy, we predict and find that men generally take the first person when they have sexual fantasies whereas women tend to take a third person perspective. This effect, crucially, and as predicted by our account, reverses in a different domain, sports performance. These results are consistent with the view that fantasies, sexual and otherwise, can be conceptualized as a byproduct of reward systems, though further work needs to be done to distinguish among candidate hypotheses.

Thursday June 30, 2016 11:50 am - 12:10 pm

Do sexually transmitted pathogens manipulate human sexual behavior?

Geoffrey Miller (University of New Mexico, gfmiller@unm.edu), Diana Fleischman

Host-parasite coevolution is central to many domains of evolutionary biology and evolutionary medicine, and sexually transmitted infections (STIs) are central to human sexual health. However, the possibility that STIs may have evolved to influence human sexual behavior has received almost no attention yet. Many parasites promote their replication by manipulating their hosts' physiology and behavior, e.g. increasing host aggressiveness (to spread through bites), disrupting anti-predator defenses (to spread through ingestion), or inducing 'parasitic castration' (to spread through sustained mating effort). Because parasites can evolve orders of magnitude faster than larger-bodied, slower-breeding hosts, parasites have a built-in advantage in developing adaptations for hijacking host nervous systems in their own interests. We'll argue that some common STIs may manipulate human sexual behavior in their own interests, e.g. by promoting sociosexuality, bisexuality, or homosexuality, broadening mate choice criteria, increasing courtship skills, disrupting long-term relationships, or inducing female sterility. Herpes viruses and neurosyphilis seem especially well-positioned to influence neural functioning. Neurosyphilis often promotes increased sexual desire, sexual and verbal disinhibition, and an increased creative spark reminiscent of Parkinson's L-DOPA therapy. More attention to possible STI manipulation could lead to better diagnostic criteria for STIs, interventions for reducing transmission, new explanations for non-heritable individual differences in sexual strategies, a better understanding of sexual disgust, and new insights into the evolution of human sexuality.

Thursday June 30, 2016 12:10 pm - 12:30 pm**Casual Sex, Motives, & Sexual coercion: sex differences in outcomes**

John M. Townsend (Syracuse University, jmtsu44@aol.com), Catherine Salmon, Timothy Wasserman, Jessica Hehman

Sexual strategies theory proposes that women, compared to men, should have negative reactions to casual, i.e. low investment, sexual relations. However, some studies report women have generally positive reactions. Vrangalova (2014) used Self-Determination Theory to study associations between motives for casual sex and measures of physical and mental well-being. She found no gender differences in associations among motivations, sexual behavior, and measures of well-being. She concluded that the motives of self-determined women--and unrestricted women as defined by SOI scores—may allow them to engage in casual sex without negative consequences. The current study explored associations among SOI scores, motives, and measures of well-being/ outcome, including sexual victimization, self-esteem, and depression. Contrary to previous studies, autonomous motives were associated with negative outcomes, but more so for women. These results offer an explanation for the apparent anomaly between sexual strategies theory and women's reported positive reactions to casual sex.

Thursday June 30, 2016 11:30 am - 12:30 pm**Vocal signaling**

Chair: David R Feinberg

Thursday June 30, 2016 11:30 am - 11:50 am**Voice pitch is not related to physical dominance**

David R Feinberg (McMaster University, feinberg@mcmaster.ca), Kelyn J Montano, Sari GE Isenstein, Julian A Bastone

Several studies show voice pitch is tied to real-world measures of social dominance, such as political and company leadership roles. Studies on physical dominance (e.g. handgrip strength & fighting records) and voice pitch however, revealed no significant relationships between physical dominance and voice pitch. We tested this idea again using voice pitch extracted from >70 videos of pre-fight interviews (~1000 voice recordings) of Ultimate Fighting Championship (UFC) fighters, and fight statistics. There was no relationship between voice pitch and any measure, including wins, losses, subcategories of wins and losses (e.g. by Knockout, Technical Knockout, decision, etc.), nor did voice pitch predict the percentage of aggressive or defensive moves. We conducted analyses of each fight and individually for each fighter. There were no surviving relationships between voice pitch, standard deviation of voice pitch, and any measure of dominance in UFC. Thus, if voice pitch did evolve to cue or signal dominance, it is likely that it is restricted to leadership roles (ie social dominance) rather than strength contests (ie physical dominance).

Thursday June 30, 2016 11:50 am - 12:10 pm**Are men's perceptions of sexually dimorphic vocal characteristics related to their testosterone levels?**

Michal Kandrik (University of Glasgow, m.kandrik.1@research.gla.ac.uk), Amanda Hahn, Joanna Wincenciak, Claire Fisher, Katarzyna Pisanski, David Feinberg, Lisa DeBruine, Benedict Jones

Feminine physical characteristics in women are positively correlated with markers of their mate quality. Previous research on men's judgments of women's facial attractiveness suggests that men show stronger preferences for feminine characteristics in women's faces when their own testosterone levels are relatively high. Such results could reflect stronger preferences for high quality mates when mating motivation is strong and/or following success in male-male competition. Given these findings, the current study investigated whether a similar effect of testosterone occurs for men's preferences for feminine characteristics in women's voices. Men's preferences for feminized versus masculinized versions of voices were assessed in five weekly test sessions and saliva samples were collected in each test session. Analyses showed no relationships between men's voice preferences and their testosterone levels. Men's tendency to perceive masculinized voices to be more dominant was also unrelated to their testosterone levels. Previous research suggests that men's judgments of sexually dimorphic characteristics in women's voices are similar to those reported for women's faces. By contrast, the current study's results, in combination with those of previous research on men's preferences for facial femininity, suggest that testosterone influences men's responses to sexually dimorphic characteristics in women's faces, but not women's voices.

Thursday June 30, 2016 12:10 pm - 12:30 pm 11:00 am - 11:20 am**Are there acoustic cues to human developmental stability? Relationships between facial fluctuating asymmetry and vocal attractiveness**

Alexander K. Hill (University of Washington, akhill@uw.edu), Rodrigo A. Cárdenas, John R. Wheatley, Lisa L.M. Welling, Robert P. Burriss, Peter Claes, KU Leuven; Coren L. Apicella, University of Pennsylvania; Michael A. McDaniel, Virginia Commonwealth University; Anthony C. Little, University of Stirling; Mark D. Shriver, The Pennsylvania State University; David A. Puts, The Pennsylvania State University

Fluctuating asymmetry (FA), deviation from perfect bilateral symmetry, is thought to reflect an organism's ability to maintain stable morphological development in the face of environmental and genetic stressors. Indeed, previous research has documented negative relationships between FA and attractiveness judgments in humans. However, scant research has explored relationships between the human voice and putative markers of genetic quality in either sex, and no study has explored relationships between vocal attractiveness and asymmetry of the face, a feature-rich trait space central in prior work on human genetic quality and mate choice. We therefore examined relationships between facial FA and vocal attractiveness in three studies comprising 231 men and 240 women drawn from two Western samples plus Hadza hunter-gatherers of Tanzania. Voice recordings were collected and rated for attractiveness, and FA was computed from two-dimensional facial images as well as, for a subset of men, three-dimensional facial scans. We show that men and women with more symmetrical faces have more attractive voices. Meta-analytic results indicate weighted mean correlations between $-.17$ and $-.25$. To our knowledge, this represents the first examination of facial FA and vocal attractiveness and lends further support to the hypothesis that voices provide cues to genetic quality in humans.

Thursday June 30, 2016 11:30 am - 12:30 pm**Cultural Evolution 1***Chair: Michael Barlev***Thursday June 30, 2016 11:30 am - 11:50 am****Introducing “Seshat”, a Global History Databank for testing cultural evolutionary hypotheses***Thomas Currie (University of Exeter, T.Currie@exeter.ac.uk), Kevin Feeney, Pieter Francois, Peter Turchin, Harvey Whitehouse*

An important challenge facing studies of cultural evolution is to empirically assess theoretical and mathematical models that have been well developed for several decades. However, the vast amount of knowledge about past human societies that could be brought to bear on such studies has not been systematically organized. Here I describe the development of a massive databank of historical and archaeological information, Seshat: The Global History Databank, that is being constructed by a large international team of researchers spanning the natural and social sciences, and the humanities. A key benefit of our approach lies in making explicit the choices involved in collecting and coding information, and in working directly with experts on different topics, regions, or time periods, in order to collate the best available historical and archaeological evidence. I illustrate this approach by demonstrating how we are using Seshat to understand the evolutionary mechanisms behind the increase in socio-political complexity and the changing nature of inequality in human societies over the last 10,000 years. This project will provide important insights into fundamental aspects of past societies, and will enable us to test more rigorously key hypotheses about human social and cultural evolution.

Thursday June 30, 2016 11:50 am - 12:10 pm**One concern regarding the use of phylogenetic methods to study transmitted culture***Michael Barlev (University of California, Santa Barbara, barlev@psych.ucsb.edu), Rachel Grillot*

The present study highlights one concern regarding the use of phylogenetic methods to study transmitted culture, defined here as chains of mental to public to mental representations that exist in two or more minds (Sperber, 1996). A classic serial reproduction method (Bartlett, 1932) was used to yield 10 generations of drawings from a known initial drawing (“ancestral state”). A reversible-jump Markov chain Monte Carlo analysis, when provided with information from the most recent (“living”) generation, wrongly inferred the ancestral state; the analysis could not predict rapid trending away from the ancestral state toward cognitive attractor points (Sperber, 1996). We argue that domain-specific but not domain-general or “blank slate” views of the mind are able to predict biases in the contents of transmitted representations; furthermore, domain-specific views can be used to delimit the conditions in which the use of phylogenetic methods to study transmitted culture is likely to lead to reliable inferences including, but not limited to, about ancestral states.

Thursday June 30, 2016 12:10 pm - 12:30 pm**Simulation models uncover processes driving geographic patterns of language diversity**

Michael C. Gavin (Department of Human Dimensions of Natural Resources, Colorado State University, michael.gavin@colostate.edu), Thiago F. Rangel, Claire Bower, Robert K. Colwell, Kathryn R. Kirby, Carlos A. Botero, Michael Dunn, Robert R. Dunn, Joe McCarter, Russell D. Gray

Why are there so many languages (~7000), and why is their geographical distribution so uneven? Surprisingly few studies have empirically assessed the degree to which different factors shape linguistic diversity patterns. Previous studies have produced contradictory results and relied on correlative curve-fitting approaches, which imply only associations and cannot infer direct causation. We present the first use of simulation modeling procedures from macroecology to examine language distribution patterns. These models work as quasi experiments, allowing investigators to hold certain factors constant to isolate and assess the impact of particular processes. We tested the extent to which a minimal set of processes determines the number and spatial distribution of languages on the Australian continent. Our model made three assumptions, each based on empirical evidence from hunter-gatherer groups: (i) human groups move to fill unoccupied spaces, (ii) environmental carrying capacity, as defined by rainfall, drives local population density, and (iii) linguistically defined social groups have a maximum population size. This simple model can explain the total number of languages (average estimate: 408, observed: 407) and ~56% of spatial variation of languages in Australia. Our approach introduces a new methodological approach for identifying environmental and cultural processes that shape human diversity patterns.

Thursday June 30, 2016 11:30 am - 12:30 pm**Social-partner Choice**

Chair: Jillian O'Connor

Thursday June 30, 2016 11:30 am - 11:50 am**Female voice pitch as an honest cue to trustworthy behaviour**

Jillian O'Connor (University of Guelph, joconn03@uoguelph.ca), Pat Barclay

Voice pitch influences perceptions of trustworthiness and cooperation, but whether voice pitch predicts differences in behaviour has been untested. Voice pitch is inversely related to individual differences in testosterone. Testosterone levels are further associated with untrustworthy and egocentric behaviour. We predicted that lower voice pitch would be associated with untrustworthy behaviour. We first obtained voice recordings from female participants. We measured voice pitch using the autocorrelation function in Praat. Participants then took part in the trust game, once as the truster and once as the responder. In this game, the truster was given \$5 and could send any amount to the responder. Any amount sent would be doubled. Before knowing the truster's decision, the responder decided what proportion to return to the truster. Women with lower voices returned less money as the responder than did women with higher voices. There was no relationship between pitch and the amount of money sent as the truster. Therefore, lower female voice pitch is a cue to untrustworthy behaviour, but is unrelated to the propensity to trust others. Listeners who attend to such cues may be better able to avoid the fitness risks of engaging in social exchanges with exploitative partners.

Thursday June 30, 2016 11:50 am - 12:10 pm
Ineffective Charitable Altruism Suggests Adaptations for Partner Choice

*Jason Nemirow (Department of Psychology, Harvard University, nemirow@fas.harvard.edu),
Max Krasnow, Rhea Howard, Steven Pinker*

What determines the esteem granted to donors to charity: the benefit delivered to the recipient (as consequentialist morality would dictate) or the sacrifice incurred by the donor (which signals the value of the donor as a potential cooperation partner)? Dollar for dollar, most charitable donations could help far more people than they do, reminding us that the benefit and sacrifice of a donation are dissociable. In a series of surveys, subjects evaluated fictitious altruists for a “Humanitarian of the Year” prize. We found that the most potent driver of positive ratings was the donor’s level of personal sacrifice; the quantity of the benefit delivered, method of contribution (money or time), and the donor’s having researched how best to give made little difference. We hypothesize that ineffective charitable giving is an unfortunate side effect of donors’ response to these reputational incentives: to bolster their own reputations as cooperative partners, they prioritize conspicuous sacrifice over the welfare of beneficiaries. We will describe follow-up work testing interventions designed to nudge the underlying psychology towards impact and away from public sacrifice.

Thursday June 30, 2016 12:10 pm - 12:30 pm
Social and non-social influences on prosocial donating in young children.

Emily Messer (Heriot-Watt University, E.Messer@hw.ac.uk), Nicola McGuigan

Our everyday experience provides us with ample evidence that humans show concern for other, even unrelated, individuals. Of great theoretical interest, both within and across species, is identifying the cognitive processes which underlie such prosociality, are they merely simple associate processes, or are more complex processes involved in which score keeping of the prior behaviour of another individual occurs. In order to help address such questions the current study asked whether young children (3 to 8 years of age) would engage in reciprocal donating when distributing resources between themselves and a same aged partner. Crucially, alongside such child-to-child exchanges we included a novel (enhanced ghost) control condition, in which children received donations ‘selected’ by a non-human agent. The inclusion of an agent versus non-agent comparison allowed us to more clearly tease apart social and non-social influences on resource donation. In the child-partner condition children reacted in kind to the behaviour of their partner, whereas no such reciprocity was evident the non-human agent condition. These findings suggest that an interaction with a partner is essential in influencing young children’s donating behaviour.

Thursday June 30, 2016 11:30 am - 12:30 pm
Evolutionary Approaches to Understanding Forgiveness

Chair: Michael E. McCullough

Thursday June 30, 2016 11:30 am - 11:50 am
People Selectively Forgive Valuable Transgressors and Low-Risk Transgressors

Michael E. McCullough (University of Miami, mikem@miami.edu), Jennifer Burnette, Eric J. Pedersen

Even though humans likely possess cognitive systems designed to motivate punishment (or “revenge”) due to its deterrent effects, many relationships retain value even after transgressions. Thus, selection might have endowed humans with cognitive systems designed to motivate reconciliation with transgressors whom they perceive as valuable and nonthreatening. Here we discuss two efforts to evaluate the importance of relationship value and exploitation risk for forgiveness. In Study 1, which sought to experimentally manipulate cognitions about a specific partner’s relationship value and exploitation risk, we found that participants’ forecasted likelihood of forgiving was higher for high-value relationship partners. Also, among high-value (but not low-value) partners, exploitation risk reduced forecasted likelihood of forgiving. In Study 2 (a longitudinal study with 337 participants who had recently been harmed by a relationship partner), we found that conciliatory gestures (e.g., apologies, offers of compensation) were associated with increased perceptions of transgressors’ relationship value and reduced perceptions of transgressors’ exploitation risk. Finally, conciliatory gestures appeared to accelerate forgiveness and reduce reactive anger via their intermediate effects on relationship value and exploitation risk. These results point to the importance of relationship value and exploitation risk for forgiveness, as well as the routes by which conciliatory gestures facilitate forgiveness.

Thursday June 30, 2016 11:50 am - 12:10 pm
Why we forgive our valuable partners: Rational calculation, emotional adaptation, or a mixture of both?

Adam Smith (Kobe University, adamrandallsmith@gmail.com), Ayano Yagi, Kazuho Yamaura, Hiroshi Shimizu, Yohsuke Ohtsubo

Recent progress in research on reconciliation in both primatology and human evolutionary psychology underscores the importance of relationship value for predicting whether a victim will seek to restore a peaceful relationship with a transgressor. Humans, for instance, are more willing to forgive transgressors when they expect ample benefits from maintaining the relationship (i.e., when relationship value is high). Although the valuable relationships hypothesis, which predicts this finding, originated from an evolutionary perspective, current empirical evidence is entirely consistent with rational choice theory. In other words, victims could be said to decide whether or not to forgive their transgressors based only on rational calculation. Such an account obviates the need for a “forgiveness instinct” and is contradictory to earlier research indicating that an emotion, empathy, accounts for a substantial proportion of variance in willingness to forgive. Across a series of three studies (291 Japanese undergraduates, 488 Japanese adults, and 494 US adults) we establish that the association of relationship value with forgiveness is partially mediated by empathy for one’s transgressor. Our consistent observance of this partial mediation implies that forgiveness of valuable relationship partners does not result from rational calculation alone—it appears, also, to be the consequence of an “instinct.”

Thursday June 30, 2016 12:10 pm - 12:30 pm
Forgiveness implies restored trust and cooperation

Daniel E. Forster (University of Miami, d.forster@umiami.edu), Michael E. McCullough

Across all societies throughout history, humans faced exploitation from others (e.g., theft, infidelity, assault, homicide). Due to the high potential costs of exploitation (e.g., loss of resources, loss of mate, injury, death), humans may have evolved motivations and behaviors to deter exploitation. Researchers have primarily studied the aggressive and avoidant tendencies directed toward exploiters; however, the loss of a social partner can have other costly consequences (e.g., a divisive social network). Although the study of conciliatory tendencies and their effects on what we would call "forgiveness" have received much empirical attention in the non-human literature, psychologists have only recently investigated the social and cognitive underpinnings of conciliation and forgiveness in humans. To further this research, we conducted an experiment on 1,026 subjects who experienced an experimentally manipulated transgression followed by conciliation (which was administered via a message that was either apologetic, aggravating, or neutral with respect to the transgression) to find whether, and via what mechanism(s), forgiveness is characterized by restored trust, restored generosity, and/or reduced punishment. Our results indicated that our measures of forgiveness explained the most variance in trust-related behavior, and that the effects of conciliatory gestures on forgiveness were mediated by relationship value and exploitation risk.

Thursday June 30, 2016 3:10 pm - 4:10 pm
Life History, the Dark Triad and Aggressive Behavior

Chair: Emily Anne Patch

Thursday June 30, 2016 3:10 pm - 3:30 pm
Childhood Stress, Life History, Psychopathy, and Sociosexuality

Emily Anne Patch (Department of Psychology, University of Arizona, epatch08@gmail.com), Aurelio José Figueredo

Early life stress (ELS) has been reported to cause a number of poor health outcomes. Research shows that attitudes in the context of social norms can predict future behavior. This presentation explores how ELS, life history (LH) strategy, and psychopathy impact attitudes towards infidelity, mating effort, and casual sex. A sample of 300 participants reported their lifetime numbers of sex partners, which correlated with unrestricted sociosexual attitudes (albeit not strongly). A structural equations model was specified that included ELS, LH Strategy, and Dark Triad traits. Results showed that the effects of ELS and LH on unrestricted sociosexual attitudes were partially mediated through psychopathy. ELS, LH, and an antagonistic social schema increased psychopathy, which then directly increased unrestricted sociosexual attitudes. Additionally, a cascade model was developed with short-term sexual behavior as the outcome variable. Results indicated that psychopathy was once again mediating the effects of ELS and LH. These results support the theory that psychopathy is an adaptive trait that functions to increase short-term mating opportunities.

Thursday June 30, 2016 3:30 pm - 3:50 pm**Examining Intelligence, Health, and Life History Correlates of the Dark Inventory: The MIDUS-DI**

Tomás Cabeza de Baca (University of California, San Francisco, tdebaca@email.arizona.edu), Emily Anne Patch, Aurelio José Figueredo

A new measure entitled The Dark Inventory (DI) reframes the classic DT personalities into three component attitudinal schemata: (1) Antagonistic Social Schemata, (2) Mutualistic Social Schemata, and (3) Affective and Cognitive Liability. This allows the three overlapping DT constructs to be decomposed into the more fundamental components from which they are theorized to be constituted. The present study uses the MIDUS II sample to replicate the theoretical specification of the original DI, using items from the included Multidimensional Personality Questionnaire. We correlated the MIDUS-DI with measures of Life History Strategy (K), such as physical and mental health (Covitality) and fluid intelligence (g). The MIDUS-DI correlated negatively with both Covitality and K, and correlated weakly but also negatively with g. Multiple regressions revealed a significant interaction between sex and K, suggesting that fast life history males were more likely to have higher levels of DT traits than females as measured by the MIDUS-DI. Significant curvilinear effects for both K and g were also found. The highest levels of the MIDUS-DI were thus found at the faster end the life history continuum with a gradual decline at the slower end. Implications for further research are discussed.

Thursday June 30, 2016 3:50 pm - 4:10 pm**The Dark Inventory and Interpersonal Aggression: Constructive Cross-Cultural Replications in the United States and Mexico using College Student and Community Samples**

Aurelio José Figueredo (Department of Psychology, University of Arizona, ajff@u.arizona.edu), Emily Anne Patch, Marisol Perez-Ramos, Gabriela Jacqueline Cruz

A cross-cultural constructive replication was performed by sampling a low-risk undergraduate student population from a Southwestern University in the United States (N=114) and a high-risk adult non-student population from a community in Central Mexico (N=97). The three “clusters” comprising the Dark Inventory (DI) were replicated almost identically in both samples, comparing both the convergent validities among the components as indicators of each of the three clusters and the convergent validities among the clusters as indicators of a higher-order DI common factor. These three DI clusters were: (1) Antagonistic Social Schemata, (2) Mutualistic Social Schemata, and (3) Affective and Cognitive Liability. These three clusters were arrayed in a Sequential Canonical Cascade Analysis to predict each other and then to predict Executive Functions, Rule Governance, and Interpersonal Aggression, in that order of hierarchical priority. With just a few statistically significant parametric differences, which in no case reversed the direction of the effects, the hybrid “Dark Violence” model cross-validated reasonably well across two independent and highly discrepant populations.

Thursday June 30, 2016 3:10 pm - 4:10 pm

Social Signaling

Chair: Conor M. Steckler

Thursday June 30, 2016 3:10 pm - 3:30 pm

Signal Police: The Social Punishment of Unwarranted Expansive Postural Displays

Conor M. Steckler (University of British Columbia, conor.steckler@psych.ubc.ca), Jessica L. Tracy

Expansive postural displays— such as “power poses” and the cross-culturally recognized emotional expression of pride—come with a range of benefits, including sending a message of increased social rank. These expressions are also easy to fake, which raises the question: what keeps this nonverbal communication honest and stable over time, if displayers can reap rewards from signaling when the signal is not merited? One possibility is that socially enacted punishment of these displays—when they are unwarranted—makes them more costly than beneficial in such cases, allowing the signal to remain stable over evolutionary time. To begin to test this account, we examined the social consequences of showing expansive postural displays in a situation that runs counter to that of a deserved rank increase: asking for help. Across three studies using ecologically valid data from a micro-lending charity website, men who showed expansive posture while requesting aid were punished with a substantial reduction in the amount of aid they received. In a fourth study we experimentally manipulated expansive posture, and found that this display is causally related to reduced aid. Together, these findings provide the first evidence that unwarranted expansive postural displays face real socially implemented penalties.

Thursday June 30, 2016 3:30 pm - 3:50 pm

The Communicative Functions of Fear Expressions

Lawrence Ian Reed (McLean Hospital/Harvard Medical School, lreed@mclean.harvard.edu), Peter DeScioli

An individual facing potential costs in a fearful social situation has a unique adaptive problem. That is, how can their fear be communicated in ways that reduce the threat of these costs? Here we use economic games to examine how fear expressions affect the credibility of statements in response to potential costs. In these games, participants viewed an audio/video clip of a character with either a neutral or fearful expression in a fictional scenario. Participants were then asked to assess whether the character was being truthful or deceptive, with correct assessments resulting in real monetary payoffs. In two experiments, we examined responses to neutral and fearful expressions in situations in which the character and participant had either shared (Experiment 1) or individual (Experiment 2) costs. We found that fearful expressions increased the credibility of statements in situations of shared costs and found no difference among fearful and neutral expressions in situations of individual costs. Together, these findings suggest a context-specific effect in which fear expressions function differentially based on the conflict between the signaler and receiver.

Thursday June 30, 2016 3:50 pm - 4:10 pm**A computational approach to gratitude: The roles benefit delivery and welfare valuation**

Eric J. Pedersen (University of Miami, epedersen@umiami.edu), Daniel E. Forster, Michael E. McCullough, Debra Lieberman

Gratitude is an emotion that promotes cooperative relationships and is elicited when an act reveals that an actor values the recipient, especially when the benefit conferred is greater than the recipient expected. We propose that the evolved function of gratitude is to motivate the formation and strengthening of mutually beneficial relationships by signaling to another individual that he or she is valued, and that this plays a key role in all types of mutually beneficial relationships in humans. Specifically, expressions of gratitude communicate to a benefactor the receipt of benefits and can strategically foreshadow the beneficiary's intent to return benefits. In this way, gratitude is a communicative device that attempts to reinforce the benefactor's positive behaviors by maintaining or increasing the benefactor's valuation of the beneficiary's welfare. Here we present the results of two large studies (total N > 1000) testing how benefit delivery produces gratitude, increases beneficiaries' valuation of benefactors' welfare, increases beneficiaries' perceptions of how much they are valued by benefactors and, jointly, how gratitude and perceptions of welfare valuation impact future motivations to cooperate.

Thursday June 30, 2016 3:10 pm - 4:10 pm**Familial Relations 2**

Chair: Gretchen Perry

Thursday June 30, 2016 3:10 pm - 3:30 pm**Investment in kin and non-kin: The role of status and cost of help**

Sara Kafashan (University of Guelph, skafasha@uoguelph.ca), Pat Barclay

Why do some individuals receive more help than others? A biological markets perspective suggests that the costs of help are investments strategically chosen to maximize inclusive fitness benefits to the helper. This logic leads to three predictions. First, costlier help should be disproportionately directed towards kin because indirect fitness benefits offset the greater fitness costs in providing such help. Second, people should invest more in kin and non-kin of high status because status allows better access to resources, thus motivating individuals to invest in partners who have the ability to confer greater benefits. And third, if benefits from partnerships with non-kin exceed the benefits provided by kin (inclusive fitness as well as other benefits), people should invest more heavily in partnerships that bring the most net benefits. To test predictions, participants (a) reported costliness of help directed at kin and non-kin, and (b) completed several measures of status (e.g., occupation, education level) for themselves and recipients of helping (kin and non-kin). Results supported the first two predictions, but not the third. These findings have implications for understanding how help is directed in kin and non-kin relationships.

Thursday June 30, 2016 3:30 pm - 3:50 pm**Who invests in children in non-intact families in rural Bangladesh?**

Gretchen Perry (University of Missouri, gretchenperry@gmail.com)

Parents rely on child-care assistance and material support from "alloparents", perhaps especially in developing nations with limited government-funded social services and when marriages are disrupted by death or divorce. Cross-culturally, bilateral family support is common. Whether this remains true after parental death or divorce in a normatively patrilocal culture is investigated in this interview study of who helps raise children in rural Bangladesh. Widows largely remain in the patrilocal home, but are frequently isolated from alloparental support. Children of divorce often find themselves cared for by their maternal grandmother, and the surviving children of deceased mothers moved between successive caregivers especially frequently, were uniquely likely to have no schooling, and to have their primary caregiver be a step-mother. Family types differed with respect to where children reside, who serves as their primary and secondary caregivers, and who provides material support, but the mother's kin play a major role in all family types, especially as material resource providers. Household income was a strong predictor of child height and weight, which were not demonstrably associated with family type when income was controlled in multiple regression analyses.

Thursday June 30, 2016 3:50 pm - 4:10 pm**Affinal Inclusive Fitness**

Tamas David-Barrett (Kiel Institute and University of Oxford, tamas.david-barrett@trinity.ox.ac.uk)

Since Hamilton's seminal papers, the concept of inclusive fitness has been the central tenet of the biological explanations of social behaviour: related individuals tend to aid others to the extent of their relatedness. In humans, it has been demonstrated that closely related individuals do regard each other as kin. However, the concept of kin recognition is much complicated by the fact that humans use linguistic kin assignment and track kin relations far beyond the close kin. Linguistic kin recognition allows the assignment of kinship to both distant and affinal kin (in-laws), with an underlying psychological mechanism that appears to be similar to maintaining kinship among close kin. However, it has not been demonstrated so far whether affinal and distant kin relations trigger costly behaviour in line with inclusive fitness theory. This is an important question, as it suggests that culturally inherited affinal kinship naming systems can trigger costly biologically inherited kin-like behaviour. Here I present evidence from a new global dataset that suggests, at high significance, that humans universally allocate resources to both kin and affinal kin in proportion of the degree of their relatedness, including an implied relatedness factor >50% to the long term romantic partner. This result holds independent of age, gender, and across a global geographical reach. These findings suggest that despite the substantial cultural variation in human kin and affinal kin tracking systems, there is a strong underlying biological foundation of affinal inclusive fitness, which is likely to be shared by all humans.

Thursday June 30, 2016 3:10 pm - 4:10 pm

Resource Harvesting

Chair: Ann E Caldwell

Thursday June 30, 2016 3:10 pm - 3:30 pm

Energetic trade-offs and physical activity through reproductive maturation among the Tsimane' of lowland Bolivia

Ann E Caldwell (University of Colorado Anschutz Health and Wellness Center, ann.hooper@ucdenver.edu), Paul L Hooper

Understanding factors that affect physical activity can have tremendous public health implications. Epidemiological studies have demonstrated decreases in physical activity during adolescence in modern, Western contexts. We examined physical activity among a cross-section of young Tsimane' forager horticulturalists (N=110; age 8-22) from a life history perspective. We tested the hypothesis that physical activity trades-off against investments in reproductive maturation, is sensitive to individual condition, and would similarly decrease during adolescence. Accelerometers were used to measure physical activity; Tanner stage, urinary DHEA and testosterone were used to measure investment in reproductive maturation; and energetic condition was measured with urinary C-peptide and serum HbA1c. Minutes of the day spent being sedentary significantly increased with Tanner stage ($\beta = -28.66$, $t = 3.47$, $p < 0.001$) controlling for age (ns) and sex. Minutes of the day spent in moderate to vigorous physical activity significantly decreased with Tanner stage ($\beta = -9.00$, $t = -2.00$, $p < 0.05$), controlling for the age (ns) and sex. Further, we will detail the relationships between physical activity and hormonal measures of maturation and energetic condition. Results will be interpreted from a life history framework and considered in light of implications for public health in modern contexts.

Thursday June 30, 2016 3:30 pm - 3:50 pm - CANCELLED

Diet composition and the sexual division of labor among the Hadza: Differential adaptations to diet and their role in cooperative breeding

Alyssa Crittenden (University of Nevada, Las Vegas, alyssa.crittenden@unlv.edu)

Recent research on the myriad ways that labor is partitioned in small-scale foraging populations suggests that broadening the discussion beyond the pair bond, and even perhaps the family unit, will better equip us to tease out the ways in which labor patterns map onto behavior. Much attention in recent years has been paid to the ways in which distributed care networks attenuate the high cost of raising children, yet there is only modest integration of diet composition and the sexual division of labor in discussions of the evolved human cooperative breeding matrix. Here, I will explore several lines of new evidence linking the sexual division of labor with differences in diet composition across the lifespan among Hadza foragers of Tanzania. Strong sex differences in patterns of foraging behavior map onto diet composition, oral health, and composition of the gut microbiome (GM). The finding that women's GM may be differentially adapted to 'low quality' plant foods is of critical importance, not only in terms of nutritional buffering during pregnancy and lactation, but also in terms of exploring the ways in which labor patterns influence cooperative breeding.

Thursday June 30, 2016 3:50 pm - 4:10 pm**Mushroom gatherers' patch visiting and leaving times: a marginal value theorem approach**

*Luis Pacheco-Cobos (Facultad de Biología, Universidad Veracruzana, luipacheco@uv.mx),
Marcos F. Rosetti, Robyn Hudson*

Our knowledge about human subsistence activities, from the perspective of behavioral ecology, can be strengthened by close ethnographic observations. In this sense, GPS-tracking of human interactions with non-timber forest products can provide valuable geographical and biological information for studying human ecological decisions. We used data from GPS-tracks of mushroom gatherers' pathways in Central Mexico, to statistically describe the number of mushroom patches gatherers visited and the time they spend on each patch. In addition to pathways, for each successful collection we registered the geographical position, the number of fruiting bodies, and the corresponding mushroom species. In order to spatially define patches we used a density-based clustering algorithm, R package *dbSCAN*, capable of detecting clusters with arbitrary shapes. For defining mushroom gatherers' average harvest rate per patch, we explored the results of two procedures: counting the number of collections at each patch, and estimating the amount in Mexican pesos the number of such collections represented according to the average weight of fruiting bodies and the market value of mushroom species. Preliminary results and evidence from ethnographic observations show that some of the Marginal Value Theorem assumptions do not necessarily apply for mushroom gathering, as gatherers can re-visit patches during foraging trips.

Thursday June 30, 2016 3:10 pm - 4:10 pm**Domain Specificity**

Chair: Adam Cohen

Thursday June 30, 2016 3:10 pm - 3:30 pm**Employing fMRI to characterize the "proper" and "actual" domain of the theory of mind system**

Adam Cohen (University of Western Ontario, acohen42@uwo.ca), Michael Miller, Tamsin German, Scott Grafton

Domain-specific accounts of theory of mind (ToM) expect mechanisms to selectively process mental representations like beliefs and desires, offloading processing of similar but non-mental representations (e.g., photos) to general reasoning mechanisms. We tested an alternative domain-specific proposal, which rests on the distinction between proper and actual domains (Sperber, 1994). On this account, the proper domain, or set of input the ToM system is designed to process, includes mental states, whereas the actual domain, or set of input it can process, also includes evolutionarily novel, non-mental representations. These other representations may activate ToM mechanisms because they share abstract properties with mental representations, although processing may be less efficient. Across two behavioral priming experiments and one neural priming fMRI study, we tested whether processing would be facilitated not only when a ToM inference was preceded by a ToM inference (within-domain condition), but also when preceded by an inference about a non-mental representation (cross-domain condition). Results revealed behavioral and neural priming in both conditions, although cross-domain priming was slightly weaker. I will discuss why these results suggest processing of certain evolutionarily novel representations may be a by-product of adaptive specializations for ToM, not a result of general reasoning mechanisms.

Thursday June 30, 2016 3:30 pm - 3:50 pm**A Meta-Analysis of Blood Glucose Effects on Human Decision Making**

Jacob L. Orquin (Aarhus University, jalo@mgmt.au.dk), Robert Kurzban

The academic and public interest in blood glucose and its relationship to decision making has been increasing over the last decade. To investigate and evaluate competing theories about this relationship, we conducted a psychometric meta-analysis on the effect of blood glucose on decision making. We identified 42 studies relating to 4 dimensions of decision making: willingness to pay, willingness to work, time discounting, and decision style. We did not find a uniform influence of blood glucose on decisionmaking. Instead, we found that low levels of blood glucose increase the willingness to pay and willingness to work when a situation is food related, but decrease willingness to pay and work in all other situations. Low levels of blood glucose increase the future discount rate for food; that is, decision makers become more impatient, and to a lesser extent increase the future discount rate for money. Low levels of blood glucose also increase the tendency to make more intuitive rather than deliberate decisions. However, this effect was only observed in situations unrelated to food. We conclude that blood glucose has domain-specific effects, influencing decision making differently depending on the relevance of the situation to acquiring food.

Thursday June 30, 2016 3:50 pm - 4:10 pm**Fresh Fruit or French Fries? Attractive Individuals Produce Sex-Specific Food Preferences**

Tobias Otterbring (Karlstad University, tobias.otterbring@kau.se)

In four studies (N = 490; 53% female), the author investigates whether mate attraction, induced by exposure to attractive opposite-sex individuals, has a differential effect on the foods and beverages men and women prefer to consume. The results revealed that exposure to attractive-looking (versus average-looking) males decreased women's willingness to spend money on unhealthy foods, and increased their inclination to spend money on healthy foods. Such exposure predominantly influenced women with a high, rather than low, concern for healthy eating, thus meaning that their motivation to consume healthy foods was particularly strong after exposure to an attractive male individual. On the contrary, exposure to attractive-looking (versus average-looking) females did not influence men's consumption preferences for healthy or unhealthy foods. However, men were more motivated to spend money on expensive drinking and dining options after exposure to an attractive female individual, and their desire to display status mediated this effect. Importantly, none of these effects occurred after exposure to attractive same-sex individuals, which provides converging evidence that mate attraction is the fundamental motive underlying these findings. Taken together, this research reveals how, why, and when appearance-induced mate attraction leads to sex-specific consumption preferences for various foods and beverages.

Thursday June 30, 2016 4:40 pm - 6:00 pm
Charles Crawford Honorary Symposium

Chair: Laura Dane

Thursday June 30, 2016 4:40 pm - 5:00 pm
Evolutionary Psychology, An Environmentalist Discipline: Revisiting Crawford & Andersen (1989)

Maria Janicki (Douglas College, janickim@douglascollege.ca)

Twenty-seven years after its publication, the paper by Crawford and Anderson (1989) stands as an impressive achievement in helping define and defend the field of evolutionary psychology (EP). In their article, Crawford & Anderson addressed a common criticism and misunderstanding - that EP is genetically deterministic and portrays human nature as hardwired and immutable. In this talk I will discuss how the authors refuted these erroneous assumptions, and provided instead a comprehensive model of how evolved mental adaptations can be influenced by environmental contingencies in the organism's immediate and developmental environments. The merits of these ideas to today's EP will be discussed.

Thursday June 30, 2016 5:00 pm - 5:20 pm
A Life History Study of the Left-Behind Children in Rural China

Lei Chang (University of Macau, chang@umac.mo)

China has 61 million "left-behind" children who have stayed in their rural hometowns while their parents seek employment in cities. Their unfortunate experience growing up separated from one or both parents in resource-impoverished rural areas provides a unique opportunity to study the impact of early environmental harshness and unpredictability, as well as resource level and competition, on life history (LH) strategies and developmental outcomes. Based on a longitudinal sample of 214 left-behind children (ages 10 and 12 at first and second data collection) and their counterparts residing with both parents in the same rural county of Henan province, the results showed that, compared to children living with parents, left-behind children who were separated from both parents before 4 or between 4 and 7 years of age showed poorer health, higher risk-taking and impulsivity, lower future orientation, poorer academic achievement and future planning. Combining both kinds of children, mini-k representing slow LH was positively correlated with resource scarcity and competition, both measured by questionnaires, and was positively correlated with academic achievement, future planning, and inhibition. These and other results confirm LH predictions about human development.

Thursday June 30, 2016 5:20 pm - 5:40 pm

Contempt, Klutzes and Rightwing Authoritarians: Is the Community Code Really Moral?

Laurence Fiddick (Lakehead University, lfiddick@lakeheadu.ca), Stephanie Bushell

Cultural psychologists have proposed that there are three universal moral codes: autonomy, community, and divinity, associated the emotions: anger, contempt, and disgust, respectively. Although originally the claim was made that these moral codes are differentially expressed across cultures, the claim has more recently been made that these moral codes are differentially expressed within cultures with political conservatives stressing all three moral codes and political liberals only stressing the autonomy code. We present evidence that the community code is better viewed as the domain of social convention and that conservatives treat the social conventional as though it were moral.

Thursday June 30, 2016 5:40 pm - 6:00 pm

Integrating social exchange and sexual selection in the study of mating interactions.

Charles Crawford (Simon Fraser University, crawford@sfu.ca)

There is considerable conflict in male–female reproductive relationships, and sexual selection theory is very useful in understanding it. However, there is also much cooperation, such as that seen in family functioning that has its basis in reproductive relationships. In this paper I attempt to integrate thinking about sexual selection and reciprocity to provide a more comprehensive view of human mating and family interactions. I first distinguish among cooperative mating, male exploitative mating, female exploitative mating, and detrimental mating in reproductive interactions. I then argue that most mating interactions are cooperative, and use Trivers's (1971, 1985) notions of parental investment and gross and subtle cheating on reciprocal reproductive interactions to develop both heuristic selection and psychological models of cooperation in human reproductive interactions. My focus is on integrating the evolutionary psychology of cooperation and sexual selection in an attempt to develop a more inclusive model of human intimate and reproductive behaviour.

Thursday June 30, 2016 4:40 pm - 6:00 pm

Evolutionary Cognitive Psychology: From argument to mechanism

Chair: David Pietraszewski

Thursday June 30, 2016 4:40 pm - 5:00 pm

A Euclidean Algorithm Predicts Short- and Long-term Attraction to Potential Mates

Daniel Conroy-Beam (University of Texas at Austin, USA, dconroybeam@gmail.com), David M. Buss

Humans poses multiple mate preferences that are hypothesized to guide mate choice. But how do we use these many preferences to evaluate and select mates who themselves vary on myriad dimensions? Solving this adaptive problem requires a psychology that can integrate many mate preferences into summary variables, such as mate value, that guide mate choice. We propose human mate choice psychology accomplishes this integration by employing a Euclidean algorithm. This algorithm represents preferences and potential mates as points within a multidimensional preference space and calculates mate value as proportional to the distance between these points. We show across two studies ($n = 522$ and $n = 411$) that this Euclidean / approach to mate preferences has power in predicting attraction to potential mates in terms of both (1) their mate value to specific people and (2) their mate value to people in general. Further, Euclidean distances between preferences and potential mates can discriminatively predict attraction as a long-term mate and attraction as a short-term mate. These findings provide novel insight into the design of human mate choice psychology. They additionally validate the Euclidean algorithm as a means to explore the connections between mate preferences and real mating outcomes.

Thursday June 30, 2016 5:00 pm - 5:20 pm

An evolutionary domain-specific risk scale

Andreas Wilke (Clarkson University, Potsdam, USA, awilke@clarkson.edu), Amanda Sherman, Bonnie Curdt, Sumona Mondal, Carey Fitzgerald, Daniel J. Kruger

We present a psychometric scale that assesses risk-taking in ten evolutionary content domains: Between-group competition, within-group competition, status-power, environmental exploration, food selection, food acquisition, parent-offspring conflict, kinship, mate attraction, and mate retention. We report on three studies that evaluate the scale's validity and consistency for a sample of 1326 participants who rated their likelihood of engagement in, the perceived riskiness of, and the benefit associated with various risky activities. Behaviors were framed as modern-day analogues of qualitatively similar actions in recurring problem domains of the ancestral environment that were potentially beneficial, but also potentially costly to survival and reproductive success. As expected, respondents' degree of risk-taking was not consistently risk-averse or risk-seeking across content domains, and a set of eight life-history variables had domain-specific effects on risk-taking propensity. In the majority of domains, men were significantly more risk-seeking than women, but in two of the ten domains—food selection and kinship risks—women were more risk-prone than men. Participants who reported not being married or in a committed relationship scored significantly higher in the domains of mate attraction and mate retention. Age, reproductive goal setting, parental status, number of siblings and birth order also affected the formation of risk thresholds.

Thursday June 30, 2016 5:20 pm - 5:40 pm**Non-compensatory integration of memory cues in evolutionary domains of risky choice**

Jana B. Jarecki (University of Basel, Switzerland, jana.jarecki@unibas.ch), Andreas Wilke

Recent evidence suggests that human risk taking propensities differ systematically across content domains with different evolutionary functions. The present study had two aims: First, we replicated the previous domain results in a more diverse sample with different demographics (recruited via Amazon Mechanical Turk). Secondly, we explored the cognitive information integration processes related to the behavioral domain differences in human risk taking. Here, we expected the behavioral domain differences to be accounted for by differential cognitive processing across domains. Our analysis investigated whether the domain specificity in risk taking propensities can be accounted for by one of three cognitive processes: The first process predicts that the relative frequency of risk-favoring cues increases risk taking (compensatory tally process); the second process implies that retrieving positive before negative cues increases risk taking (fluency-based process, query-theory), while the / third view holds that specific cues, independent of their positive or negative direction, relate to differences in risk taking (non-compensatory process). We measured retrieved cues for risk and cue directions across ten evolutionary content domains using the aspect-listing methodology. Our results show evidence for non-compensatory processing, but fail to support / the notion that a compensatory tally or fluency-based process underlies domain differences in risk taking propensities.

Thursday June 30, 2016 5:40 pm - 6:00 pm**Toward a computational grammar of coalitional conflict**

David Pietraszewski (Center for Adaptive Rationality, Max Planck Institute for Human Development, davidpietraszewski@gmail.com)

All conflicts involving three or more agents can be modeled and described using a vocabulary of only four interaction types (Strayer & Noel, 1987; Pietraszewski, 2012). Analyzing the cost/benefit calculations of each agent's role within these interactions provides a more precise way to describe the adaptive problem of coalitional conflict, and allows us to more precisely specify what information-processing tasks are actually being carried out by coalitional psychology. A grammar for the proximate psychological representation of coalitional conflict contingencies is described. The cost/benefit logic of loyalty, attribution, defensive aggression, coalitional narratives, and social identities falls out from this analysis, as does a purely mechanistic way to operationally-define a "group". Collapsing the overwhelming complexity of coalitional conflict into a small, finite set of invariant dynamics opens the way for more precise evolutionary psychological models of groups and coalitions to be proposed and tested.

Thursday June 30, 2016 4:40 pm - 6:00 pm**Mating Strategies 1***Chair: Joshua Ackerman***Thursday June 30, 2016 4:40 pm - 5:00 pm****Women's fear of crime and preference for formidable mates: How specific are the underlying psychological mechanisms?***Hannah Ryder (The University of Leicester, hr98@le.ac.uk), John Maltby, Lovedeep Rai, Phil Jones, Heather Flowe*

Previous research shows fear of crime is associated with preferences for physically formidable and dominant mates (PPFDM), ostensibly because of the physical protection afforded. In the lab and field, we tested whether the relationship between PPFDM and fear of crime is pronounced when victimisation risk is relatively high and evolutionarily more costly. In Study 1, women were presented with daytime and night time images including a shadowy male figure, crime hotspots and safespots, and they reported their risk of victimisation in the situation depicted. In Study 2, female participants walked through crime hotspots and safespots in a city centre, and reported their perceived victimisation risk for different types of crime, perpetrated by a male-versus female. Participants in both studies also completed a scale that measures PPFDM. In both studies, PPFDM was positively associated with fear of crime in hotspots and in safespots. Additionally, fear of crime was significantly affected by risk situation (i.e., safespot versus hotspot, night time versus daytime). The relationship between PPFDM and fear, however, did not vary in relation to risk situation, perpetrator gender, or crime type, suggesting that the psychological mechanisms underlying the relationship between perceived risk of victimisation and PPFDM are general in nature. Women with high PPFDM tend to feel more at risk of crime, regardless of the situational risk factors present.

Thursday June 30, 2016 5:00 pm - 5:20 pm**Fear of family violence promotes preference for feminine faced men in Colombian women.***Martha Lucia Borrás Guevara (St Andrews University, mlb22@st-andrews.ac.uk), Carlota Batres, David Ian Perrett*

Variation in women's preferences for masculinity in male partners has been explained in terms of benefits from heritable health, resource provision in face of inequality, and protection from violence. No study has examined the role of partner violence in preferences. The aim of this study was to investigate the effect of violence (experience of robberies, perceptions of danger) on preferences of Colombian women. A sample of 75 women (Mean age= 29.4 years, SD= 7.7) were asked to choose which male face they considered most attractive between pairs consisting of a masculinized and a feminized face shape. The faces presented were European and El Salvadorian. Subsequently, participants were surveyed in reference to indicators related to health (e.g. frequency of illnesses), development (e.g. frequency of internet use), education (e.g. graduating from high-school) and exposure to violence (e.g. feelings of danger from violence). We found women who considered men dangerous to their children preferred more feminine male faces. Considering men dangerous to their children contributed significantly to masculinity preferences after controlling for age, education, development, and health. These preferences may reflect women's strategy to avoid violence towards themselves and their children. These results indicate that exposure to violence matters in women's interpersonal attraction.

Thursday June 30, 2016 5:20 pm - 5:40 pm**Going all-in: Unfavorable sex ratios attenuate choice diversification**

Joshua Ackerman (University of Michigan, joshack@umich.edu), Jon Maner, Stephanie Carpenter

When faced with risky decisions, people typically choose to diversify their choices by allocating resources across a variety of options, and thus avoid putting “all their eggs in one basket.” The current research finds that this tendency is reversed when people face an important cue to mating-related risk: skew in the operational sex ratio, or relative number of men to women in the local environment. Counter to the typical strategy of choice diversification, four experiments demonstrate that romantically unfavorable ratios (those featuring relatively more same-sex than opposite-sex individuals) lead people to diversify less and instead concentrate investment in high-risk/high-return options in lottery, stock pool, retirement account, and research funding contexts. This research sheds light on a key process by which people manage risks to mating success implied by unfavorable interpersonal environments. I will discuss the implications of these choice patterns for both mating behavior and other everyday forms of decision-making.

Thursday June 30, 2016 5:40 pm - 6:00 pm**Perspectives Shape Perceptions: Sex Differences in the Strategic Use and Implications of Relative Physical Position**

Anastasia Makhanova (Florida State University, makhanova@psy.fsu.edu), James K. McNulty, Jon K. Maner

People can signal many qualities, including dominance and youthfulness, by manipulating their physical position relative to social partners. Although this strategy may have deep ancestral roots, we examined whether it shapes impression management in contemporary social contexts (photographs). We hypothesized that women would display a lower relative physical position than men, especially in attraction contexts, because such photos would highlight neotenous features. We hypothesized that men would display a higher relative physical position than women, especially in resource-competitive contexts, because such photos would highlight size and dominance. We found support for these hypotheses in four studies that examined men’s and women’s self-taken photographs and photographs posted online. In Study 5, we manipulated relative physical position and found that women were rated as more attractive in photos demonstrating a lower (vs. higher) relative physical position and this effect was mediated by perceptions of youth. Further, we found that men were rated as more dominant in photos demonstrating a higher (vs. lower) relative physical position and this effect was mediated by perceptions of size. These findings provide preliminary support for sex differences in the way men and women strategically use relative physical position to signal qualities important to specific goals.

Thursday June 30, 2016 4:40 pm - 6:00 pm**Geography and Evolution of Cultural Diversity: New Tools and Applications***Chair: Fiona M. Jordan***Thursday June 30, 2016 4:40 pm - 5:00 pm****D-PLACE: A Database of Global Cultural, Linguistic, and Environmental Diversity***Fiona M. Jordan (Department of Archaeology & Anthropology, University of Bristol, fiona.jordan@bristol.ac.uk), Kathryn R. Kirby, Russell D. Gray, Simon J. Greenhill, Michael C. Gavin, Stephanie Gomes-Ng, Hans-Jorg Bibiko, Damian Blasi, Carlos A. Botero, Claire Bown, Carol R. Ember, Dan Leehr, Bobbi S. Low, Joe McCarter, William Divale*

From the foods we eat, to who we can marry, to the kinds of environments in which we live, the diversity of human lifeways in the world is astounding. Our ability to understand this diversity is often limited by the ways it has been documented and shared in various formats. Here we introduce D-PLACE, the Database of Places, Language, Culture, and Environment. This expandable and open-access database brings together the dispersed corpus of information on the geography, language, culture, and ecology of over 1400 human societies. We aim to enable researchers to investigate the extent to which patterns in cultural diversity are shaped by different forces, including shared history, demographics, migration/diffusion, cultural innovations, and environmental conditions. We describe four barriers to understanding these forces and how D-PLACE provides a resolution to these challenges: comprehensive linkages that allow users to simultaneously consider how cultural practices relate to linguistic ancestry, practices of neighbouring cultures, and the environment. We show how D-PLACE can be used for exploratory, predictive, and evolutionary analyses of cultural diversity, from descriptive use by high-school students and the worldwide public, to mapping and visualisation, to large-scale computational phylogenetic analyses of cultural evolution.

Thursday June 30, 2016 5:00 pm - 5:20 pm**The global geography of subsistence strategies***Patrick Kavanagh (Colorado State University, Patrick.Kavanagh@colostate.edu), Michael Gavin, Claire Bown, Bobbi S. Low, Carlos A. Botero, Hannah Haynie, Geoff Kushnick, Carol R. Ember, Fiona M. Jordan, Russell D. Gray*

The strategies humans use to obtain food – hunting, gathering, fishing, agriculture, pastoralism – vary widely across the planet. Although most would agree that environmental, demographic, technological, social and historical conditions all shape subsistence, the influence these factors have across different contexts is strongly debated. Drawing conclusions from results to date is also difficult due to the variety of methods used and the limitations of prior analytical approaches. Here, we provide a critical advance by taking advantage of analytical developments in biogeography. We use a sample of >1000 societies, including independent estimates of shared ancestry to account for vertical cultural transmission, trait values of neighboring societies as proxy for horizontal transmission, a suite of environmental data to explore ecological adaptation, and other cultural traits to explore impacts of the socio-political environment. Our results indicate that cultural transmission, cultural conditions, or environmental drivers alone cannot explain global variation in subsistence. Rather a model that accounts for a combination of social, cultural, and environmental processes predicts dominant subsistence strategies with an accuracy of >90%. Our results have implications for understanding subsistence choice, and demonstrate the power of this methodological approach for examining cultural diversity patterns more broadly.

Thursday June 30, 2016 5:20 pm - 5:40 pm**Do Natural Hazards Transform Culture? Some Preliminary Results**

Carol R. Ember (Human Relations Area Files, Yale University, carol.ember@yale.edu), Teferi Abate Adem , Ian Skoggard

Climate change is accelerating the pace of natural hazards such as drought and floods. But these hazards are not new and with an interdisciplinary team we are studying whether societies in unpredictable hazard-prone environments have arrived at some common cultural solutions, such as more cooperation, wider social networks, more communal property, diet diversity, and tighter rules as compared with societies living in less hazard-prone environments. Our overall research strategy compares ethnographically-described societies, archaeological traditions going back 15,000 years to the recent past, and contemporary countries. The research team consists of cultural anthropologists, a cross-cultural psychologist, an archaeologist, and a climatologist. In the current presentation, we describe some preliminary results the HRAF team has found regarding property systems, beyond-household food sharing, cooperative labor, and cultural salience of rules and punishment (“tight” versus “loose” cultures). Although the results are somewhat more nuanced than expected regarding property rights, our results to date are generally consistent with our hypotheses.

Thursday June 30, 2016 5:40 pm - 6:00 pm**The evolution of complex stratified societies: testing causal hypotheses with phylogenetic methods**

Russell D. Gray (Max Planck Institute for the Science of Human History,), Joseph Watts

Explaining the transition from small scale egalitarian societies to the large scale hierarchical societies is a central challenge for evolutionary explanations of human behaviour. Religious beliefs and practices have frequently been claimed to play a causal role in this transition. Here we show how data drawn from the new publicly accessible Pulotu database (<https://pulotu.shh.mpg.de>) can be analysed with computational phylogenetic methods to test these hypotheses. Pulotu documents the remarkable diversity of religious beliefs and practices in Austronesian cultures. These cultures span a region containing 1/6th of the world’s languages and covering over half the world’s longitude. The religious beliefs range from localised ancestral spirits to powerful creator gods, and include practices such as headhunting, elaborate tattooing, and the construction of impressive monuments. Pulotu currently contains 116 cultures, and has 80 variables describing supernatural beliefs and practices, as well as social and physical environments. Our phylogenetic analyses show that broad supernatural punishment, but not moralising high gods, drove the evolution of political complexity in these cultures. They also highlight a darker side of religious beliefs and practices - ritual human sacrifice plays a powerful role in promoting and sustaining the evolution of stratified societies.

Thursday June 30, 2016 4:40 pm - 6:00 pm**Female Mate Choice and Attraction***Chair: Elizabeth G. Pillsworth***Thursday June 30, 2016 4:40 pm - 5:00 pm****Strategic Flexibility in Women's Mating: Economic Recessions and Women's Sexual Strategies***Jaimie Arona Krems (Arizona State University, jaimie.krems@asu.edu), Keelah E. G. Williams, Douglas T. Kenrick, Steven L. Neuberg*

For women, the potential costs of short-term sex typically outweigh the potential benefits. Nevertheless, women do pursue short-term sex. We investigate the relatively understudied questions of under what circumstances—and for what benefits—women become more willing to engage in short-term sex. Consistent with hypotheses, results from three experiments revealed that manipulated cues of economic recession influenced women's (but not men's) sexual strategies, leading women to report increased openness to short-term sex. Further, cues of economic recession increased women's (but not men's) reported willingness to engage in short-term sex for partner-mediated resources (but not for other reasons), whereas cues of economic abundance decreased women's (but not men's) reported willingness to engage in such short-term sexual exchanges. This ecology-driven willingness to engage in short-term sexual exchanges was not dependent on women's personal financial need. These lab-based findings were supported by U.S. state-level data linking real-world economic downturn to interest in short-term sexual exchanges, as indexed by Google search behavior, and these data also point to a possible role for income inequality. Overall, findings suggest that women's mating psychology and behavior are strategically responsive to ecological cues.

Thursday June 30, 2016 5:00 pm - 5:20 pm - CANCELLED**Do Women with Children Exploit Male Sexual Psychology?***Viviana A. Weekes-Shackelford (Oakland University, weekessh@oakland.edu), Zachary Willockx, Maria Jovanovski, Giovanni Randazzo, Todd K. Shackelford*

Men rate women with children as less attractive than women without children. If desertion, death, and divorce were recurrent features of ancestral humans, and assuming children remained with the mother, female psychology may have evolved to compensate for disadvantage in the mating market by exploiting male sexual psychology. A woman with a reproductive-aged daughter might be more attractive to a prospective mate than a woman with a much younger daughter or a woman with a son. We investigated men's perceptions of the attractiveness of a woman with a child as a function of the sex and age of that child. In Study 1, we asked several hundred men to rate a woman's attractiveness and their interest in a relationship with her. In Study 2, we asked several hundred women to report how eager, interested, and excited they would be to introduce their child to a new partner who was not the genetic father of the child. Preliminary results suggest that women with children may adjust their dating behaviors to exploit male sexual psychology. This research suggests that women with children face a different set of adaptive problems of sex and mating than women without children.

Thursday June 30, 2016 5:20 pm - 5:40 pm**No, seriously... What do women want?? Rethinking the underlying constructs of male mate value.**

Elizabeth G. Pillsworth (California State University, Fullerton, epillsworth@fullerton.edu)

Studies of women's mate preferences rely on a set of assumptions about the underlying factors that are important in mate choice. In the popular press, these are, superficially, often boiled down to "genes" versus "resources." In the evolutionary literature, "good genes" is almost universally operationalized as some measure of physical or sexual attractiveness, including attractive body, attractive face, and low fluctuating asymmetry. The quality of "resources" is operationalized in a far more varied manner, depending on the specific research questions, study population, or idiosyncratic preferences of the researchers. It may be current or future educational attainment, income, or social status; generosity, prosociality, or various measures of intelligence that are expected to correlate with the attainment of resources. In a recent study designed to investigate the sexual strategies of pregnant women, we found that the underlying constructs revealed from factor analysis of a commonly-used measure of mate assessment differed from those typically derived from non-pregnant, non-contracepting participants in ovulatory studies. This prompted a review of the underlying constructs revealed when using this measure in different populations, including parous women, post-menopausal women, and homosexual women. Differences observed between these groups, and recommendations for operationalizing male mate qualities going forward, will be discussed.

Thursday June 30, 2016 5:40 pm - 6:00 pm**Cue-based estimates of reproductive value explain women's body attractiveness**

Talbot M. Andrews (University of Portland, andrewst16@up.edu), Aaron W. Lukaszewski, April Bleske-Rechek, Zach L. Simmons

Previous research suggests that judgments of women's body attractiveness track specific morphological features, such as low body mass index (BMI), low waist-to-hip ratio (WHR) and high shoulder-to-waist ratio (SWR). However, it remains unclear whether such body attractiveness judgments are explained by perceptions of women's reproductive value, as defined by youth and nullparity (a lack of previous offspring). Because ancestral males would have accrued fitness benefits by mating with young and nulliparous women, we hypothesized that the associations between morphological features and assessments of women's body attractiveness are mediated by cue-based estimates of reproductive value. To test this, we asked a large sample of participants to view standardized photos of women in swimsuits, cropped so that participants could not see their heads. Participants were assigned to guess the target women's age, guess their number of offspring, or rate their body attractiveness. We found that (i) women's BMI, WHR, and SWR each independently predicted estimates of reproductive value and rated attractiveness, and (ii) estimated reproductive value was statistically indistinguishable from rated attractiveness. These findings support the claim that female body attractiveness is explained by cue-based estimates of reproductive value.

FRIDAY**Friday July 1, 2016 10:00 am - 11:20 am****Pedagogy in Evolutionary Psychology: Excitement, Obstacles, and Strategies in Teaching***Chair: Jeffrey L. Niehaus***Friday July 1, 2016 10:00 am - 10:20 am****Why Students Love Evolutionary Psychology and How to Teach It***David M. Buss (University of Texas, Austin, dbuss@psy.utexas.edu)*

Teaching evolutionary psychology can be daunting, yet highly rewarding. It is daunting because students often enter the class with misconceptions about evolutionary psychology. It is rewarding because many students experience a profound intellectual transformation. Over many years, I have developed 17 tools for increasing the effectiveness of teaching evolutionary psychology. These include (#1) conveying a sense of deep time; (#6) describing the interactionist nature of evolutionary psychology; (#8) explaining that humans were not designed to understand the causal processes that created them; (#9) using analogies to the human body; (#11) highlighting compelling conceptual and empirical work central to student lives such as in the domains mating, cooperation, aggression, status, reputation, and social conflict; (#12) using thought experiments; (#13) dealing with controversial topics such as sexual conflict and homicide openly and honestly; and (#17) showing how the meta-theory of evolutionary psychology conceptually unites the different branches of psychology and integrates psychology with the life sciences. Discussion focuses on effective ways to implement these teaching tools.

Friday July 1, 2016 10:20 am - 10:40 am**Bringing Evolutionary Psychology to Life by Bringing Popular Culture into the College Classroom***Barry X. Kuhle (The University of Scranton, barrykuhle@gmail.com)*

Popular culture can provide a window into human nature as “the patterns of culture that we create and consume, although not adaptations in themselves, reveal human evolutionary psychology” (Buss, 2012, p. 428). An engaging way to bring evolutionary psychological theories, hypotheses, and data to life is to incorporate popular culture evocations of them into classroom lectures, discussions, and assignments. Sprinkling outrageously funny, theoretically sound, and empirically supported popular culture perspectives on romantic relationships into discussions of the primary literature is a sure-fire way to grab students’ attention and make memorable the myriad ways sex differences stem from asymmetrical obligatory parental investment. To illustrate this I’ll discuss how the nature of evolved jealousy mechanisms can be readily seen in television (Kuhle, 2011), movies (Kuhle, 2012a), stand-up (Kuhle, 2012b), and song (Davies & Shackelford, 2006). I’ll also discuss popular culture manifestations of other evolutionary psychological topics and a simple, fun assignment that will help instructors find cutting-edge pop culture to include in college classes that will resonate with current students.

Friday July 1, 2016 10:40 am - 11:00 am**You Must Unlearn What You Have Learned: Pre-existing Concepts that Make Teaching Evolutionary Psychology a Challenge**

Jeffrey L. Niehaus (Christopher Newport University, Jeffrey.Niehaus@cnu.edu)

One of the most exciting things about teaching evolutionary psychology is the chance to introduce students to a truly iconoclastic approach. However, a new and insidious problem has arisen because evolutionary psychologists have succeeded so well in achieving mainstream acceptance. A shrinking minority of academics are openly hostile to evolutionary psychology, but this has led to students being exposed to a false synthesis between traditional and evolutionary approaches. Students enter our introductory classrooms with the assumption that evolutionary psychology is nothing new, when in fact they may have been taught a sanitized version that allows their old assumptions to go unchallenged. These concepts include: 1) intuitive dualism (Bloom, 2006) in which students tend to see mental activity as a different class of thing than physical activity, 2) the “Do the Right Thing Machine”, in which students believe that they have an “evolutionary” explanation if they can point to some plausible advantage for a behavior, and 3) a version of the “Nurture Assumption” (Harris, 2009) in which everything that was not present at birth is the product of domain-general learning. I will explore how to get students to confront their own assumptions while in the processes of changing them.

Friday July 1, 2016 11:00 am - 11:20 am**The Adaptive Assignment: Replacing the Required Essay with a Peer Reviewed Assignment in EP Courses**

Martin S. Smith (University of Victoria, msmith@uvic.ca)

Evolutionary psychology is often taught as a second or third year course, and an essay is often part of the course requirements. However essays have dubious effectiveness as learning tools, and their use is largely traditional, rather than based on current pedagogical models. This paper outlines an alternative to the essay for use in evolutionary psychology courses: the peer-reviewed assignment. Advantages of this system over essays are outlined and exemplified. These include: (#1) More closely modeling the public scientific communication system that is an essential part of our sub-discipline (#2) Engaging the “social energies” of students in a way the non-social essay does not (#3) Requiring students to act as commentators develops critical skills that essay writing by itself does not. (#4) The “public” nature of the posted assignments discourages plagiarism. (#5) Students receive more feedback (from several commentators) than they generally would on standard essay. (#6) Students have the opportunity to respond to feedback on their assignment – a “closure-providing” step not usually part of the essay process. Practical details regarding this system will be provided.

Friday July 1, 2016 10:00 am - 11:20 am**Mediators of Sociality***Chair: Kristopher Smith***Friday July 1, 2016 10:00 am - 10:20 am****Prestige, dominance, or intelligence? A cross-cultural analysis of leadership in the ethnographic record***Zachary H. Garfield (Washington State University, zachary.garfield@wsu.edu), Edward H. Hagen*

This study tested two evolutionary models of leadership, the dominance-prestige model and James Neel's intelligence-reproduction model, against the ethnographic record. Using the Human Relations Area Files Probability Sample, 1200 ethnographic texts from traditional societies discussing leadership were coded. We analyzed cross-cultural variation using frequency counts and proportions, cluster analysis, principal components analysis, MANOVA, and linear models. Results suggest the prestige strategy is more frequent cross-culturally than the dominance strategy, and followers resist overly assertive leaders; this relationship is strongest among hunter-gatherers. Intelligence is a widespread quality of leaders (present in 61% of societies) and leaders are often polygynous (present in 41% of societies). Predictive models suggest universal validity to these two theoretical models. There was little evidence that followers selectively emulate leaders, however, contrary to one influential version of the prestige model. We find that being respected, intelligent, having expertise, and being polygynous are common qualities of leaders and may form the foundation of a novel model of leadership.

Friday July 1, 2016 10:20 am - 10:40 am**Disgust and Status Hierarchy***Joonghwan Jeon (Kyung Hee University, evopsy@gmail.com), Chorong Kim, Jae C. Choe*

Little evidence thus far exists that disgust is related to moral judgments in the "authority" domain (maintaining order within status hierarchies). Past studies, however, have overly focused on a low-status person's duty of respecting for the authority. We stress that the authority-related morality requires the guidance of high-status individuals, as well as the deference of low-status individuals. Given that the evolved function of moral disgust is to avoid moral transgressors, a third-party individual (observer) would be selected to simply avoid, rather than costly punish, an unworthy high-status person because of the risk of retaliation from the high-status person. We thus hypothesized that disgust would play a casual role in judging unworthy high-status individuals, but little or no role in judging disrespectful low-status individuals. Two studies confirmed our hypothesis. First, experimentally induced physical disgust increased the severity of moral judgments about unworthy high-status individuals, but not about disrespectful low-status individuals. Second, individuals with a stronger disposition to feel disgust toward physical stimuli made more severe moral judgments about unworthy high-status individuals, but not about disrespectful low-status ones. The present study suggests that disgust may influence only one subcategory of the authority domain, i.e., a high-status person's duty of noblesse oblige.

Friday July 1, 2016 10:40 am - 11:00 am**Listen, follow me: Dynamic vocal signals of dominance predict emergent social rank in humans**

Joey T. Cheng (University of Illinois at Urbana-Champaign, jtcheng@illinois.edu), Jessica L. Tracy, Simon Ho, Joseph Henrich

Similar to the nonverbal signals shown by many non-human animals during aggressive conflicts, humans display a broad range of behavioral signals to advertise and augment their apparent size, strength, and fighting prowess when competing for social dominance. Favored by natural selection, these signals communicate the displayer's capacity and willingness to inflict harm, and increase responders' likelihood of detecting and establishing a rank asymmetry, and thus avoiding costly physical conflicts. Included among this suite of adaptations are vocal changes, which occur in a wide range of non-human animals (e.g., chimpanzees, rhesus monkeys) prior to aggression, but have received little attention in humans. Here we test whether and how humans use vocal pitch modulations to signal their intention to dominate or submit. Results from Study 1 demonstrate that in the context of face-to-face group interactions, individuals spontaneously alter their vocal pitch in a manner consistent with rank-signaling. Raising one's pitch early in the course of an interaction predicted lower emergent rank, whereas deepening one's pitch predicted higher emergent rank. Results from Study 2 provide causal evidence that these vocal shifts influence perceptions of rank and formidability. Together, findings suggest that humans use transient vocal changes to track, signal, and coordinate hierarchical relationships.

Friday July 1, 2016 11:00 am - 11:20 am**Social Bonds and Exercise: Evidence for a Reciprocal Relationship**

Jacob Taylor & Aaron Davis (University of Oxford, jacob.taylor@keble.ox.ac.uk; arran.davis@anthro.ox.ac.uk)

Collective physical activity is ubiquitous across cultural domains as varied as play, ritual, sport, and dance. Physical activity, exercise, and sport have well-known positive effects on physical and psychological health, while social scientists have long speculated about the benefits of such energetically costly activities for social cohesion. A large body of research in social and sport psychology also indicates a positive association between group cohesion and performance. In two experimental studies, we investigated mechanisms hypothesized to underpin two interrelated phenomena: that certain forms of group movement and exercise lead to social bonding and that social bonding can lead to enhanced exercise performance. In Study 1, we manipulated synchrony and exercise intensity among rowers and found that, compared with low intensity exercise, moderate intensity exercise led to significantly higher levels of cooperation in an economic game; no effect of synchrony vs. non-synchrony was found. In Study 2, we investigated the effects of bonding on performance, using synchrony as a cue of existing supportive social bonds among an elite, highly bonded team of rugby players. Athletes participated in solo, synchronized, and non-synchronized warm-up sessions before a difficult anaerobic fitness test; compared to the non-synchronous warm-up, the synchronous warm-up led to significantly faster running times, constituting a competitively meaningful increase in performance. We suggest that coordinated group movement could produce an environment in the brain that serves to alter perceptions and beliefs—of self and others, and of pain and fatigue—crucial to social bonding and athletic performance. We outline future research directions designed to further test this suggestion in novel settings and with a diverse range of methods.

Friday July 1, 2016 10:00 am - 11:20 am**Development***Chair: Marco Del Giudice***Friday July 1, 2016 10:00 am - 10:20 am****Cheerful infants of energetic mothers - association between mother energetics, milk composition and infant temperament***Anna Ziomkiewicz (Polish Academy of Sciences , annaziomkiewicz@gmail.com), Magdalena Babiszewska, Boguslaw Pawlowski*

Child temperament, which develops within the first two years of life, is strongly influenced by the early environment. During this period the relationship with the mother represents the main source of information about this environment. It should be thus expected that the mother's characteristics, especially those associated with energy availability, might affect an infant's temperamental traits. Here we report the results of the study examining the association between infant temperament, the mother's energy metabolism and breast milk composition. Mothers (n=87) and their healthy, born at term and exclusively breastfed infants took part in the study. Maternal BMR was estimated based on measurements from an Akern BodyComp analyzer. Mothers' and infants' temperament was assessed using the Formal Characteristic of Behavior – Temperamental Questionnaire and the Infant Behavior Questionnaire – Revised version. Behavioral characteristics of the infants (Vocal Reactivity, Pleasure of High Intensity and Laugh and Smile) were positively associated with the mothers' BMR and breast milk composition. These characteristics load upon the temperamental factor of Surgency/Extraversion, which was also positively related to maternal BMR. The results of this study constitute evidence that mother energetics may influence infant temperament. They show that temperamental traits in humans evolved in response to the local biological environment.

Friday July 1, 2016 10:20 am - 10:40 am**What Evolutionary Theory Can Teach Us About Pubertal Development***Jennifer Kotler (Harvard University, jkotler@fas.harvard.edu), David Haig*

An individual's maternal and paternal genes may have different probabilities of being passed on to future generations via kin. This evolutionary theory has helped explain growth and feeding behaviours commonly perturbed in disorders of genomic imprinting. Another important determinant of an offspring's fitness is the completion of pubertal development. Although both parents benefit from reproductively mature offspring, the optimal age of maturity may differ between them. Indeed, pubertal development seems to be altered in some imprinting disorders, indicating that imprinted genes may play a role in the timing of reproductive development. Adrenarche and puberty are poorly defined, often confounded terms in the medical literature. However evolutionary theory leads us to predict very different outcomes for these stages of development based on differing optimal strategies for genes of paternal versus maternal origin. We predict that maternally derived genes will favor early adrenarche but delayed puberty. Having mature, independent (but non-reproducing) offspring provides help for the mother in caring for other offspring at a low cost to herself. We outline support for this prediction from the medical literature, by considering disorders of abnormal sexual development within the context of human evolutionary theory and the kin conflict hypothesis.

Friday July 1, 2016 10:40 am - 11:00 am**Evolution of Sex Differences in Trait- and Age-Specific Vulnerabilities**

David C. Geary (University of Missouri, GearyD@Missouri.edu)

Traits that facilitate competition for reproductive resources or that influence mate choice generally have a heightened sensitivity to stressors. They have evolved to signal resilience to infectious disease and nutritional and social stressors, and are compromised by exposure to man-made toxins. Although these traits can differ from one species or sex to the next, an understanding of the dynamics of competition and choice can in theory be used to generate a priori predictions about sex-, age-, and trait-specific vulnerabilities for any sexually reproducing species. I will provide a brief review of these dynamics and illustrate associated vulnerabilities in nonhuman species. The age- and sex-specific vulnerability of such traits will then be illustrated for stressor-related disruptions of boys' and girls' physical growth and play behavior, as well as for aspects of boys' and girls' and men's and women's personality, language and spatial abilities. There is much that remains to be determined, but enough is now known to reframe trait sensitivity in ways that will allow us to better identify and understand vulnerable human traits, and eventually ameliorate or prevent their expression.

Friday July 1, 2016 11:00 am - 11:20 am**Differential Susceptibility to the Environment: Theoretical and Methodological Advances**

Marco Del Giudice (University of New Mexico, marcogd@unm.edu)

The theory of differential susceptibility (DS) has become one of the main paradigms for the study of person-environment (PxE) interactions in developmental psychology and psychopathology. Over the last years, empirical research in this framework has exploded, but there has been relatively little work on its theoretical foundations. Meanwhile, initial methodological guidelines have crystallized, and data analytic practices have become divorced from the deeper evolutionary questions that should inform the field. In this talk I present three new theoretical studies that address different aspects of DS theory. First, I use a simulation approach to determine whether (and at what conditions) current models of DS are consistent with the cumulative findings of twin studies of personality and behavior. Second, I model the evolution of interaction shape in DS; the main finding is that the standard assumption that interactions in DS should be symmetric is generally not warranted; instead, PxE interactions are likely to show a specific asymmetric shape. This prediction is corroborated by an initial analysis of published empirical findings. Third, I evaluate the performance of current statistical guidelines and "critical tests" for detecting DS in PxE studies, point out their limitations, and propose a revised test with improved performance.

Friday July 1, 2016 10:00 am - 11:20 am**Strategic Sexuality***Chair: Leif Edward Ottesen Kennair***Friday July 1, 2016 10:00 am - 10:20 am****Coy or not in naturally occurring encounters? Biases in sexual misperception***Mons Bendixen (NTNU, mons.bendixen@svt.ntnu.no), Leif Edward Ottesen Kennair, Robert Biegler*

Error Management Theory (Haselton & Buss, 2000; Haselton & Nettle, 2006) maintains that universal biases in judgments of sexual interest in men are due to evolved adaptations. Men tend to overperceive signals from women, thinking that women are sexually interested when no such interest is present. This may give rise to sexual miscommunication and possibly sexual harassment. The notion of a cognitive bias in men has been challenged in a recent study by Perilloux and Kurzban (2015) claiming that sexual overperception in men may be explained by women acting coy or understating their actual sexual interest. This paper examined initial perceptions of opposite sex signals along with participant sexual interest and displayed interest in their most recent natural occurring opposite-sex encounter. Data on heterosexual Norwegian male and female students were collected on two separate occasions (Spring 2015: N=224 and Fall 2015: N=210). Results suggest that displayed signals of interest were strongly associated with actual sexual interest in both sexes and there was no indication of coyness in women's reports. Singles, sociosexually unrestricted and participants meeting short-term high mate-value persons were more sexually interested and displayed more interest. Controlling for these factors in the above analyses did not influence the findings.

Friday July 1, 2016 10:20 am - 10:40 am**Forgiving the unforgivable: Biases in infidelity forgiveness***Leif Edward Ottesen Kennair (NTNU, leif.edward.kennair@svt.ntnu.no), Mons Bendixen, Trond Viggo Grøntvedt*

From an Error Management Theory (EMT) perspective we expect a negative forgiveness bias, in which one underestimates a romantic partner's forgiveness following one's own transgressions. The function would be to motivate efforts that contribute to securing the relationship. The extent this bias is related to infidelity and type of infidelity has not yet been examined. Ninety-two couples responded to questionnaires about their reactions to hypothetical emotional and sexual infidelity scenarios, forgiveness of partner's hypothetical infidelity, and trust in their partner's forgiveness of them. They also reported on the quality of their relationship. Question order was balanced for self and partner transgressions. Results: We found a strong negative forgiveness bias effect suggesting that participants (both sexes) were less likely to believe that their infidelity is forgiven compared to their partner's likelihood for forgiving them. This effect was present in both emotional and sexual infidelity scenarios. Results also suggest that expressed and internal forgiveness of partner's infidelity closely mirrors findings of sex differences in jealousy responses. Relative to females and relative to emotional infidelity, males found it harder to forgive sexual infidelity as presented in the scenarios. Quality of relationship was generally high and did not moderate the effects.

Friday July 1, 2016 10:40 am - 11:00 am

Using lies to find out the truth about who suppresses sexuality and manipulates the price of sex?

Dax Kellie (UNSW Australia, d.kellie@student.unsw.edu.au), Barnaby Dixson, Robert Brooks

Biological theories of parental investment successfully explain much of the observable variation among species and some within-species variation in sexual dimorphism and sex-dependent behaviour. While Parental Investment Theory and its various derivations have some predictive power concerning human sex differences in behaviour, it is seldom up to the task of explaining the variety of human sexual behaviour in relation to ecological, economic and cultural circumstances. ‘Sexual Economics’, as put forward by Baumeister, Vohs and Twenge combine differences in reproductive investment with the dynamics of a mating market to generate more context-dependent predictions about human behaviour. One of the more controversial predictions out of sexual economics implicates women in the suppression of female sexuality as a way of raising the exchange price of sex on the mating market. Here we use the lies people tell about their sexual histories as an indirect measure of who is doing the suppression of female sexuality. By asking people what they would reveal about their sexual past to their parents, and same- or opposite-sex contemporaries, we exposed differences in the lies that people tell to different audiences. These lies suggest that the suppression of sex is not as simple as sexual economics would have us believe.

Friday July 1, 2016 11:00 am - 11:20 am

Intergroup violence and mental state attribution in two societies

Collin Holbrook (c.colin.holbrook@gmail.com)

Friday July 1, 2016 11:30 am - 12:30 pm

Mating Strategies 2

Chair: Todd K. Shackelford

Friday July 1, 2016 11:10 am - 11:50 am - CANCELLED

Duration of Cunnilingus Predicts Estimated Ejaculate Volume in Humans: A Content Analysis of Pornography

Todd K. Shackelford (Oakland University, shackelf@oakland.edu), Michael N. Pham, Austin John Jeffery, Yael Sela, Justin T. Lynn, Sara Trevino, Zachary Willockx, Adam Tratner, Paul Itchue, Bernhard Fink, Melissa M. McDonald

Humans perform copulatory behaviors that do not contribute directly to reproduction (e.g., cunnilingus, prolonged copulation). We conducted a content analysis of pornography to investigate whether such behaviors might contribute indirectly to reproduction by influencing ejaculate volume—an indicator of ejaculate quality. We coded 100 professional pornography scenes depicting the same male actor copulating with 100 different females, affording control for between-male differences in estimated ejaculate volume. Coders visually estimated ejaculate volume, and recorded the time the actor spent engaged in cunnilingus, penile-vaginal penetration, and in any physical contact with his partner. We found support for the hypothesis that a man who spends more time performing cunnilingus produces an ejaculate with greater estimated volume, even after controlling statistically for the age and attractiveness of the actress, and time spent in physical contact with his partner. Additionally, we tested the ejaculate adjustment hypothesis for prolonged copulation and found no support. Prolonged copulation does not facilitate production of an ejaculate with greater estimated volume. This research is the first to use content analysis to document that pre-ejaculatory copulatory behavior predicts estimated ejaculate volume, and also is the first to document a relationship between the time spent performing cunnilingus and ejaculate quality.

Friday July 1, 2016 11:50 am - 12:10 pm

Nonverbal cues of high quality romantic relationships: women's courtship as an efficient relationship maintenance strategy

Jitka Lindova (Charles University, Prague, jitka.lindova@seznam.cz), Katerina Klapilova, Devin Johnson, Jan Havlicek

The role of nonverbal signals of attractiveness and attraction to partner, as well as the role of interpersonal coordination in maintenance of long-term relationship quality and satisfaction, has not received any particular attention. Our study of 47 (childless) long-term romantic couples examined associations between nonverbal displays of both partners during an interview of the couple with a strange female experimenter, and their relationship quality, measured by Spanier's Dyadic Adjustment Scale (DAS). Using ethogram based systematic observation, we measured Friendly (positive), Familiar (touching), and Negative behavior, Short and Long Glance at partner, Self-Grooming, Upper- and Lower-Body Open/Closed Posture, and 5 aspects of Interpersonal Coordination. Relationship quality of men and women was not related to Friendly, Negative or Familiar behavior for either partner. DAS scores of both partners were positively related to Self-Grooming and Long Glance of the woman, which we interpreted as a relationship maintenance strategy used by women in the presence of a strange female in order to promote own attractiveness and express interest in partner. Movement Synchrony of the woman and microbehavioral Responsiveness of the man was related to woman's DAS scores, which implies that interpersonal coordination reflects and promotes her perception of closeness in the romantic relationship.

Friday July 1, 2016 12:10 pm - 12:30 pm**Solutions to the mating 'problem': Narcissism, psychopathy and men's reproductive output**

Gregory Carter (Durham University/York St John University, g.carter1@yorks.j.ac.uk)

Theoretical articles (e.g., Holtzman & Strube, 2011) have suggested narcissism is an evolved adaptation that 'solves the problems' of men's short-term mating. Moreover, one report (Rowe, 1995), based on one small-scale sample (Lynn, 1995; N = 104) has frequently been cited in support of the predictive relationship between "narcissism" and reproductive output (e.g., Jonason, Li, Webster, & Schmitt, 2009). The current, larger study (N = 579) will show that, after controlling for age, narcissism is a predictor of more limited reproductive output and that psychopathy, distinctly, better explains lifetime variance in absolute offspring in men. Results will be discussed in respect of the related yet distinct Dark Triad traits (narcissism, Machiavellianism, psychopathy), men and women's mating strategies, evolutionary theory and evolutionarily-novel factors. This presentation will synthesise relevant literature on behavioural outcomes associated with these traits (e.g., Jonason, Baughman, Carter, & Parker, 2015; Carter, Montanaro, Linney, & Campbell, 2015). It will conclude that work which focuses on and distinguishes between the Dark Triad traits regarding evolutionary fitness is valid and crucial. It will also emphasise the importance of methodological and theoretical rigour, as well as replication and extension work that, within this rapidly-expanding field, is comparatively limited yet sorely needed.

Friday July 1, 2016 11:30 am - 12:30 pm**Cultural Evolution 2**

Chair: Tom Vardy

Friday July 1, 2016 11:10 am - 11:50 am**Modeling cultural evolution requires evolutionary psychology**

Leda Cosmides (Center for Evolutionary Psychology, University of California, Santa Barbara, cosmides@psyc.ucsb.edu), John Tooby

Cultural differences—patterns of within-group similarity and between-group differences—can arise in many different ways. All of them depend on details of our evolved psychology. It's not just that domain-specialized inference systems shape cultural transmission and accumulation. Cultural differences can arise without transmission. (1) Specialized learning mechanisms exposed to different environments can generate outcomes that vary across cultures. (2) What appears to be one domain (e.g., sharing, cooperation) may be regulated by several alternative, functionally distinct cognitive systems, each generating different intuitions, motivations, and inferences. Which is activated depends on eliciting cues; these evoked cultural patterns can be misattributed to cultural transmission. (3) A single system may be designed to respond nimbly to key cues, shifting behavior immediately; these shifts can be misattributed to cultural selection of institutions. When cognitive adaptations have these features, it is easy to underestimate rates of behavioral change and over-estimate the stability of patterns, both within and between cultures. These pitfalls can be avoided by careful attention to the design of evolved computational systems. That design can be revealed by systematic experiments—even on WEIRD people—when triangulated with cross-cultural tests. Incorporating evolutionary psychology can produce more powerful and predictive models of cultural evolution.

Friday July 1, 2016 11:50 am - 12:10 pm**Prosocial preferences and the social function of religion on Tanna Island, Vanuatu.**

Tom Vardy (University of Auckland, tvar789@aucklanduni.ac.nz), Quentin Atkinson

The cultural and religious diversity of Tanna Island, Vanuatu, provides an ideal context in which to test functionalist theories of religion. One hypothesis is that the dominant world religions today were shaped by cultural evolution to facilitate cooperation within groups of increasingly large, non-related individuals. Here, we report findings based on a series of interviews and economic games with 134 Tannese Christians. Participants were interviewed about their religious beliefs and practices and played four rounds of a modified dictator game, measuring willingness to share a windfall endowment. In each game participants' preferences were tested against co-residents in their village and both co-religionists and non-co-religionists from another village. We use this data to test whether participants' prosociality is predicted by the nature and strength of their beliefs about gods, and by religious participation. We also examine whether religious priming affects the same prosociality measures. These findings have implications for how we understand the role of religion in small traditional societies.

Friday July 1, 2016 12:10 pm - 12:30 pm**Can social learning favour altruism in the public goods game?**

Maxwell Burton-Chellew (University of Oxford, max.burton-chellew@zoo.ox.ac.uk), Claire El-Mouden, Stuart A. West

Our potential for social learning, or cultural evolution, has been proposed as playing a pivotal role in making human societies cooperative, by favouring cooperation in conditions where cooperation is not favoured by genetical selection. These theories assume that biases in how people learn socially create the conditions for selection of cultural groups. Specifically that people are predisposed to learn from the successful (prestige bias) and from common behaviours (conformity bias). However, this suggestion has been contested, with others arguing that cultural evolution will disfavour cooperation if people learn from the successful as the successful will have higher payoffs. Furthermore, it is not clear if these biases in copying behaviour still apply to the transmission of costly behaviours. We test between these competing hypotheses, by experimentally controlling the sources of social information that players obtain in a public goods game, and determining how this influences the level of cooperation. We find that (1) people show no conformity bias for costly behaviors; (2) that people choose to copy successful individuals. This was true when success was defined either within-groups only, or relative to the entire population; and (3) that social learning disfavors cooperation in most circumstances

Friday July 1, 2016 11:30 am - 12:30 pm**Strategic Interactions***Chair: Kristopher M Smith***Friday July 1, 2016 11:10 am - 11:50 am****Infants' developing social evaluations and social preferences in the context of resources distributions***Jessica Sommerville (University of Washington, sommej@u.washington.edu)*

A variety of recent research suggests that infants possess social preferences: they seek out certain individuals to interact with based on their prosocial or anti-social intentions, and based on their possession of in-group characteristics. In this talk I will review evidence from my lab suggesting that infants also socially evaluate and select individuals on the basis of their allocation or receipt of resources. First, I will demonstrate that infants positively evaluate individuals that allocate resources in a fair, or equal, manner to recipients, and negatively evaluate individuals that allocate resources to recipients in an unfair or unequal manner to recipients. Second, I will demonstrate that infants positively evaluate individuals that receive more (versus fewer) resources in and negatively evaluate individuals that receive fewer versus more) resources in the context of a resource distribution. In both cases infants' social preferences mirror their evaluations: infants prefer fair to unfair individuals, and materially advantaged to materially disadvantaged individuals. Together, these findings add to a growing body of literature suggesting that infants are socially selective and that such selectivity is likely based on both adherence to socio-moral norms, as well as cues to social status or social dominance.

Friday July 1, 2016 11:50 am - 12:10 pm**Judgments of moral punishment are based on harm caused, not benefits gained***Kristopher M Smith (University of Pennsylvania, krsmit@sas.upenn.edu), Robert Kurzban*

Evolutionary theories of moral punishment such as indirect and strong reciprocity hypothesize that moral punishment functions to disincentivize selfish behavior by imposing a cost on the perpetrator. If true, then judgments of punishment are expected to scale on the expected benefits gained by the act – punishment less than the ill-gotten gains would be ineffective at changing harmful behavior. We test this by presenting scenarios of different violations in which the harm caused to the victim and the benefit gained by the perpetrator is orthogonally manipulated and asking participants drawn from an online sample to make judgments of punishment. The manipulation of harm caused, but not benefits gained, increased punishment. We replicated this finding in three additional samples. Further, in a meta-analysis of the 1700 observations across all four samples, ratings of harm caused significantly predicted punishment, whereas ratings of benefit gained did not – people completely ignored the perpetrator's gains when making punishment judgments. This provides further evidence of nonconsequentialism in punishment judgments, a robust feature of moral cognition. Such a psychology is poorly designed to deter selfish behavior and is problematic for many current evolutionary theories of moral punishment.

Friday July 1, 2016 12:10 pm - 12:30 pm**Reputation effects in public and private interactions**

Hisashi Ohtsuki (SOKENDAI, Japan, ohtsuki_hisashi@soken.ac.jp), Yoh Iwasa, Martin A. Nowak

We study the evolution of cooperation in a model of indirect reciprocity where people interact in public and private situations. Public interactions have a high chance to be observed by others and always affect reputation. Private interactions have a lower chance to be observed and only occasionally affect reputation. We explore all second order social norms and study conditions for evolutionary stability of action rules. We observe the competition between "honest" and "hypocritical" strategies. The former cooperate both in public and in private. The later cooperate in public, where many others are watching, but try to get away with defection in private situations. The hypocritical idea is that in private situations it does not pay-off to cooperate, because there is a good chance that nobody will notice it. We find simple and intuitive conditions for the evolution of honest strategies.

Friday July 1, 2016 11:30 am - 12:30 pm**Digging at the roots of religion: How mentalizing abilities and group processes at the heart of religious beliefs and rituals help sustain human cooperation**

Chair: Rita Anne McNamara

Friday July 1, 2016 11:10 am - 11:50 am**Content and Correlates of Belief in Karma**

Cindel White (University of British Columbia, cwhite@psych.ubc.ca), Ara Norenzayan

Karmic beliefs are found around the world, in major Eastern religions and in Western spiritual movements, yet karma has been largely neglected in evolutionary accounts of religion. By punishing and rewarding people's behaviour, karma may rely on the same cognitive mechanisms, and play the same role in sustaining cooperation, as do other culturally evolved sources of justice (e.g., God). We explored the prevalence, content, and correlates of karmic belief among samples of American adults and Canadian students (N = 3145). We examined whether the same demographic variables and cognitive biases (e.g., mind-body dualism, teleology) support belief in karma, supernatural agents, and more mundane sources of justice. We also explored whether karma is viewed as an impersonal force, or if karma is personified, thus relying on the mentalizing abilities required for other religious beliefs. Understanding the psychological foundations of karma would help to explain the cultural evolution of karmic religions, and allow us to generalize evolutionary accounts of religion to a broader portion of the world's religious diversity.

Friday July 1, 2016 11:50 am - 12:10 pm**Connecting bodies and minds: Behavioral synchrony in collective ritual**

Adam Baimel (University of British Columbia, adambaimel@psych.ubc.ca), Rita McNamara, Ara Norenzayan

Participation in collective rituals often exploits our evolved social cognition in myriad ways that fosters affiliative motivations, trust, cooperation, and generally increases group solidarity. In particular, much work has explored how culturally evolved collective rituals involving behavioral synchrony (the act of moving together in time with others) can act as social glue. However, what is often ignored in this literature is the precise mechanisms by which this effect occurs. We argue that behavioral synchrony, like the human propensity for imitation, should be considered as part of a larger suite of processes that allow for effective interpersonal coordination of physical bodies, but even more importantly minds. We present data from four studies (N = 812) demonstrating that behavioral synchrony engages our capacities for mentalizing - tuning our minds for reasoning about other minds - in the process of fostering social coordination and cooperation. This work highlights how the study of the psychological foundations of collective ritual can speak to the evolutionary function of ritual in shaping human sociality.

Friday July 1, 2016 12:10 pm - 12:30 pm**God's Mind on Morality: How core cognition and culture combine to shape expectations of supernatural punishment**

Rita Anne McNamara (University of British Columbia, ramcnama@psych.ubc.ca)

Evolutionary approaches to religion routinely cite our abilities to think about minds as the root of belief. Belief in watchful, moralizing supernatural agents may also confer adaptive benefits supporting long-term, non-kin cooperation. If beliefs stem from our evolved, human-oriented social cognition, then supernatural agents should be expected to judge moral violations based upon intent in ways that parallel human judgments. We investigate how beliefs about human and supernatural minds influence expected divine punishment across cultures and religious traditions. In study 1, we find North Americans expect more divine punishment for more intentional violations, especially if God is more agentic than experiential. In study 2, after experimentally making God's mind salient, we find North Americans expect increasing divine punishment based on intent regardless of personal belief. In study 3, we find people in Yasawa, Fiji, and Indo-Fijians expect divine judgments to roughly mirror their own – importantly, Yasawans expect God to emphasize outcome parallel to their own normative focus on behavior. In study 4, when primed to think about thoughts, Yasawans expect divine punishment to emphasize intent. Mental state reasoning can therefore be seen as a core cognitive mechanism that interacts with norm systems like religion to sustain societal values and cooperation.

NEW INVESTIGATOR COMPETITION FINALISTS**Friday July 1, 2016 2:00pm - 3:00pm****New Investigator Competition***Chair: Diana Fleischman***Friday July 1, 2016 2:00pm - 2:20pm****Silent Disco: Strangers dancing in synchrony feel socially close, and naltrexone blocks the associated rise in pain threshold***Bronwyn Tarr (University of Oxford, UK, bronwyn.tarr@psy.ox.ac.uk), Jacques Launay, Robin I. M. Dunbar*

Moving in synchrony leads to cooperation and feelings of closeness, and dance (involving synchronization to others and music) may cause social bonding. We used an experimental silent disco paradigm to determine which aspects of synchrony in dance are associated with changes in pain threshold (a proxy for endorphin uptake) and social bonding between strangers. Those who danced in synchrony experienced elevated pain thresholds, whereas those in the non-synchronized conditions experienced no analgesic effects. Similarly, synchronized dancers reported feeling more socially bonded. This experiment suggests that dance encourages social bonding amongst co-actors by stimulating the production of endorphins. To confirm the role of endorphins, we conducted a double-blind administration of placebo and naltrexone (an endorphin blocker) before groups of strangers danced in synchrony. Administration of naltrexone blocked the pain threshold response, compared to the placebo-treated participants, confirming that increases in pain threshold in the control group are due to activation of the endogenous opioid system (EOS) during synchronized dancing. We conclude that dance may have been an important human behavior evolved to encourage social closeness in the formation of social groups.

Friday July 1, 2016 2:20pm - 2:40pm**Ritual increases children's affiliation with in-group members***Nicole Wen (The University of Texas at Austin, nicole.wen@utexas.edu), Cristine Legare*

Cultural conventions such as rituals are a psychologically understudied yet pervasive feature of human social group cognition. We propose that studying the emergence of rituals in childhood provides insight into the complex dynamics of social group cognition. This study examined the impact of ritual participation on children's in-group affiliation (N = 71, 4-11-year-olds). A novel social group paradigm was used in an afterschool program to test the influence of a ritual versus a control task on a measure of affiliation with in- versus out-group members. The data support the hypothesis that the experience of participating in a ritual increases in-group affiliation to a greater degree than group activity alone. There was a significant effect of condition after accounting for attendance, $F(1, 68) = 4.54, p = .037, \text{partial } \eta^2 = .06$. Overall, children in the ritual condition had higher in-group affiliation composite scores ($M = 3.03, SD = 1.00$) than children in the control condition ($M = 2.59, SD = 1.14$). The results provide insight into the early-developing preference for in-group members and are consistent with the proposal that rituals facilitate in-group cohesion. We propose that humans are psychologically prepared to engage in ritual as a means of in-group affiliation.

Friday July 1, 2016 2:40pm - 3:00pm**Risk buffering and resource access shape valuation of out-group and in-group strangers**

Anne C Pisor (Department of Anthropology, University of California Santa Barbara, acpisor@gmail.com), Michael Gurven

Unlike other primates, humans exhibit extensive inter-group tolerance and frequently build relationships with out-group members. Despite its common occurrence, little is known about the selective forces that may have favored out-group relationship building in humans. What are the social and ecological factors that promote valuation of out-group members as potential social partners? Do they differ from those that promote valuation of in-group members? We propose that opportunities for non-local resource access and resource buffering, crucial in the human foraging niche, will increase valuation of out-group members. Using survey and experimental data collected among three populations of Bolivian horticulturalists, we find that individuals who have not experienced recent resource shortfalls, but stand to gain from additional market resource access or social connections, demonstrate more initial generosity toward out-group strangers, though results are sensitive to the proxy used. Those who have existing market access and networks to buffer shortfalls demonstrate more initial generosity toward in-group members. Our results illustrate how evolved human psychology is sensitive to the costs and benefits of new relationships, regardless of the in-group or out-group status of the target individual; however, the social and ecological factors that favor new relationships with in-group versus out-group strangers may differ.

POST-DOCTORAL COMPETITION FINALISTS**Friday July 1, 2016 3:00pm - 4:00pm****Post-Doctoral Competition**

Chair: Debra Lieberman

Friday July 1, 2016 3:00pm - 3:20pm**Fetal microchimerism and maternal health: Cooperation and conflict beyond the womb**

Amy Boddy (Arizona State University, amyboddy@gmail.com), Angelo Fortunato, Melissa Wilson Sayres, Athena Aktipis

During pregnancy, there is a bi-directional exchange of fetal and maternal cells. The presence of fetal cells has been associated with both positive and negative effects on maternal health. These paradoxical effects may be due to the fact that maternal and offspring fitness interests are aligned in certain domains and conflicting in others. We use a cooperation and conflict theory framework to propose an explanation for this paradox. Considering the evolutionary and phylogenetic origins of microchimerism, fetal cells may have a similar function to the placenta. Just as the placenta's physiology is designed to transfer resources from the maternal body to the offspring in the womb, the physiology of fetal cells in maternal tissues may enhance resource transfer to the offspring after parturition. This resource transfer may be mutually beneficially for both maternal/offspring fitness interests, or fetal manipulation may push maternal tissues beyond the maternal optimum leading to conflict over resource allocation. Depending on the ecological context (mother's body), fetal cells may function to contribute to maternal somatic maintenance (e.g. wound healing) and to manipulate maternal physiology. We suggest fetal cells may play important roles in continued maternal investment in the offspring through manipulation of lactation, thermoregulation, and attachment systems.

Friday July 1, 2016 3:20pm - 3:40pm**Social devaluation elicits shame independent of actual behavior**

Tess Robertson (Stony Brook University, theresa.robertson@stonybrook.edu), Daniel Sznycer, Andrew Delton

Social devaluation is a costly and potentially disastrous event. The emotion of shame may provide a defense by preventing or minimizing the damage from devaluation. If this is the function of shame, then shame should be triggered by signs of devaluation. Devaluation often follows wrongdoing; however, sometimes people are devalued even though they have done nothing wrong, but merely because others believe they have. Therefore—crucially—devaluation should elicit shame independent of actual behavior. To test this hypothesis, participants interacted in face-to-face groups, including a public good game. Devaluation was signaled by experimental manipulation of social exclusion. Participants in the exclusion condition were ostensibly excluded for failing to contribute to the group; actually, exclusion was randomly assigned and was independent of participants' actual contributions. As predicted, exclusion elicited shame; mediated through perceptions of devaluation. Importantly, however, the relationship between exclusion and shame was independent of participants' actual behavior. Indeed, even the highest contributors felt more shame after being excluded, despite objectively having done nothing wrong. In contrast, contribution level (i.e., actual behavior) did not predict shame intensity. Independent of the actions one has taken, devaluation by others is sufficient to elicit shame.

Friday July 1, 2016 3:40pm - 4:00pm**In-group ostracism increases high-fidelity imitation in early childhood**

Rachel Watson-Jones (The University of Texas at Austin, watsonjones@austin.utexas.edu), Harvey Whitehouse, Cristine Legare

The Cyberball paradigm was used to examine the hypothesis that children use high-fidelity imitation as a reinclusion behavior in response to being ostracized by in-group members. Children (N = 176; 5- to 6-year-olds) were either included or excluded by in- or out-group members and then shown a video of an in-group or an out-group member enacting a social convention. Participants who were excluded by their in-group engaged in higher-fidelity imitation than those who were included by their in-group. Children who were included by an out-group and those who were excluded by an out-group showed no difference in imitative fidelity. Children ostracized by in-group members also displayed increased anxiety relative to children ostracized by out-group members. The data are consistent with the proposal that high-fidelity imitation functions as reinclusion behavior in the context of in-group ostracism. In reciprocal interaction, adherence to social conventions fosters trust and affiliation that is essential to maintaining group membership and cohesion. These findings demonstrate that children are sensitive to being ostracized in the context of in-group membership. Our results provide insight into the ontogeny of behavioral strategies used to navigate social group membership and the social function of imitation in early childhood.

Friday July 1, 2016 4:30pm - 5:50pm

Social and Biological Underpinnings of Affiliative Behaviours

Chair: Pablo Nepomnaschy

Friday July 1, 2016 4:30pm - 4:50pm

Oxytocin, vasopressin, and the evolution of sex differences in affiliation

Tanya Procyshyn (Biological Sciences and Human Evolutionary Studies Program, Simon Fraser University, tprocysh@sfu.ca), Mika Mokkonen, Bernard Crespi

The neuropeptide hormones oxytocin and vasopressin (and homologues) are evolutionarily conserved mediators of sociality, having been shown to influence behaviours including communication, competition, cooperation, attachment, and parenting in diverse taxa from fish to humans. Aspects of sociality often relate to survival and reproductive strategy, and may thus differ between males and females of the same species. For example, male reproduction may be increased by male-male competition while, for females, reproduction may be increased by affiliative female-female social bonds. The oxytocin and vasopressin systems, which are known to interact with steroid hormone systems in the brain, represent potential proximate mechanisms for regulating sex differences in social behaviour within species. To examine this theory, we synthesized the literature reporting sex differences in the functions of oxytocin and vasopressin in three aspects of affiliation: pair bonds, friendship bonds, and parent-offspring bonds. We then linked these results to documented, associated effects of steroid hormones, to develop and evaluate a general theory for how peptide and steroid hormones jointly mediate adaptive sex-specific sociality in humans. Our findings indicate that females and males differ substantially in proximate hormonal mechanisms of context-specific social behaviour, with important implications for human evolution and risks for disorders of social cognition.

Friday July 1, 2016 4:50pm - 5:10pm

Why hormones matter

Mark V Flinn (Anthropology, University of Missouri, FlinnM@missouri.edu)

We humans are highly sensitive to our social environments. Our brains have special abilities such as empathy and social foresight that allow us to understand each other's feelings and communicate in ways that are unique among all living organisms. Our bodies use internal chemical messengers—hormones and neurotransmitters—to help guide responses to our social worlds. Understanding this chemical language is important for many research questions in anthropology. For the past 27 years I have conducted a field study of child stress and family environment in a rural community in Dominica. The primary objective is to document hormonal responses of children to everyday interactions with their parents and other care providers, concomitant with longitudinal assessment of developmental and health outcomes. Results indicate that difficult family environments and traumatic social events are associated with temporal elevations of cortisol and morbidity risk. The long-term effects of traumatic early experiences on cortisol profiles are complex and indicate domain-specific effects, with normal recovery from physical stressors, but some heightened response to negative-affect social challenges.

Friday July 1, 2016 5:10pm - 5:30pm**Parenting and attachment in a small-scale, non-Western society**

Tanya Broesch (Psychology, Simon Fraser University, tanya_broesch@sfu.ca)

The first relationship – that between an infant and its caregiver – is thought to set the stage for subsequent relationships and have social, emotional and cognitive consequences later in life. Great strides have been made to understand this complex relationship, yet only a handful of studies have investigated parent-infant relationships outside of an urban, Western context. Decades of ethnographic research and detailed observations of parenting across diverse societies suggests that differences in the early social environment may impact the nature of the attachment relationship. We investigated parenting behaviors and attachment relationships in a non-Western, rural society on Tanna Island Vanuatu and an urban society in Canada. We find similarities in the ways parents respond to infants (contingent responding, affect mirroring, infant directed speech) but differences in the selectivity of the response. We also report similarities in the kinds of attachment behaviors we see in Vanuatu, compared to existing research on attachment. This research suggests that, across diverse human societies, there are commonalities in the early social experience of infants. There are also interesting variations indicating selective scaffolding of emotional expressions is occurring as early as the 2nd month of life.

Friday July 1, 2016 5:30pm - 5:50pm**Reproductive events, life history traits, the hypothalamic-pituitary-adrenal axis and cellular aging in women**

Pablo Nepomnaschy (Faculty of Health Sciences and Human Evolutionary Studies Program, Simon Fraser University,), Cindy K Barha, Katrina G Salvante, Courtney W Hanna, Samantha L Wilson, Wendy P Robinson, Rachel M Altman

Life history theory (LHT) posits that energy invested in reproduction is unavailable for tissue maintenance. Thus, having more offspring should accelerate senescence. We tested LHT's prediction by evaluating the associations between key components of women's reproductive history, parity and child mortality, and the pace of telomere attrition, a marker of cellular aging, and the potential role of the stress axis in these relationships. Contrary to expectations, higher parity was associated with slower telomere attrition over 13 years. Telomere length (TL) decreased with increasing age in women who suffered child mortality, but not in women who did not. Regardless of exposure to child mortality, women with higher average and day-to-day variability in basal cortisol levels exhibited shorter TL, consistent with the hypotheses that stress axis activation may influence cellular aging via oxidative stress and telomerase pathways. We hypothesize that in cooperative breeding species, higher parity may attract more alloparental providers and support, potentially freeing energy that can be devoted to somatic maintenance, thereby slowing cellular aging. Within this framework, child mortality would have an emotional cost but, potentially, also a logistic one. Exploration of this novel hypothesis is necessary in humans and other cooperatively-breeding species.

Friday July 1, 2016 4:30pm - 5:50pm
Developing best practices for teaching evolution*Chair: Cristine H. Legare***Friday July 1, 2016 4:30pm - 4:50pm**
Children can learn evolutionary explanations for biological adaptation as well as adults can*Andrew Shtulman (Occidental College, shtulman@oxy.edu)*

Evolution by natural selection is often relegated to the high school curriculum on the assumption that younger students cannot grasp its complexity. We sought to test that assumption by teaching elementary-school-aged children (n = 96) a selection-based explanation for biological adaptation and comparing their success to that of adults (n = 30). Participants provided explanations before and after a ten-minute, analogy-based tutorial illustrating the principles of variation, differential survival, differential reproduction, inheritance, and population change. While younger children (aged 4 to 6) showed minimal evidence of learning these principles, older children (aged 7 to 12) showed robust evidence of doing so, learning them at rates equivalent to adults. Participants of all ages, however, provided non-evolutionary explanations for biological adaptations (i.e., explanations referencing need, growth, and creation) nearly as often at posttest as they did at pretest. These results suggest that older elementary-school-aged children can be taught evolutionary concepts but that learning such concepts does not lead to the automatic replacement of non-evolutionary views of biological adaptation, which must be addressed separately. They also suggest that the widespread practice of delaying evolution education until the second decade of life is misguided and may actually exacerbate cognitive obstacles to learning evolution.

Friday July 1, 2016 4:50pm - 5:10pm
Anthropomorphizing science: How does it affect the development of evolutionary concepts?*Cristine H. Legare (The University of Texas at Austin, legare@austin.utexas.edu)*

Despite the ubiquitous use of anthropomorphic language to describe biological change in both educational settings and popular science, little is known about how anthropomorphic language influences children's understanding of evolutionary concepts. In an experimental study, we assessed whether the language used to convey evolutionary concepts influences children's (5- to 12-year-olds; N = 88) understanding of evolutionary change. Language was manipulated by using three types of narrative, each describing animals' biological change: (a) need-based narratives, which referenced animals' basic survival needs; (b) desire-based or anthropomorphic narratives, which referenced animals' mental states; and (c) scientifically accurate natural selection narratives. Results indicate that the language used to describe evolutionary change influenced children's endorsement of and use of evolutionary concepts when interpreting that change. Narratives using anthropomorphic language were least likely to facilitate a scientifically accurate interpretation. In contrast, need-based and natural selection language had similar and positive effects, which suggests that need-based reasoning might provide a conceptual scaffold to an evolutionary explanation of biological origins. In sum, the language used to teach evolutionary change impacts conceptual understanding in children and has important pedagogical implications for science education.

Friday July 1, 2016 5:10pm - 5:30pm**Catalyzing cultural change in W. Texas: Reducing teachers' anxiety and increasing their efficacy about teaching evolution**

Patricia H. Hawley (Texas Tech University, patricia.hawley@ttu.edu)

It is well known that attitudes towards evolutionary theory is tepid at best and hostile at worst in the U.S. The factors underlying the obstacles to acceptance are also well known (e.g., conservatism, religiosity). However, treatments and solutions have been relatively ignored. At the same time, the “other side” is visibly organized and has developed practiced talking points within the common vernacular (e.g., “Why are there still monkeys?”). Efforts for enhancing knowledge about the nature of science and attitudes towards evolution have focused predominantly on content. In contrast, the novel program presented here targets anxieties stemming from epistemological entanglements created and exploited by the intelligent design movement. Fifty four in-service science and biology teachers from the W. Texas region participated as part of their requirements for continuing education credits. On average, they were 37.94 years old, had 9.23 years of teaching experience, and reported a conservative self-identity of 5.2 on a 7-point scale. Elementary, middle school, and high school were represented. Success of the workshop was evident in significant mean changes in intelligent design propaganda endorsement, negative emotions about the theory and teaching it, and self-efficacy in teaching. Importantly, their negative emotions became uncoupled from regional attitudes at time 2.

Friday July 1, 2016 5:30pm - 5:50pm**Teaching evolution through transformative experience: Promoting positive affect and conceptual change**

Gale M. Sinatra (University of Southern California,), Benjamin C. Heddy

The challenges of teaching and learning about biological evolution (i.e., misconceptions, disinterest, negative affect) have been extensively documented (see Rosengren, Brem, Evans, & Sinatra, 2012). Teaching for Transformative Experience in Science (TTES) is an instruction model that aims to promote engagement with science content outside the classroom (Pugh & Heddy, 2015). TTES is designed in a manner that effectively confronts the challenges of learning about evolution by promoting “1) active use, 2) expansion of perception, and 3) experiential value” (Pugh et al., 2011, pg. 112). The first dimension, active use, occurs when students apply what they have learned about evolution to real life situations (e.g. thinking about the concept of extinction when seeing a polar bear at the zoo). Expansion of perception occurs when students use science concepts to see phenomena or situations differently (e.g. realizing that climate change can contribute to the extinction of polar bears). Experiential value occurs when students value a concept for its ability to impact their everyday experience (e.g. valuing extinction for its utility in understanding the polar bears plight). This presentation will discuss the instructional model along with evidence of its effectiveness (Heddy & Sinatra, 2013). Implications for evolution education are discussed.

Friday July 1, 2016 4:30pm - 5:50pm
Female-Female Competition*Chair: Jessica Ayers***Friday July 1, 2016 4:30pm - 4:50pm****Do women slut-shame women who are not sexual rivals? Testing the coordinated condemnation and direct threat models of women's competition***Jessica Ayers (California State University, Fullerton, jessiaayers90@csu.fullerton.edu), Aaron T. Goetz*

Models of women's competition attempt to explain underlying influences on women's same-sex aggression. Specifically, the direct threat model proposes that women only compete when a rival poses a direct threat to a romantic relationship, whereas the coordinated condemnation model outlines a strategy of unconscious collusion to maintain a favorable cost-of-sex regardless of relationship status. We previously demonstrated that a target woman who was dressed slightly sexually provocatively was perceived more negatively across multiple characteristics. In the current study ($N = 335$), we varied the degree to which a target woman threatened the participant's relationship (i.e., target was described as the partner's sister, close friend, or an unknown woman). We found that participants responded in accordance with the direct threat model when presented with first person judgments but also in accordance with the coordinated condemnation model when presented with third-party judgments. The participant's similarity to the woman, attractiveness, and relationship status did not moderate the effect, suggesting that these factors do not override the need to preserve bargaining power that favors women in sexual interactions. This investigation suggests that the two models of competition may work simultaneously in competitive interactions.

Friday July 1, 2016 4:50pm - 5:10pm**Women's Intrasexual Competition: Social Information and Reputational Attacks***Tania Reynolds (Florida State University, reynolds@psy.fsu.edu), Roy Baumeister*

Across human evolution, men's intrasexual competition relied more heavily on physical aggression than did women's. However, women still could gain a relative advantage by outcompeting other women for the best mates. So how do women compete? Researchers have contended that women may compete with social information and reputational attacks. Because men value chastity in their long-term partners and this trait is invisible, women's sexual reputations may have been quite influential for their mate value, but also vulnerable to defamation. Hess and Hagen (2009) have argued that women may use their same-sex friendships to help them in this reputational battle. Across four online studies we tested predictions stemming from this framework. In Studies 1 and 2, we evaluated whether women's interests, worries, and friendship expectations are better suited than men's for reputational competition. In Studies 3 and 4, we experimentally manipulated the mating threat level of a target woman and found that women relayed reputationally relevant information about her strategically. Specifically, they passed on more negative and less positive social information about a hypothetical a woman who flirted with their mates (compared to one who did not) and an attractive woman (compared to a less attractive woman).

Friday July 1, 2016 5:10pm - 5:30pm**Mating Intelligence and Intrasexual Competition: The Interesting Case of Mate Manipulation**

Maryanne L. Fisher (Saint Mary's University, mlfisher.99@gmail.com), Brittany T. Cormier

There has been recent attention towards mating intelligence. Mating intelligence is a set of psychological abilities designed for sexual reproduction. Here we focus on mating intelligence as it relates to same-sex competition for access and retention of mates. In this two-part study, we examined mating intelligence as it relates to the four strategies of intrasexual competition (self promotion, competitor derogation, competitor manipulation, and mate manipulation). In Part 1, 130 women completed Kaufman and Geher (2009) mating intelligence survey and intrasexual competition measures. The results indicated that only mate manipulation was significantly positively correlated with mating intelligence. We propose that this strategy involves more complexity than the other three, particularly since one must still remain desirable to their mate. In Part 2 (underway), men and women completed a revised version of the mating intelligence measure, with items modified to be more applicable to a young adult population and spanning the various facets of mating intelligence more deeply. Further, in Part 1, mating success was not strongly related to mating intelligence, which we explore in Part 2. They also completed competition measures, as well as a measure of social desirability. Results are pending.

Friday July 1, 2016 5:30pm - 5:50pm - CANCELLED**Women fight and lose an imaginary sexual competition against female advertising models**

Sylvie Borau (Toulouse Business School, sylvie.borau@gmail.com), Jean-François Bonnefon

Women are constantly exposed to media images featuring thin, attractive, and provocative female advertisement models. Previous research that investigated the effects of this exposure largely focused on the notion of women internalizing media ideals, and suffering from the failure to live up to these impossible expectations. Here we explore a complementary pathway, originating from evolutionary pressures on sexual selection. In three experimental studies (n=103; n=157; n=228), we show that women exposed to provocative female models display the signature of fighting and losing a competition against a sexual rival, in proportion to their own propensity to intrasexual competition. Competitive women experience feelings of jealousy and unfriendliness toward provocative models, derogate their appearance and purported promiscuity, and revise downward their own mating and financial prospects. These results, and the life prospects effects in particular, speak strongly for the value of applying evolutionary theory to the field of consumption, and offer an elegant framework for jointly considering previously observed effects of ideal models on food, cosmetics and luxury goods consumption.

Friday July 1, 2016 4:30pm - 5:50pm
Psychopathology 1

Chair: Phil Kavanagh

Friday July 1, 2016 4:30pm - 4:50pm
Evolutionary Psychopathology of Comorbid Social Anxiety Disorder and Alcohol Use Disorder

Adam Bulley (The University of Queensland, adam.bulley@uqconnect.edu.au), Beyon Miloyan, Ben Brilot, Thomas Suddendorf

Social anxiety disorder (SAD) commonly co-occurs with, and often precedes, Alcohol use disorder (AUD). This talk introduces an evolutionary perspective on this comorbidity that considers how natural selection has left socially anxious individuals vulnerable to alcohol abuse. Social anxiety is thought to have evolved because it regulates behaviours involved in managing threats to status in complex social hierarchies. Alcohol affects evolutionarily conserved emotion circuitry, and can down-regulate anxiety, thereby artificially signalling the absence or successful management of social threats. Alcohol may therefore become particularly reinforced in socially anxious people because it reduces subjective malaise and facilitates social behaviours. The current fitness implications of the hypotheses derived from this perspective were tested in a nationally representative sample of 42,685 American adults with binary logistic regression analyses. Results indicated that a lifetime history of SAD was independently associated with lower odds of reproduction relative to those without SAD. However, individuals with a lifetime history of both SAD and AUD had higher odds of reproduction relative to the rest of the sample. This work elucidates the evolved motivational and psychosocial factors that leave people with SAD susceptible to AUD, and addresses the contemporary fitness implications of these disorders.

Friday July 1, 2016 4:50pm - 5:10pm
From PTSD to Moral Injury: The Gene-culture Coevolution of Combat Stress

Matthew R Zefferman (Arizona State University, zefferman@asu.edu), Sarah Mathew

In soldiers from western industrialized societies there is an association between combat exposure and a collection of symptoms classified as post-traumatic stress (PTS). Existing evolutionary theories of PTS posit that these symptoms evolved primarily as a fear response to harmful situations. These theories plausibly explain some PTS symptoms, especially those that are found in both humans and non-humans after exposure to non-combat stress. However, recent research in combat stress has uncovered additional symptoms, under the heading of “moral injury,” that are not easily explained by an evolutionary fear response. I posit a gene-culture co-evolutionary theory of combat stress that explains how the susceptibility to moral injury-based trauma evolves out of the conflict between fear-based PTS and the forces of group-structured cultural selection. I support this theory with evidence from my ethnographic research with Turkana warriors from northern Kenya.

Friday July 1, 2016 5:10pm - 5:30pm**Life history orientation and individual differences in psychopathological traits: An examination of autism, anxiety, and depression**

Priya Parmar (University of Regina, parmar2p@gmail.com), Sandeep Mishra

Life history theory provides a functional evolutionary account of how individuals differentially allocate effort, time, and energy toward important biological functions (e.g., reproduction, growth). Del Giudice (2014) theorized that there may be systematic relationships between individual differences in life history orientation (ranging on a continuum from “fast” to “slow”) and psychopathology. Specifically, Del Giudice predicted that autism would represent a slow spectrum disorder, and that depression and anxiety could be associated with either fast or slow strategies dependent on context. In the present study, we examined whether individual differences in life history orientation are associated with individual differences in non-clinical psychopathological symptoms in anxiety, depression, and autism. Preliminary results suggest that slower life history orientations were associated with greater symptomology related to general anxiety, depression, and autism, providing some support for Del Giudice’s psychopathological taxonomy. Importantly, these results represent the first empirical support for the idea that life history orientation is associated with individual differences in psychopathology.

Friday July 1, 2016 5:30pm - 5:50pm**Life History Strategies and Psychopathology: The Faster the Life Strategies, the More Symptoms of Psychopathology**

Phil Kavanagh (University of South Australia, phil.kavanagh@unisa.edu.au), Jessie Hurst

There is little extant empirical literature examining the associations between life history strategies and symptoms of psychopathology. The current study (N = 138) investigated the associations between life history strategies, symptoms of psychopathology, aggression, incidence of self-harm behaviour, and attachment (perceived parental support) in sample drawn from the general population and community mental health service providers. The results from the study indicate those with a faster life strategy report greater levels of aggression and symptoms of psychopathology. Further, perceptions of poorer parental support were associated with a faster life history strategy. Implications for life history theory, conceptualising psychopathology, and future research directions are discussed.

Friday July 1, 2016 6:00pm - 7:00pm**Mating and Hormones***Chair: James R. Roney***Friday July 1, 2016 6:00pm - 6:20pm****Social interactions with attractive confederates trigger multiple hormone increases in both men and women***James R. Roney (UCSB, roney@psych.ucsb.edu), Rachel L. Grillo, Adar B. Eisenbruch*

Previous research has demonstrated reactive increases in men's testosterone and cortisol concentrations after brief interactions with women. Here, we tested both male and female subjects' hormonal responses to interactions with the same male and female confederates when conversation content was controlled. Subjects were randomly assigned to interact with a man or woman and were also randomized to either a 'closeness' or 'small-talk' condition that involved answering sets of scripted questions that varied in intimacy across conditions. Pre/post saliva samples were assayed for testosterone, estradiol (women only), oxytocin, and cortisol. Surprisingly, we found reactive increases in testosterone, oxytocin, and estradiol in both same- and opposite-sex interactions for both men and women. For cortisol, however, women exhibited large increases only when interacting with men, and men exhibited large increases only when interacting with women. For men, the magnitude of cortisol response was highly correlated with attraction to the women confederates. The closeness manipulation had few effects, perhaps because the 'small-talk' condition also induced some closeness. Our findings suggest that same-sex interactions of sufficient intensity may trigger hormone increases that have been previously associated with responses to potential mates, with the exception of cortisol, which appears to respond selectively to opposite-sex encounters.

Friday July 1, 2016 6:20pm - 6:40pm**Hormone levels predict women's response to self-resembling faces***Iris J Holzleitner (University of Glasgow, iris.holzleitner@glasgow.ac.uk), Amanda C Hahn, Claire I Fisher, Anthony J Lee, Benedict C Jones, Lisa M DeBruine*

Women's affiliative behavior towards kin changes across the menstrual cycle (Lieberman et al., 2011), as does their preference for a likely cue to kinship, facial resemblance (DeBruine et al., 2005). Such hormone-mediated changes might serve to (1) increase kin-affiliation during the luteal phase of the menstrual cycle, when progesterone levels increase in preparation for pregnancy, or (2) avoid inbreeding during peak fertility, when the ratio of estradiol to progesterone is highest. We tested these hypotheses in a longitudinal design, by relating 106 women's responses to self-resembling faces to their hormone levels as assessed from weekly saliva samples. Women judged self-resembling faces as both more attractive and trustworthy when progesterone levels were high, supporting the kin-affiliation hypothesis. A separate analysis showed that estradiol-to-progesterone ratio had no effect on the attractiveness of self-resembling faces, but opposing effects on trustworthiness ratings of male and female faces. The higher the estradiol-to-progesterone ratio, the less trustworthy self-resembling female faces were judged, while self-resembling male faces were judged as more trustworthy. Our findings cannot easily be reconciled with the inbreeding avoidance hypothesis, but support the notion that menstrual cycle shifts in women's kinship bias might be linked to benefits associated with increased kin-affiliation during pregnancy.

Friday July 1, 2016 6:40pm - 7:00pm

Mate-Guarding and Preferences for Self-Resemblance Across the Menstrual Cycle in Women and Their Male Partners

Sarah Donaldson (Oakland University, sdonaldson@oakland.edu), Lisa Welling

Men exhibit increased mate retention behavior around their female partner's ovulation, although these studies collected data exclusively from women. Therefore studies comparing the couple, from both the male and female perspective are needed. Additionally, no study has directly investigated how men's preferences change in accordance with their female partner's cycle. Since men are more vigilant to threats of cuckoldry and engage in more mate retention behaviors when their partners are most likely to conceive, and given that mate retention behavior is related to preferences for self-resemblance (a cue to paternity) in infant faces among men, it is likely that men's preferences for self-resemblance will also vary as a function of their partner's menstrual cycle. The current study uses measured hormone levels to investigate changes in mate retention behaviors and preferences for self-resemblance across the menstrual cycle among women and their male partners. We found that fertility status affected perception of mate retention behaviors in women, however, further analyses are ongoing for men. Also, because women increase their preferences for cues to kinship in adult faces in the luteal (i.e., nonfertile) phase of the menstrual cycle, we predict to find similar results in women's preferences for self-resembling infant faces.

Friday July 1, 2016 6:00pm - 7:00pm
Policing and Punishment

Chair: David Gordon

Friday July 1, 2016 6:00pm - 6:20pm

Guarding the Guardians: will asymmetries in resource holding potential promote the policing of anti-social punishment and intra-group feuds?

David Gordon (University of Jyväskylä, david.s.gordon@jyu.fi), Mikael Puurtinen

Retaliation against punishment can lead to wasteful feuds. Centralised (pool) punishment can overcome this problem, but the conditions that allow the emergence of such institutions remain unclear. We investigate whether asymmetries in RHP will motivate individuals to ‘police’ deleterious punishment behaviours, i.e. show behaviour similar to punishment institutions. 200 participants played a public goods game with fixed groups and identities where participants could contribute, punish, and police punishment behaviour. We employed four conditions: ‘Free for all’ where all participants can sanction cheaply; ‘Costly for All’, where all sanctions were expensive, ‘Costly Hero’ where one group-member can sanction more cheaply than others, and ‘Local Hero’, where one group-member is immune from all sanctions. Individuals with asymmetric RHP were more willing to police anti-social behaviours, but in the Local Hero condition they contributed less, lowering group-level earnings. The most efficient groups were those where all individuals had low RHP. Thus, ‘powerful’ individuals were willing to enforce a ‘culture of pro-social punishment’, but this came at the expense of group efficiency. We suggest that sufficient asymmetries in RHP can lead to a de facto punishment authority from which formal institutions could emerge, but this may not occur for the public good per se.

Friday July 1, 2016 6:20pm - 6:40pm

Local competition promotes costly policing against cheating

Jessica Barker (Aarhus University, jbarker@aias.au.dk), Pat Barclay

Policing to ensure that others cooperate is itself a cooperative dilemma: why incur the cost of policing when it can be paid by others? We hypothesize that when competition occurs locally, the absolute cost of policing translates into a fitness increase relative to non-cooperative competitors, thus favoring policing. We provide the first test of this novel hypothesis, using a game outside the traditional laboratory setting that incorporates the social cost of policing. Two players competed to get rid of a hand of playing cards; they could cheat by discarding incorrect cards, and police by publicly notifying the experimenter. We manipulated the scale of competition by awarding money to the player with more cards (local competition: relative payoffs) or based on how many cards each player had left (global competition: absolute payoffs). The results supported our prediction that people are more willing to police others when competition was local. As local competition has previously been shown to reduce cooperation, our result suggests that the effect of local competition on cooperation may be more complex than previously thought (because increased policing should counteract decreased cooperation), and contributes to a growing awareness of the importance of the scale of competition for human behavior.

Friday July 1, 2016 6:40pm - 7:00pm**Asymmetric power and cooperation in social dilemmas: Does power influence the use of punishment and gossip strategies to promote cooperation?**

Catherine Molho (VU Amsterdam, c.molho@vu.nl), Daniel Balliet

Previous research has identified punishment and gossip as key strategies to promote cooperation in social dilemmas. However, this work has primarily studied cooperation in egalitarian interactions, overlooking a fundamental feature of human social organization: hierarchy and asymmetric power. While recent accounts posit that hierarchies can improve coordination and reduce within-group conflict, individuals who possess higher rank or power typically behave more selfishly. How is then cooperation achieved and sustained within groups that contain power asymmetries? To address this question, we examine how power affects cooperation, as well the use of punishment and gossip strategies to promote cooperation, in the context of public goods dilemmas. Results from dyadic (N=246) and group (N=371) interactions suggest that low-power individuals cooperate more than high-power individuals when punishment opportunities are absent. However, when punishment opportunities are present, high- and low-power individuals exhibit similar levels of cooperation. Further, results suggest that high-power individuals are more likely to punish—but, also to gossip about—their low-power counterparts, than vice-versa. In total, our findings highlight the importance of considering the strategies available to both the powerful and the powerless when studying cooperation in asymmetric power relationships.

Friday July 1, 2016 6:00pm - 7:00pm**The Behavioral Immune System**

Chair: Joshua M. Tybur

Friday July 1, 2016 6:00pm - 6:20pm**The Parasite-Stress Theory of Sociality, the Behavioral Immune System, and Human Social and Mental Uniqueness**

Randy Thornhill (Department of Biology, University of New Mexico, Albuquerque, NM USA, rthorn@unm.edu), Corey L. Fincher

We propose a new version of the social brain hypothesis for the rapidly evolved, huge human brain and its human-unique mental and social adaptations that places centrally evolved responses to infectious diseases in the evolution of these adaptations. The older version proposes that, as ecological dominance was achieved by ancestral humans as a result of their evolved capacity for inventing and using weapons, tools and many other technologies, the most important selective agent acting on sociality and mental ability was not climate, weather, food shortages, parasites or predators. Rather, as relative freedom (compared to other species) from these forms of selection was achieved, the social behavior of other humans became the greatest force of selection favoring human mental and social intelligence. We agree with this emphasis on social selection, but propose, unlike the older version of the social brain hypothesis, that local variation in parasite adversity facing human ancestors gave rise to frequent change and great complexity in the preferences/values of behavioral immunity and in their manifest social behaviors that are socially adaptive, and that evolutionary selection in this context accounts for important aspects of human uniqueness in mental ability and sociality. Evidence supporting the new hypothesis is discussed.

Friday July 1, 2016 6:20pm - 6:40pm**Why Does the Behavioral Immune System Relate to Conservatism? Testing Competing Hypotheses Across 30 Nations**

Joshua M. Tybur (VU Amsterdam, j.m.tybur@vu.nl)

Prior research suggests that people who are more avoidant of pathogens are more politically conservative, and that nations with greater parasite stress are characterized by more conservative social values. Researchers have offered two hypotheses to explain these relationships. The first hypothesis suggests that the relationship between pathogen-avoidance and conservatism is based on motivations to avoid contact with outgroup members, who putatively pose greater pathogen threats than ingroup members; the second hypothesis suggests that the relationship between pathogen-avoidance and conservatism is based on motivations to adhere to local traditional norms, which putatively serve prophylactic functions. The current research uses these two hypotheses to generate competing predictions regarding the nature of the relationship between disgust sensitivity, national parasite stress, and two dimensions of conservatism: social dominance orientation and traditionalism. Results from a study of 11,538 participants across 30 nations were consistent with the traditional norms account rather than the outgroup-avoidance account. Whereas both national parasite stress and disgust sensitivity were related to traditionalism, national parasite stress was unrelated to social dominance orientation—an aspect of conservatism related to endorsement of intergroup barriers and prejudice toward ethnic outgroups—and disgust sensitivity was only weakly related to social dominance orientation.

Friday July 1, 2016 6:40pm - 7:00pm**The quantitative genetics of disgust sensitivity**

James Sherlock (The University of Queensland, james.sherlock@uqconnect.edu.au), Brendan P. Zietsch, Joshua M. Tybur, Patrick Jern

Contemporary approaches to disgust typically employ an evolutionary perspective to understand the adaptive function and origin of the emotion. Rather than serve one single purpose, disgust is comprised of three domains, each with a specific function shaped by recurrent adaptive problems. Pathogen disgust motivates the avoidance of disease vectors, while sexual disgust functions to mitigate the cost of unsuitable sexual partners (i.e. close relatives or low quality mates), while moral disgust may encourage the avoidance of social transgressions and transgressors. Response sensitivity to common disgust elicitors varies considerably among individuals. In the current study, we used a large sample of female twins ($N = 1,041$) and their siblings ($N = 170$) to estimate the proportion of variation in disgust sensitivity due to genetic and environmental influences. We also conducted independent pathway modelling of this data to explore independent and common sources of genetic variance within and co-variation between the three domains of disgust sensitivity. These results are discussed in light of contemporary evolutionary approaches to disgust sensitivity.

Friday July 1, 2016 6:00pm - 7:00pm**Cooperation and Competition 1***Chair: Jolene H. Tan***Friday July 1, 2016 6:00pm - 6:20pm****Heuristic and Deliberative Prosociality in Four Economic Games: How Decision Time Is Related to Two Types of Prosocial Behaviour***Toshio Yamagishi (Hitotsubashi University, yamagishitoshio@gmail.com), Yoshie Matsumoto, Yang Li, Toko Kiyonari*

Human prosociality constitutes the most fundamental issue in the social sciences, and scientists have traditionally focused on internalization of social norms as the primary mechanism promoting prosocial behavior. Recent behavioral and neuroscientific studies examined two pathways through which internalized social norms promote prosocial behavior. One involves control of impulsive selfishness through deliberative enforcement of internalized norms and the other the formation of prosocial preferences, which are translated into behavior only when they evade deliberative control for pursuing self-interest. We measured 377 participants' (age 20–59) behaviors in four economic games conducted over 3 years and categorized their prosocial preference types using 3 methods of social value orientation. Here we show that norm enforcement and prosocial preferences operate differently in the prosocial-type and proself-type individuals, such that the difference in the individual's type is clearly reflected in their game behavior among the quick decision makers, but this difference disappears among the slow decision makers. Deliberation promotes prosocial behavior of the proself-type, and demotes prosocial behavior of the prosocial-type individuals, generating an inverted-U shape relationship between decision time and behavioral prosociality.

Friday July 1, 2016 6:20pm - 6:40pm**Local competition amplifies the corrosive effects of inequality***Daniel Brian Krupp (One Earth Future and Queen's University, dbkrupp@saltlab.org), Thomas R. Cook*

Inequality of outcomes is thought to work against the evolution of cooperation. However, the theoretical foundations and experimental support for this hypothesis are surprisingly limited. Here, we develop and test a simple game theoretic model of the effects of inequality on social evolution over varying spatial scales of competition. In our model, individuals play a Hawk-Dove game, in which they compete for a resource and pay a cost for violent confrontation. We vary outcome inequality (the value of the contested resource) and the scale of competition (the probability of dispersal between interaction and competition) and find that (1) inequality hinders the evolution of cooperation and (2) local competition exacerbates this effect. We tested our model with more than 1000 participants who played a one-shot, anonymous Hawk-Dove game with a random partner for money under one of three inequality regimes (no, low, or high inequality) and one of two spatial scales (local or global competition). As predicted, cooperation declined with inequality and with local competition. Our study provides compelling evidence that inequality causes conflict, and that its effects are most severe when one's partner is also one's sole competitor.

Friday July 1, 2016 6:40pm - 7:00pm**Social signal detection: Adaptive logic for social exchange**

Jolene H. Tan (Max Planck Institute for Human Development, Berlin, Germany, tan@mpib-berlin.mpg.de)

How do we decide whether to forgive, punish, cooperate, or form an alliance with another agent? These distinct systems of social exchange have similar design principles based on tradeoffs in costs and benefits, and share two features that make them signal detection and error management tasks: they have to be made under conditions of uncertainty, and have decision outcomes with asymmetric fitness costs and benefits. Making each of these decisions thus requires estimating the strength of evidence that engaging with the agent will be fitness enhancing, and then comparing that estimate to a selected decision criterion (i.e., applying a bias), based on tradeoffs in the cost of errors. Across a number of different classes of decisions, evidence strength is likely informed by the other agent's welfare tradeoff ratio towards the decision maker, whereas the decision / criterion is informed by the agent's relationship value and exploitation risk. Using the example of forgiveness, I will show how this insight guided my investigation of the decision process using cognitive models that implement the logic of signal detection. I will also discuss how the precision of signal detection theory can advance error management theory even further.

SATURDAY**Saturday July 2, 2016 10:00 am - 11:20 am****Inequality and Aggression***Chair: Aaron Goetz***Saturday July 2, 2016 10:00 am - 10:20 am****Upper-Body Strength and Human Egalitarianism: Six Conceptual Replications***Michael Bang Petersen (Aarhus University, michael@ps.au.dk), Lasse Laustsen*

Animal models of conflict behavior predict that an organism's behavior in a conflict situation is influenced by physical characteristics related to abilities to impose costs on adversaries (Hammerstein & Parker, 1982). Stronger and larger organisms should be more motivated to seek larger shares of resources and higher places in hierarchies (Sell et al. 2009; Petersen et al. 2013). Consistent with this, studies of human males demonstrate that measures of upper-body strength correlate with measures of support for inequality including Social Dominance Orientation (SDO), a measure of individual differences in support for group-based hierarchies (Price et al. 2011; Sell et al. 2012). Recently, however, a study was published failing to replicate this correlation (Price et al. 2015). In this paper, we re-examine the link between upper-body strength and support for inequality using six European samples in which relevant measures were available. These samples include student and locally representative samples with direct measures of physical strength and nationally representative samples with self-reported measures related to muscularity. While the predicted correlation does not replicate for every single available measure of support for inequality, the overall data pattern strongly suggests that for males, but not females, upper-body strength correlates positively with support for inequality.

Saturday July 2, 2016 10:20 am - 10:40 am**Killing the competition: Is the inequality-homicide connection peculiar to modern nation states?***Martin Daly (McMaster University, daly@mcmaster.ca)*

When outcomes are equitable, there is little to fight over. But when payoff variance is high, the appeal of escalated competitive tactics, including potentially dangerous tactics, rises. This simple logic provides a compelling explanation for the fact that economic inequality is the best available predictor of variability in homicide rates at various spatial scales. Criminologists have maintained, however, that the inequality-homicide relationship is peculiar to "modern" societies, and fails in the "simple societies" typically studied by anthropologists. Moreover, these traditional, small-scale societies are allegedly highly egalitarian but also highly homicidal, and thus call into question the very idea that inequality fuels lethal violence. I will review evidence that debunks these claims. Other factors such as the availability of dispassionate third-party justice affect homicide rates, too, but inequality's effect on dangerous competition is ubiquitous.

Saturday July 2, 2016 10:40 am - 11:00 am

Guns, Concerns, and Zeal: The Evolutionary Psychology of Gun Ownership (with apologies to Jared Diamond)

Aaron Goetz (California State University, Fullerton, agoetz@fullerton.edu)

Two opposing models could explain gun ownership: a Facultative Calibration Model, which would predict that formidable men would be more likely to own or intend to own firearms, particularly those designed to kill people, and a Compensatory Model, which would predict that less formidable, more vulnerable men would be more likely to own or intend to own firearms. I surveyed a large and diverse sample of men (N=604) about their gun ownership. In accordance with the Facultative Calibration Model, I documented that gun owners are stronger, more quick to become angry, more likely to spontaneously assess other men's formidability, more likely to get into fights, more likely to watch combat sports, and more likely to have received training in fighting. Conversely, I documented that gun owners are not taller or heavier than those who do not own guns, probably because, in our modern environment, height and weight are no longer reliably diagnostic of formidability. Intentions to own guns, particularly handguns, produced similar results. From a practical standpoint, it seems that one can predict men's gun ownership, not from their concerns about compensating for vulnerability, but from their formidability and aggressive zeal.

Saturday July 2, 2016 11:00 am - 11:20 am

Ritual human sacrifice and the evolution of stratified societies

Quentin Atkinson (University of Auckland, q.atkinson@auckland.ac.nz), Joseph Watts, Oliver Sheehan, Joseph Bulbulia, Russell D. Gray

Human sacrifice is known to have occurred in early Germanic, Arab, Turkic, Inuit, American, Austronesian, African, Chinese and Japanese cultures, and continued to be practiced by some cultures into the 20th centuries. One proposal is that human sacrifice functions to legitimise political authority and social class systems, thereby stabilising social stratification, but this hypothesis has not been rigorously tested using cross-cultural data. In this talk, I report results from Bayesian phylogenetic analysis of a geographically and socially diverse sample of 93 traditional Austronesian cultures. We find strong support for models in which human sacrifice stabilises social stratification once stratification has arisen, and promotes a shift to strictly inherited class systems. Our results highlight the potential of religions to benefit those in power at the expense of others, and suggest a darker side to the link between religion and the emergence of complex modern societies

Saturday July 2, 2016 10:00 am - 11:20 am

Psychopathology 2

Chair: Edward Hagen

Saturday July 2, 2016 10:00 am - 10:20 am

The sex difference in depression is explained by the sex difference in physical formidability

Edward Hagen (Washington State University, edhagen@wsu.edu), Tom Rosenström

The female bias in depression has yet to be explained. One evolutionary model of depression proposes that loss of interest in virtually all activities is a bargaining strategy to compel reluctant social partners to provide more help in the wake of adversity. An evolutionary model of anger proposes that high upper body strength predisposes individuals to angrily threaten social partners who offer too few benefits or impose too many costs. Here we propose that when social partners provide too few benefits or impose too many costs, the physically strong become angry and the physically weak become depressed. The sexual dimorphism in upper body strength means that men will be more likely to bargain with anger and physical threats and women with depression. We tested this idea using the 2011-2012 National Health and Nutrition Examination Survey. The odds of depression in those with high upper body strength were less than half those with low upper body strength (OR=0.4, $p=0.0079$), which was not a consequence of confounds with anthropometric, hormonal or socioeconomic variables, but was partially explained by a confound with physical disability. Nevertheless, upper body strength mediated 63% of the effect of sex on depression, whereas physical disability mediated only 11%.

Saturday July 2, 2016 10:20 am - 10:40 am

Repetitive thinking in a normal population: responses to negative events

Simen MjøenLarsen (NTNU - Norwegian University of Science and Technology, simen_ml@hotmail.com), Thomas H. Kleppestø, David M. Buss, Leif Edward Ottesen Kennair

Some theories view repetitive thinking as a maladaptive coping response that exacerbates depressive symptoms and explains the sex difference in depression. Other theories view repetitive thinking as the chief mechanism for solving complex social problems. A central theoretical assumption in evolutionary psychology is that psychological mechanisms are sensitive to modern cues to ancestral fitness-relevant contexts. This study explores different types of repetitive thinking after the most recent negative events in different social contexts. Data from a survey of 524 students tested predictions from competing hypotheses derived from evolutionary and clinical theories. Multivariate analysis revealed that number of depressive symptoms after a negative event depends upon sex, social context, and the type of repetitive thinking. Females reported more repetitive thinking than males. However, sex differences in repetitive thinking disappeared and even reversed after a loss in a competitive social situation. All measures of repetitive thinking predicted depression but there were significant differences in how much the respondents used the different types of thinking. These findings are relevant to theories about the nature of depression and repetitive thinking and for theories that might explain known sex differences in depression. Social context should be considered when theorizing about repetitive thinking, sex and depression.

Saturday July 2, 2016 10:40 am - 11:00 am

Suicidal Behavior as a Costly Apology: Results from a test of multiple models of suicidal behavior against the ethnographic record

Kristen Syme (Washington State University, kristen.syme@wsu.edu), Zachary H. Garfield, Edward H. Hagen

The present study tested a novel evolutionary model of suicidal behavior (SB) against the ethnographic record. In a previous study, the researchers tested two evolutionary models of SB: the inclusive fitness model (IFM) and the bargaining model (BRM), a game theoretic model based on costly signaling theory that sees SB as a credible signal of need. The researchers operationalized the two models into a set of variables, and two independent coders coded 473 texts extracted from the Probability Sample of the Human Relations Area Files for the variables. While the BRM was well supported by the data, there were recurring themes that did not map on to the original models such as shame and accusations of wrongdoing. The researchers reformulated the BRM in light of these variables to create the costly apology model, a sub-type of the BRM that frames SB as a sincere signal of apology. Two independent coders recoded the same extracts for these variables. Data analyses lent support to the costly apology model of SB. First, many of the model's variables were moderately represented in extracts and cultures. Secondly, a non-negative matrix factorization showed that the theoretical variables formed distinct clusters, occupying unique components.

Saturday July 2, 2016 11:00 am - 11:20 am

A symptom-based approach to investigating the adaptive significance of postpartum depression in a longitudinal cohort

Molly Fox (UC Irvine, molly.fox@uci.edu), Laura Glynn

Postpartum depression (PPD) is a critical health issue affecting women, children, and wider society. Using data from a cohort of 308 pregnant California women studied longitudinally from early gestation through 9 years postpartum, we evaluate a new framework for understanding PPD in an evolutionary context. Our approach was motivated by Nesse's model of major depressive disorder that focuses on symptoms and situations. We expand upon that model by adding childbirth to the list of situations that instigate depression, and identify symptoms that may be adaptive in this context based on principles of evolutionary anthropology. To test our hypotheses, we compare PPD symptomology between postpartum women and women assessed outside the perinatal phase. Additionally, we hypothesize that endocrinology is the most likely biological pathway regulating adaptive depressive symptoms during the postpartum phase. We test this hypothesis by measuring gonadotropin and stress hormone levels serially across each woman's pregnancy, and evaluate relations between gestational hormone trajectories and postpartum depressive symptom clusters. Results suggest particular symptom profiles predicted to have adaptive relevance in PPD may be programmed by gestational endocrinology. Results provide evidence for gestational neuroendocrinology as the target of selection, enacting psycho-behavioral adaptation.

Saturday July 2, 2016 10:00 am - 11:20 am

Intergroup Conflict

Chair: Chair: Dylan M. Tweed

Saturday July 2, 2016 10:00 am - 10:20 am

A Cross-Cultural Test of the Imbalance-of-Power Hypothesis

Michelle Scalise Sugiyama (University of Oregon, mscalise@uoregon.edu)

The imbalance-of-power hypothesis posits that coalitional intergroup aggression has evolved in certain territorial species with a fission-fusion pattern of social grouping (including humans), and is evoked under conditions of intergroup hostility and large intergroup power asymmetries. Two hypothesized components of this faculty are mechanisms that (1) assess power asymmetries between groups and (2) motivate groups to attack when they have the power advantage. To date, however, no study has tested this claim by examining cross-cultural patterns in human cognition. Accordingly, this study surveyed a cross-cultural sample of forager war narratives for evidence of the hypothesized mechanisms. Because they document actual forager lethal raiding practices, these narratives provide an evolutionarily relevant record of decision-making and motivation with respect to coalitional aggression, and may thereby illuminate the psychology underlying this behavior. Ability to assess intergroup power differentials and motivation to attack under conditions of a power advantage were operationalized as: (a) attack by a group with a numerical advantage; (b) retreat by a group with a numerical disadvantage; and (c) use of tactics aimed at creating a more favorable intergroup power differential (i.e., force multipliers). Evidence of the presence of the hypothesized mechanisms was found in 90% of the collections surveyed.

Saturday July 2, 2016 10:20 am - 10:40 am

Relationship of women's marital surname change with (1) age, income, and perceived female-female competition among brides-to-be, and (2) duration of marriage and number of children among divorcées

Melanie MacEacheron (University of Western Ontario, mmaceacheron@gmail.com)

Brides-to-be from across western and central Canada (N=184) were surveyed as to whether they would undergo marital surname change, partially replicating work on non-engaged/unmarried, female undergraduates. Brides-to-be who were older ($t(83) = -3.14, p = .002$), had greater income ($t(97) = -2.56, p = .012$; but not greater fiancé income), were more educated ($t(141) = -5.25, p = .000$), were emotionally closer to their fathers ($t(153) = -4.02, p = .000$), rated their fathers as more likely to help with children ($t(142) = -3.64, p = .000$), were less politically conservative ($t(161) = 3.63, p = .000$), and who rated as greater local female-female competition for husbands ($t(171) = -1.80, p = .07$), were more likely to report they would not be undergoing the practice. Among all different-sex couples (N=167 couples) divorcing in a Canadian county in a 7-month period, 2013-2014, couples the women in which did not undergo marital surname change remained married significantly less long than couples the women in which underwent marital surname change. Where the wife had undergone marital surname change there was a 1-1.604=.604 increase in incidence rate ratio of duration of the marriage in years. When the woman's marital surname change/retention was used as a regression predictor of number of children of the marriage alongside marriage duration in years, only the latter was significantly predictive.

Saturday July 2, 2016 10:40 am - 11:00 am

Extrinsic religious belief predicts hostility directed towards out-groups while religious devotion predicts willingness to sacrifice for one's in-group in rural Jamaica

Robert Lynch (University of Missouri, robertflynn@gmail.com), Robert Trivers

It has been suggested that intergroup conflict played an important role in the evolution of human cooperation—aggression directed against out-groups, and cooperation with in-groups (including self-sacrifice or “parochial altruism”), may be linked in humans. Some have also speculated that religious belief may have co-evolved in conjunction with parochial altruism and there is evidence that extrinsic religious beliefs (e.g. religion is a means to an end and belief is motivated by external desires), but not intrinsic religious beliefs (e.g. religion and belief are an end in themselves), exacerbate out-group hostility and in-group sacrifice. Here we test the hypothesis that extrinsic religiosity predicts parochial altruism in rural Jamaica. Results indicate that extrinsic religious belief, but neither intrinsic religious belief nor overall religious devotion, predicts parochial altruism. Furthermore, hostility towards out-groups is positively predicted by extrinsic religiosity and negatively predicted by religious devotion, while willingness to sacrifice for one's in group is positively predicted by reported religious devotion and costly signals of belief. These results provide evidence supporting the hypothesis that religious belief can promote cooperation with in-groups, but that practicing religion without sincere belief may generate hostile attitudes towards out-groups.

Saturday July 2, 2016 11:00 am - 11:20 am

The Strategic Use of Outrage in Intergroup Conflict

Dylan M. Tweed (Harvard University, dylantweed@g.harvard.edu), Danielle Truxaw, Max Krasnow

Intergroup conflict poses a difficult adaptive problem. Members of a coalition, possessed of competing interests and agendas, must successfully coordinate their actions when entwined in a dispute with another group. Natural selection may have solved this coordination problem in part by equipping us with an outrage psychology that interacts with systems for welfare tradeoff valuation in order to effectively mobilize support against fitness-suppressing others. Such an outrage psychology should be strategically engaged when one interprets another's actions as indicating a low welfare trade-off ratio (WTR) toward oneself or one's group. We test this prediction by asking participants to infer the WTRs of others who endorse controversial political opinions. After receiving only this limited information, subjects were asked to estimate the person's WTR toward a generic other and toward a member of each side of the controversy, as well as rate their degree of outrage. As predicted by the theory, the more reactive participants were in inferring WTRs from the political opinion, the more outraged they were in response. While intuitive theories hold that politics is about abstract principles, our results suggest these principles matter because of what they signal.

Saturday July 2, 2016 10:00 am - 11:20 am

Leadership in Mammalian Societies

Chair: Mark van Vugt

Saturday July 2, 2016 10:00 am - 10:20 am

Leadership solves collective action problems in small-scale societies

Chris Von Rueden (Jepson School of Leadership Studies, cvonrued@richmond.edu), Luke Glowacki

Observation of leadership in small-scale societies offers unique insights into the evolution of human collective action and the origins of sociopolitical complexity. Among Tsimane forager-horticulturalists of Bolivia, I evaluate the traits of leaders and the contexts in which leadership becomes more institutional. I find that leaders tend to have more capital, including body size and social connections. These attributes can reduce the costs leaders incur and increase the efficacy of leadership. Leadership becomes more institutional in domains of collective action, such as resolution of intragroup conflict, where collective action failure threatens group integrity. Together these data support the hypothesis that leadership is an important means by which collective action problems are overcome in small-scale societies.

Saturday July 2, 2016 10:20 am - 10:40 am

Leadership in Mammalian Societies: Emergence, Distribution, Power, and Payoff

Jennifer Smith (Mills College, jesmith@mills.edu), Sergey Gavrilets, Monique Borgerhoff Mulder, Paul L. Hooper, Claire El Mouden, Daniel Nettle, Christoph Hauert, Kim Hill, Susan Perry, Anne E. Pusey, Mark van Vugt, Eric Alden Smith

Leadership is an active area of research in the biological and social sciences. Here we provide a transdisciplinary synthesis of leadership from an evolutionary perspective for mammalian societies. First, we identify four key domains of leadership with fitness consequences for individuals involved in collective action: movement, food acquisition, within-group conflict mediation, and between-group interactions. Second, we quantify variation in leadership in five dimensions: distribution (across individuals), emergence (achieved versus inherited), power, relative payoff to leadership, and generality (across domains). Based on these domains and dimensions, we propose a novel comparative framework in which to examine patterns of leadership across mammalian societies. We apply this framework to produce a preliminary analysis based on longitudinal patterns for recognizable individuals from sixteen mammalian societies. Our sample includes societies of non-human mammals (African elephants, bottlenose dolphins, chimpanzees, African lions, plains zebra, spotted hyena, and white-faced capuchins) and small-scale human societies (The Ache, Cheyenne, Inuit, Kipsigis, Nootka, Pimbwe, Shoshone, and Tsimane). We reveal significant variation across domains for two dimensions, distribution and power, with leadership being the most concentrated and powerful in conflict mediation and between-group interactions. Human leadership exhibits commonalities with and differences from the broader mammalian pattern, raising interesting theoretical and empirical issues.

Saturday July 2, 2016 10:40 am - 11:00 am

The many distinctive faces of leadership: An evolutionary psychology perspective

Mark van Vugt (VU University Amsterdam, m.van.vugt@vu.nl), Allen Grabo

Many psychological studies have shown that facial appearance matters in the people we select as leaders. An evolutionary-psychology approach suggests that facial cues serve as inputs into an adaptive, context-sensitive followership psychology. That is, leadership suitability may be contingent upon the match between facial cues (indicating, e.g., dominance, trust, competence, and attractiveness) and follower needs. There is much support for this evolutionary-contingency hypothesis in the psychological literature. People prefer leaders with dominant, masculine-looking faces in times of war and conflict, yet they prefer leaders with more trustworthy, feminine faces in peacetime. In addition, leaders with older-looking faces are preferred in traditional knowledge domains, whereas younger-looking leaders are preferred for new challenges. We speculate about whether such followership heuristics are evolved or culturally learned, currently adaptive or mismatched, and, finally, we address the implications of the evolutionary contingency hypothesis for leadership theory and practice.

Saturday July 2, 2016 11:00 am - 11:20 am

Conflict Activates Preferences for Dominant Leaders: Investigating Preferences for Dominant Leaders across Behavioral, Experimental and Real-World Indicators of Conflict

Lasse Laustsen (University of Aarhus, LL@ps.au.dk), Michael Bang Petersen

Recent research finds that leaders with masculine and dominant physical features and personalities are preferred more under conditions of conflict than of cooperation. Importantly, however, methodological limitations of past research have hindered the identification of whether this effect reflects that followers intuitively view (1) dominant leaders as more competent in solving problems of conflict, (2) non-dominant leaders as more competent in solving problems of cooperation or (3) both. We argue that followers primarily enhance preferences for dominant leadership when facing threats from enemy out-groups because dominant leaders—compared to less dominant leaders—are better positioned to facilitate in-group protection by enforcing participation in coordinated, aggressive collective action. From this, we develop precise predictions on the nature of the underlying followership psychology and utilize an array of data types—including controlled experiments, natural experiments and behavioral measures—to investigate the validity of these predictions. Based on a large nationally representative survey of 2,009 Poles and Ukrainians fielded during the Crimea-crisis of 2014, we find that preferences for leader dominance are exclusively driven by the intuition that dominant leaders are better able to facilitate aggressive responses during social conflict and are regulated by contextual conditions and individual predispositions related to such responses.

Saturday July 2, 2016 11:30 am - 12:30 pm

Foundations of Cooperation

Chair: Martin Schmelz

Saturday July 2, 2016 11:10 am - 11:50 am

Chimpanzees return favors even at a personal cost

Martin Schmelz (Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany, martin_schmelz@eva.mpg.de), Sebastian Grüneisen, Alihan Kabalak, Jürgen Jost, Michael Tomasello

A central characteristic of human cooperation is people's tendency to behave prosocially towards others even at a personal cost – e.g. by provisioning them with resources – and to reward others who have previously behaved prosocially. While chimpanzees engage in a range of cooperative behaviors such strong prosocial tendencies are thought to be absent in our closest evolutionary relatives. Here, we present data from a series of three studies with a special emphasis on ensuring that subjects understood the payoff structures and the consequences of their decisions. We show for the first time that chimpanzees are willing to return favors to conspecifics who have previously assisted them in acquiring food. Crucially, they do this even at a material cost to themselves and tend to reward cooperative partners more if their partner incurred a risk by providing assistance. These results highlight the importance of a stronger focus on methodologies and demonstrate that chimpanzees are capable of engaging in reciprocal cooperative interactions previously considered unique to humans.

Saturday July 2, 2016 11:50 am - 12:10 pm

The development and evolution of the capacity to prepare for future uncertainty: Children and apes' performance on a minimalist paradigm

Jonathan Redshaw (University of Queensland, j.redshaw@uq.edu.au), Thomas Suddendorf

Humans are ideally suited for thriving under conditions of environmental uncertainty because they can mentally represent and prepare in advance for mutually exclusive versions of future events. Little is known, however, about when this capacity develops in children and whether it is shared with non-human animals. Here we show that children become able to insightfully prepare for two mutually exclusive versions of an undetermined future event during the middle preschool years, whereas we find no evidence for such a capacity in a sample of great apes. We gave 90 preschool children and 8 great apes the opportunity to catch an item dropped into a forked tube with two bottom openings. Children's performance improved linearly across age groups (2, 2.5, 3, 3.5, and 4 years), with none of the youngest group but most of the oldest group spontaneously covering both openings the first time they prepared to catch the item. The apes performed like 2-year-olds, with none of them covering both openings on the first trial. Our results reveal the developmental trajectory of a crucial cognitive capacity that allows humans to prepare for future uncertainty, and they also raise the intriguing possibility that this capacity is not shared with other hominids.

Saturday July 2, 2016 12:10 pm - 12:30 pm

The Nature of My Game: Sociality and Playfulness in Wild Bonobos

Isabel Behncke (University of Oxford , isabel.beagle@me.com)

My focus is on the rarest form of play: play in adults. Play entails costs in energy and time, and other risks. So why would individuals who have finished their development engage in this wasteful behavior? I studied the play behaviour of bonobos (*Pan paniscus*), who are, together with chimpanzees, our closest living relative yet little is known about them. Play in wild bonobos was pervasive and clearly an intrinsic part of their daily lives. Everybody, of all ages and both sexes, played, and moreover, played with a wide range of partners, including the oldest individuals in the group. Comparison of the networks of play and sex show that bonobos' play interactions were more frequent and with more partners than sexual interactions were. Bonobos participated in notable 'games of trust', where situations of risk and tolerance (such as testicle play) seem to be deliberately exercised. Notably, bonobo playfulness extended to neighbouring communities during inter-group encounters, where most play was between the dominant males of one group with the immatures of another. These findings open new questions for human evolution on the role of salient positive emotion in exploration and social connection – such as is experienced during feasts and festivals.

Saturday July 2, 2016 11:30 am - 12:30 pm

Explaining Modern Fertility

Chair: Djuke Veldhuis

Saturday July 2, 2016 11:10 am - 11:50 am

“Expect the unexpected”: human physiological, psychological and cultural, responses to urbanization in Papua New Guinea.

Djuke Veldhuis (University of Aarhus, djukev@aias.au.dk)

The human stress response governs our ability to deal with a wide range of stimuli that life throws at us. An evolutionary approach encourages us to consider the selective advantage this system provides, particularly given its associated costs (e.g. in metabolism and immune function). However, given that our ancestors almost certainly experienced more stress, in the form of trauma, disease and starvation for example, one may question why stress appears to play such a large role in industrialised societies. One argument is that our stress response developed in the context of physical stressors, not the mental and social ones people in industrialised societies mainly encounter today i.e. a mismatch between the evolutionary contexts in which our stress response evolved and environment it operates in today. To test this hypothesis, I report results from three distinct communities in Papua New Guinea. These communities face notably different stages of socioeconomic transition. I examine the interaction between social change, lifestyle, and stress. A 'stress profile' was built using physiological (hormonal) measures of stress and psychological indicators of anxiety alongside socioeconomic surveys. The results suggest that with urbanization come a swathe of maladaptive coping behaviours and significantly heightened stress hormone levels.

Saturday July 2, 2016 11:50 am - 12:10 pm

Waiting for Go: A genetic entropy theory of the demographic transition

John Tooby (Co-Director, Center for Evolutionary Psychology, UCSB, tooby@anth.ucsb.edu)

Members of industrial societies have become better fed, less resource limited, and less vulnerable to early mortality. Where limits to reproduction have been relaxed, Darwinian intuition suggests that the number of children per parent should increase. Yet the reverse happened. Decreases in early mortality have been followed by decreases in birth rates. While the beginning of the transition (down to 4 children) can be explained by quantity-quality tradeoffs, such explanations could not possibly account for drops in the richest societies to below replacement rates. A theory resolving this paradox rests on two claims: (1) Humans have adaptations designed to initiate or defer each reproductive project based on internal assessments of reproductive condition, and (2) the radical drop in early mortality has necessarily led to a sharp accumulation of individually modest genetic/metabolic impairments. (The premodern mutation-selection balance was maintained because a large proportion of offspring died before reproduction due to their excess load of negative mutations.) As mortality rates plunge, newly retained genetic impairments increasingly aggregate into physiological conditions that lead the self-assessment system (rightly or wrongly) to register the individual as currently unready for reproduction. As populations become increasingly low fecundity, they may pass a mutational point of no return.

Saturday July 2, 2016 12:10 pm - 12:30 pm

Understanding the reproductive ecology of industrial society

Gert Stulp (London School of Hygiene & Tropical Medicine, gertstulp@gmail.com), Rebecca Sear, Louise Barrett

The nature of the relationship between wealth and reproductive success among industrial societies has a chequered history, with positive, negative and null associations all being reported. This variety of outcomes has given rise to a lively debate over whether the study of fertility in modern society is relevant to evolutionary analyses; a question usually answered positively by human behavioural ecologists and negatively by evolutionary psychologists. Here, we argue that the direction of this relationship is irrelevant to this question, and that fertility measurements are essential to any evolutionary analysis, whether from a HBE or EP point of view. We go on to support our position using data from a literature review of longitudinal studies on wealth and fertility, and empirical survey data from the NLSY79. Although relationships between wealth and fertility tend to be positive, supporting simple evolutionary predictions, levels of fertility fall below those needed to maximise fitness. We suggest that detailed understanding of how and why fertility varies can shed light on the proximate mechanisms that potentially explain why behaviour is maladaptive, and that industrial society should no longer be treated as a monolith, given there are clear differences in reproductive strategies both within and between different nations.

Saturday July 2, 2016 11:30 am - 12:30 pm**Life History Effects***Chair: Joseph H. Manson***Saturday July 2, 2016 11:10 am - 11:50 am****Can race be replaced? Life history stereotyping and race categorization***Oliver Sng (Arizona State University, oliver.sng@asu.edu), Keelah E. G. Williams, Steven L. Neuberg*

Why do perceivers categorize others by race? Existing evolutionary perspectives to this question conceive of race as a cue to coalitional alliances. Integrating life history and affordance management approaches, we propose a novel and complementary hypothesis—that perceivers categorize others by race because race can be a cue to the environments/ecologies in which groups live. Knowing another’s home ecology can provide useful information about their likely behaviors, and consequently the potential fitness threats and opportunities they may pose. In the U.S., because Blacks and Whites are differentially distributed across resource-harsh and unpredictable ecologies (which trigger faster life history strategies) or resource-sufficient and stable ones (which trigger slower life history strategies), race in the U.S. may be used as a cue of a person’s home ecology. In two experiments using the memory confusion paradigm (“Who-said-what?”), we find that when perceivers are presented with information on both a target’s race (Black/White) and the ecologies in which they live (harsh/sufficient), race categorization decreases and ecology categorization emerges. We discuss implications of our findings for the origins of race stereotyping, and for social perception more broadly.

Saturday July 2, 2016 11:50 am - 12:10 pm**Life History Strategy and Human Cooperation***Junhui Wu (Vrije Universiteit Amsterdam, junhui.wu@vu.nl), Daniel Balliet, Joshua M. Tybur, Sakura Arai, Paul A. M. Van Lange, Toshio Yamagishi*

Across five studies using samples from both Japan and United States (N = 2,345), we take a multi-method approach to test the prediction from life history theory that a slow, compared to fast, life history strategy promotes investing in cooperative relationships. Studies 1 and 2 used two measures of life history strategy (i.e., Mini-K and high-K Strategy Scale) and correlated these measures with cooperation in different economic games. Studies 3 to 5 measured early childhood environments (i.e., childhood unpredictability and childhood socioeconomic status), manipulated resource scarcity through either (a) a slideshow of pictures indicative of resource scarcity or (b) different relative initial endowment in an economic game, and then measured cooperation in that game. We also examine three hypothesized psychological mechanisms that could explain the relation between life history strategy and cooperation: temporal discounting, social value orientation, and trust in others. Overall, we did not find support for the hypothesis that life history strategy predicts cooperation or that early childhood environments and current resource scarcity interact to predict cooperation. Thus, our findings imply that life history theory does not account for individual variation in cooperative strategies in economic games.

Saturday July 2, 2016 12:10 pm - 12:30 pm

Life history strategy and the major dimensions of personality: data from free-ranging college students

Joseph H. Manson (UCLA Anthropology, jmanson@anthro.ucla.edu)

Theory and data concur that the Five Factor Model (FFM) dimensions Conscientiousness, Agreeableness and Emotional Stability are positively associated with a Slow Life History (SLH) strategy. In contrast, it remains unclear whether high levels of Extraversion and Openness are part of an SLH, or whether these dimensions include both fast and slow LH components. I used McCrae et al's (1986) factor analysis of the 100 California Q-Sort (CAQ) items to assign unit-weighted scores on the FFM dimensions to the CAQ SLH template developed by Sherman et al. (2013) and Dunkel et al. (2014). The FFM scores of the SLH template were then compared to a distribution of 91 CAQ profiles based on periodic brief audio recordings of student volunteers who wore the Electronically Activated Recorder (EAR) for three days during their normal activities. The SLH template ranked above all 91 real participants on Agreeableness and Conscientiousness. However, it ranked at the 35th percentile on Emotional Stability, at the 23rd percentile on Extraversion, and lower than all the real participants on Openness. Participant self-reports validated the CAQ-based Conscientiousness, Extraversion and Openness measures. These results suggest complex and unresolved relationships between LH strategy and Extraversion, Openness and Emotional Stability.

Saturday July 2, 2016 11:30 am - 12:30 pm

The evolutionary origins of music: communicating attention and regulating arousal

Chair: Max Krasnow

Saturday July 2, 2016 11:10 am - 11:50 am

On the origin of music: Parent-offspring conflict and the evolution of infant-directed song

Sam Mehr (Harvard, sam@wjh.harvard.edu), Max Krasnow

Music is a ubiquitous element of the human experience: we sing and play instruments in a wide variety of formal and informal contexts around the world; we spend billions each year on recorded and live music; and we incorporate music into a wide variety of technologies seemingly unrelated to music, from smart phones to smart fridges. Despite this ubiquity, fundamental questions remain open regarding music's origin, which of its features are adaptations, and which are byproducts of other adaptations. None of the present theories of music as adaptation can answer these most basic questions: Why does music have the features it has, and not others? How does the design of those features fit a plausible selection pressure or pressures? How could those features evolve, even in principle, from ancestral forms? Here, we present an adaptationist theory (Attentional Investment Theory) concerning a single form of music, infant-directed song. After examining the ancestral ecology of parent-infant relations, we propose that infant-directed song arose in an evolutionary arms race stemming from the dynamics of parent-offspring conflict. We describe testable predictions that follow from this theory, and consider the possibility that it may help to explain human music, writ large.

Saturday July 2, 2016 11:50 am - 12:10 pm

Mommy sings because you cry: testing the Attentional Investment Theory of music evolution

Max Krasnow (Harvard, krasnow@fas.harvard.edu), Sam Mehr, Jennifer Kotler, Rhea Howard, David Haig

The Attentional Investment Theory of music proposes that music evolved in the human lineage from arms race co-evolution between parents and infants regarding conflicting interests in attentional investment. On this theory, an appetite for song has been under selection in infants in order to secure parental attention. If so, then populations with disorders of genomic imprinting on regions that regulate traits under Parent-Offspring Conflict present a natural experiment for testing this theory. Prader-Willi Syndrome (PWS) and Angelman Syndrome (AS) are two such disorders, complementary dysregulations of a region of chromosome 15 that produces a pattern of reduced demands on maternal investment when paternal imprinting is lacking (PWS) and increased demands on maternal investment when maternal imprinting is lacking (AS). Here we test Attentional Investment Theory by comparing the musical sensitivity and physiological arousal response to music of typically developing individuals and those with PWS. Consistent with this theory, those with PWS show both a reduced ability to discriminate pitches and a stronger reduction in arousal following music than do typically developing individuals. Pilot work with individuals with AS and typically developing infants will be discussed.

Saturday July 2, 2016 12:10 pm - 12:30 pm

Physiological and subjective responses to the sound of arousal in music

Greg Bryant (UCLA, gabryant@ucla.edu), Dan Blumstein, Vinicio Zanon Santon

Many animals produce and respond to harsh nonlinear sounds when alarmed, possibly because acoustic production systems are overblown in stressful, dangerous situations. Humans produce nonlinearities in music, achieved through various means. We examined how nonlinearities in music affect listeners' emotional responses by presenting participants music without noise, or versions of the music that had noise or abrupt frequency shifts experimentally added. Arousal and valence judgments were affected by the addition of simulated nonlinearities including noise and rapid pitch shifts. In a second experiment with benign video, valence (but not arousal) judgments changed with the addition of noise or frequency shifts. We also explored whether these acoustic attributes directly affect facial electromyographic (EMG) activity. Noise-manipulated music significantly increased corrugator supercilii activity compared to control and pitch-up conditions. The addition of video eliminated any effect of the acoustic manipulations on facial EMG measurements, but judges rated distorted music as more negative than pitch-up or control compositions. These results demonstrate that nonlinearities in music affect listeners' ratings of arousal and valence somewhat independently of their physiological responses, and possibly reflect an adaptive sensitivity in humans to noisy features in communicative sounds that have been widely incorporated into music through cultural evolutionary processes.

Saturday July 2, 2016 3:10 pm - 4:10 pm

Sexual Variation

Chair: Robert Brooks

Saturday July 2, 2016 3:10 pm - 3:30 pm

Sex difference in attractiveness perceptions of strong and weak male walkers

Bernhard Fink (University of Göttingen, bfink@gwdg.de), Selina André, Johanna S. Mines, Bettina Weege, Todd K. Shackelford, Marina L. Butovskaya

Men and women accurately assess male physical strength from faces, bodies and voices. Here, we investigate men's and women's attractiveness, dominance, and strength assessments from brief samples of male gait. Handgrip strength (HGS) was measured in 70 heterosexual men and their gait was motion-captured. Men and women judged 20 pre-categorized strong (high HGS) and weak (low HGS) walkers on attractiveness, dominance, and strength, and provided a measure of their own HGS. Both men and women judged strong walkers higher on dominance and strength than weak walkers. Women but not men judged strong walkers more attractive than weak walkers. These effects were independent of observers' physical strength. We conclude that male physical strength is conveyed through gait and discuss our findings with reference to studies suggesting that physical strength provides information about male quality in contexts of inter- and intrasexual selection.

Saturday July 2, 2016 3:30 pm - 3:50 pm

The Relative Importance of Sexual Dimorphism, Fluctuating Asymmetry, and Color Cues to Health During Evaluation of Potential Partners' Facial Photographs: A Conjoint Analysis Study

Justin Mogilski (Oakland University, jkmogils@oakland.edu), Lisa Welling

Sexual dimorphism, symmetry, and coloration in human faces putatively signal information relevant to mate selection and reproduction. Here, we use conjoint analysis to examine whether individuals prioritize certain features over others. Participants (N = 542, 315 female) ranked six sets of facial photographs (3 male, 3 female) by their preference to start long- and short-term romantic relationships with each person depicted. Composite-based digital transformations were applied such that each image set contained 11 different versions of the same identity. Photographs within each set possessed a unique combination of three traits: sexual dimorphism, symmetry, and color cues to health. We found that participants prioritized cues to sexual dimorphism over symmetry and color cues to health. Sexual dimorphism was also found to be relatively more important for male faces than for female faces, whereas symmetry and color cues to health were relatively more important for female faces than for male faces. Utility estimates revealed that our data is consistent with research showing that preferences for facial masculinity and femininity in male and female faces vary according to relationship context. These findings are interpreted within the context of previous work examining the influence of these facial attributes in romantic partner perception.

Saturday July 2, 2016 3:50 pm - 4:10 pm

Using the full evolutionary toolkit to understand variation in gender

Robert Brooks (UNSW Australia, rob.brooks@unsw.edu.au)

A growing appreciation that social and sexual living extends far beyond biological sex has led to the use of “gender” to understand variation in the degree of individual masculinity and femininity. Where the evolutionary sciences have enjoyed considerable success in understanding how sex differences arise, the same cannot be said for the more nuanced and mercurial variation in gender, much of which develops socially. Indeed, gender’s social dimension, the role of social processes in women’s suppression, and the sheer changeability of gendered behaviour all led to a view that gender is entirely social in origin, reinforcing the divide between biological and social processes and contributing the view that neither can meaningfully inform the other. I consider variation in gender as a naïve evolutionary biologist would consider the origins of variation in any other trait. This approach suggests that the forces that normally maintain additive genetic variance in the face of selection may well also maintain variation in gender. Moreover, I evaluate the idea that our gendered interests are never entirely masculine nor feminine, an idea that has the potential to undermine gendered identity politics.

Saturday July 2, 2016 3:10 pm - 4:10 pm

Facultative Aspects of Personality

Chair: Sandeep Mishra

Saturday July 2, 2016 3:10 pm - 3:30 pm

The relative state model: Integrating need-based and ability-based pathways to risk-taking

Sandeep Mishra (University of Regina, mishrs@gmail.com), Pat Barclay, Adam Sparks

Who takes risks, and why? Does risk-taking in one context predict risk-taking in other contexts? We seek to resolve these questions by considering two (non-independent) pathways to risk: need-based and ability-based. The need-based pathway suggests that risk-taking is a product of competitive disadvantage, consistent with risk-sensitivity theory. The ability-based pathway suggests that people engage in risk-taking when they possess abilities or traits that increase the expected value of the risky behavior itself and/or have signalling value. We provide an integrated conceptual model of decision-making under risk—the relative state model—explicating how situational and embodied factors influence the estimated costs and benefits of risk-taking in different contexts. This model may help to reconcile longstanding disagreements and issues regarding the etiology of risk-taking, such as the domain-general versus domain-specificity of risk or differential engagement in antisocial and non-antisocial risk-taking.

Saturday July 2, 2016 3:30 pm - 3:50 pm
Risk and relative deprivation

Dallas Novakowski (University of Regina, dallas.novakowski@gmail.com), Sandeep Mishra

Substantial epidemiological evidence has linked societal-level inequality and outcomes associated with risk-taking (e.g., teen pregnancy, crime, violence). However, little research has examined whether downstream psychological consequences of inequality are similarly associated with risk-related outcomes. Personal relative deprivation serves as a proximate affective mechanism to alert organisms to their competitive disadvantage; it should motivate individuals to reduce the perceived disparity. We examined whether feelings of relative deprivation were associated with risk-related individual differences in a diverse community sample (n = 328). Personal relative deprivation was associated with personality traits associated with risk (high impulsivity, low self-control, and facets of sensation-seeking), risk-related attitudes (in ethical, gambling, and health/safety domains), and behavioral outcomes (gambling and problem gambling, future discounting, antisocial conduct, and criminal outcomes), but not with two laboratory behavioral risk tasks. Together, the results indicate that subjective feelings of relative deprivation predict individual differences in key personality traits, attitudes, and behaviors associated with risk.

Saturday July 2, 2016 3:50 pm - 4:10 pm
Personality differences as facultative adaptations: Naturalistic evidence from online behavior

Kyle Thomas (MotiveMetrics, kylethomas63@gmail.com)

Natural selection tends to minimize individual differences in sexually reproducing species, because relative genetic uniformity is required for complex adaptations to survive many iterations of sexual recombination. The systematic and heritable individual differences of human personality thus pose an evolutionary paradox. To resolve this paradox, evolutionary psychologists have proposed that the variation manifested as personality traits might result from facultative adaptations—universal “if-then rules” that calibrate an organism’s behavior to its environment. This hypothesis suggests a tight linkage between personality traits and an organism’s goals and motivations. If this hypothesis is correct, it offers a novel method for assaying the motivations that drive specific decisions: Statistically aggregating the trait profiles of individuals that made a decision to expose which traits systematically vary off the population average. In this talk, I explain how this novel method works, describe a software tool that can reveal motivations using publicly available data from social media sites, and present real-world case studies that demonstrate its effectiveness. I argue that the method provides a valuable new research tool to test evolutionary hypotheses about motivations, and that the software tool provides access to an extremely rich source of free, naturalistic data that already exists—online behavior.

Saturday July 2, 2016 3:10 pm - 4:10 pm**Mating Strategies 3***Chair: David P. Schmitt***Saturday July 2, 2016 3:10 pm - 3:30 pm****The Facultative Influence of Personality and Culture on Men's and Women's Short-Term Mating Strategies***David P. Schmitt (Bradley University, dps@fsmail.bradley.edu)*

Several adaptations underlie men's and women's differential pursuit of sexual strategies. Many of these adaptations are facultative--designed to adaptively respond to environmental inputs. For instance, high stress environments (i.e., high pathogens, mortality, violence) may facultatively evoke more short-term mating or "unrestricted" sociosexual attitudes and behaviors. Evidence in support of this view is mixed, however, depending on whether associations are examined at individual or cultural levels. At individual levels, some facultative adaptations may be sex-specific, such as high self-esteem men pursuing more short-term mates, whereas high self-esteem women typically pursue less short-term mating. Personal levels of religiosity, wealth, attractiveness, strength, exploitativeness, risk-taking, masculinity, and various testosterone-related features appear to influence short-term mating. Culture-level factors associated with short-term mating include religiosity, GDP, pathogens, sociopolitical gender egalitarianism, sex role ideologies, individualism, power distance, in-group favoritism, public corruption, life satisfaction, short 5-HTTLPR gene variants, lactose tolerance, sex ratios, obesity, and height. Using multilevel modeling, links between sexual strategies and several individual-level factors (e.g., personal religiosity and socioeconomic status) and culture-level factors (e.g., average weekly religious service attendance and GDP per capita) were examined using data from 58 nations of the International Sexuality Description Project-2 (N = 35,000). Overall, findings suggested several facultative adaptations generate sociosexual variability in predictable ways at both individual and cultural levels of analysis.

Saturday July 2, 2016 3:30 pm - 3:50 pm**Kindness is sexy: Findings from an experimental, policy-capturing approach to human mate preferences***Rachel Grillot (UCSB, grillot@psych.ucsb.edu), James Roney*

Previous research on human mate preferences has shown that there are sex differences in the importance placed on physical attractiveness and earning capacity in potential mates, and that kindness is greatly valued by both sexes. However, much previous work was conducted with self-report measures rather than by assessing individuals' preferences via their actual choices. Here, we used a memory confusion paradigm to manipulate kindness or social status in order to test their effects on revealed mate preferences. Opposite-sex targets represented by faces were randomly paired with sentences describing behaviors that were pre-rated as indicating high or low kindness or social status, respectively. After viewing these pairings, subjects rated targets' mate attractiveness. Results indicated that manipulated kindness and pre-rated physical attractiveness independently and positively predicted long-term mate attractiveness ratings for both sexes. There was no sex difference in the effect of physical attractiveness, but the effect of kindness was stronger for male participants. Positive effects of manipulated status on mate attractiveness reached only trend levels of significance. Other analyses suggested that effects of trait information depend on the physical attractiveness of the targets. The findings demonstrate the potential utility of a novel experimental method for the assessment of human mate preferences.

Saturday July 2, 2016 3:50 pm - 4:10 pm
Male choice in humans: Cross-cultural comparison

Kim, Jun-Hong (Institute of Cross-Cultural Studies, Seoul National University, South Korea, junhongkim@snu.ac.kr)

Compared to other animals, the dynamic of sexual selection is complicated in humans (mostly due to paternal investment). One peculiar phenomenon of human sexual adaptation is that ornamentation is often done by female, whereas the opposite pattern is found in other mammals. Here, for ornamentation, I consider physical adaptation as well as cultural practice (e.g. cosmetics and clothing) since cultural practice can be seen as the manifestation of underlying evolved psychology. This peculiarity stems from the fact that cost of reproduction is often born by male (by direct paternal care or material resources) and the variation of that cost is greater in males than the opposite sex. In cross-cultural comparison, I predict that male choice is stronger (hence more variability in ornamentation in female) in a society 1) where the cost of investment in mating by male is greater than the cost by female 2) operational sex ratio is skewed toward male and 3) resource variability among males is greater than variability among females.

Saturday July 2, 2016 3:10 pm - 4:10 pm
Evolution of Cooperation Pt. I: Social Dynamics of Group Boundaries & Reputation
Chair: Drew Gerkey

Saturday July 2, 2016 3:10 pm - 3:30 pm
Reputation is an honest signal of cooperative strategy in partner choice

Gilbert Roberts (Newcastle University, gilbert.roberts@newcastle.ac.uk)

When people choose partners, it should pay to select the most cooperative. Hence, it should pay to display that you will make a good partner (e.g. by helping others). But how can reputation based partner choice be honest and stable? Here I offer a theoretical framework in which individuals have a series of choices to optionally (1) invest in a cooperative reputation by helping ('signalling'); (2) choose a partner with a reputation; and (3) cooperate in an iterated Prisoner's Dilemma. Modelling shows how these independent traits evolve to become linked. Analysis reveals that reputation is an honest signal of cooperation when it is strategic for cooperators to invest in the benefits of reputation, and where it is not worth defectors paying the signal cost just for short term exploitation. This remarkably simple yet novel reputation-based mechanism is distinct from condition-dependent costly signalling in which helping reveals differences in underlying quality such as resources. Instead, helping provides an honest signal of cooperative strategy/ intentions among otherwise equal individuals, and benefits signallers through access to profitable cooperative relationships. I relate this to recent studies showing people do indeed display helping behaviour and benefit from partner choice for cooperative relationships.

Saturday July 2, 2016 3:30 pm - 3:50 pm

Big Gods, Insecurity and Outgroups: the Role of Belief in Promoting Cooperative Behavior in Northeastern Brazil

Montserrat Soler (Montclair State University, soler8@gmail.com)

Evidence suggests that an important force driving in-group cooperation are religious beliefs and rituals. In recent years, there has been much discussion regarding cognitions around moralizing gods and supernatural punishment as important mechanisms to sustain cooperation in large groups and even toward strangers. Here, data from ethnographic interviews and economic games are presented as part of a large, cross-cultural research effort that seeks to investigate these issues around the world. The research was conducted in Northeastern Brazil where Christianity and religions of the African Diaspora have long existed side by side. Findings are placed in the context of economic insecurity and preferences concerning co-religionists and out-groups.

Saturday July 2, 2016 3:50 pm - 4:10 pm

Measuring Communitas: Collective Worship and Social Networks in Rural South India

Eleanor Power (Santa Fe Institute, epower@santafe.edu)

Scholars of religion have long argued that religious belief and practice help to foster community. This is a central point of classic sociological works (such as Durkheim's "collective effervescence" and Turner's "communitas"), as well as of more recent evolutionary explanations of religion. Indeed, the belief that collective worship fosters solidarity and cohesion is so pervasive that it is often taken as a given. And yet, we have few empirical tests of this common contention. Here, I will present social support network data that I gathered in two villages in South India, which can be used to evaluate the relationship between interpersonal bonds and shared religious practice. I will present exponential random graph models (ERGMs) that show that people who worship together, both in recurrent worship and in intense collective rituals, are more likely to be connected by a cooperative tie. And, I will show that, at a structural level, the groups of people who perform rituals together have denser and more reciprocal relationships than would otherwise be expected. Collectively, these data provide preliminary evidence that collective worship does indeed bind groups together. These findings have further relevance for the larger scholarship on cooperation, group structural dynamics, and cultural group selection.

Saturday July 2, 2016 4:40 pm - 6:00 pm**Pathogen-related Adaptations***Chair: Diana Fleischman***Saturday July 2, 2016 4:40 pm - 5:00 pm****Sex differences in pathogen disgust as a form of hazard avoidance***Adam Sparks (UCLA, adspar@gmail.com), Daniel M.T. Fessler, Kai Qin Chan, Ashwini Ashokkumar, Colin Holbrook*

Sex differences in disgust reactions appear to be a robust research finding. We confirm this impression with a meta-analysis of 250 effects. We then evaluate evolutionary explanations for women's stronger disgust propensity. An emerging consensus among evolutionary scholars distinguishes between disgust elicited by pathogen cues and disgust elicited by sexual stimuli. Sex differences in sexual disgust are readily explained by differences in obligate parental investment – the more heavily-investing sex should be more sexually choosy. But existing accounts for sex differences in pathogen disgust that focus on immune mechanisms of mothers and/or their vulnerable offspring are challenged by key findings about individual differences in disgust propensity. We propose that the solution is to situate pathogen risks within the larger context of exogenous risks to health. Our effectively-polygynous ancestral environment favored greater male willingness to risk health and safety. Enduring costs to avoid hazard was more fitness-enhancing for our female ancestors; for males, pursuing status and reproductive opportunities were more higher priorities. This view links sex differences in disgust propensity to individual differences in valuation of hazards versus opportunities. We report new supportive evidence: several original studies showing positive associations between disgust response, risk aversion, and hazard avoidance.

Saturday July 2, 2016 5:00 pm - 5:20 pm**Pathogen disgust is related to patterns of cellular immunity***Aaron Blackwell (University of California - Santa Barbara, blackwell@anth.ucsb.edu), Angela Garcia, Nikka Keivanfar, Sarah Bay*

If disgust evolved to motivate pathogen avoidance, individuals with higher pathogen disgust should show less evidence of a history of immune activation. We collected capillary blood from 97 females and 36 males, age 18 to 42. Participants also completed a three-domain disgust scale, a revised sociosexual orientation inventory, and provided demographic and health information. We quantified immunity using flow cytometry to count granulocytes, helper T-cells (naïve, senescent, memory, Th1, Th2, Th17, and Treg), cytotoxic T-cells (naïve, memory, senescent), natural killer cells, and B cells (naïve, non-class switched, class-switched memory, plasma cells). Given many correlated variables, immunological parameters were reduced to five principal components. Consistent with predictions, the first component, constituting 34% of the variance and characterized by high naïve T-cells and low senescent and Th1 T-cells, was correlated with pathogen disgust (controlling for recent illness, ethnicity, sex, and age: $r = 0.30$, $p = 0.002$), suggesting that pathogen disgust may protect against immune activation. No immune component was associated with sexual disgust or sociosexuality, and only marginal correlations were found with moral disgust, suggesting that immunity is most directly related to the pathogen avoidance dimension of disgust.

Saturday July 2, 2016 5:20 pm - 5:40 pm**Pathogens, sex and health: Pathogen-Avoidance Motives and Health-Protective Behavior**

Stefan Gruijters (Maastricht University, Stefan.Gruijters@maastrichtuniversity.nl), Joshua M. Tybur, Robert A.C. Ruiter, Karlijn Massar

Research suggests that the psychology of pathogen avoidance has wide-reaching effects on how people interact with the world. These processes constitute, in a way, our “evolved” health psychology. However, this work has primarily focused on how pathogen-avoidance processes relate to social behavior, and have scarcely investigated how pathogen-avoidance motivation relates to health-protective behaviors. These studies attempt to fill this gap. Across three studies, two cross-sectional and one experimental design (N=386, 470, 270 respectively), we examined the relationship between pathogen-avoidance motives and health-protective behavior. The studies used self-reported measures of attitude and intention as indicators of health-protective behavior. Data collected in Studies 1 and 2 revealed that pathogen-avoidance motivation related to participants’ attitude and intention towards STI screening. High levels of pathogen-avoidance motivation were also related to having had fewer sexual partners. Study 2 extended these findings by showing moderate associations between pathogen-avoidance motivation and a broad range of health-protective behaviors – including those ostensibly unrelated to pathogen contraction. Study 3 examined how activation of pathogen-avoidance motivation, using a text prime, influenced participants’ beliefs about behavioral outcomes related to STI testing. We argue that understanding and targeting pathogen-avoidance psychology can add novel and important understanding of health-protective behavior.

Saturday July 2, 2016 5:40 pm - 6:00 pm**Baseline inflammation predicts higher disgust sensitivity but stronger inflammation in response to disease cues predicts lower disgust sensitivity: insights into evolved disease avoidance mechanisms from IL-6 levels**

Diana Fleischman (University of Portsmouth, Diana.Fleischman@port.ac.uk), Abbey R. Woods, Susan S. Girdler

Disgust is thought to have evolved to motivate humans away from contagious disease (Curtis et al., 2004). The compensatory behavioral prophylaxis hypothesis (Fleischman & Fessler, 2011) predicts disease vulnerability is associated with greater disgust sensitivity. Previous research finds disease cues increase immune markers and core body temperature (e.g. Stevenson et al., 2012) and that disease vulnerability predicts attention to disease cues (Miller & Maner 2011). The current study is the first to investigate baseline immunity and immune activation in response to a stress paradigm on disgust sensitivity. Women (n=150) completed the Trier Social Stress Test. Plasma levels of interleukin 6 (IL-6) were collected at baseline and other time points. After recovery, women rated their disgust response to images (Curtis et al., 2004) and the Three Domains of Disgust inventory (Tybur et al. 2009). We find baseline IL-6 is associated with greater disgust sensitivity. However, a larger IL-6 response to stress is associated with lower disgust sensitivity. We hypothesize that baseline IL-6 may be indicative of recent infection or immune vulnerability but that IL-6 increase during the stress task could be indicative of healthy immune function. Results will be discussed in light of an adaptationist perspective on disgust and disease avoidance.

Saturday July 2, 2016 4:40 pm - 6:00 pm
Molecular Genetics and Human Mating Behavior

Chair: Shimon Saphire-Bernstein

Saturday July 2, 2016 4:40 pm - 5:00 pm
Evidence for MHC-Based Genetic Compatibility in Long-Term Relationships?

Shimon Saphire-Bernstein (UCLA, shimon.saphirebernstein@gmail.com), Christina M. Larson, Kelly A. Gildersleeve, Martie G. Haselton

Research on animal models has suggested that mate preferences may be influenced by dissimilarity (i.e., compatibility) in major histocompatibility complex (MHC) genes, which is thought to potentially confer immune benefits on offspring. By extension, MHC dissimilarity may be related to sexual attraction within human couples, and some researchers have furthermore posited that hormonal contraceptives disrupt this preference in women. We typed three classical MHC markers in couples (Ns=168 and 274 couples for Study 1 and Study 2, respectively). In Study 1, evidence for a relationship between MHC dissimilarity and in-pair attraction was mixed. Only in the Asian subsamples (N = 44) did MHC dissimilarity predict partners' sexual attraction to one another, whereas no significant effects were observed in the overall sample. Study 2 tested the prediction that women who used hormonal contraceptives at relationship initiation (vs. those who did not) would be less MHC-dissimilar to their partner. This was not found, with a trend in the reverse. In sum, findings are somewhat consistent with an effect of genetic "compatibility" on attraction within existing relationships, but inconsistent with the notion that the pill disrupts this preference.

Saturday July 2, 2016 5:00 pm - 5:20 pm
MHC Homozygosity is Associated with Fast Sexual Strategies

Kelly A. Gildersleeve (Chapman University, kellygildersleeve@gmail.com), Damian R. Murray, Melissa R. Fales, Martie G. Haselton

Life history theory proposes that individuals facing uncontrollable threats to their survival will pursue a "fast" sexual strategy that favors a short-term mating strategy and earlier reproduction. Whereas past research has focused largely on uncontrollable threats located outside of the individual (e.g., pathogen prevalence, predation risk), we propose that an individual's own genome may sometimes pose uncontrollable threats to his or her survival. Specifically, individuals with genes that equip them with poorer defenses against pathogens might also tend to pursue a fast sexual strategy. We tested this novel hypothesis in a sample of 180 women. We found that women with a genetic marker of lower immunocompetence—namely, homozygosity at the Major Histocompatibility Complex (MHC) region of the genome—reported more positive attitudes toward uncommitted, short-term sexual relationships. They also reported a younger age at sexual debut, a more promiscuous sexual history (e.g., more one-time sex partners), and a greater lifetime number of sexual relationships but not romantic relationships. These findings identify the MHC as a possible source of adaptively patterned variation in women's sexual strategies and highlight the need for further research examining the complex links between genes, immunocompetence, and sexuality in humans.

Saturday July 2, 2016 5:20 pm - 5:40 pm

Genetic analysis of human extrapair mating: heritability, between-sex correlation, and receptor genes for vasopressin and oxytocin

Brendan P. Zietsch (University of Queensland and QIMR Berghofer Medical Research Institute, Brendan.Zietsch@qimrberghofer.edu.au), Lars Westberg, Pekka Santtila, Patrick Jern

Non-adaptive explanations for female extrapair mating have rarely been considered in humans, but recent findings in birds suggest that females' predisposition to extrapair mating may result from indirect selection, via direct selection on males and a between-sex genetic correlation. To examine the plausibility of this non-adaptive explanation of extrapair mating in women, we used data on recent extrapair mating in 7,378 Finnish twins and their siblings. Genetic modelling showed within-sex broad-sense heritability – i.e. the percentage of variation in extrapair mating due to genetic variation – of 62% in men and 40% in women. There was no between-sex correlation in extrapair mating, making indirect selection unlikely. Based on previous animal and human findings, we also tested for association of the arginine vasopressin receptor 1A gene (AVPR1A) and oxytocin receptor gene (OXTR) with extrapair mating. We found gene-based association for AVPR1A in women but not in men, and OXTR showed no significant association in either sex. Overall, these findings confirm genetic underpinnings of extrapair mating in humans, but do not suggest that women's predisposition to extrapair mating is due to selection on men. Also discussed are the limitations of the candidate gene approach to understanding the genetic basis of human mating.

Saturday July 2, 2016 5:40 pm - 6:00 pm

How does variation in the oxytocin receptor gene translate to behavioral differences?

Hasse Walum (Emory University,), Larry J. Young

Oxytocin (OT) facilitates several aspects of social behavior in mammals, including maternal nurturing, social recognition, and social attachment. There is growing evidence for associations between single nucleotide polymorphisms (SNPs) in the OT receptor gene (OXTR) and several aspects of human social behavior including face and emotion recognition and pair-bonding behavior. However, the mechanisms by which these SNPs relate to variation in social behavior are poorly understood. We have in our lab started to investigate how to bridge the gap between genetics and behavior by focusing on OT dependent brain endophenotypes, as well as investigating molecular mechanisms by which SNPs in OXTR can influence these traits. This research builds on a recent finding from our lab showing that SNPs in the prairie vole *oxtr* explain more than 70% of the variance in OT receptor density in the nucleus accumbens, a brain region important for reward processing and pair-bonding behavior. The focus of my talk will be on how using molecular techniques in a highly social model organism can give insights into how genetic variation in OXTR can translate to behavioral differences in humans.

Saturday July 2, 2016 4:40 pm - 6:00 pm
Cooperation and Competition 2

Chair: John Q. Patton

Saturday July 2, 2016 4:40 pm - 5:00 pm
Social Networks, Rather than Cultural Differences, Predict Ultimatum Game Offers: a case from the Ecuadorian Amazon.

John Q. Patton (Cal. State U. Fullerton, johnpatton@fullerton.edu), James Zerbe, Mateo Peñaherrera Aguirre

Offers in ultimatum games played in three tribal communities in the Conambo River basin of the Ecuadorian Amazon range from means of 26.6% to 58.0%, exhibiting a range of diversity comparable to the worldwide cross-cultural sample. This diversity is in contrast to the cultural similarity, and shared norms, found among the people in these three communities. Games conducted three different years (1998, 2002, & 2015) in one of these communities also yielded a large range of offers (means of 26.6% - 46.7%). This diversity of ultimatum game offers is difficult to account for in terms of culture. Social network data collected concurrently with the ultimatum games does predict offers. Players who made more generous offers had larger networks and had more privileged positions within their networks. It is argued that ultimatum game offers are influenced by an individual's perception that they are embedded in a social network that is fair, stable, and favorable to them. Investments in such networks are likely to be reciprocated in the future. These data support the argument that offers in the ultimatum game are better predicted by indirect reciprocity rather than cultural models based on group-selection and self-sacrifice.

Saturday July 2, 2016 5:00 pm - 5:20 pm
Cooperation and Coalitional Competition: Public Goods Game Data from the Ecuadorian Amazon

James Zerbe (California State University Fullerton, jzerbe627@gmail.com), Mateo Peñaherrera Aguirre, John Q. Patton

One instance of a cooperation dilemma common to humans is inter-coalitional competition and conflict. Here, results are reported from a series of five one-shot anonymous public goods games designed to elicit varying coalitional and competition motivations into game structure. Specifically, the relative influence of group composition, either random or coalitional, and the level of competition at which conflict occurs, either none, intra-group, or inter-group, is examined for influencing investment in group cooperation. The data were collected from Conambo, a bi-ethnic tribal community of Achuar and Zapara peoples in the Ecuadorian Amazon. Currently, comparisons of PGG treatments reveal a significant increase in offers due to the varying of group composition (either coalitional or a random group) in the context of between-group competition. Additionally, preliminary analysis shows that offers by individuals in the highest social status category similarly increased by playing in a coalitional group treatment (in comparison to a random group condition) in both competition and non-competition contexts. Subsequent analysis is focused on testing predictions concerning the influence of social capital on cooperation in the PGG.

Saturday July 2, 2016 5:20 pm - 5:40 pm
Third party coordination key to norm enforcement

Cristina Moya (Harvard University, moya@g.harvard.edu), Dan Fessler, Joe Henrich, Wanying Zhao, Clark Barrett, Alex Bolyanatz, Helen Davis, Mike Gurven, Martin Kanovsky, Geoff Kushnick, Anne Pisor, Brooke Scelza, Chris von Rueden, Steve Laurence

Anti-social behavior, one of the costs of living in groups, is of particular relevance to humans given their ultra-sociality. We examined the extent to which societies have divergent or similar cultural institutions to deal with these problems. Using vignette experiments in eight diverse societies – the majority of which rely less on state legal institutions than do industrialized nations – we show that most respondents expect third parties to be involved in inflicting costs on the norm violator. This is often accomplished using relatively inexpensive methods that affect the violator's reputation, such as scolding or condemning the violator, either privately or publicly. However, despite its apparent low cost, ostracism is not a preferred solution to the problem – the reputations of those who withhold aid from norm violators are expected to suffer. We find cross-cultural regularities in people's expectations that siblings would be more involved in dealing with norm-violators than would other community members. However, for most responses, we find large levels of cross-site variation. These data suggest multiple equilibria solutions can sustain norm-compliance, and a role for psychological biases in shaping these.

Saturday July 2, 2016 5:40 pm - 6:00 pm
Gendered outgroup prejudice: an evolutionary threat management perspective

Tingting Ji (Vrije Universiteit Amsterdam, t.ji@vu.nl), Joshua M. Tybur, Mark van Vugt

Do prejudices against all immigrant groups have the same motivational underpinnings? In this research, we propose an evolutionary threat management perspective to test for differences in prejudices across different immigrant groups. Specifically, we hypothesized that prejudice would be differentially expressed toward male versus female immigrants, and that differences in prejudice toward males and females would be moderated by the type of threat endemic to the immigrants ecology of origin. Consistent with our hypothesis, we found that the sex of immigrants interacted with the type of threat associated with that immigrant's ecology of origin. In Study 1 (N = 262), participants reported more prejudice toward male immigrants who come from country associated with violence (Syria). In contrast, prejudice toward immigrants who come from country associated with pathogens (Liberia) did not vary across male and female immigrants. Further, this non-gendered pathogen based prejudice does not generally apply to outgroups. In two additional studies (N's = 468 and 439), we found that cues of pathogen failed to magnify prejudice against an origin-unspecified immigrant group, equally for male and female immigrants. Combining the studies, results supported a threat management perspective of outgroup prejudice.

Saturday July 2, 2016 4:40 pm - 6:00 pm

Evolution of Cooperation Pt. II: Environmental Dynamics of Risk-pooling & Social Networks

Chair: Padmini Iyer

Saturday July 2, 2016 4:40 pm - 5:00 pm

Ecologies of Risk-Pooling: An agent-based modeling approach to model social behavior in volatile environments.

Marco Campenni (Arizona State University, marco.campenni@asu.edu), Lee Cronk, C. Athena Aktipis

Across life, surviving in volatile environments requires the effective management of risk. Individuals can use a number of different strategies for managing risk. They can decide to adopt a pro-social behavior and the expectation related to such specific pro-social behavior may be very different depending on the adopted strategy. Our project focuses on two specific resource sharing rules that can lead to the pooling of risk in small scale societies, but, that can be also generalized to many other social biological systems: generalized food sharing based on need as seen among some human small scale societies, which we refer to as need-based transfers (NBT) and, an account-keeping (AK) system based on tracking of debt and credit frequently seen in both small scale societies and contemporary Western societies. We use agent-based modeling approach to model pro-social behavior to contrast and compare different measures (e.g., the surviving rate of agents) obtained adopting these two strategies (plus a control setting where there is no pro-social behavior) in volatile environmental conditions while foraging. The proposed modeling approach is very flexible allowing us to test many different experimental conditions, from a spatially explicit environment where the distribution of sources of food may vary both in time and space to complex socially structured groups of individuals (i.e., different social network topologies) interacting while facing volatile environmental conditions. Moreover, the proposed approach in combination with evolutionary algorithms may be used to investigate evolutionary roots of cooperative traits and behaviors in in-group living (non-)human animals.

Saturday July 2, 2016 5:00 pm - 5:20 pm

The role of livestock exchange relationships in pastoralist risk reduction in Karamoja, Uganda

Padmini Iyer (Rutgers University, padmini.iyer@rutgers.edu)

Among pastoralist populations of Africa, one of the central ways in which male herders built networks of mutual assistance was through livestock transfers in the form of gifts and loans. These reciprocal relationships, commonly termed ‘stock friendships,’ allowed herders to call upon a set of friends in times of urgent livestock needs such as during marriage, dispute resolution, and, critically, loss of herds from disease or raiding. The importance of livestock exchange relationships as an ex post insurance mechanism has come into question. In addition, scholars have contended that regular livestock transfers among individuals were critical in herd building, and stock friendships indeed played an ex ante role in risk management. Here, I present data from two ecologically and economically different locations within a primarily pastoralist zone in Karamoja, Uganda to show the importance of institutions of mutual aid in the face of a slow-onset disaster. I compare herders’ personal networks of social support (including stock friends), and exchange networks during a recent drought to investigate the role of tie strength and other demographic and economic variables in conditioning transfers during stress. I discuss the role of risk-buffering stock friendships and other transfer relationships to argue that rather than looking at these relationships as contingent on reciprocity, they are better seen as a system of need based transfers. The motivation for engaging in such a system is a product of the expected environmental stochasticity.

Saturday July 2, 2016 5:20 pm - 5:40 pm

Indirect Reciprocity, Risk-pooling, and Environmental Dynamics: Economic Games in Siberia and Alaska

Drew Gerkey (Oregon State University, drew.gerkey@gmail.com)

Most theories of cooperation focus on strategic risks—the costs and benefits of choosing a strategy in a social context where outcomes are affected by the actions of other individuals. This approach has been useful for identifying factors that diminish risks of cooperation and amplify risks of defection, including rewards, reputations, punishments, cultural norms, and institutions. However, this approach often assumes individuals are independent, inhabiting an environment where cooperation is unnecessary for long-term survival and well-being. This assumption of independence contrasts with widespread cultural values in Arctic communities. People in Siberia and Alaska emphasize the importance of interdependence as a foundation of social relations in challenging and uncertain environments. My presentation uses data from economic games with 136 participants from Siberia and 283 participants in Alaska to explore social and environmental factors that affect the viability of independent and interdependent strategies, in turn shaping patterns of cooperation. These games build on a multi-round public goods game and systematically vary strategic and environmental risks, allowing us to explore the interactions between social and environmental dynamics. We find that when participants face environmental risks, sharing is increasingly directed toward individuals experiencing hardship, good reputations increase aid, and risk-pooling becomes more effective.

Saturday July 2, 2016 5:40 pm - 6:00 pm

Wealth inequality can promote the resilience of informal lending networks within small-scale societies

Mark A. Caudell (Washington State University, mcaudell@vetmed.wsu.edu), R. Kyle Bocinsky

Individuals across small-scale societies cope with shocks by employing informal insurance strategies that are embedded within networks of social ties. The structure of these networks determines network capacity to respond to shocks. Identifying how these structures emerge within the sociocultural and ecological contexts observed across small-scale societies is critical for predicting whether a network will promote or inhibit resilience of individuals and groups. Here, we propose that informal insurance networks based upon the exchange of material goods (e.g., livestock) are formed by cultural institutions patterning the intergenerational transmission of wealth. We argue that insurance networks within societies that distribute wealth unequally will exhibit topologies more robust to idiosyncratic shocks compared to societies where wealth is more equally distributed. To test this prediction, we model the effects of random nodal shocks and the diffusion of non-lending behavior across three lending networks, one collected among Sidama farmers of Ethiopia (188 nodes, 295 ties) and the other two networks simulated to have the same number of nodes and edges but derived from samples with lower and higher levels of wealth inequality. Results indicate that informal networks in societies with more inequality are generally more robust to idiosyncratic shocks, as measured by decreases in the number of lending options and largest connected component size across shock intensities and diffusion thresholds, but that robustness varies at higher intensities and thresholds. Results highlight that viewing social networks as cultural products facilitates a cross-cultural understanding of resilience, provides insight into how patterns of cultural evolution may impact resilience, and suggests ways to leverage existing social networks to facilitate post-shock interventions.

**Poster Session
Thursday June 30, 2016
Stanley Park Ballroom
7:30-10:30 PM**

1. Explicit Contextual Frames in Experimental Economic Games

Aaron Lightner (Washington State University, aaron.lightner@wsu.edu), Edward Hagen, Luke Premo, Pat Barclay

Economists, anthropologists and psychologists have been testing for Nash equilibrium predictions of game theory models of human cooperation with one-shot, anonymous experimental economic games, such as the ultimatum game (UG) and the dictator game (DG). Typically, the outcomes of these games do not conform to such predictions, suggesting for some that, in humans, utility is at least partially characterized by other-regarding preferences. Several criticisms have been leveled against these studies; one in particular notes that the brain is not a generalized utility maximizer, but a modular information processor with mechanisms that interact with cultural constructs. Because subtle cues may be implicitly contextualizing games like the UG and DG for participants, it is unclear how players are internally modeling novel situations like one-shot, anonymous games. In the current study, we apply explicit, culturally evolved economic contexts to these games and analyze the outcomes. We predicted that in these contexts, the results of the UG and DG would drastically deviate from the “typical fair share” found in similar populations, and would exhibit markedly lower variance. We discuss our results and their implications for the notion that in games like the UG and DG, different people are often playing considerably different games.

2. Female hair color preference: Does female choice vary by region?

Abraham Miller (University of Tampa, abraham.miller@ut.edu), Jennifer Wortham, Daniela Delvescovo

Mate choice begins by assessing the visual characteristics of an individual. These traits help us determine if a potential mate is attractive and worth pursuing. One of the least studied traits in this decision making process is hair color. Previous research on hair color preference has yielded inconsistent results. These studies have not evaluated female preference and did not consider regional differences of the participants surveyed. Furthering our understanding of hair color preferences will give us insight into the sociobiological factors that affect choice. This information can be applied to biological questions as well as be used to inform the multi-million dollar cosmetology industry about regional preferences. We hypothesized that hair color choice would vary by region. Our results show that male choice does not vary by region, but female choice did. All regions and sexes chose brunettes most frequently, but females chose blondes at varying degrees based on the region they were from. Therefore, we conclude that female choice is influenced by the hair colors present in their population, while male choice is consistent across populations.

3. Development and Initial Psychometric Assessment of the Childhood Religious Experiences Inventory – Peers Version

Adam E. Tratner (Oakland University , aetratner@oakland.edu), Yael Sela, Alyse Ehrke, Guilherme S. Lopes, Viviana A. Weekes-Shackelford

Work on peers' religious influence during childhood has been limited theoretically and empirically. A key limitation is that the construct of peers' religious influence during childhood has not been properly operationalized and measured. Our goal was to address this limitation by developing an inventory that measures peer influences on childhood religious experiences: the Childhood Religious Experiences Inventory – Peers version (CREI-peers). Study 1 (n = 254) involved an act nomination procedure, resulting in 106 items that describe things a same-sex peer said to, did to, or did with, participants during their childhood. In Study 2 (n = 458), participants indicated how frequently each item occurred in their childhood. A principle components analysis yielded 56 items organized into four factors: Critical Persuasion, Mentoring, Shared Activities, and Skeptical Rejection. CREI-peers allows researchers to quantify the peer influence on childhood religious experiences, thus enabling future investigation of whether and how these influences predict adult religiosity. We emphasize the social and cultural importance of this research, and discuss the possibilities that: (1) children may be susceptible to religious influences at specific ages (or developmental periods), and (2) childhood religious experiences with peers are instrumental in the development of religiosity.

4. Elevation and declination as emotions of social contagion: Scale development and validation

Adam Sparks (UCLA, adspar@gmail.com), Colin Holbrook, Daniel M.T. Fessler

Prosocial and antisocial behavior appear to be contagious; numerous studies show that those who witness such acts (or their consequences) tend to behave in kind. An adaptive explanation of such contagion is straightforward. Cues that one is in a prosocial environment suggest that cooperators can be rewarded and exploiters may be punished; cues of an antisocial environment suggest cooperators may not be rewarded and exploiters are unlikely to be punished. At the proximate level, simple imitation or positive/negative mood are inadequate explanations, implicating affective mechanisms. Emotions dubbed elevation and declination may be mechanistic causes of pro- and antisocial contagion, respectively, but supportive evidence is limited. In preliminary research, elevation has been measured with a crude scale that potentially conflates the emotion and its behavioral consequences. Further while this elevation measure responds to prosocial stimuli, there has been no demonstration of mediation, i.e. no evidence that the emotional response causes prosocial behavior. Very little work has investigated declination. Here we report efforts to develop improved elevation and declination scales. Our elevation measure is more reliable than declination, perhaps because antisocial contagion requires only an absence of elevation, rather than a separate declination emotion.

5. Sex and Context Effects in the Relative Valuation of Partner Choice Criteria: Results from a Trust Game Experiment

Adar Eisenbruch (UCSB, eisenbruch@psych.ucsb.edu), James Roney

The ability to choose cooperative partners is important for the evolution and maintenance of cooperation, and there is substantial evidence indicating that humans have adaptations for choosing partners who are expected to be generous. More recent evidence, however, has suggested that humans also value a partner's ability to create benefits, and favor potential partners with cues of higher-than-average productivity. We conducted an experiment to test how people trade off generosity versus productivity in a cooperative partner. Participants played a Trust Game with partners who varied in both generosity and productivity, and the game was framed as an opportunity for either risk pooling or increasing individual productivity. Results show that participants prefer partners with both high generosity and high productivity, even controlling for earnings, but that generosity was more important when the game was framed as an opportunity for risk pooling. In addition, there was an interaction between productivity and generosity such that one trait could compensate for low levels of the other, especially among men and especially when the game was framed as an opportunity for enhancing individual productivity. These results have implications for the psychology of partner choice, and understanding how humans divide the spoils of cooperation.

6. Evolutionary Theories of Religion in the Czech Republic and Slovakia

Aiyana K. Willard (University of Texas at Austin, aiyana.willard@gmail.com)

Numerous theories exist to explain the prevalence and spread of religions. Cognitive theories claim that religion is a by-product of our evolved cognitive capacities. Sociological theories suggest that religion exists to deal with existential insecurity. Cultural evolution theories suggest that religions have adapted beliefs and practices that make them more likely survive and spread. We compare these theories across a representative sample from the Czech Republic and Slovakia (n=2022). These countries were selected because of their cultural and historical similarity, but stark difference in religiosity (18% of Czechs and 76% of Slovaks are religious). Across both samples, we find that cognitive theories predict some variance in belief in God (8%), no variance in religious participation, and substantial variance in paranormal beliefs (21%). Theories of existential security predict very little variance in any area. Finally we find that the cultural evolutionary theory of Credibility Enhancing Displays (CREDS), predicts the most variance in belief in God (15%) and in religious practice (25%), but little variance in paranormal beliefs (2%). Additionally, the CREDS theory is the only theory that accounts for any religious difference between these two countries. Cognitive theories predict supernatural beliefs, where cultural evolution accounts for specific religious beliefs and practices.

7. Prestige of regional accents and effects on cultural transmission

Alarna Samarasinghe (University of Bristol, as15936@bristol.ac.uk), Richard Berl, Fiona Jordan, Michael Gavin

The social transmission of information is a major driver of cultural evolution, and a number of social learning biases based on context, content, and trait frequency influence what we learn and from whom we learn. Drawing upon theory from cultural evolution, sociolinguistics, cultural anthropology, and allied fields, we explore the effects of prestige-biased transmission and its interactions with other transmission biases. We hypothesize that prestige is associated with certain regional accents or dialects, and that information provided by individuals of greater prestige will be transmitted with greater fidelity. Here, we present results from studies carried out in Fort Collins, USA and Bristol, UK using both qualitative and quantitative methods. Our results demonstrate that regional accents vary predictably in their associations with prestige and a set of attitudinal variables. We also argue for the importance of local calibration of stimulus materials in transmission bias experiments due to differing perceptions of prestige for standard and non-standard accents.

8. Testing hypotheses for the evolution of sociopolitical complexity using agent-based models

Alice Williams (University of Exeter, ajw246@exeter.ac.uk), Thomas Currie

The increase in the scale and complexity of societies is a major trend of human history. There are many hypotheses from anthropology and archaeology about how and why complex societies emerged but these have not often been developed as formal models based on Darwinian evolutionary theory. Here, we employ agent-based models (ABMs) to assess the role that environmental circumscription may have played in the emergence of complex societies. These ABMs are informed by models of reproductive skew from evolutionary ecology, where the relative costs and benefits determine decisions about whether to disperse or remain in a despotic group. It is predicted that increasing costs of dispersal, due to factors such as mountain ranges, increase the likelihood that complex, hierarchical societies would form. We test these ABMs using archaeological data from the Valley of Oaxaca, Mexico in order to assess the extent to which the model predicts the spatial and temporal formation of complex societies there. More broadly these ABMs demonstrate the utility of applying modern Darwinian approaches to investigate human social evolution, and provide a conceptual and testable link between processes at the individual level and emergent patterns of organization at the group level.

9. Charisma, leadership and facial cues: Evidence for an adaptive, domain-specific followership psychology

Allen Grabo (VU Amsterdam, allen.grabo@gmail.com)

An important adaptive challenge for all individuals and groups is to choose the right kinds of leaders. An evolutionary approach suggests that our judgments of leadership potential are influenced by both cues and signals conveying information about the ability of specific individuals to help solve recurrent, fitness-relevant coordination challenges which have confronted human groups throughout our species' evolution. This talk will review the results of 2 empirical studies demonstrating that this interaction between physical cues (e.g. facial masculinity versus femininity) and context (e.g. cooperation versus competition) continues to impact our psychology today – influencing not only whom we choose to follow, but our perceptions of how charismatic we find these leaders as well. We outline a theoretical framework in which charismatic leadership can be understood as an interaction between context, cues, and signals, and finally present evidence from 3 studies suggesting this may represent an adaptation which provides fitness benefits for both leaders and followers by increasing the likelihood of successful coordination.

10. Facial coloration is associated with women's physical health

Amanda C Hahn (University of Glasgow, Amanda.Hahn@glasgow.ac.uk), Claire I Fisher, Michal Kandrik, Lisa M DeBruine, Benedict C Jones

Distinguishing between healthy and unhealthy individuals is critical for successful social interaction. Correlations between coloration and physical condition in some non-human animals suggest that color can be an important health cue. Although aspects of facial coloration (yellowness, redness, and lightness) positively influence health perceptions in humans, there is little empirical evidence that facial coloration and actual physical health are correlated in humans. Consequently, we investigated the relationship between facial coloration and health in a sample of 267 young adult white women. We measured each woman's susceptibility to infectious illnesses (via questionnaire) and facial coloration on five different occasions to obtain more reliable estimates of each woman's health and facial coloration. We also measured each woman's body mass index (BMI). Analyses indicated that facial yellowness was associated with low susceptibility to infectious illnesses and low BMI. Facial redness was associated with high BMI and unrelated to susceptibility to infectious illnesses. Facial lightness was not related to either susceptibility to infectious illnesses or BMI. Together with research demonstrating positive effects of facial yellowness on health perceptions, our results suggest facial yellowness as a potential health cue in humans.

11. Female sexual desire across relationship status: A mate acquisition trade-off hypothesis.

Amanda Rotella (University of Guelph, arotella@uoguelph.ca), Rebecca Bruer, Robin M. Milhausen

Women have high reproductive costs because of the greater minimum obligatory investment in reproduction in comparison to men. These costs have strongly influenced female mating psychology, as evident by women's choosiness. Sexual desire and arousal may be mechanisms which function to guide women's mate choice in addition to their reproductive function. If so, overall levels of sexual desire would decrease after mate acquisition. We propose that relationship commitment, defined using relationship status, calibrates levels of sexual desire and arousal such that as relationship commitment increases, overall levels of female sexual desire and arousal would decrease. To test this, 1,154 women completed the Female Sexual Function Index (FSFI) and indicated their relationship status (single, dating, and committed). The FSFI sub-scales were entered into a MANCOVA controlling for age, relationship duration, relationship satisfaction and general health. Results indicated that general levels of sexual desire and arousal were highest among single women and lowest among women in committed relationships. These findings provide evidence that relationship commitment influences sexual desire beyond relationship duration, and supports the hypothesis that female sexual desire and arousal have functions in mate selection.

12. Expectations of reciprocity and response-time predict trusting behavior in economic games

Amrita Lamba (College of William & Mary, alamba@email.wm.edu), Joanna Schug

Previous research has shown that response times provide insight into modes of cognition, such as automatic versus controlled processing. Recent applications of this research have focused on cooperative behavior using economic games. In this experiment we build on these findings by exploring the effects of response times on trusting behavior. We tested 66 women and 45 men, recruited from the College of William and Mary, who participated in a trust game. Prior to deciding how much money to allocate to the second player, participants indicated how likely it was that the other player would return a fair amount of money (i.e. expectations for reciprocity). The results of our experiment showed that when participants estimated the probability that the other player would return the money was greater than .5, faster decisions were higher monetary allocations and slower decisions lower monetary allocations, with a significant interaction between time and estimate. However, there was no significant effect of time on allocation for participants that estimated the probability of return was less than .5. These results suggest that initial expectations of reciprocity and response time affect trusting behavior in economics games

13. Intrasexual Competition in the Chilean Context

Ana Maria Fernandez (Universidad de Santiago de Chile, ana.fernandez@usach.cl), Jose Antonio Muñoz-Reyes, Paula Pavez, Valeska Cid

Intrasexual competition can be defined as competition between members of the same-sex struggling to obtain a reproductive mate. For evolutionary psychologists this is a central topic of study, requiring the validation and adaptation of reliable tests to assess this construct. This research aimed at evaluating the Chilean version of the intrasexual competition scale (ICS) on a sample of individuals ranging from adolescent age into adulthood, a time period in which intrasexual competition is more intense. A total of 1071 participants reported their age, sex, and our adapted version of Buunk & Fisher 's (2009) ICS. The results showed adequate internal consistency of all the measures, and the theoretically expected inverse relationship between age and ICS. An unpredicted sex difference was observed, with men scoring higher than women in ICS, but it may be attributed to a significantly younger age of the masculine sample. We also did observe significantly higher ICS scores in the younger (below 26 years of age) than in the older sample. Finally, the results of the reported sociosexuality of 112 participants, using the same instrument used to validate the original ICS, confirmed a low negative correlation of intrasexual competition and openness to sexuality.

14. The Role of Partner Forgiveness in Self-Reported Health among Couples with One Spouse Employed in a High-Stress Job

Elnaz Bondar (University of British Columbia, elnaz_b0n868@yahoo.com), David B. King, Anita DeLongis

Previous research has broadly supported a positive association between forgiveness and health. More forgiving people describe themselves as happier and healthier, display better cardiovascular function, and appear to suffer less from variety of illnesses. An important distinction in the literature has been made between self- and other-forgiveness. Dyadic studies of other-forgiveness suggest that it is one key factor in the maintenance of intimate relationships. Within the marital domain specifically, wives' forgiveness of husband transgressions appears to be especially important for the resolution of marital conflict. The current study aimed to examine the role of partner forgiveness in self-reported health among 63 couples in which one spouse was employed full-time as a paramedic, an occupation identified as high risk for a variety of deleterious stress outcomes. Previous analyses of this sample suggested that the daily interactions of spouses have meaningful implications for the stress management of paramedics. It was therefore our secondary goal to better understand the potential role of partner forgiveness in the self-reported health of a particularly high-stress population. Spouses independently completed the Transgression-Related Interpersonal Motivations Scale (TRIM; McCullough et al., 1998), modified to measure partner forgiveness specifically, as well as the Medical Outcomes Study 36-Item Short Form Health Survey (SF-36; Stewart & Ware, 1992). Relationship satisfaction was also measured using the Relationship Assessment Scale (RAS; Hendrick, 1988) and included in regression analyses as a control. Spouses' tendency to forgive their partner (i.e., the paramedic) emerged as a significant predictor of their own self-reported general health as well as that of paramedics. Interestingly, however, paramedics' forgiveness of their spouses did not display significant associations with either their own or their spouses' health.

15. Personality Predicts Strategies of Status Attainment and Resource Control**Andrew R. Bower (Texas Tech University, andrew.r.bower@ttu.edu), Patricia H. Hawley**

Personality and individual differences, although integral for human behavior, are oft neglected in evolutionary research. This is largely due to the lack of powerful and coherent theories connecting individual differences and evolution in meaningful ways (Buss, 2009). Recent work, however has conceptualized personality in terms of alternate strategies employed to solve adaptive problems; namely, for the present work, status hierarchy ascension (Hawley, 1999; Lund et al., 2007). How do individuals negotiate status hierarchies to extract resources (from the environment and each other) necessary to inhabit and thrive in their current socioecology. Here we suggest that reframing personality to predict individual differences in strategic resource control behaviors (prosocial and coercive) will help elucidate a mechanism by which individuals use alternative strategies for solving adaptive problems (obtaining resources) from peers. In total, 243 students (51% male) from a large university occupying 6 group living situations (~48 residents each) participated. Each student completed a questionnaire that included their self-reported personality on the Five Factor Model, and resource controlling strategies. Our evidence suggests that both stable personality characteristics and resource control behaviors combined help explain social dominance, specifically through instrumental prosocial behavior, extraversion, openness, and agreeableness.

16. From Mr. Darcy to Mr. Big: female choice in popular romantic fiction**Ania Grant (University of Auckland, New Zealand, agra111@aucklanduni.ac.nz)**

Romantic fiction has long had a bad press: either dismissed as trivial or condemned as an ideological tool perpetuating women's subordination. But despite such harsh criticism, millions of women continue to read romantic stories. This persistent popularity may not be the result of pernicious cultural conditioning but a reflection of evolved female sexual psychology. I propose an evolutionary-feminist reading of popular romantic narratives from Jane Austen's *Pride and Prejudice* to the hit television series *Sex and the City* and suggest that far from promoting mindless escapism or passive submission to the patriarchal order such fiction focuses on the importance and complexities of female choice. It posits female characters as decision makers and strategists. It gives audiences opportunities to consider different mating strategies and to vicariously experience ideal and problematic solutions to the mate selection process. Being able to identify and attract an appropriate mate is vitally important for evolutionary, cultural and personal reasons: it determines our reproductive success and our individual satisfaction. Insofar as romantic narratives provide low-cost, low-risk training for audience's emotional, social and mating intelligence, it may be adaptive for women (whose obligate parental investment is greater than men's) to be interested in such stories.

17. Risks and rewards: female sexual strategies in Jane Austen's *Pride and Prejudice***Ania Grant (University of Auckland, New Zealand, agra111@aucklanduni.ac.nz)**

The importance and complexities of female sexual strategies have been the subject of compelling work by evolutionary psychologists and anthropologists. They are also the main focus of romantic narratives. Jane Austen's *Pride and Prejudice* features several female characters whose mating strategies are differentially shaped by their personalities, life histories and cultural environment. Charlotte Lucas marries the pompous Mr. Collins, a decision guided by the evolved preference for resource-rich mates and further reinforced by her upbringing and culture. Charlotte secures her financial future but is unlikely to achieve emotional fulfillment. Lydia Bennet's choice of the handsome but unreliable Mr. Wickham, together with her extraversion and lack of impulse-control, points to an unrestricted mating strategy. Lydia satisfies her sexual desire and outcompetes her sisters but risks severe social opprobrium. Elizabeth Bennet puts her reproductive future at risk by rejecting two marriage proposals, but she demonstrates her superior mating intelligence by gradually recognizing that Mr. Darcy's physical, psychological and social traits promise a rewarding relationship and high reproductive success. Romantic narratives, such as *Pride and Prejudice*, are tales of female mate choice. They allow readers to vicariously experience ideal and problematic solutions to the mate selection process, and provide training for our emotional, social and mating intelligence.

18. Pathogen disgust sensitivity is associated with women's 3rd party incest aversion, but not attractiveness of self-resembling male faces.**Anthony J. Lee (University of Glasgow, Anthony.Lee@glasgow.ac.uk), Amanda C. Hahn, Claire I. Fisher, Iris J. Holzleitner, Benedict C. Jones, Lisa M. DeBruine**

Pathogen disgust sensitivity is thought to influence preferences for cues to good health when assessing potential mates. Choosing a mate that is genetically similar to oneself can introduce indirect costs to offspring health, either through deleterious effects associated with inbreeding or by producing offspring who are less likely to have a heterozygotic MHC region (important for immune functioning). As such, individuals high in pathogen disgust sensitivity may place greater importance on genetic diversity when choosing a partner. Here, we predict that women's pathogen disgust sensitivity, independent of other domains of disgust, would be associated with two measures related to kin bias in mating decisions: third-party incest aversion, and attractiveness judgments of self-resembling other-sex faces. While we found the predicted positive association between pathogen disgust sensitivity and third-party incest aversion, we did not find the predicted negative association between pathogen disgust sensitivity and attractiveness judgments of self-resembling other-sex faces. There was no significant correlation between third-party incest aversion and attractiveness judgments of self-resembling other-sex faces. These findings have theoretical implication for how pathogen exposure may have influenced mate preference for related individuals, as well as methodological implications for the measurement of kin bias in mate preference.

19. Science as a cultural evolutionary process: Bridging epistemology and the evolutionary behavioural sciences.**Antonio Fadda (University of British Columbia Okanagan, antonio.fadda@hotmail.com)**

The 1970s are marked with a new wave of studies that investigate human behavioural and cognitive faculties under an evolutionary lens. The three main evolutionary approaches in the behavioural sciences known as Evolutionary Psychology, Dual Inheritance Theory and Memetics have their roots in the 70's decade. In the same years 'Evolutionary Epistemology' emerged within broader efforts to naturalize epistemology. My paper offers an analysis of some key theoretical contributions that each field offers to the case of science as an evolutionary cultural process. I argue that a selectionist view of science can clarify and solve long standing epistemological puzzles such as 1) the so called 'demarcation problem' that aims at distinguishing science from non science, 2) the role of the external reality in selecting our theories and 3) the notion of truth approximation (involving truthlikeness and progress). The renewed evolutionary and selective program that emerges from the bridging of these fields goes back to fundamental suggestions made by Donald T. Campbell with his 'blind variation and selective retention' (BVSr) mechanism. I argue that BVSr offers, up to this day and despite some criticism, a viable model to characterize science as a cultural evolutionary process.

20. Context-Contingent Effects Of Facial Cues On Leadership Judgments Generalize To Samples Including Diverse Ages**Vanessa Fasolt (University of Glasgow: Institute of Neuroscience and Psychology, v.fasolt.1@research.gla.ac.uk), Amanda C Hahn, Anthony J Lee, Lisa M DeBruine, Benedict C Jones**

Facial cues can have context-contingent effects on leadership judgments, with dominant-looking individuals judged as better leaders in wartime than peacetime contexts and trustworthy-looking individuals judged as better leaders in peacetime than wartime contexts. Such results may not necessarily generalize to samples including diverse ages, however. To explore this issue, older (40 to 70 years) and younger (18 to 30 years) participants rated male and female faces (18 to 70 years) for dominance, trustworthiness, attractiveness, and effectiveness as leader of a country during wartime or peacetime. Older and younger participants' ratings were highly correlated. Principal component analysis of potential leaders' characteristics that predicted leadership judgments in prior research produced three components, reflecting general positive regard, dominance, and height, respectively. Scores on the positive regard component were positively and significantly correlated with leadership ratings in the peacetime, but not wartime, context. By contrast, scores on the height and dominance components were positively and significantly correlated with leadership ratings in the wartime, but not peacetime, context. Together, these results present further evidence for context-contingent effects of facial cues on hypothetical leadership judgments and suggest previous results generalize to samples including diverse ages.

21. The psychology of friendship investment: Testing the quality-quantity trade-off

Ashley Ranki, B.S. (Oklahoma State University, Ashley.Rankin@okstate.edu), Aaron Lukaszewski

Friendships theoretically function to generate collateral benefits, increase cooperative efficiency, and buffer risk related to stochastic patterns of occasional misfortune (e.g., injury). Given the costs of cultivating and maintaining friendships (and friend-like alliances), individuals necessarily face trade-offs regarding the quality vs. quantity of friends they can afford to have. For example, an individual who invests heavily in a small number of close “deep engagement” friendships will, all else equal, have fewer personal resources to invest in casting a wide social net involving numerous superficial acquaintances. In the current research, we employed a budget allocation paradigm to probe these trade-offs. Specifically, subjects invested “friendship tokens” (at low, medium, high, and unlimited budgets) in acquiring close friends (\$10), friends (\$5), strategic associates (\$5), and acquaintances (\$1). Results indicated that close friendships are viewed as both necessities (prioritized at low budgets) and luxuries (differentially prioritized at higher budgets), although subjects also invested significantly in other types of relationships. Moreover, friendship allocation decisions varied as a function of (i) sex, (ii) individual differences (e.g., self-assessed bargaining power) and (iii) experimental manipulations of social context that were predicted to modulate the strategic value of investment in friendship quality vs. quantity (e.g., illness, ostracism).

22. Skin colour changes during experimental sickness

Audrey Henderson (University of St Andrews, ajw29@st-andrews.ac.uk), Julie Lasselin, Mats Lekander, Mats Olsson, Simon Powis, John Aselsson, David Perrett

Skin colour may be an important cue to sickness in humans. To determine possible colour changes associated with acute sickness, 22 healthy Caucasian participants were injected twice, once with lipopolysaccharide (LPS) and once with placebo (saline), in a randomised control trial. A reduction of redness and yellowness consistent with a decrease in blood perfusion and carotenoid status was predicted. Skin colour changes were recorded spectrophotometrically over a period of 8 hours and plasma carotenoids were measured by high-performance liquid chromatography (HPLC). We found that 1-2 hours post LPS injection; facial skin colour became lighter and less red whilst arm skin showed a drop in redness and yellowness. A drop in plasma carotenoids with LPS was noted from 3 hours onwards. Changes in skin colour are best explained by changes in blood perfusion and oxygenation and are likely a bi-product of the inflammatory response. Recorded skin colour changes may serve as cue that others use for detecting and avoiding sick peers. This is consistent with literature showing that such changes relate to reduced attractiveness. There is a need for further studies on the clinical relevance of these changes and how long-term immune activations affect skin colouration.

23. Cultural Experiences and Homosexual Expression in Western Men

Austin Jeffery (Oakland University, ajjeffer@oakland.edu)

Because human male homosexuality is culturally universal, largely heritable, and frequently exclusive, it is not clear how it evolved and persists in human populations. Several compelling hypotheses are available to explain how genes that produce reproductive abstinence could persist. However, whether men in ancestral social environments practiced exclusive homosexuality is unknown. The purpose of this research was to investigate the influence of modern social experiences on men's sexual attractions and behaviors, while attempting to control for non-social predictors of homosexuality. If modern influences uniquely contribute to homosexual exclusivity, reproductive hypotheses for the evolution of male homosexuality are tenable. In an online questionnaire, 108 same-sex attracted and 103 opposite-sex attracted men reported experiences including coming out, involvement in a gay community, and homophobic victimization. Being homophobically victimized was negatively associated with men's sexual attraction to women while controlling for childhood gender-atypicality, a developmental predictor of adult homosexuality. Being out and involved in a gay community were both negatively associated with the ratio of past female partners to male partners and interest in future female partners, controlling for childhood gender-atypicality and sexual attraction to women, among other covariates. Limitations and future directions are addressed.

24. Elliptic Fourier Analysis of the Ongagawa Pottery

Kohei Tamura (University of Bristol, tmr.kohei@gmail.com), Yui Arimatsu, Hisashi Nakao, Yuji Yamaguchi, Naoko Matsumoto

Quantitative understanding of cultural diversity has been a major goal of anthropology with a wide range of implications on human behaviors. Because cultural diversity was shaped by the process of "descent with modification" as well as biological diversity, studies of cultural evolution, or applications of concepts and methods in evolutionary biology to cultural phenomena, have played an important role in investigating patterns and underlying processes of human culture. However, empirical studies on geographically and temporally large-scale data are relatively rare. In the present study, based on the framework of cultural evolution, we analyzed archaeological data on the Jomon-Yayoi transition, which was a major cultural replacement in Japan. Ongagawa-style pottery has been considered as a key indicator of the spread of Yayoi cultural complex including rice farming. By using the methods of morphometrics, we quantified the shapes of the Ongagawa pottery to investigate geographical patterns of similarities in shapes of the Ongagawa pottery. Based on the results, we further compared several hypotheses about the origin and spreading process of the pottery.

25. Evolutionary Obstetrics in the Living Room

Bria Dunham (Boston University, dunhamb@bu.edu)

An evolutionary framework helps to organize an understanding of otherwise perceptually disparate considerations within the context of how maternal and neonatal anatomy, physiology, and behavior have evolved. Awareness of that evolutionary heritage can support optimal birth outcomes in a world where humans are equipped with technology to offer critical obstetric interventions both at times when they are needed and at times when they are not. Following a birthing pattern that is more aligned with evolved human anatomical and physiological design, including the support of a dedicated care provider and the use of upright birthing postures, can be associated with a lower rate of obstetric interventions, which may in turn confer a range of benefits to neonates and mothers. As practiced in the contemporary United States, homebirth is characterized as having a low-intervention, woman-centered approach to supporting birth in low-risk pregnancies, which is consistent with evolved human anatomy, physiology, and behavior. Placing contemporary U.S. homebirth within its cross-cultural and evolutionary context, the current theoretical examination addresses the timing of onset of labor, use of obstetric interventions, social support, movement during labor, positions for birth, and care rendered in the immediate postpartum.

26. Do All Types of Positive Emotion Function the Same? How Vigor, Well-Being, and Calm Differentially Impact Sleep Depending on the Stress Context

Brooke Jenkins (University of California, Irvine, bgentle@uci.edu), Sarah D. Pressman, Tara L. Kraft, Heather Rasmussen, Michael F. Scheier

The broaden and build theory of positive affect proposes that an evolutionary advantage of positive affect (PA) is to expand resources. For example, PA has been shown to benefit sleep (an important somatic restorative resource). However, what has gone untested is whether different types of PA (vigor, well-being, calm) all function to benefit sleep in the same way and whether the context of stress plays a role in these associations. In two studies, we examined which types of PA were most beneficial for sleep under varying levels of stress. In Study 1, college students (N = 99) reported on their PA and sleep one week and one night before a major exam. In Study 2, two weeks of daily PA, stress, and sleep data were collected (N = 83). Across both studies, results revealed that during high stress, vigor predicted better sleep efficiency and quality while calm and well-being did not. During low stress, calm and well-being predicted more sleep hours and better sleep quality while vigor did not. These findings demonstrate the importance of investigating specific components of PA, the unique benefits of specific types of PA on somatic maintenance, and how the stress context plays a role.

27. Managing threats and opportunities: When people holding the same stereotypes harbor very different prejudices**Cari M. Pick (Arizona State University, cari.pick@asu.edu), Steven L. Neuberg**

Social perceivers seek to identify the potential opportunities and threats others afford, and many stereotypes can be viewed as representing the potential affordances people from different groups are believed to pose. Whether a stereotype actually implies threats or opportunities, however, should depend on perceiver goals. For example, that Mexican immigrants are stereotyped as “working hard for low wages” may imply threats to laborers seeking jobs and good wages, but opportunities to white-collar workers seeking the cheap services such immigrants produce. We thus hypothesize that as goals differ between individuals (as with laborers versus white-collar workers), or change within individuals (as when white-collar workers find their skill sets no longer in demand), the same stereotypes will imply different affordances and thus elicit different responses (i.e., prejudices and forms of discrimination). Testing these hypotheses correlationally and experimentally, we report findings on how stereotypes of Mexican and Asian immigrants elicit prejudices in perceivers with different and/or changing goals. That the same stereotypes can lead to different prejudices and discriminatory inclinations depending on perceiver goals runs counter to traditional views of the relationship between stereotypes and prejudices and lends additional support to the affordance management approach to social perception.

28. Translation, adaptation and validation of Short Dark Triad (SD3) in Chilean context: Preliminary analysis**Carmen Gloria Baeza Ugarte (Universidad de Santiago de Chile, c_gloria_bae@hotmail.com), Carolina Cerda, Ana Maria Fernandez, Francis Pino**

The Dark Triad traits (Machiavellianism, Narcissism and Psychopathy) have been viewed as undesirable traits. However, research suggest that dark triad can also be advantageous to individual and even flourish en the society (Jonason Li & Buss, 2010; Paulhus, 2014). One of the instruments to measure the dark traits is the “Short Dark Triad” (Jones & Paulhus, 2014). The purpose of this study is to adapt and validate this questionnaire for the Chilean context. 187 participants (54% female and 46% men), with a mean age of 33.21 (S.D=9.29), answered the questionnaires SD3 and FBI (Big five model). Internal consistency analysis showed a Cronbach’s of 0.74 Machiavellianism, 0.70 for Narcissism and 0.78 for Psychopathy. Also all the dark triad traits correlate with low agreeableness, and is consistent with the research on the international area. Furthermore, narcissism is associated with high extroversion and psychopathy was associated with low conscientiousness and high neuroticism. The results also indicated that men have higher levels of psychopathy compared to women. Results indicate that SD3 is an adequate and valid measure for the assessment of the Dark Triad of personality.

29. Dark Triad, Attachment and Mate poaching: A correlational study

Carolina Cerda (Universidad de Santiago de Chile, cestefania.ca@gmail.com), Francis Pino, Carmen Gloria Baeza, Ana María Fernández

Previous research suggests Dark Triad personality (Machiavellianism, Narcissism and psychopathy) and adult romantic attachment was demonstrated to predict poaching behaviors. However no studies examining the effects of the dark triad traits and attachment dimensions simultaneously in poaching. This research seeks to establish the relationship and make a predictive model between the dark triad traits of personality dimensions of adult attachment and seduce someone committed tendency (mate poaching). A quantitative methodology, correlational and non-experimental design was used. For the purposes of this research, five instruments were applied to 200 college students in an age group ranging between 18 and 25 years old. From the results, it was determined that dimension of attachment dependence and psychopathy explain the tendency to Mate poaching. That is, those who had a better quality bonds with their caregivers in early childhood, adulthood would be characterized have an interest in forming intimate and deep relationships, and provide and receive support; valuing its relationship with partner; so they would be less likely to mate poaching. On the other hand, those subjects who tend to sensation seeking, follow few rules, tend to be colder in relationships with others and are more impulsive, are more likely to mate poaching.

30. Facial masculinity ratios and adolescent testosterone in Bolivian males

Carolyn R. Hodges-Simeon (Boston University, crhodges@bu.edu), Katherine N. Hanson Sobraske, Theodore Samore, Michael Gurven, Steven J.C. Gaulin

Facial width-to-height ratio (fWHR) has been proposed as a sexually-selected signal that develops under the influence of pubertal testosterone (T); however, no studies have examined the association between fWHR and T during the phase in which facial growth is canalized-- adolescence. In a sample of adolescent Tsimane males, we evaluate the relationship between T, T-derived traits (i.e. strength and voice pitch), and craniofacial measurements. If fWHR variation derives from T's effect on craniofacial growth during adolescence, several predictions should be supported: 1) fWHR should increase with age as T increases, 2) fWHR should reflect adolescent T (rather than adult T per se), 3) fWHR should exhibit velocity changes during adolescence in parallel with the pubertal spurt in T, 4) fWHR should correlate with T after controlling for age and other potential confounds, and 5) fWHR should show strong associations with other T-derived traits. Only prediction 4 was observed. Additionally, we examined three alternative facial masculinity ratios: facial width/lower face height, cheekbone prominence, and facial width/full face height. All three alternative measures show a strong age-related trend and are associated with both T and T-dependent traits. These results question the status of fWHR as a sexually-selected signal of pubertal T.

31. Mama's Baby, Papa's Maybe: Links Between Child-Father Resemblance and Child-Reported Paternal Investment

Casey Bloechl (University of Wisconsin - Eau Claire, bloechcr@uwec.edu), Rachel Griffiths, Carly Murray, Rebecca Nelton, April Bleske-Rechek

Because conception occurs internally to the human female, ancestral males would never have 100% certainty of their paternity. Evolutionary theorists have proposed that males are sensitive to an offspring's resemblance to them as a cue of paternity (Daly & Wilson, 1988), and calibrate their investment accordingly. In support of this proposal, research has shown that young adults who perceive themselves as resembling their father also report higher quality relationships with their father (Gallup et al., 2015). The current research was designed to replicate that association and to extend it by showing that the link between resemblance and investment is stronger for fathers than for mothers. We brought 248 young adults into the lab, where they reported on their family history, primary mother and father figures' investment, and perceived physical resemblance to each parent. Each young adult also supplied a photo of themselves as a child, a current photo of themselves, and a current photo of their primary mother figure and father figure. As expected, young adults' perceptions of their resemblance to their father were positively correlated with perceptions of their father's investment, whereas perceptions of their resemblance to their mother were not correlated with perceptions of their mother's investment.

32. When Beauty Is Bad: Attractive Faces Trigger Unhealthy Food Choices

Tobias Otterbring (Karlstad University, tobias.otterbring@kau.se)

Faces in general and attractive faces in particular attract attention better than almost any other stimuli, and are frequently used in marketing, advertising, and packaging design. However, little is known about the effects that attractive faces have on people's choice behavior. Given studies showing that sexually laden stimuli instigate impatience in intertemporal choice, thus making people prefer smaller-sooner rewards over larger-later, this work aimed to examine whether exposure to attractive (vs. unattractive) opposite-sex faces motivates people to choose unhealthy rather than healthy foods. The results show that people intuitively think that viewing an attractive (vs. unattractive) opposite-sex face should make them more likely to choose healthy foods (Study 1). However, this lay belief is directly contradictory to people's actual choice behavior: Exposure to attractive (vs. unattractive) opposite-sex faces increases individuals' inclination to make unhealthy food choices, especially among men (Study 2). Yet, these results do not generalize to exposure of attractive same-sex individuals, thus suggesting that the effect is restricted to sexy stimuli (Study 3). From a health perspective, the results suggest that exposure to attractive opposite-sex faces may lead to sub-optimal food choices, thus making people prefer vices over virtues.

33. Racial Stereotypes in a Mexican Population: The Pervasiveness of Social Stereotype Formation

César Maya (IIB, UNAM, cpaco_cir@hotmail.com), Patricia Ornelas, Robyn Hudson

Stereotypes are considered evolved energy-saving mechanisms and an important part of the human cognitive toolkit of information processing. Stereotypes have implicit and explicit components and are acquired through experience and transmitted knowledge, resulting in culturally shared stereotypes. Stereotypes have been reported to influence behavior via another evolutionary developed human trait: in-group cooperation and out-group competition. From an evolutionary perspective, this interconnection of a cognitive process with intergroup behavior and culture represents an important interface to be studied in order to better understand actual human societal interactions. We studied 928 young adults from a Mexican university campus, representing an important part of the racial diversity of a country that is usually divided into three socially recognized categories: Indigenous, Mestizo and European. Through an on-line Brief Implicit Association Test and an explicit questionnaire, we evaluated participants' racial stereotypes and attitudes and found a general bias in favor of the European category on the implicit measures, and a non-preference on the explicit measures, evincing the possible contrasting nature of implicit and explicit components of stereotypes. Our results demonstrate the pervasiveness of racial stereotypes even in a young, educated and cosmopolitan population, and the importance of implicit test methodology in revealing this.

34. When Expertise is Squandered: The Misalignment of Skills and Roles within Groups

Charleen Case (Kellogg School of Management, Northwestern University, charleenrcase@gmail.com), Jon K. Maner

Groups function best when their members fill roles that make the most use of their individual talents. Consequently, leaders typically ensure their subordinates inhabit roles congruent with their specific skillsets. Nevertheless, many people end up inhabiting roles that are misaligned with their talents. Such misalignment recently was identified as a major source of organizational dysfunction that affects up to 50% of the international labor force and hinders the well-being of both groups and individuals. Might such misalignment be intentional? We tested the hypothesis that, when they perceive their power to be threatened, some leaders strategically route talented subordinates into roles misaligned with their skillset in order to selfishly protect their own power. In so doing, those leaders might undermine the performance of talented subordinates in efforts to prevent being outshone by them. Misalignment tactics were observed only among dominance-motivated (not prestige-motivated) leaders and were directed only toward highly talented (not less-talented) subordinates. Consistent with the hypothesis that leaders' behavior was driven by a desire to protect their power, misalignment tactics were not observed when leaders were assured that their power was irrevocable. These results illuminate factors that may cause leaders to squander the expertise of their most valuable group members.

35. Interrelationships among men's threat potential, facial dominance, and vocal dominance

Chengyang Han (University of Glasgow, c.han.1@research.gla.ac.uk), Michal Kandrik, Amanda Hahn, Claire Fisher, David Feinberg, Lisa DeBruine, Benedict Jones

The benefits of minimizing the costs of engaging in violent conflict are thought to have shaped adaptations for the rapid assessment of others' capacity to inflict physical harm. Although studies have suggested that men's faces and voices both contain information about their threat potential, one recent study suggested that men's faces are a more valid cue of their threat potential than their voices are. Consequently, the current study investigated the interrelationships among a composite measure of men's actual threat potential (derived from measures of their upper body strength, height, and weight) and composite measures of these men's perceived facial and vocal dominance (derived from dominance, strength, and weight ratings of their faces and voices, respectively). Although men's perceived facial and vocal dominance were positively correlated, men's threat potential was related to their perceived facial, but not vocal, dominance. These results present new evidence that men's faces may be a more valid cue of their threat potential than their voices are.

36. Can wolves serve as animal models for human family and brain evolution?

Christopher Cosans (University of Maryland, ccosans1@mail.umd.edu)

If we consider wolves as animal models for human behavior, we can find an evolutionary basis for the kinds of cooperation that occurs in the nuclear family. Although wolves and humans are phylogenetically removed by about 80 million years, as a result of convergent evolution, they both became predators that hunt in groups by day light. Another behavior wolves share with humans that bonobos lack, and which fits with our common biology as predators, is that wolf social organization centers on nuclear families. The alpha male and alpha female are usually the parents or step parents of the other pack members. Wolves forgo breeding for up to 5 years so they can stay with their parents even though the meat per wolf consumed drops as pack size increases. A social structure based on a nuclear family thus expands parenting. It allows the imparting of learned behaviors with wolf males playing a much more intensive role in the teaching of their young than bonobo males. In hominids, care by both parents may have set the stage for the brain to evolve to larger sizes, even though large brains required dramatic increases in parental time and energy investment before sexual maturity.

37. If You Like It, Keep A Ring On Yourself: Effects of Removing A Wedding Ring on Relationship Satisfaction and Definitions of “Cheating”**Christopher J Holland (Texas Christian University, c.holland@tcu.edu), Christopher D. Rodeheffer, Sarah E. Hill, Charles G. Lord**

Both evolutionary and cultural mechanisms favor maintenance of pair bonds. One cultural mechanism involves wearing wedding rings, which signals to others that the individual is not available as a mate. A danger with this particular signal, however, is that wearing a wedding ring might become so closely associated with fidelity that not wearing one might prove corrosive to a marriage. We tested this possibility by examining the impact of not wearing one's wedding ring on thoughts related to relationship commitment and fidelity. Both men and women who completed a survey without wearing their wedding rings reported lower relationship satisfaction (Study 1) and adopted more permissive definitions of “cheating” (Study 2) than did those who completed the survey while wearing their wedding rings. These results suggest that wedding rings not only send signals to others, but might also act as a personal barrier to infidelity.

38. Not just dead meat: An evolutionary account of corpse treatment in mortuary rituals**Claire White (California State University, Northridge , clairejwhite81@gmail.com), Daniel Fessler , Maya Marin**

Mortuary rituals are ubiquitous features of human cultures. One aspect often noted by scholars is the highly regulated, functionally opaque, and elaborate sets of behaviors that result in close and often prolonged contact with the deceased. Yet existing symbolic and functionalist accounts of rituals do not provide a convincing explanation of why practices that promote prolonged and intimate contact with the corpse in mortuary rituals prevail. In this presentation, I propose a functionalist account of mortuary rituals that considers the unique adaptive challenges entailed by the death of a loved one. Namely, that intimate contact with the corpse provides the bereaved with extensive veridical cues of death, which facilitates the re-categorization of the deceased as no longer a relationship partner, opening the door to relationship replacement and a return to social functioning. I will discuss the findings of two studies that I (and my collaborators) have conducted which offer support for this theory, including (a) a survey of over 140 recently bereaved individuals and their interaction with the corpses of deceased loved-ones, and (b) a cross-cultural analyses of the extent, and nature of, corpse interaction in mortuary rituals across 57 representative cultures from around the globe (2). I will conclude the presentation with a discussion of the implications of these findings for bereavement research and modern western funerary practices.

39. A comparison of naturally occurring dance and conversation behavior in social venues in England and Germany

Cole Robertson (The Centre for Language Studies, Radboud University, The Max Planck International School for Language Sciences, Nijmegen, NL; **Social and Evolutionary Neuroscience Research Group, University of Oxford, UK, C.Robertson@let.ru.nl**), **Bronwyn Tarr, Robin I. M. Dunbar**

Dancing is a universal human activity that involves mutual, exertive, and synchronized rhythmic movement to music. Like conversation, it has been suggested that dancing may be an inexpensive form of social bonding, in that it allows dancers to interact with multiple partners simultaneously. However, observations of natural dance group sizes are lacking. In this observational study, we present data comparing dance with conversation group sizes. Both the group size and the cumulative number of partners over 20-minutes were greater in dance than in conversation. However, in dance, but not in conversation, the cumulative number of partners was significantly greater than group size. In conversation, but not in dance, large group sizes negatively predicted duration of uninterrupted engagement. Finally, length of uninterrupted engagement was significantly shorter in dance than conversation. Together, these results indicate that dance may not be subject to the same group size constraints as conversation – where maintaining triadic awareness of multiple individuals grows progressively more difficult as group size increases. Rather, dancers appear to rapidly switch between partners, thereby achieving a greater cumulative broadcast group than is possible in conversation. We conclude that dance may have been an important instrument by which Paleolithic hominins engaged in multi-partner bonding prior to the emergence of multi-partner conversation.

40. Coalitional Conflict Heightens Perceived Guile

Colin Holbrook (UCLA, cholbrook01@ucla.edu), **Adam Sparks, Daniel M. T. Fessler, Jeremy Pollack**

An extensive corpus of research attests that threatening situations exacerbate coalitional bias. Conventional social psychological accounts interpret these effects as reflecting intrapsychic motivations to reduce feelings of anxiety, whereas evolutionary approaches postulate judgment shifts elicited by threats as germane to addressing those threats. For example, anxiety-palliation accounts predict that contexts of coalitional conflict will lead individuals to underestimate the mental capacities of out-group adversaries. By contrast, as it would be maladaptive to underestimate adversaries' cunning, an evolutionary functional perspective therefore predicts that attributions of intelligence to enemies should be heightened during times of conflict. To test these divergent predictions, we conducted a field study at a Paintball event which realistically simulated coalitional combat. In a within-subjects design, we solicited estimates of terrorists' intelligence before and after participating in the battle. Participants viewed cropped facial images depicting the eyes of neutral-face males that were framed as militants planning an attack. In mixed support for our model, participants rated the terrorist as significantly more of a "Clever Thinker" following the battle, with no effect of condition on estimates of the extent to which the terrorist was a "Tricky Strategist" (possibly due to a confound in the order of eye image presentation).

41. The role of parental imprinting in ideal and actual partner height

Danielle K. Morrison (University of Glasgow, d.morrison.4@research.gla.ac.uk), Benedict C. Jones, Lisa M. DeBruine

Similarities in height between human mates may be explained by preferences for self-similar traits and/or by parental imprinting-like effects. Here, we tested how own height, own-sex parent's height and other-sex parent's height predict both ideal and actual partner's height in a sample of 192 men and 537 women in heterosexual relationships. We found that own height positively predicted partner height. However, this relationship was qualified by own sex and partner type, whereby own height predicted ideal height for both men and women and actual partner height for women only. Own-sex parental height positively predicted only actual partner height, and for men only, suggesting a potential role of direct paternal influence on men's mate choice. Other-sex parental height positively predicted partner height. This relationship was not qualified by own sex or partner type, suggesting that this parental imprinting-like effect does not occur mainly through direct parental influence on partner choice, but rather through learning about parental phenotypes.

42. Men's health status predicts their use of mate retention and aggressive intrasexual competition

Danielle Ouellette (Nipissing University, dcouellette329@community.nipissingu.ca), Steven Arnocky

Arnocky, Pearson, & Vaillancourt (2015) showed that self-perceived health predicts perceptions of a partner's likelihood of infidelity and corresponding jealousy. Unhealthy individuals are at a mating disadvantage and may therefore require more effort toward bolstering their mating success. The present study followed up on these findings by exploring mate-retention and intrasexual aggression in relation to men's perceived health status. 104 men ($M_{age} = 20.62$ $SD = 2.28$) completed the health symptoms survey (Knack et al., 2011), the mate-retention inventory short-form (Buss et al., 2008), the Buss-Perry aggression Questionnaire (modified to assess only intrasexual aggression; Buss & Perry, 1992), and a measure of romantic jealousy (Buunk, 1997). Simple linear regression analyses controlling for participant age and relationship status revealed that men who perceived themselves to be unhealthy were more jealous ($b = 0.89$, $p = .0001$), engaged in more mate-retention ($b = 0.38$, $p = .003$), and engaged in more physical aggression ($b = 0.93$, $p = .015$), more hostility ($b = 1.09$, $p = .0001$), and anger toward other men ($b = 1.02$, $p = .004$), relative to healthier individuals. Men who perceive themselves to be unhealthy are more likely to exhibit competitive mating behaviors, perhaps as a compensatory behavioral strategy meant to augment their low mate-value.

43. Who punishes? The status of the punishers affects the perceived success of, and indirect benefits from, ‘moralistic’ punishment**David Gordon (University of Jyväskylä, david.s.gordon@jyu.fi), Stephen E.G. Lea**

Punishment of anti-social behaviour can provide a beneficial reputation, but can be initially costly to the punisher. Study 1, investigated whether social-status would offset or mitigate the costs of punishment. 119 participants were presented with a vignette describing a punishment scenario. Participants predicted whether punishment would occur, how successful it would be, and indicated their attitude to the punisher. Participants believed only intervention by a high-status (HS) individual would be successful and that low-status (LS) individuals would not intervene at all. HS punishers were seen to be at less risk from retaliation. In Study 2, 117 participants read a vignette that described a HS or LS individual punishing, or failing to. Participants were asked to indicate if they wished to be led by the punisher. HS individuals who did not punish were less likely to be chosen as leaders compared to punishers, whereas this was not the case for LS individuals. The results of both studies suggest a HS position may make punishment more likely: a) status offsets some of the costs of moralistic punishment thus allowing access to reputation benefits, and b) maintaining HS position, and the direct benefits thereof, might depend on ‘moralistically’ punishing anti-social behaviour.

44. Pro-Life or Anti-Promiscuity? The Role of Mating Strategies in Opposition to Abortion**David Pinosof (UCLA, david.pinosof@gmail.com), Martie Haselton**

Abortion is one of the most divisive issues in American politics. Previous researchers have argued that opposition to abortion is “strategic”—that is, it represents an attempt by sexually restricted individuals to deter promiscuous sexual behavior by increasing the costs of unwanted pregnancies. However, prior research has not established whether individuals in fact believe that banning abortion would have such a deterrent effect on promiscuity, and if so, whether or not this belief moderates the relationship between mating strategies and abortion attitudes. Using a large, online sample (N = 855), we show a) that this belief is common among both pro-life and pro-choice individuals, b) this belief interacts with variation in mating strategies to predict opposition to abortion, and c) the interaction remains significant even when controlling for religiosity and political orientation. We discuss the implications of these results in light of recent evolutionary approaches to political ideology.

45. The dominance aspects associated with relationship quality in long-term romantic couples.

Denisa Průšová ((1) Charles University in Prague (2) National Institute of Mental Health, Laboratory of Evolutionary sexology and psychopathology, Prusova.d@gmail.com), Kateřina Klapilová, Jitka Lindová

Previous research found correlation between satisfaction in romantic relationships and dominance equality or stereotypical gender hierarchy. We tested 53 Czech heterosexual romantic couples living together for at least one year (mean 3), mean age of 25 years (19 to 46). Because dominance construct contains many various aspects, we controlled four areas of Relationship Dominance i.e. Self-reported dominance and Partner-reported dominance, Pulerwitz's standardized Control and Decision making Scales (own and partners'), qualitatively ascribed situational dominance from experimental testing and also a power source - difference in education level. In a linear regression model we tested how these dominance variables predict relationship quality, measured by Spanier's Dyadic Adjustment Scale. Our results shows that relationship quality in females was strongly predicted by their own control over relationship. Similarly, the relationship quality in males was also positively associated with their partners' Control scale (Pulerwitz). On the other hand, male relationship quality was negatively associated with their partners' Decision making scale and positively associated with their partners' Self-reported dominance. Also a higher education level in males (relatively to female) predicted their relationship quality. Our results suggest that the relationship quality is affected by females' higher control but lower decision-making.

46. Reducing students' perceived conflict between religion and evolution

Elizabeth Barnes (Arizona State University, liz.barnes@asu.edu), James Elser, Sara Brownell

Evolution is simultaneously one of the most important theories in biology and one of the most controversial in society. Even among students in college biology classes, rates of rejection can reach up to sixty percent. Research shows that the source of rejection of evolution most often stems from an interplay of students' misconceptions about evolution and their perceptions that evolution and religion are in conflict. While evolution instructors are often versed on how to provide instruction on student misconceptions about evolution, they are often unsure about how to reduce students' perceptions that evolution is in conflict with religious beliefs. In this study, we designed a two week module on evolution aimed at both increasing student knowledge of evolution and reducing students' perceived conflict between evolution and religion. Using an open ended survey, we analyzed students' perceptions of conflict between evolution and religion before and after our two week module. We found that over the course of the module, students' perceptions that evolution and religion are in conflict were reduced by half. Surprisingly, we saw this reduction among both religious and non-religious students. This study suggests that by incorporating explicit discussion of the conflict between religion and biology we may be able to ameliorate students' perceived conflict and thus improve student attitudes towards evolution.

47. Can a Celebrity Influence Individuals' Belief in Evolution?**Emma Bozek (Nipissing University, ebozek263@community.nipissingu.ca), Steven Arnocky**

Diverse views about human evolution are sometimes expressed by celebrities. Celebrities are often viewed as credible sources of information that can influence individuals' core values, beliefs, and behaviors including political orientations and voting, public health initiatives, and self-harm. We examined whether celebrity opinion might similarly influence participants' belief in evolution. 150 men and women ($M_{age} = 20.13$) were randomly assigned to read one of three fictitious magazine articles in which a celebrity (George Clooney), as part of an interview, briefly summarizes and recommends a book that was either pro-evolution, anti-evolution, or neutral. Participants then completed a memory test for details about the article, followed by the Measure of Acceptance of the Theory of Evolution Instrument (MATE; Rutledge & Warden, 1999). A univariate ANOVA showed celebrity endorsement influenced acceptance of evolution, $F(2, 147) = 7.29, p = .001$. Post-hoc comparisons using Fisher's LSD indicated that the mean score for the pro-evolution condition ($M = 4.00, SD = 0.65$) was differed from the anti-evolution condition ($M = 3.52, SD = 0.64$) as well as the neutral condition ($M = 3.75, SD = 0.55$). The difference between the anti-evolution and neutral conditions was marginally significant ($p = .06$). Celebrity endorsement of pro- and anti-evolution sentiments can influence individuals' beliefs in human evolution.

48. Sex Differences in Perceptions of Men's and Women's Deception**Eric T. Steiner (National University, tsteiner@nu.edu), Matthew J. Sanders**

The current study examined sex differences in perceptions of men's and women's deceptive practices. Specifically, the aim was to investigate men's versus women's beliefs about which sex lies more in general (white lies and serious lies), and which sex lies more about several factors that pertain to mating efforts (height, weight, age, money earned, emotional fidelity, and sexual fidelity). This study also examined men's versus women's beliefs about which sex lies more effectively. A 12-item questionnaire was administered to male and female participants at a large university in California. A one-way MANOVA was conducted to analyze sex differences. Interpretation of results and implications are discussed.

49. Can behavioural traits be canalized? A simulation study.**Eva A. Padilla (UC Santa Barbara, emotstudy@gmail.com), Aaron Blackwell**

Experimental evidence has shown that induced physical changes can eventually become canalized (Waddington, 1953; 1943). However, the question of whether induced behavioral changes are capable of the same canalization remains unresolved. The current simulation study will investigate the evolutionary feasibility of the canalization of a behavioral trait, and the circumstances required for canalization to occur. This model will innovate on previous models (Ackley & Littman, 1992; Hinto & Nowlan, 1987; Mitchell, 1996) by explicitly introducing epigenetic mechanisms into the evolutionary dynamic. The study will utilize the R computing environment to run agent based Monte Carlo simulations to model the dynamics of a three layer system; consisting of a genotypic layer, an epigenetic layer, and a behavioral layer.

50. Effects of Anxiety on Mate Value**Erin Clahane (Acadia University, erinclahane@gmail.com), Maryanne L. Fisher**

We propose that lowered mate value may result in less openness to sexual and romantic experiences due to evolutionarily based mate preferences. Anxious individuals may be more likely to avoid sexual and romantic situations due to experiences that reinforce negative beliefs surrounding their mate value (Stevens & Morris, 2007). 263 participants completed an online demographics survey, The State Trait Anxiety Inventory, Mate Value Inventory (MVI), and The Sociosexual Orientation Inventory-Revised (SOI-R). Results indicated that the effect of trait anxiety did not significantly influence mate value while the effect of state anxiety did, surprisingly with participants in the high state anxiety condition scoring higher on the MVI. The effect of trait anxiety significantly influenced sociosexuality with participants in the high anxiety condition scoring higher on the SOI-R. The effect of state anxiety did not significantly influence sociosexuality. Significant sex differences were found in sociosexuality and state anxiety, with males scoring higher than females. Sociosexuality findings were as expected; males tended to rely more heavily on short-term mating tactics due to disparities in parental investment. Significant sex differences were not found in trait anxiety and mate value. Further exploration of mate value as it relates to anxiety is recommended.

51. An exploratory analysis of the relationships between mothers' and fathers' testosterone, general well-being, and depression levels**Eva B. Niklinska (University of Notre Dame, eniklins@nd.edu), Mariana E. Tumminello, Julia M. Braungart-Rieker, E. Mark Cummings, Jennifer Burke, Mallika S. Sarma, Lee T. Gettler**

It is thought that human males have the evolved capacity to downregulate testosterone when they become invested fathers, resulting in increased parenting sensitivity and responsiveness. Evidence suggests this may likewise apply to mothers. However, the relationship between testosterone and mental health in parenting has not been rigorously explored. Up to 15% of new mothers suffer from post-partum mood depression, while less is known about paternal depression. Low testosterone is a risk factor for depression for men and possibly also women, while parents are more commonly depressed than non-parents. In a sample ($n = 31$) of new mothers and fathers, we explored salivary testosterone levels and measures of general well-being (GWB) and general depression (GD), drawn from validated psychological surveys. Within couples, mothers' and fathers' GWB and GD were not correlated to one another ($p > 0.1$). Mothers' and fathers' T did not correlate to their own well-being or depression scores (all $p > 0.2$). In couples where fathers had higher T, mothers' general depression levels were lower ($p = 0.03 < 0.05$). Fathers' T levels and mothers' GWB were not correlated ($p > 0.4$) while fathers' mental health was not significantly related to mothers' T (both $p > 0.1$).

52. Familiarity With Spanish Predicts Perceived Cultural Relevance Of And Desire To Interact With Spanish Speakers**William H.B. McAuliffe (University of Miami, w.mcauliffe@umiami.edu), Michael E. McCullough**

As early as infancy, humans categorize others according to whether their language or accent is native to their own community. For reasons not well-understood, people also often stigmatize non-native speakers. It is possible that these tendencies were selected because non-native speech indicates that communication difficulties and cultural differences may hamper successful coordination. We tested predictions of this hypothesis by administering questionnaires to 294 undergraduates at the University of Miami, which is located in a city where English and Spanish speakers must frequently interact. We found that the extent to which English dominated in one's childhood neighborhood negatively predicted willingness to include Spanish speakers in one's cooperative network and positively predicted the perceived relevance of Spanish speakers to American culture. Familiarity with Spanish mediated these associations. One's primary language, familiarity with English, and American citizenship status were not robustly correlated with attitudes toward Spanish speakers. Thus, of the factors we tested, only factors directly related to successful coordination with Spanish speakers predicted attitudes about their merits as members of American society. Future researchers should experimentally test whether successfully coordinating with non-native speakers reduces negative perceptions of them.

53. The Attractiveness of the Singing Voice in Women**Sari Isenstein (McMaster University, isensts@mcmaster.ca), Kelyn Montano, Benedict Jones, David Feinberg**

Despite music being a human cultural universal, most research on voice attractiveness focuses on speaking voices. Prior work on speaking voices shows that men perceive women with relatively higher-pitched voices as more attractive. To test if these results extend to women singing, we recorded the voices of 48 female students singing and speaking "Happy Birthday." Both men and women rated the voices based on attractiveness. We measured fundamental frequency (pitch) and created out of tune and out of rhythm scores (based on jitter and shimmer formulae) for each voice. We found a positive linear relationship between speaking and singing attractiveness as well as an overall effect of voice pitch on speaking and singing attractiveness. Out of tune and out of rhythm scores did not predict voice attractiveness. The aforementioned relationships between pitch and attractiveness remained after controlling for singing ability. Our results suggest that underlying attractiveness is more important in determining the attractiveness of singers than is their actual ability to sing well.

54. Discrimination of Sexual Orientation and Attitudes to Homosexuality**Gayle Brewer (University of Central Lancashire, GBrewer@UCLan.ac.uk), Minna Lyons**

Previous research has largely ignored the relationship between sexual orientation judgement accuracy, confidence, and attitudes towards homosexuality. In an online study, homosexual and heterosexual participants (N = 269) judged the sexual orientation of homosexual and heterosexual targets presented via a series of facial photographs. Participants also indicated their confidence in each judgement and completed the Modern Homonegativity Scale (Morrison & Morrison, 2002). We found that (i) homosexual men and heterosexual women were more accurate when judging photographs of women, as opposed to photographs of men, and (ii) in heterosexual men, negative attitudes towards homosexual men correlated positively with confidence and bias when rating men's photographs. Our results indicate that homosexual men and heterosexual women are similar in terms of accuracy in judging women's sexuality, which could be a result of sexual competition. Further, especially in men, homophobia is associated with cognitive biases in labelling other men, but does not have a relationship with increased accuracy.

55. Homophobia is about sex: Sexual disgust sensitivity predicts anti-gay attitudes in the USA, Brazil, China, and South Africa**Florian van Leeuwen (Department of Political Science, Aarhus University, florianvanleeuwen@ps.au.dk), Rengin Firat, Pascal Boyer**

Research has linked the stigmatization of homosexual men to various processes (e.g., gender-role conflict, maintaining traditions, or pathogen avoidance motivations). We propose that homophobia might be understood as a functional output of mechanisms regulating sexual behavior. Across cultures, sex is construed as a service that men seek and women provide. In addition, homosexual men differ from heterosexual men in that their preferred sexual targets are male. Ultimate cost-benefit analysis based on these assumptions suggests that both males and females can avoid costs of sub-optimal or non-reproductive behaviors by avoiding homosexual males. Thus, proximately, homophobia might be a functional output of sexual psychology among (1) individuals who are targets of male homosexual behavior, i.e., males, and (2) individuals who are generally avoidant of non-reproductive sexual behaviors. Results from large online surveys conducted in the USA, Brazil, South Africa, and China are consistent with these predictions. Males reported stronger homophobia in three samples (not in the Chinese sample). Sexual disgust sensitivity was associated with stronger homophobia in all samples (though this association was specific to females in the USA sample). Although people might dislike gays for various baroque reasons, homophobia might in part originate from mechanisms for regulating sexual behavior.

56. Perceived Risk of Infidelity, Mate Value, and Mate Retention in Women

Yael Sela (Oakland University, ysela@oakland.edu), Nicole Barbaro, Todd K. Shackelford, Virgil Zeigler-Hill

Women perform mate retention (MR) behaviors to thwart a partner's infidelity. Mate value (MV) provides information about a person's ability to secure extra-pair partners, and personality traits have been shown to influence MR behaviors. The current study aims to establish a comprehensive model of women's MR. Specifically, we hypothesize that women's perceptions of their partner's infidelity will mediate the relationship between their partner's MV and performance frequency of MR. We further hypothesize that women's MV will moderate the association between their partner's MV and women's MR, and that women's personality (Agreeableness and Emotionality) will moderate the relationship between perceived risk of partner infidelity and women's MR. Women recruited via MTurk (n = 406) completed an online self-report survey. The results support the hypothesized moderated-mediation model, and indicate that women are sensitive to their partner's MV relative to their own MV, and that this relative MV influences the perceived risk of partner infidelity. Perceived risk of partner infidelity is associated with MR, and this relationship is moderated by women's personality. The current study tests these theoretically-informed hypotheses in a cohesive model, which highlights the complexity and nuance of women's information-processing system designed to thwart partner infidelity.

57. Mate Preference Shifts Before and After Having Children

Giovanni Randazzo (Oakland University, ggrandazzo@oakland.edu), Zac Willockx, Maria Jovanovski, Viviana A. Weekes-Shackelford, Todd K. Shackelford

Women with children from a previous mateship seeking to establish a new mateship is likely to have been a recurrent social feature of human evolutionary history. Because the presence of a child from a previous mateship presents a different set of adaptive problems in mate selection than those presented when there is no child from a previous mateship, we hypothesize that women with children, relative to women without children, will differ in their ratings of the importance of specific mate preferences. We also hypothesize that the degree of mate preference changes will be moderated by the woman's age and the child's age. To test these hypotheses, several hundred women were recruited to complete a self-report mate preference survey. Results indicated support for several key mate preference shifts for women with children but not for women without children. Traits related to domestic abilities, greater resources, and strong family relationships were all preferred more by women with children relative to women without children. In contrast to previous research, physical attractiveness was rated as equally important for both groups. Discussion includes limitations, such as lack of single women with children, and suggestions for future research, such as comparing these shifts between males and females.

58. Mate Attraction Tactics Before and After Having Children

Stephanie Martin (Oakland University, sjmartin@oakland.edu), Zachary Willockx, Giovanni Randazzo, Maria Jovanovski, Vivianna A. Weekes-Shackelford, Todd K. Shackelford

Recent research has examined the extent to which the presence of children affects the importance women place on specific mate preference characteristics and how much time and effort is invested in attracting a mate. This research suggests that women with children do differ from women without children in their self-reported mate preferences and in their use of mate attraction tactics. The current study extends this research by specifically focusing on two components of mate attraction: Sexual Availability and Physical Enhancement. We hypothesize that, in general, although women with children will engage in less mate attraction than women without children, women with children will employ specific attraction tactics more than women without children. Furthermore, we hypothesize that younger women with children, relative to older women with children, will report less use of the attraction tactics of (1) sexual availability display and (2) physical enhancements. A sample of 351 women completed an online survey about their dating and mate attraction behaviors. Preliminary analyses revealed that women with children report lower levels of signaling sexual availability than women without children. The current study contributes to the research on female sexual psychology by examining how the presence of children may affect female reproductive decision making.

59. Perceptions of Attractiveness Vary with Ascribed Values

Guilherme S. Lopes (Oakland University, gslopes@oakland.edu), Walberto S. Santos, Todd K. Shackelford, Adam E. Tratner, Valdiney V. Gouveia

Expressed values may have solved ancestral problems of survival and reproduction (e.g., social inclusion, mate selection) and, therefore, may affect perceptions of attractiveness of those expressing particular values. This study investigated the effects of ascribed values on perceptions of attractiveness. We performed a 2 (sex) x 2 (facial attractiveness) x 7 (ascribed values) factorial design. Participants were 280 Brazilian individuals, equally divided by the factorial combinations, aged between 16 and 56 years ($M = 24.6$, $SD = 6.53$), mostly heterosexual (92.1%), Catholic (41.4%), and currently attending college (59.3%). We invited prospective participants to participate by posting invitation messages on Brazilian Facebook groups. Participants rated attractiveness of faces associated with ascribed values, on a 6-point Likert scale (unattractive–very attractive). All survey material was in Brazilian Portuguese. Perceptions of facial attractiveness varied with ascribed values, providing some support for evolutionarily-informed hypotheses. More specifically, we found that ascribed values affect perceptions of attractiveness, that some values affect perceptions of attractiveness more than others, and that some value-attractiveness links are sex-differentiated. We discuss these results in light of evolutionary hypotheses of mate selection, highlighting limitations and identifying directions for future research.

60. Detection of fitness-related stimuli: An assessment of the fertility-related rape avoidance hypothesis**Hannah Ryder (The University of Leicester, hr98@le.ac.uk), Heather Flowe**

Research demonstrates behavioural changes suggested to support the hypothesis that women have evolved a rape-avoidance adaptation, particularly during ovulation when conception risk and costs of rape to reproductive fitness are highest. However, research lacks focus on the underlying cognitive mechanisms. Furthermore, it is unclear whether the adaptation is rape-specific, or whether fertile women become risk-avoidant more generally. This study aimed to examine the cognitive mechanisms underlying women's risk-avoidance, and secondly determine whether such mechanisms were specific to stimuli associated with rape, e.g., threatening males, or generalised to other threats, e.g., animals. Women participated twice, during days 12-14 (peak fertility) and days 1-3 or 21-23 (low fertility) of their menstrual cycles. Using a dot-probe paradigm, we assessed women's speed of detection of angry versus neutral male and female faces, and threatening versus neutral animals. There was no effect of cycle day in hormonal contraceptive users regardless of stimuli-type, and no effect of fertility status in naturally cycling participants for detecting threatening animals. However, unexpectedly, fertile women were significantly faster to detect neutral compared to angry faces, whilst nonfertile women were significantly faster to detect angry versus neutral faces. Results suggest domain specificity in fertility-related attentional biases to fitness-related stimuli.

61. The Role of Scent in Dominance Perception**Hanne Collins (University of British Columbia, hanne.collins@gmail.com), Marlise Hofer, Kelly Gildersleeve, Frances Chen**

Accumulating evidence suggests that the automatic and unconscious processing of status cues plays an important role in the development of social hierarchies. We propose that one such mode of automatic processing may be olfaction. Scent cues are known to communicate socially relevant information in humans. For example, based merely on scents, ovulating women are able to assess men's physical attractiveness. This project investigated the role of olfaction in dominance assessments. Specifically, we examined the role of olfactory cues of testosterone present in men's natural body odor in perceivers' inferences about those men's personal attributes. Thirty-eight men provided scent samples and saliva samples for testosterone assays. One hundred and eighty participants (60% women) evaluated the scent samples. Perceivers' inferences were associated with testosterone levels of scent providers. Specifically, women rated samples from men with higher testosterone levels as smelling more dominant and less agreeable. This research has the potential to clarify the role of olfaction in human social behavior and dominance relations.

62. Evolutionary Dynamics of the Human Oral Microbiome

Helen Wasielewski (Arizona State University, helen.wasielewski@asu.edu), Athena Aktipis, Joe Alcock, Naomi Mandel, Rosa Krajmalnik-Brown

The human body is a habitat for a diverse array of microorganisms, some of which perform important physiological functions for the host. In the colon, for example, secondary fermenters break down dietary fiber and enable some caloric extraction by the host from material that would otherwise be indigestible. Unlike fiber, dietary sugar does not require the assistance of digestive mutualists and is therefore a source of potential resource conflict between the host and its sugar-metabolizing microbiota. Within the oral cavity, sugar metabolizing species, such as *Streptococcus mutans*, would benefit from increased dietary intake of sugar by their human hosts. Food taste perception is a primary factor in food intake, and given the proximity of the oral bacteria to taste receptor cells, manipulation of taste perception would be a potential mechanism for increasing host intake of dietary sugar. Consistent with this hypothesis, oral bacterial disease (e.g., periodontitis) and obesity have long been recognized to co-occur, and some evidence for a causal link between oral bacteria and obesity has been reported. Genomic analyses of oral microbiota along with data on host diet and oral hygiene behavior will be needed to evaluate these hypotheses.

63. Lie To Me, Lie To Yourself: Dark Triad Traits, Dishonesty, and False Memory

Max Draymond (Douglas College, mdaymon@portal.douglas.bc.ca), Nicole Vittoz

The Dark Triad Traits (DTT: Psychopathy, Machiavellianism, and Narcissism) are clearly linked to deceptive and manipulative behaviour, yet little is known about whether people with high levels of DTTs deceive themselves in order to convince others. This online study investigated whether the DTTs predicted false memory, as assessed by the DRM paradigm (Deese, 1959; Deese & McDermott, 1995) modified to include DTT-related lures (Power, Control, and Status). Among the three DTTs, Psychopathy was most clearly predictive of self-reported dishonesty. However, results showed that psychopathy (and to a lesser degree, Narcissism) significantly predicted lower rates of adopting false memories for neutral lures, whereas Machiavellianism predicted higher rates of false memories for DTT-related lures. These findings indicate that among the DTTs, Psychopathy and Narcissism are associated with a lower likelihood of self-deception, while Machiavellianism may be linked with an increased probability of self-deception.

64. Group size matters: peer sanction and cooperation in a large group**Hiroki Ozono (Kagoshima University, hiroki.ozono@gmail.com), Yoshio Kamijo, Kazumi Shimazu**

Many studies show that peer reward and punishment (hereafter, peer sanction) can sustain cooperation in public goods game experiments, where the group size is relatively small, frequently having 4 members. We argue, however, that the situation will drastically change when the group size is large. First, one member's contribution to public goods is more negligible in a large group than in a small group; if one person acts environmentally friendly, the effect should be very limited. Second, if the group size is large, it is difficult for members to sanction all other members due to several reasons, such as the practical difficulty of sanctioning others who live far away. We examined experimentally if peer sanction could increase and sustain contribution levels to the public goods in a large group, that is, a group of 16 members. The results showed that high levels of cooperation could be achieved and peer sanction was effective for cooperation only when the influence of a member's contribution was high or when the members one could sanction were not restricted; one could sanction all the members. The results suggest that there are limitations to achieving cooperation by peer sanction when the group size is large.

65. Costly signaling leads to a more efficient cooperative equilibrium than the standing strategy**Hiroki Tanaka (Kobe University, h-tanaka@lit.kobe-u.ac.jp), Hisashi Ohtsuki, Yohsuke Ohtsubo**

How to distinguish punitive defectors (who only defect on "bad" players) from unconditional defectors (who defect on everyone) is a critical problem for indirect reciprocity. Theoretically, this problem can be solved if players use a standing strategy and take into account second-order information regarding their current partner (i.e., whether the partner previously defected on a "bad" vs. "good" player). However, an empirical study revealed that people tend not to use second-order information possibly due to its heavy cognitive demand (Milinski et al., 2001). To bridge the gap between theoretical and empirical work, we propose the Intention Signaling strategy (intSIG), which allows punitive defectors to signal their cooperative intent by voluntarily abandoning a resource. Not only does our theory evince that intSIG is robust against invasion from both unconditionally defective and cooperative strategies under a wide range of conditions, two experiments showed that participants voluntarily behave in an intSIG-like fashion when given the opportunity. Building on these results, we computed expected group-level payoffs under two conditions. The results revealed that the group-level payoff of the signaling condition was higher than that of the standing condition, possibly because participants used the signaling opportunity but did not utilize second-order information.

66. Conflict in the prehistoric period of Japan: the spatiotemporal pattern of skeletal evidence for conflict in the Jomon and Yayoi period**Hisashi Nakao (Yamaguchi University, hisashinakao@gmail.com), Kohei Tamura, Yui Arimatsu, Tomomi Nakagawa, Naoko Matsumoto, Takehiko Matsugi**

Whether man is predisposed to lethal conflict, ranging from homicide to warfare, and how that may have impacted human evolution, are among the most controversial topics of debate on human evolution. Although recent studies on the evolution of warfare have been based on various archaeological and ethnographic data, they have reported mixed results: it is unclear whether or not warfare among prehistoric hunter-gatherers was common enough to be a component of human nature and a selective pressure for the evolution of human behaviour. This study reports the mortality attributable to conflict, and the spatiotemporal pattern of conflict thus shown among ancient hunter-gatherers and horticulturalists using skeletal evidence in prehistoric Japan (the Jomon period; 13000 cal BC to 800 cal BC and the Yayoi period; 800 cal BC to 350 cal AD). Our results suggest that the mortality due to conflict was low and spatiotemporally highly restricted in the Jomon hunter-gatherers' period, and that the mortality was also low though it was spatiotemporally dense in the Yayoi horticulturalists' period, which implies that conflict including warfare in Japanese prehistory was not common.

67. Cooperation, Competition, and Physical Attractiveness among Women**Holly Pittaway (California State University, Fullerton, hthacker2@csu.fullerton.edu), Elizabeth Pillsworth**

Women face a conundrum when evaluating other women as social partners. Empirical data shows that people generally perceive physically attractive others to be more intelligent, more trustworthy, and more socially desirable, suggesting that women should prefer more attractive female friends. Research also shows that women may perceive attractive women as potential threats, and should therefore be less inclined to prefer them as friends. This study was designed to directly examine how reputational information and physical attractiveness may interact to predict perceptions of women's desirability as social partners. 247 women were shown images of women's faces that had been pre-rated for attractiveness, along with vignettes that presented the pictured woman as either more or less cooperative with other female friends or associates. Participants were then asked to rate each pictured woman in terms of her physical attractiveness, and her desirability as a potential friend. We predict that physical attractiveness and reputation will interact, such that more attractive (i.e. more threatening) women who are also reputed to be less cooperative will be seen more negatively than less attractive women, and that more attractive women who are also reputed to be cooperative will be viewed more positively than less attractive women.

68. Do partnered women discriminate men's faces less along the attractiveness dimension?

Hongyi Wang (University of Glasgow, h.wang.4@research.gla.ac.uk), Amanda C. Hahn, Lisa M. DeBruine, Benedict C. Jones

Romantic relationships can have positive effects on health and reproductive fitness. Given that attractive potential alternative mates can pose a threat to romantic relationships, some researchers have proposed that partnered individuals discriminate opposite-sex individuals less along the physical attractiveness dimension than do unpartnered individuals. This effect is proposed to devalue attractive (i.e., high quality) alternative mates and help maintain romantic relationships. Here we investigated this issue by comparing the effects of men's attractiveness on partnered and unpartnered women's performance on two response measures for which attractiveness is known to be important: memory for face photographs (Study 1) and the reward value of faces (Study 2). Consistent with previous research, women's memory was poorer for face photographs of more attractive men (Study 1) and more attractive men's faces were more rewarding (Study 2). However, the strength of these effects of attractiveness was not modulated by women's partnership status in either study. These results do not support the proposal that partnered women discriminate potential alternative mates along the physical attractiveness dimension less than do unpartnered women.

69. Resource Allocation to Kin, Friends, and Strangers by 3- to 6-Year-Old Children

Hui Jing Lu (The Hong Kong Polytechnic University, huijing.lu@polyu.edu.hk)

Kin favoritism has been observed in many species including humans. However, few studies have discussed the development of kin favoritism. In this study, 3- to 6-year-old children allocated resources between themselves and kin, a friend, or a stranger in 3 allocation tasks where a fair allocation incurred a cost, incurred no cost, or conferred an advantage. The results revealed that kin favoritism appeared in children at approximately 5 years of age; compared with 3- and 4-year-olds, 5- and 6-year-olds acted more fairly but also more discriminatively toward the different targets. These findings reveal the early development of kin favoritism and provide insight on how children behave discriminatively toward different targets in various types of allocation tasks independent of theory of mind.

70. Do I feel okay? The behavioral immune system and attention to internal cues

Iris Wang (University of Michigan, imxwang@umich.edu), Joshua Ackerman, Shinobu Kitayama

The behavioral immune system (BIS) is a set of cognitions and actions designed to guard against pathogen infection. A number of adaptive outcomes of this system have been identified which involve management of external threats (e.g. avoidance of out-group members, attention to people with physical abnormalities). However, less attention has been paid to whether BIS activation increases people's attention to internal cues. Because disease threats are largely invisible, concerned people may benefit from attending to their own bodies and internal states in order to detect whether infection has taken place. In two studies, we provide preliminary evidence demonstrating a link between

71. Life-History-Moderated Cycle Shifts in Women's Sexual Desire**Tran Dinh (University of California, Los Angeles, trandinh@ucla.edu), Martie G. Haselton**

In an ancestral world without modern forms of contraceptives, natural selection may have crafted adaptations whereby female fertility is regulated in ways that maximized reproductive success on average over human evolutionary history. In this study, we examined whether sexual desire is one such mechanism for fertility regulation concordant with life history strategy. Adaptations regulating reproductive decisions may be particularly important on cycle days associated with higher conception risk. Therefore, this study tested whether ovulatory shifts in women's sexual desire varied as a function of life history strategies in a sample of 1,555 naturally cycling women recruited using M-Turk. Data from this study show that women from lower childhood SES backgrounds experienced higher sexual desire, initiated sex more, and engaged in more sexual activity with their romantic partner at high fertility, whereas women from wealthier childhood backgrounds experienced a decrease at high fertility. The results of this study present evidence that women may have evolved psychological and behavioral mechanisms for regulating the timing of reproduction.

72. Body Mass Index, Facial Width-to-Height Ratio, and Perceived Formidability in Female Ultimate Fighting Championship (UFC) Fighters**Jaime L. Palmer-Hague (Trinity Western University, Langley, BC, jaime.palmerhague@twu.ca), Anita C. Twele, Alexandra J. Fuller**

Both facial width-to-height ratio (fWHR) and body mass index (BMI) have been associated with aggressive behaviour in women, but the degree to which each serves as a cue of formidability to others remains unclear. Here we assessed the effects of fWHR and BMI on perceptions of fighting ability and aggressiveness from faces of 42 female Ultimate Fighting Championship (UFC) fighters. In our first study we found that although BMI and fWHR were positively correlated, BMI, but not fWHR positively predicted participants' ratings of perceived aggressiveness and fighting ability from photographs of fighters' faces. In Study 2, we found that both high fWHR and high BMI composite faces were rated as more aggressive, more tough, and more likely to win a fight than low fWHR and low BMI composite faces, respectively. These results suggest that although BMI may contribute to the perception of fWHR in women, BMI may be the more accurate morphological indicator of formidability in this population.

73. Comprehensive longitudinal study challenges the existence of neonatal imitation in humans

Janine Oostenbroek (University of York, janine.oostenbroek@york.ac.uk), Thomas Suddendorf, Mark Nielsen, Jonathan Redshaw, Siobhan Kennedy-Costantini, Jacqueline Davis, Sally Clark, and Virginia Slaughter

Human children copy others' actions with high fidelity, supporting early cultural learning and assisting in the development and maintenance of behavioral traditions. Imitation has long been assumed to occur from birth, with influential theories placing an innate imitation module at the foundation of social cognition (potentially underpinned by a mirror neuron system). Yet, the very phenomenon of neonatal imitation has remained controversial. Empirical support is mixed and interpretations are varied, potentially because previous investigations have relied heavily on cross-sectional designs with relatively small samples and with limited controls. Here we report surprising results from the most comprehensive longitudinal study of neonatal imitation to date. We presented infants (N = 106) with nine social and two non-social models and scored their responses at one, three, six, and nine weeks of age. Longitudinal analyses indicated that the infants did not imitate any of the models, as they were just as likely to produce the gestures in response to control models as they were to matching models. Previous positive findings were replicated in limited cross-sections of the data, but the overall analyses confirmed these findings to be mere artefacts of restricted comparison conditions. Our results undermine the idea of an innate imitation module and suggest that earlier studies reporting neonatal imitation were methodologically limited.

74. Television consumption is the strongest predictor of female body size ideals in populations recently exposed to the media

Jean-Luc Jucker (Durham University, jean-luc.jucker@durham.ac.uk), Tracey Thornborrow, Mark Jamieson, Michael Burt, Robert Barton, Elizabeth H. Evans, Martin J. Tovee, Lynda Boothroyd

Previous research has shown that television consumption influences female body size ideals and increases body dissatisfaction. However, no study has controlled for an apparently obvious determinant of female body size ideals: food availability or nutritional stress. 112 participants were recruited from three indigenous communities in Nicaragua that differed in terms of television consumption and nutritional stress. Participants completed a female figure preference task, reported their television consumption, and responded to measures assessing nutritional status. Comparisons showed that communities with high television consumption and low nutritional stress preferred thinner female bodies than communities with low television consumption and/or high nutritional stress. Regression analyses revealed that television consumption is a stronger predictor of female body size ideals than nutritional stress, even when controlling for other variables such as socio-economic status. These results demonstrate for the first time that television consumption supersedes nutritional status as the strongest predictor of female body size ideals in a non-Western population.

75. Men's vocal pitch predicts their romantic jealousy and mate-retention behaviors

**Jessica Desrochers (Nipissing University, jedesrochers739@community.nipissingu.ca),
Graham Albert, Steven Arnocky**

Men with more fluctuating vocal pitch are often perceived as being less socially dominant. Accordingly, these men may be competitively disadvantaged in the realm of mate-retention. We expected that men with more variable vocal pitch would be more romantically jealous, which would in turn mediate links to increased mate retention effort. 109 men (Mage = 20.68 SD = 2.27) were recorded reciting five vowel sounds ("eh, ee, ah, oh, oo") using a Samson meteorite professional studio microphone in mono at 44.1 kHz. Recordings were analyzed using PRATT software for fundamental frequency and standard deviation (fluctuation). Participants also completed the mate-retention inventory short-form (Buss et al., 2008) and a measure of romantic jealousy (Buunk, 1997). Mediation analyses showed that vocal fluctuation predicted men's mate retention ($b = 0.020$, $p = .03$). With jealousy included in the model, vocal fluctuation predicted jealousy ($b = 0.021$, $p = .03$) which in turn predicted mate-retention ($b = 0.30$, $p = .0001$). The indirect effect of vocal fluctuation on mate-retention was reduced ($b = 1.09$, $p = .0001$) (Bootstrapping: 95% LL = 0.01, 95% UL = 0.012, $R^2_{adj} = .28$). Men's vocal pitch variation is an accurate predictor of their mate-retention efforts, as mediated by heightened romantic jealousy .

76. Does subjective assessment of own health predict self-perceived mate-value and actual mating outcomes?

Jessica Desrochers (Nipissing University, jedesrochers739@community.nipissingu.ca), Brodie Fitzgerald, Steven Arnocky

Self-perceived health may be an important factor influencing men's and women's mating behavior (Arnocky, et al., 2015). The present study examined whether self-perceived health predicted increased mate-value scores and reported mating success. 261 men and women (Mage = 20.29 SD = 2.38) completed the general health assessment question: "In general, would you say your health is poor/fair/good/very good /excellent" (Singh-Manoux et al., 2003), followed by the Self-perceived mating success (SPMS). The SPMS scale (Landolt et al., 1995), the Components of Self-Perceived Mate-Value Survey (CMVS; Fisher et al., 2008), and measures of lifetime dating and sex partners, virginity status, times copulating in the past month, and sex partners within the past year. Bivariate correlations showed that for men, self-perceived health status related to self-perceived mate value ($r = 0.26$, $p = .004$) and mating success ($r = 0.19$, $p = .045$), as well as having had sex ($r = 0.22$, $p = .019$), past year sex partners ($r = 0.22$, $p = .019$), past month copulations ($r = 0.21$, $p = .025$). For women, self-rated health correlated with self-perceived mate value ($r = 0.26$, $p = .002$) and mating success ($r = 0.20$, $p = .017$), as well as number of sex partners in the past year ($r = 0.31$, $p = .0001$). Men and women with high self-perceived health score higher on metrics of mate-value and reported variety of sex partners.

77. Casual Sex and College Students: Evolutionary Perspectives on the Impact of Father Absence**Jessica A. Hehman (University of Redlands, jessica_hehman@redlands.edu), Catherine A. Salmon, John Townsend**

Recently much attention has been focused on understanding casual sex, or hooking up, among college students. The current study uses an adaptationist approach to investigate sex differences in casual sex behavior, emotional reactions, and the influence of father absence. If males and females possess different emotional mechanisms designed to evaluate the consequences of sexual behavior, we would expect sex differences in emotional reactions following that behavior. A sub-theory of life history strategy, psychosocial acceleration theory, predicts that stressful childhood environments will result in accelerated puberty and increased adult promiscuity. This study examines the impact of one childhood stressor, father absence, on casual sex, along with the previously mentioned sex differences in college students. Results indicate (1) while there was no significant difference in the number of overall sex partners in the last 12 months, males had significantly more casual sex than did females; (2) females had significantly more negative emotional reactions to casual sex than did males; and (3) males and females who grew up in stressful childhood environments (indexed by father absence) were more likely to engage in casual sexual behavior. These results will be discussed in light of sexual strategies theory.

78. Father involvement predicts parent-adolescent adrenocortical attunement in low-income families**Jessica L. Calvi (University of Nebraska-Lincoln, jcalvi2@unl.edu), Jennifer Byrd-Craven, Michael M. Criss, Amanda Sheffield Morris**

Paternal involvement is a lesser-studied facet of parent-child relationships, and less is known about the effects on parent-child relations between the father and child, as well as indirect influences on mother-child relations (Geary, 2000). Further, few studies have examined fathers' influence on parent-child relationships in adolescence. Physiological attunement has recently been established as a potential indicator of biopsychosocial processing within a dyad. The current study examined father involvement (via adolescent reports) in predominantly low-income families (N = 171) with adolescent females ages 12-16 years of age. Saliva samples were collected via passive drool before and after a conflict discussion task in which mothers and adolescents discussed topics on which they disagreed. Results indicated attunement in mother-adolescent dyads at Time 1 (pre-task) were significantly predicted by father involvement. Results point toward the complex and potentially far-reaching effects of father involvement on mother-adolescent physiological synchrony (as indicated by cortisol synchrony). Future research should examine effects on both male and female adolescents, and further examine the effects of low-income stressors and the potentially ameliorating effects of paternal involvement on physiological synchrony.

79. Beyond Wealth: The Role of Economic Insecurity and Risk on Fertility**Jessica Parker (University of Lethbridge, jessica.parker@uleth.ca), Daniel Lima, Peter Henzi, Louise Barrett**

Evolutionarily, the recent large-scale pattern of fertility decline among economically prosperous industrial societies presents a puzzle. Both evolutionary and economic approaches to fertility predict that, in environments where resources and wealth are abundant, fertility should be high. One possibility that could account for the observed pattern is that economic and social factors beyond material wealth, such as economic insecurity and perceptions of risk, are important for reproductive decision-making. The aim of the present study was to interrogate the effect of individual perceptions and attitudes toward economic (in)security on fertility intentions and views on the costs/benefits of having children. Data were collected from 750 undergraduate students by means of an online questionnaire asking about fertility intentions, current economic circumstances, understanding of economic risk, and views of children. We also systematically varied the order of presentation for economic and fertility-based questions in order to test for any potential priming effect of economic factors on fertility goals. Our results suggest that there was no priming effect, that almost all respondents desire children, that economic factors are salient in the formation of these desires, and that people factor in both future economic risk and uncertainty into their reproductive decisions.

80. The Auditory Looming Bias: Looming Sounds are Perceived as Faster than Receding Sounds**John G. Neuhoff (The College of Wooster, jneuhoff@wooster.edu), Christian Golden**

A sound source that moves toward a listener can signal impending danger. In perceiving the arrival time of a “looming sound” listeners display a systematic bias and perceive the sound to have arrived when it is still some distance away. This “auditory looming bias” has been proposed as a perceptual adaptation that gives listeners slightly more time than expected to prepare for the looming object. The bias is consistent with Error Management Theory and is supported by a wide array of comparative, physiological, behavioral, neuroimaging, and gender studies. Here, we presented listeners with equivalent looming and receding sounds from near and far distances. In two experiments, listeners estimated the velocity of each moving sound source. We found a main effect for direction of travel indicating that looming sounds were perceived as moving faster than receding sounds. However, this effect was moderated by a significant interaction. For close sounds, looming was perceived as significantly faster than receding. For distant sounds, there was no difference between looming and receding velocity judgments. Close looming sounds present greater danger and are perceived as traveling faster than equivalent distant or receding sounds. The results support the hypothesis that the auditory looming bias is an adaptation.

81. Evolutionary programming in developmental dyslexia: Neoteny and Neuroepigenetics**John Kershner (University of Toronto, john.kershner@utoronto.ca)**

This research review and synthesis advances an evolutionary account of developmental dyslexia premised on the hypothesis that an environmentally-induced alteration in the pace of brain maturation may constitute a significant factor in the etiology of the disability. Neoteny or prolonged maturation, a well-documented evolutionary concept acting over geological time, is shown to be equally viable in influencing children's cognitive development in ontogeny. The slowly developing, widely distributed neuronal networks implicit in phonological processing and reading are especially vulnerable to neuroepigenetic mechanisms acting through natural selection to produce shifts in the duration of neuroplasticity. Research in dyslexia reveals pretermitted maturation of the posterior corpus callosum associated with underdevelopment of the left hemisphere sub-lexical reading network and the dorsal parietal region of the right hemisphere system of attentional networks. Such a theoretical framework tentatively establishes dyslexia as a learning disorder of changes in brain circuitry. Thus, the underlying neurobiology of dyslexia may be characterized as a dynamic, naturally occurring adaptation to an active and ongoing gene/environment interactive process.

82. By the Stock and Honor of My Kin: Human Nature in Shakespeare's Romeo and Juliet**John Maune (Hokusei Gakuen University, jfmaune@gmail.com)**

Shakespeare has been thought by many to have had a sublime understanding of human nature. However, for too many academics in the social sciences, human nature is a fallacy, and culture is the sole sculptor of our behavior. My view of Shakespeare's bi-hemispheric globe is that he heeded Hamlet's advice to his players to act as if mirroring nature. *Romeo and Juliet* is perhaps the most performed of Shakespeare's plays and deals with a concept vital for the propagation of our species: love. This poster will interpret portions of text from *Romeo and Juliet* with evolutionary concepts—human nature—in mind, examining examples of aggression, kin selection, parental investment, mate selection, and human universals. The results lend support to the view that Shakespeare had a firm grasp of human nature, which is why his works are venerated and widely performed.

83. Attitudinal and behavioural prosociality increase with Age

Yoshie Matsumoto (Tamagawa University, mtmttyoshie@gmail.com), Yang Li, Toshio Yamagishi

Ontogenic studies of human prosociality generally agree on that human prosociality increases from early childhood through early adulthood, but it has not been established if prosociality increases beyond early adulthood. Using a sample of 408 non-student residents from Tokyo, Japan, who were evenly distributed across age and gender, and who played five economic games, we demonstrated that the behavioural as well as attitudinal prosociality shown in five economic games and social value orientation measures of prosociality increased with age beyond early adulthood. Participants' preference of advantageous (but not disadvantageous) inequity and their belief that manipulating others is a wise strategy for social success decreased (increased) with age and mediated the age effect on both attitudinal and behavioural prosociality. Participants' age-related socio-demographic traits such as marriage, having children, and owning a house weakly mediated the age effect on prosociality through their relationships with the aversion of advantageous inequity and the belief in manipulation.

84. Evolution, Religion, and Fantastical Stories: An Integrative Approach

Thomas Kristjansen (Aarhus University, tk2ugr@gmail.com)

Why are so many people captivated by stories featuring magic and worlds governed by supernatural agencies? To what extent can the study of fiction dealing with the fantastical and the supernatural benefit from evolutionary studies of literature and religion? Fantasy mediates broadly prevalent and biologically motivated human themes (including mating choices, social navigation and morality) through the use of worlds constructed on supernatural and transempirical forces in a manner akin to religion and religious stories. An evolutionary approach can help explain the prominence of supernatural elements in both kinds of stories by examining how these elements are predicated by our evolved nature and dispositions. By comparing commonalities between both kinds of stories, I argue that a synthesis of evolutionary studies in literature and in religion can create an integrated framework to better explain the deep-seated human fascination with the fantastical, and to explain the role of the counterintuitive and supernatural in multiple kinds of stories. I will take J. R. R. Tolkien's massively popular *The Lord of the Rings* as a case study, examining its resonance with evolved dispositions to demonstrate this approach in practice, and discuss the challenges and potential of such a framework.

85. Cross-Cultural Replication of Evolved Navigation Theory Predictions

Jordan E. Kizer (University of Idaho, kize9472@vandals.uidaho.edu), Kirsie Lundholm, Jesus Onofre-Murillo, Michelle E Shannon, Russell E. Jackson

Many human behavioral studies, especially in vision science, derive exclusively from WEIRD (Western, Educated, Industrialized, Rich, Democratic) samples. Most such studies fail to identify species-wide selection factors and are thus unlikely to identify species-typical behavior. As a result, their findings do not often generalize accurately across populations. An exception to this approach may exist in Evolved Navigation Theory (ENT), which proposes how several species-typical cognitive mechanisms evolved. Currently, there are no cross-cultural data yet published supporting ENT predictions and so we tested Peruvian adults for the presence of the descent illusion. Participants estimated a vertical distance from above and below, as well as a separate horizontal distance. We predicted 1) overestimation of vertical, but not horizontal, distances, 2) greater vertical overestimates from above than below (i.e. the descent illusion), and 3) average descent illusion magnitude would not meaningfully differ from that found in WEIRD populations. Data supported all three predictions. Average descent illusion magnitude was 33%, essentially identical to the WEIRD average, 32%. These data identify an ostensibly evolved, species-typical mechanism. This understanding of selection in response to navigation over evolutionary time is important for understanding modern health risks, where navigation poses the broadest accidental mortality risk worldwide.

86. Adaptive functions of male human masturbation: An online experiment with 468 men

Joseph LaMendola (University of New Mexico, drprofjoe@gmail.com), Geoffrey Miller

Sexual self-stimulation (masturbation) is common in male animals, especially primates, yet there is little research on the adaptive functions of masturbation in male humans. We hypothesized that men evolved to use masturbatory ejaculations to modulate their sexual strategies to fit the cost/benefit structures of local mating markets. Specifically, men who masturbated more recently may nudge themselves towards higher sexual patience, higher choosiness about female traits, longer-term mating strategies, higher cooperativeness with clan-mates/rivals, and lower use of deceptive, manipulative, and coercive mating tactics. We recruited 468 young men through Amazon MTurk for an 8-day experiment; they were randomly assigned to masturbate either 1 day (low desperation condition) or 8 days (high desperation condition) before completing questionnaires. More recent masturbatory ejaculations did not significantly influence any of the personality traits or sexual attitudes measured, except for two. Surprisingly, more recent masturbation reduced cooperativeness and increased psychopathy measures. These results conflict with our initial hypotheses, but they also conflict with the popular 'anti-fapping' (zero-masturbation) subculture in the Manosphere, which portrays masturbation as a pacifying, pro-social, 'beta male' activity.

87. Engagement in hobbies as a window into sexual selection

Josh Gonzales (University of Regina, gonzjosh89@gmail.com), Sandeep Mishra, Lisa Watson

Sexual selection suggests that organisms have evolved to be attractive to the opposite sex and to outcompete intrasexual rivals. In humans, one mechanism that may facilitate attractiveness to the opposite sex and outcompeting intrasexual rivals is engagement in highly skilled behaviors. Excelling at a hobby (an activity or interest pursued for pleasure or relaxation during leisure time) is one such behavior. We examined sex differences in engagement in hobbies, with the prediction that men (compared to women) would place greater emphasis on outcompeting others through potential status signaling involved in hobby engagement. We found that men and women report engaging in the same mean number of hobbies. For their most salient hobbies, however, men, compared to women, reported: (1) greater perceived hobby importance, (2) greater importance of being “better than others”, (3) that their hobbies made them more attractive to others (although not more interesting), and (4) greater willingness to spend money on hobbies. Furthermore, men reported greater engagement in competitive (vs. recreational) hobbies, and greater engagement in individual (vs. group) hobbies, suggesting an emphasis on personal status. Together, the results suggest that patterns of engagement in hobbies among men and women provides a window for understanding sexually selected motivations.

88. The roles of emotional expression and dominant shape in the motivational salience of men's faces

Thomas Richardson (University of Glasgow, thomasrichardson140293@outlook.com), Amanda C Hahn, Lisa M DeBruine, Benedict C Jones

Research on the motivational salience of faces (the extent to which people will expend effort or sacrifice rewards to view a face) has generally emphasised positive effects of physical attractiveness. Here, we first manipulated (a) morphological cues associated with perceived dominance (high versus low) and (b) emotional expressions (angry versus smiling) in images of men's faces within a 2 (dominance) x 2 (emotion) design. We then presented these stimuli to men using a paradigm commonly used to assess facial motivational salience (a key-press task). Results suggest that emotional expressions have larger effects on the motivational salience of faces than do morphological cues of dominance.

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90. Green beards and the evolution of true altruism in Humans: the theoretical possibility and empirical evidence.

Juan Perote-Peña (Universidad de Zaragoza, jperote@unizar.es), Javier Perote, Francisco Candel-Sánchez

We introduce a simple overlapping generations model to explain the evolution of true altruism in Humans in which individual donors achieve a lower reproductive fitness than selfish individuals. All existent models of altruism (reciprocal altruism, indirect reciprocity, multilevel selection, etc.) imply that altruistic individuals (or their relatives) obtain some indirect benefit that increase their fitness above the average, so that altruism may evolve. Our model gives theoretical plausibility to a so-called “green beard” effect associated to altruism in early Humans living in large groups meeting together for safety reasons and with the cognitive ability to recognize members of the previous cohorts. The model can also be used to explain the very first emergence of costly punishing strategies (strong reciprocity) and later the spread of culture co-evolving with genes. We have also designed an experiment to test the existence of a Human psychological propensity to “reward the just”, that is, the donor in the older cohort that donated to other individuals who were donors themselves before. The first preliminary tests with using undergraduate students as subjects are promising and the final results will be collected next month.

91. Women's Sociosexuality Influences their Gaze Patterns: An Eye-Tracking Study**Judith A. Easton (Texas State University, je44@txstate.edu), Tisha Dudley, Nina R. Rodriguez, Reiko Graham**

Previous eye-tracking research has demonstrated that analyzing gaze patterns (e.g., total fixation time) to specific body regions provides information on how people determine attractiveness of others. Little is known about how mating related factors may influence gaze patterns and subsequent attractiveness ratings. To examine this, female participants ($N = 49$, $M = 21.63$, $SD = 2.40$) completed the SOI-R, provided their relationship status, and viewed lean, overweight, and normal weight male and female bodies in an eye-tracking paradigm. Results indicated total fixation time differed based on area of interest for normal weight male and female bodies. Participants spent more time fixated on the upper bodies compared to the middle or lower areas. This pattern was qualified by SOI, such that fixation time for both male and female upper bodies was longer for women with higher SOI scores. More time spent fixated to the upper body of normal weight males predicted higher ratings of attractiveness. This pattern did not hold for lean or overweight men or women. There was no effect of relationship status on gaze patterns. Results suggest women interested in short-term mating may direct their gaze to body areas that best inform about partner and competitor quality.

92. Toddlers' prosocial behaviours are sensitive to recipient deservingness**Julia Van de Vondervoort (University of British Columbia, julia.vandevondervoort@gmail.com), Lara Aknin, Tamar Kushnir, Kiley Hamlin**

Toddlers engage in prosocial behaviours (Vaish & Tomasello, 2013). Are these behaviours selective? Some researchers characterize young children as "indiscriminate altruists" (Warneken & Tomasello, 2009), while others contend that early prosociality is selective (Kuhlmeier, Dunfield, & Neill, 2014). Two studies explored whether toddlers' prosocial acts depend upon the recipient's deservingness. In Experiment 1, 32 20-month-olds watched a puppet show featuring a prosocial and antisocial individual. The prosocial or antisocial puppet then demonstrated her preference for one of two toys (see Kushnir, Xu, & Wellman, 2010) and made an ambiguous request for one. Toddlers could give her the preferred toy, non-preferred toy, or nothing. Toddler's giving behaviours were selective. They were more likely to give toys to prosocial requesters than antisocial ones, more likely to give preferred versus non-preferred toys to prosocial requesters, and gave preferred and non-preferred toys equally to antisocial requesters. In Experiment 2, 32 20-month-olds participated in the same procedure, except that the prosocial or antisocial puppet did not demonstrate a toy preference. In this case, toddler's giving behaviours did not depend on the prosocial or antisocial status of the requester. Together, these results suggest that toddlers can be selective in their prosocial behaviours, rather than indiscriminately altruistic.

93. Examining conservation psychology across cultures

Justin Busch (University of Texas at Austin, justin.ta.busch@utexas.edu), Rachel Watson-Jones, Cristine Legare

The perceptual system of humans is not evolved to deal with slowly developing environmental issues (Ehrlich, 2002; Johnson & Levin, 2009). The present study examined cross-cultural variation in reasoning about environmental conservation in the U.S. and Tanna, Vanuatu (N = 173). These populations differ on their level of interaction with the natural world, and the extent to which subsistence is a product of direct reliance on the environment. This study used eight different vignettes to assess conservation beliefs. Each vignette presented three possible reasons for engaging in conservation, moral reasons, religious or supernatural reasons, or reasons that regarded preserving a resource for future generations. Participants could also indicate the scenario did not warrant conservation. Results show that participants in Vanuatu endorse more supernatural explanations, while participants in the U.S. endorse more moral explanations. There was no difference in sustainability endorsements between countries. In the U.S., sustainability explanation endorsements were positively related to moral explanation endorsements. In Vanuatu, sustainability explanation endorsements were positively related to supernatural explanations endorsements. There were also similarities, endorsements of sustainability explanations increased with age in both cultures. Killing young animals is more moralized than land use, and hunting/fishing in both the U.S. and Vanuatu.

94. Infants' Physical Immaturity Triggers Greater Empathy in Adults

Karin Machluf-Sellers (Pennsylvania State University, kxm5600@psu.edu), David F. Bjorklund

Children exhibit neotenous, or physically immature, features, such as a large head relative to body size, adult-sized eyes, and round cheeks. Bowlby (1969) and Lorenz (1943) proposes that, in species whose young depend on care from an adult, these features evolved to increase offspring survival. The goal of this experiment was to examine whether neotenous features trigger empathy, arguably important for prosocial behavior, such as caretaking and parenting (Eisenberg & Fabes, 1998). Previous research finds that neoteny has a positive emotional influence on mother-child interaction (Langlois et al., 1995), and that adults report more overall positive emotions after viewing neotenous images (Sherman et al., 2009; 2013). These studies, however, did not examine empathy. Studies examining neoteny and empathy are oddly scarce. To examine this, 205 participants were randomly assigned to view images of neotenous, non-neotenous, or neutral stimuli. Participants then answered an 8-item empathy questionnaire (Loewen, et al., 2009). Results revealed that participants who viewed pictures of neotenous stimuli rated themselves as having significantly higher empathy than those who non-neotenous or neutral stimuli, $F(3, 202) = 2.74, p < .05, \eta^2 = .18$. These findings suggest that empathy is one mechanism triggered by neotenous features and may be adaptive to motivating care from adults.

95. Gene-culture coevolutionary dynamics of socially learned bonding rituals

Karl Frost (University of California, Davis, culturalvariant@gmail.com),

Rituals, such as synchronized movement practices, have been shown to generate prosocial emotional responses. It is suggested that this effect arises from hijacking genetically evolved behavioral dispositions, solving otherwise intractable coordination problems. As such rituals are socially learned, this sets up a potential for gene-culture coevolutionary dynamics between the rituals and the genes responsible for the hijacked behavior. I formally model the two-trait coevolutionary dynamics, both analytically and through simulations to determine under what conditions such a dynamic may be evolutionarily plausible and when it will fail due to the familiar dynamics of green beard systems. This takes a ‘genetic mismatch’ hypothesis and models it dynamically, predicting trajectories for both the socially learned behavior and the hijacked genetic trait over time. Relying on fast culture and slow genes, it demonstrates how high levels of ritual efficacy may be established through gene culture interaction, to solve cooperation dilemmas. Uncontroversially, if the benefit of the highjacked trait is sufficiently high, ritual facilitated cooperation may move to rapid fixation in the population. However, for intermediate level benefits of the hijacked gene, a mixed equilibrium state exists and the population will move through oscillations in both gene and cultural variant frequencies and, despite the establishment of altruism in the population, population mean fitness will be reduced. Such dynamics may explain both the pervasiveness of such ritual practices and their extant but relatively low levels of observed efficacy in group bonding. It also suggests a scenario where genes responsible for such prosocial responses may have been under strong negative selection pressure in our recent past.

96. Is the vertical-horizontal illusion a byproduct of the environmental vertical illusion?

**Katherine Kruger (California State University, Fullerton, kmkruger@csu.fullerton.edu),
Kayla Hernandez, Aaron Goetz**

The vertical-horizontal illusion (VHI) is the overestimation of a vertical line compared to a horizontal line of the same length (\perp). Although studied for over a century, the cognitive mechanisms that give rise to the VHI remain elusive. Jackson and Cormack (2007) suggested that the VHI might be a byproduct of the mechanisms that generate the environmental vertical illusion (EVI), which is the tendency to overestimate vertical distances (i.e., heights) relative to horizontal distances the same length. To test this hypothesis, participants estimated the height of a 61-foot (18.6-meter) vertical surface (i.e., a parking garage) from its top, then they completed a VHI task by drawing a horizontal line below a 3.6-inch (9.1-cm) vertical line while still standing on top of the parking garage. We then correlated the participants’ height estimates in the EVI to their vertical line estimates in the VHI. Additionally, to demonstrate that the EVI is robust and impervious to explicit awareness, we told a random half of our participants about the EVI (i.e., that people overestimate heights), and to avoid making this error. Despite explicit awareness of the EVI and being incentivized to be accurate, participants still drastically overestimated the height, speaking to the strength of the EVI.

97. The Vertical Horizontal Illusion as a byproduct of the Environmental Vertical Illusion

Katie Kruger & Kayla Hernandez (California State University, Fullerton, kayceeaych@csu.fullerton.edu,)

This study examines the relationship between the Environmental Vertical Illusion (EVI) and the Vertical Horizontal Illusion (VHI). We hypothesize that participants' EVI estimates will positively correlate with their VHI estimates made in an ecologically valid setting (at a height). Further, it is predicted that when participants are informed of the EVI prior to their estimations, the illusion will persist. It is also hypothesized that the EVI will persist when subjects are tasked to draw their own recreation of the perceived horizontal and vertical distances from a fixed point opposite them. Pearson's r will be used to compare the relationship between subjects' reported EVI and VHI estimates, an independent t -test will be used to compare the magnitude of the EVI between subjects informed of the illusion and a control, and a two-way ANOVA to examine the relationship of cognitive awareness and line placement (left, right, or center) in the VHI, we seek to provide evidence that the VHI is a two-dimensional byproduct of the EVI.

98. Life History Theory and the Endorsement of Child Support Policies

**Keelah Elizabeth Grace Williams (Arizona State University, keelah.williams@asu.edu),
Jaimie Arona Krems, Steven Neuberg**

Traditional predictors of child support compliance focus on demographic factors such as race, income, marital status, and education. However, we suggest that a biological framework—life history theory—can contribute unique insights into understanding child support attitudes. Life history theory predicts that individuals differently prioritize investment in parenting effort: “Fast” life history strategists engage in earlier reproduction, higher numbers of offspring, and lower parental investment, whereas “slow” strategists engage in later reproduction, fewer offspring, and higher parental investment. In two studies, we apply these ideas to better understand the public's endorsement for child support policies—specifically, mandatory paternity testing. Study 1 finds that people who are sexually unrestricted—a proxy for “fast” life history strategy—are more favorable towards mandatory paternity testing than people who are sexually restricted. This effect holds after controlling for socioeconomic status. Study 2 manipulates the perceived ratio of men to women in an environment—an ecological driver of life history strategy—and finds that an unequal sex ratio influences both men and women's attitudes towards mandatory paternity testing. Taken together, these findings suggest that life history theory may be a valuable framework for understanding individuals' endorsement of child support policies.

99. The Seven Pillars of Sexual Morality**Kelly Asao (The University of Texas at Austin, kellyasao@gmail.com), David Buss**

Across every society there exist moral rules governing the sexual domain. Nonetheless, extant theories have largely ignored the domain of human conduct most heavily and universally moralized—sexual conduct. Across three studies, we investigated people's intuitions about sexual morality. In Study 1, participants rated the moral wrongness of 25 sexual acts performed by men and by women. Study 2 used an act nomination procedure to create an extended list of sexual acts in order to create a comprehensive Sexual Morality Inventory. In Study 3, participants repeated the procedure of Study 1 for the extended list of 70 sex acts. Through PCA factor analysis, we uncovered 7 pillars of sexual morality and created the Sexual Morality Inventory. We also found that gender, religion, personality, and mating strategy predict individual differences in people's codes of sexual morality.

100. Modeling the evolution of concealed ovulation**Kelly Rooker (University of Tennessee, Knoxville, krooker@vols.utk.edu), Sergey Gavrilets**

Humans are one of the few species in which there are no signs of ovulation visible. Not only can no other male nor female accurately know when another female is in her fertile window, not even the female herself knows. Contrast this with most female mammals who go into heat, have large sexual swellings/bright colorations around their genital areas, etc. Evolutionarily, it makes sense that females benefit from advertising their times of fertility in order to attract the highest-quality mates and ensure copulation. Because of these apparent fitness benefits, such concealment of ovulation has long been an evolutionary mystery, puzzling anthropologists, psychologists, and biologists alike. With no fossil record or concrete evidence to which to turn, little headway has been made thus far in answering it. We here use mathematical modeling to investigate this question. In this talk, I will describe six different hypotheses which have been proposed to explain why concealed ovulation first evolved in our evolutionary past. I will then describe the general mathematical modeling framework we use to identify conditions under which concealed ovulation could have evolved for each of these hypotheses, as well as compare the results obtained after analyzing each of these models.

101. Sensitivity to Relative Salary Varies by Sex and Individual Differences**Kevin M. Kniffin (Cornell University, kmk276@cornell.edu)**

Whether it is called "keeping up with the Joneses" or runaway selection or the Red Queen effect, the sensitivity of individuals to their relative standing amongst peers makes solid sense in an evolutionary framework; however, not everyone is equally interested to be the leader of their packs. In the present study, we examined the question of whether sex and individual differences influence sensitivity to one's relative salary within an organization. 464 participants who were at least 25 years old and not full-time students were randomly assigned to a scenario where they were either offered a job that (a) paid them \$80,000/year and comparably-qualified co-workers \$60,000/year or (b) paid them \$100,000/year and comparably-qualified co-workers \$120,000. Consistent with prior research, the first scenario was rated significantly higher even though the absolute value is less than the latter. Interaction effects exist, though, for sex as well as Need for Power (NfP) with both men as well as those rating high in NfP being relatively more sensitive to their relative standing. The findings offer deeper and evolutionarily-sensible insights into variation observed with respect to sensitivity to one's relative rank among peers.

102. Manly Men Eat To Impress But Do Women Care?**Kevin M. Kniffin (Cornell University, kmk276@cornell.edu), Brian Wansink, John Brand**

Disordered eating among women has been the primary focus of evolutionary studies of food consumption given its immediate clinical value. Male eating behaviors, though, also warrant analysis through evolutionary perspectives. We present a set of three studies that apply sexual selection theory to better understand over-eating among men and women. Study 1 shows that men expect that men who eat conspicuously large amounts of food will tend to enjoy relatively greater reproductive fitness when compared with similarly successful women as well as men with average appetites. While Study 1 fits with recent research showing that men tend to "eat to impress" in the company of women, Study 2 finds that women tend to consider men who eat conspicuously to be less attractive. Studies 1 and 2 jointly support the interpretation that men tend to view eating as an avenue to distinguish themselves favorably but that women are not impressed. Study 3 focuses more closely on mechanisms and finds that high masculinity – among men and women – is positively associated with unhealthy eating. The studies collectively highlight the value of evolutionary perspectives for understanding eating behaviors known to have relevance for long-term health.

103. The Other Language Effect and Voice Pitch Preferences**Kelyn Montano (McMaster University, montak@mcmaster.ca), Paul Fracarro, Sari Isenstein, David Feinberg**

Perceptual abilities in the voice and face become specialized for native stimuli ontogenetically. The other-face effect is illustrated in manipulation studies wherein men have a stronger preference for feminized versions of faces in native stimuli. As facial and vocal cues are related and may provide similar cues to mate quality, it is reasonable to predict that there may be an other-language effect in voice pitch preferences. In the present study, we examined if the strength of voice pitch preferences varied between native and foreign languages. We had English, Cantonese and Urdu female speakers listen to voices in several languages and rate them for attractiveness and sex typicality. We found that when English and Cantonese speakers rated men's voices they rated them as more sex typical and rated lower voices as more attractive when the men spoke the women's native languages. We did not see a native language bias with Urdu listeners but there were language based effects. Our results suggest that preferences may vary depending on the languages of the vocalizer and the listener, but these effects are not universal.

104. Human life history strategies: Calibrated to external or internal cues?**Kristine Chua (Oklahoma State University , kristine.chua@okstate.edu), Aaron Lukaszewski, Oliver Sng**

Human life history (LH) strategies are theoretically regulated by developmental exposure to environmental cues that ancestrally predicted LH-relevant world states (e.g., morbidity-mortality rates). Recent modeling work has raised the question of whether the association of childhood family factors with adult LH variation arises via (i) direct sampling of external environmental cues during development, and/or (ii) calibration of LH strategies to internal somatic condition (i.e. health), which itself reflects cumulative exposure to variably propitious environments. The present research tested between these possibilities through surveys involving over 900 subjects. Subjects completed questionnaires assessing components of recalled environmental harshness, health status, and various LH-related psychological phenotypes (e.g., mating strategies, paranoia, anxiety). Path analyses demonstrated that exposure to high family neglect and neighborhood crime had direct effects on LH indicators as well as indirect effects on LH indicators mediated via health status. These findings suggest that human LH strategies may be calibrated to both external and internal cues, and that such calibrational effects manifest in a wide range of psychological and behavioral phenotypes.

105. To Swipe Left or Right: Sex Differences in Tinder Profiles

Barry X. Kuhle (University of Scranton, barrykuhle@gmail.com), Dayton O. Beasley III, William C. Beck, Sara M. Brezinski, Diana Cnudde, Kimberly D. Lavelle, James B. Moran, Emily N. O'Connor, Alyssa M. Piranio, Roger C. Woehrle

Before the internet, evolutionary psychologists explored the nature of “lonely hearts” personal advertisements in newspapers to identify what women and men actually look for in and how they advertise themselves to potential romantic partners (Thiessen, Young, & Burroughs, 1993). Here we explore what heterosexual women and men seek and how they sell themselves on the modern and popular mobile dating app Tinder. After creating a fake male and a fake female Tinder account, we content analyzed the profiles and pictures of 272 female (Mage = 23.0 years) and 374 male (Mage = 26.3) Tinder users. Most users were from Pennsylvania, New York, and New Jersey. On the seeking front, as predicted women were significantly more likely than men to list more traits sought (e.g., height) and more traits to avoid (e.g., a short-term relationship) whereas men appeared more interested than women in a short-term relationship. On the selling front, as predicted men were significantly more likely than women to signal that they were funny, athletic, and of high status while women used more pictures than men to capture a user’s interest. Discussion will focus on the prospects and pitfalls of studying Tinder as a window into humans’ mating psychology.

106. Want to Hookup?: Sex Differences in the perceived effectiveness of short term mate attraction tactics

T Joel Wade (Bucknell University, jwade@bucknell.edu), Carly Downs

Using act nomination methodology, the present research sought to determine which actions are used by heterosexual men and women to solicit a hook-up partner (Study 1), and to determine which of these actions are perceived as most effective by men and women (Study 2). Actions that suggest sexual access were expected to be nominated most often by women while actions that suggest a willingness to commit were expected to be nominated most often by men. Additionally, men and women were expected to rate actions by men that suggest a willingness to commit as most effective and actions by women that suggest sexual access as most effective. The results were consistent with the hypotheses. These findings are explained in terms of prior research on sexual solicitation, sexual strategies theory, and hookups.

107. The Role of Anxiety In Pareidolia and Detection of Camouflaged Animals.**Farhad Dastur (Kwantlen Polytechnic University, kevinbsmith14@gmail.com), Kevin Smith**

The tendency to perceive meaning in otherwise meaningless noise may contribute to conspiratorial ideation and magical thinking. Such a tendency makes evolutionary sense, especially when viewed from an error management perspective in which selection favoured individuals with a bias for making Type 1 errors. Given that the propensity to seek order, predictability, pattern, and agentivity is heightened during situations of uncertainty, we hypothesized that inducing anxiety would increase pareidolia and increase the detection and threat assessment of camouflaged animals. Anxiety was induced in participants by completion of challenging cognitive tasks (reasoning, memory, and attention) under conditions of evaluation. The State-Trait Anxiety Inventory and the Personal Need for Structure Scale were used as manipulation checks. A computer-modified version of the Snowy Picture Task were used to assess pareidolia. Images of camouflaged animals were used to determine speed and accuracy of detection as well as threat assessment. Results will be discussed in terms of error management theory and findings from previous research on pattern perception, uncertainty, conspiracy ideation, and magical thinking.

108. Hormonal Correlates to Deception are Moderated by the Dark Triad Traits.**Laura K Dane (Douglas College, danel@douglascollege.ca), Marlene McCaffery, Megan Walker, Peter K Jonason**

We investigated the relationship between hormones, the Dark Triad traits (i.e., Machiavellianism, psychopathy, and narcissism), the ability to deceive others, and the ability to detect deception. Video recordings of multiple statements (i.e., either true or lies), self-reported Dark Triad scores, and saliva samples (pre- and post lies) were obtained from male and female undergraduates. An mTurk sample watched the target videos and judged which statement they believed to be a lie. Among raters, higher psychopathy scores were associated with better lie detection abilities. Targets who were higher on the Dark Triad traits were the best liars (regardless of gender), while the female target who was low in the Dark Triad traits was the worst liar. Among women, higher scores for Machiavellianism and psychopathy were related to decreases in Testosterone and Cortisol after having to lie on video, while the pattern was reversed for males. Results are discussed in terms of adaptive benefits of individual difference variation, and the cheater detection hypothesis.

109. Pointing in Human Evolution: Development Matters.**Olga Vasileva (Simon Fraser University, ovasilev@sfu.ca)**

Development and functioning of early forms of communication such as pointing gesture in humans' ontogenetic and phylogenetic development have serious implications for the evolution of human language and cognition. Unfortunately, multiple hypotheses regarding these questions rest on certain assumptions about development of pointing and its relation to other domains of human cognition and behavior. Despite the fact that pointing development and functioning is a well-established area of research with an abundance of studies conducted on the topic, there is still no complete agreement on question of its evolutionary uniqueness for humans and role in language development (e.g. Leavens, 2004; Gillespie-Lynch, et al., 2013; Fagard, 2013). In my talk I will first argue that treating pointing as a behavioral communicative phenotype, not just a limited form of communication, is useful for understanding its evolution. I will also argue that careful examination of the pointing development not only in infancy but over the lifespan warrants questioning certain assumptions regarding the evolution of human communication and its proxies in other communicative systems, as well as stresses its uniqueness. I will conclude my talk by suggesting further avenues of research that can contribute to our understanding of human communicative evolution.

110. Good Fat/Bad Fat and Cognitive Function.**Steven Gaulin (Department of Anthropology, UC Santa Barbara, gaulin@anth.ucsb.edu),
William D. Lassek**

In normal, healthy humans a high percentage of body mass is fat, with women being about 2.5 times fatter than men. This derived state may be explained by the unusually large human brain, which is 50% fat on a dry-weight basis and must be produced from maternal resources. The rare omega-3 fat, DHA, comprises about 1/7 of all brain fat and is especially critical because of its role in neural membranes. Dietary supplies of omega-3 have been declining while supplies of omega-6 fats—which compete metabolically—have been dramatically increasing. Such dietary shifts may compromise cognitive performance. With 29 nations as the units of analysis, we tested this hypothesis using published reports of maternal breast milk fatty acid content as an indicator of neuro-developmental resource supply and teen's PISA test scores as an indicator of brain function. Across all three PISA tests—math, science, and, reading—the omega-3 and -6 supply better predicted national averages than did major economic variables such as per capita GDP or expenditures on public education.

111. Looking Near And Far From An Evolutionary Perspective**Ximena Katz (Clinica Las Condes, ximekatz@gmail.com),**

Refractive errors of the eye are a growing public health concern worldwide. Myopia has specially been rising alarmingly in its prevalence, almost certainly because of environmental factors. Although its optical treatment is relatively easy, it still carries significant risk of blindness later in life. On the other hand, presbyopia is so common that if you are not a myope you are bound to suffer it after midlife. Despite recent surgical advances, its treatment remains frustratingly disappointing. Are these pathologies then, if they are so common? Or do they convey a mismatch between our ancestral visual-tasks demands, for which the refractive drift of the eye across our lifespan was probably shaped, and our current modern environments? Would the concept of dysevolution better frame our way of thinking about them and suggest novel therapeutical approaches? Visual requirements of our human ancestors living as hunter gatherers will be explored based both on available data from hunter gatherers as well as from observations of primates and monkeys in the wild. The environmental factors recently implicated in the current myopia epidemic will be revised in light of evolutionary thinking. In this contested field, evolutionary medicine offers a framework to address current challenges.

112. Further evidence for featural processing of facial kinship cues**Lisa DeBruine (University of Glasgow, lisa.debruine@glasgow.ac.uk), Rosie Gordon, Eilidh Turner**

Previous studies have shown that kin recognition from facial appearance relies on spatially localised (featural) cues, rather than spatially distributed (configural) cues. Here, we present two further tests of the hypothesis that allocentric kin detection does not rely on configural information. First, we found that kinship detection was not decreased by face inversion in either the original paradigm where face pairs were simultaneously presented for an unlimited duration or in a new paradigm where face pairs were sequentially presented for a brief duration. Second, we found that computer-graphic manipulation of configural information in face images did not influence kinship detection. These studies provide further evidence that kin recognition from facial appearance is not simply a byproduct of face perception abilities such as identity recognition.

113. #shoutyourabortion: Disclosures of abortion experiences on social media**Lora Adair (Lyon College, lora.adair@lyon.edu), Elizabeth Wilson, Madolyn Miller**

According to life history theory, organisms face many “trade-offs” relevant to the allocation of limited resources. One such “trade-off” involves prioritizing investment in one’s own growth and development or prioritizing investment in the production of offspring. Little work has investigated the relationship between these decision-making forces and abortion (a decision to put off current reproduction in order to increase somatic investments). Study 1 addresses this need by investigating the relationship between abortion decisions and expected investment through disclosures of abortion experiences on social media (N = 433 #shoutyourabortion tweets, 3.9% male), finding that these disclosures were likely to include mentions of expected paternal investment. In study 2, these findings are extended to explore the relationship between the media and perceptions of abortion (N = 118, Mage = 19, SDage = 1.29, 50.8% male), finding that regardless of the accuracy of information provided, participants overwhelmingly endorsed false beliefs about abortion, particularly men. Participants were likely to overestimate the number of women seeking abortions after their second trimester and often reported inaccurate beliefs regarding the emotions commonly reported to follow an abortion. Political ramifications are discussed, as our findings suggest that attitudes about abortion are a strong motivating force for political party associations.

114. The evolving function of the primate nose**Lucia Jacobs (University of California, Berkeley, USA , jacobs@berkeley.edu)**

We primates are classified by our noses, specifically our nose (i.e., -rhine) shapes, as strepsirhines, catarrhines or platyrrhines. Yet the olfactory system of primates and other vertebrates remains largely a mystery, the only vertebrate sensory system whose neural code remains unbroken. One reason may be that a major function of olfaction is spatial navigation. Many patterns of olfactory allometry, plasticity and behavior can be explained in light of this function (Jacobs, 2012, PNAS). Vertebrates have two olfactory systems, however: the main and the more recently evolved vomeronasal system. Why the vomeronasal evolved is not clear, as both its function and distribution vary widely, from prey choice signals in snakes to sexual pheromones in rodents. More remarkably, unlike the universally present main olfactory system, the vomeronasal is lost in unpredictable patterns across vertebrates, for example in birds and catarrhine primates. I present here the PROUST (perceiving and representing odor utility in space and time) hypothesis to explain why the vomeronasal evolved, why its loss in catarrhines is explained by a general cognitive function of the vomeronasal and why this function led to the loss of vomeronasal in catarrhines, even before its eventual supplanting and substitution by the evolution of trichromatic vision.

115. Like father, like son: the significance of genetic relatedness for father-child relationships**Lucy Blake (University of Cambridge, lb377@cam.ac.uk)**

When it comes to fatherhood, the discipline of psychology appears to be divided. From an evolutionary perspective, biological relatedness between parents and children is typically considered to be the motivating factor behind parental investment and care. Conversely, from a developmental perspective, relationships between fathers and children who are not genetically related have been found to be just as likely (and in some cases, more likely) than fathers and children who are genetically linked to be characterised by warm, positive relationships. However, more recent work from the evolutionary perspective has found that parents invest more in their adoptive children than their naturally conceived children. Likewise, developmental studies have reached conclusions that might have been predicted by theorists in evolutionary psychology, as parents who conceive using donated sperm have been found not to share this information with their children out of a concern that disclosure might have a negative impact on the father-child relationship. So how significant is genetic relatedness for relationships between fathers and their children? This presentation will present qualitative data from fathers who have experienced both genetic and non-genetic parenthood, contributing to the synthesis of developmental and evolutionary perspectives and understandings of the significance of genetic relatedness for fatherhood.

116. Early Life and Young Adulthood Predictors of Fathers' Hormonal Reactivity During Interactions with Their Toddlers**Mallika S. Sarma (University of Notre Dame, msarma@nd.edu), Lee T. Gettler**

High rates of extrinsic mortality appear to select for “faster” life histories across species. If organisms are adaptively attuned to environmental cues of extrinsic mortality in early life, this may influence within-species variation in life history pace and reproductive behavioral strategies. Accordingly, early life experiences are possible factors influencing patterns of social behavior across development, the emergence of reproductive strategies, and the underlying physiology thereof. These early life effects might particularly contribute to the facultative expression of human fathering and paternal psychobiology. Drawing on data from fathers ($n = 43$) in Metro Cebu, Philippines, we observed no significant relationship between early life social experiences (sibling death, paternal instability, and maternal absence) and later life acute reactivity of testosterone and cortisol in fathers during interactions with their toddlers (all $p > 0.1$). However, we found that men who had fewer life time sexual partners or later ages at first sex had larger declines in testosterone ($p < 0.05$) and larger declines in cortisol ($p < 0.05$) after playing with their toddlers. Thus, we find modest evidence supporting the notion that later life “fast” life history behaviors, rather than early life psychosocial stressors, predict paternal testosterone and cortisol reactivity in parenting contexts.

117. The effect of spatial scales on a searching task

Marcos F. Rosetti (Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, rosetti_m@yahoo.com), Bertha Valdez, Robyn Hudson

The decision processes involved in searching behavior are often assumed to be similar despite differences in the dimensions in which the subjects are required to search. However, many sensorimotor processes are reduced when searching tasks are moved from field situations to experimental rooms or to computer screens. In this study we tested children (6 to 12 yrs old, n=246) in experimental situations which required searching for objects hidden under opaque containers, so that children had to pick up containers in order to find and collect the items underneath. We used 4 different scales to gradually reduce the sensorimotor component involved in searching: (1) a 50 x 70m soccer field, (2) a 5 x 7m floor area, (3) a 50 x 70cm table surface, and (4) a computer game which simulated the dimensions of the soccer field. We evaluated the linear distance traveled between containers, the number of mistakes (containers lifted more than once) and rates of collection (number of target objects obtained by distance). Performance had a clear relationship with age on the soccer field, but not on the floor and table searches. Also, searchers on the virtual environment had a notably poorer performance, with fewer collections and more mistakes.

118. Filicides Committed by Mother's Boyfriend

Maria Jovanovski (Oakland University, jovanovskimaria@gmail.com), Viviana A. Weekes-Shackelford, Todd K. Shackelford

The killing of a child by a parent—filicide—has been explored within several academic disciplines. Despite this investigation, there is much we do not know about the psychology that motivates filicide. Previous research guided by an evolutionary psychological perspective indicates that stepparents, relative to genetic parents, are overrepresented as perpetrators of filicide, and more likely to use more brutal methods of filicide. In addition, previous research suggests that mother's boyfriend are at greater risk than stepfathers for perpetrating child abuse. We extend this research by comparing the rates and methods of filicide committed by mother's boyfriends, stepfathers, and genetic fathers. We hypothesize that the greatest rate of filicides will be committed by mother's boyfriends, followed by stepfathers, and the lowest for genetic fathers. We also hypothesize that filicides by mother's boyfriends will be the most brutal, followed by stepfathers, and the least brutal for genetic fathers. We use the National Incident-Based Reporting Series (NIBRS), 2001-2013 to test these hypotheses. Discussion addresses how the non-marital status of a couple might increase the risk of filicide by a mother's partner, coding limitations in the dataset, and implications for prevention.

119. Intersections Between Parental Sleep Quality, Testosterone, Individual Well-Being, And Relationship Happiness

Mariana Tumminello (University of Notre Dame, mtummine@nd.edu), Eva B. Niklinska, Julia M. Braungart-Rieker, E. Mark Cummings, Jennifer Burke, Mallika S. Sarma, Lee T. Gettler

Mothers and fathers have lower testosterone levels than nonparents. Men who experience sleep deprivation also exhibit lower testosterone levels. In new mothers, sleep deprivation has been associated with postnatal depression. Less is known about the effects of sleep on parents' testosterone. Sleep deprivation and low testosterone may produce similar negative mood effects but diverging effects on relationship functioning. In a study at the University of Notre Dame, we recruited families with young infants in which parents reported their normal sleep patterns, overall well-being, and perceived relationship happiness using widely validated psychological surveys (n=31 families). We also measured salivary testosterone in both mothers and fathers. Within couples, mothers' and fathers' relationship happiness were strongly positively linked ($p < .0001$). Fathers with poor sleep quality had significantly lower testosterone than fathers who got sufficient sleep ($p = .006$), while mothers' testosterone levels did not vary with sleep quality ($p > .1$). Counter to our hypotheses, poor sleep quality was not correlated with overall well-being or relationship happiness in mothers and fathers (all $p > .2$). These results suggest that within a relatively small sample, low testosterone was not a driving factor linking sleep with well-being or happiness.

120. The Scent of a Good Night's Sleep: How Partner's Scent Influences Sleep Quality

Marlise Hofer (University of British Columbia, hofer@psych.ubc.ca), Dr. Frances Chen

Sleep is a vulnerable state, during which conscious monitoring of potential threats is impossible. Throughout evolutionary history, proximity to in-group members during sleep may have afforded humans increased safety. During sleep, scent may provide a cue about the presence of known others. Indeed, past research shows that scent cues presented during sleep increase brain activation. Additional research demonstrates that scent cues from a mother exert a calming effect on her child. Could scent cues from a significant other provide similar benefits for adults? The present research investigated this question on forty heterosexual couples. Men provided a worn shirt, and women slept for two nights with their partner's shirt and two nights with a clean shirt. Sleep efficiency was measured using Actigraph sleep watches. Results revealed that women slept more efficiently while exposed to the scent of their partner (compared to no scent). Additionally, relationship quality was associated with this effect. The more women felt they could depend on their partner, the more benefit they received from sleeping with their partner's scent. This line of research may uncover new insights to the role of olfactory cues in sleep, and may lead to practical implications for increased sleep quality in everyday life.

121. Endocrinological correlates of infanticide by males in non-human primates: A phylogenetic analysis**Mateo Peñaherrera Aguirre (University of New Brunswick, mpeaher@unb.ca), James Zerbe, Heitor Barcellos Ferreira Fernandes, Isabel Garcés Dávila**

According to the sexual selection hypothesis, infanticide should occur in species where infant death results in females returning to estrus and subsequently being more likely to conceive the offspring of the infanticidal male. It's also posited that taxa characterized by longer periods of lactation compared to gestation will be exposed to higher infanticide risk. Here we examined endocrinological variations among 32 primate species exhibiting different levels of infanticide. Species data on circulating testosterone, relative cortisol, infanticide presence, and proxies of infanticide risk (lactation/gestation ratio and inter-birth interval lactation- gestation difference), were compiled. We hypothesized that taxa with infanticidal males exhibit (1) higher testosterone levels, as females may aggressively defend their infants or solicit protection from another male; (2) higher cortisol levels, due to the infanticide-related distress; (3) the evolutionary rates of these variables correlate across clades. The first hypothesis was supported by a General Linear Model and, similarly, a positive relationship was found between lactation/gestation ratio and testosterone levels. No relationship was found between cortisol and infanticide. To avoid issues with pseudo-replication, analyses with Phylogenetic Generalized Least Squares and Phylogenetic Contrasts were also conducted, confirming results. Hence, results support the theorized associations between infanticide and circulating testosterone levels.

122. Extrapolation, Idealization, and Analogical Reasoning in Laboratory Micro-Cultures**Mathieu Charbonneau (CEU, Cognitive Science, mathieu.charbonneau1@gmail.com), Helena Miton**

Laboratory studies of social transmission and cumulative culture, such as chain transmission, replacement, and closed-group methods, aim to recreate and study cultural phenomena into the laboratory. The epistemological underpinnings of such "laboratorization" of natural human cultures are far from clear. In this paper, we discuss three forms of reasoning used to construct and interpret results of micro-cultural laboratory experiments. Idealization is used in compressing large, structured human populations, their rich natural setting, and the trans-generational time-scale of cultural processes into a manageable laboratory set-up. Analogical reasoning is used to transform population-level properties of natural cultural phenomena into measurable behaviors and properties of individual test subjects. Finally, extrapolation is used to build from the experimental results obtained in the laboratory generalizations concerning actual cultural processes. All three forms of reasoning are fraught with implicit assumptions and trade-offs that experimentalists rarely if ever discuss along with their published results. We discuss several of these key assumptions and trade-offs and briefly suggest potential ways to address them.

123. Life History Strategies and Political Conservatism: Contrasting Right Wing Authoritarianism and Social Dominance Orientation**Matt Hayes (Winthrop University, hayesm@winthrop.edu), Jeff Sinn**

Thornhill and Fincher (2007) present evidence suggesting liberals show avoidant, and conservatives secure, attachment styles. Recent research suggests difference within conservatism, with Right Wing Authoritarianism (RWA) reflecting an honest-cooperator, and Social Dominance Orientation a deceptive-cooperator, strategy (Heylen & Pauwels, 2015). Agent-based simulations suggest cooperative groups with selfish leaders outcompete more homogenous groups (Makowsky & Smaldino, n.d.). Such divergent strategies may reflect alternative life history (LH) strategies. We explored this possibility with a more comprehensive measure of LH strategy (Arizona Life History Battery, ALHB; Figueredo, 2007) and recently redefined, multicomponent measures of SDO (Ho et al., 2015) and RWA (Duckitt & Bizumic, 2013), predicting RWA to correlate with slow, and SDO fast, LH strategies. We also examined whether SDO facets, Opposition to Equality (OEQ) and Group Based Dominance (GBD), might reflect different LH strategies. Participants (N=172 Americans) completed ALHB, RWA, and SDO scales. As predicted, RWA correlated with slow, and SDO fast, LH. The RWA-Conservatism and RWA-Traditionalism subscales related most consistently to LH strategy, driven primarily by religiosity. No LH differences between SDO subscales emerged. These results suggest the possible role of LH in explaining differences among different types of conservatism.

124. Effect of Copulins on Rating Female Attractiveness, Mate-Guarding and Self-Perceived Sexual Desirability**Megan Williams (University of Pennsylvania , meganwil@sas.upenn.edu), Amy Jacobson**

A mixture of five volatile fatty acids produced through the anaerobic activity of bacteria and secreted vaginally, identified and named “copulins,” were first suggested as a sexual attractant in studies using rhesus monkeys. Human studies find men exposed to copulins exhibit an increase in testosterone, are inhibited in discriminating the attractiveness of women’s faces, and behave less cooperatively in a tragedy of the commons paradigm. Here, we attempted to replicate Jütte and Grammer’s (1997) finding that copulins inhibit the ability of men to discriminate the attractiveness of women’s faces and we examined the role of copulins in self-reported mate-guarding behaviors and self-perceived sexual desirability. We utilized a placebo-controlled design and as predicted, results indicated men exposed to copulins were more likely to rate themselves as sexually desirable to women and, on average, the copulin group rated women’s faces as more attractive than controls. Mate-guarding analyses did not produce significant findings.

126. Sex differences, structured pathways, and travelling distance in a virtual reality path-recall task.**Melissa Kirby (University of Leicester, mk217@le.ac.uk), Carlo De Lillo**

Tasks assessing spatial cognition often show a male advantage in accordance with evolutionary theories. During search, humans benefit from the organisation of a foraging space, though this often confounds with the distance to-be-travelled. The present study used a new experimental paradigm requiring serial recall within a navigational space. Participants travelled through a virtual reality environment, where locations were arranged in clustered 'patches' or a matrix, within large and small search spaces. Participants were required to walk trajectories through the search space that followed either structured sequences, where consecutive visits to locations were within the same row, column, or cluster, or unstructured sequences which violated this pattern, before a recall phase began. Findings indicated that males recalled sequences significantly more accurately than females, whilst overall, participants recalled structured sequences significantly more accurately than unstructured sequences, regardless of the distance travelled through the search space. This male advantage in the recall of to-be-visited locations supports the notion that males may have evolved superior spatial memory skills. Results also indicate that in humans, organisational factors appear to play an important role in minimising the memory demands for efficient foraging. This has important implications for the understanding of cognitive evolution.

127. The evolution of same-sex attractions: Parental and intimate partners' reactions to deviations from exclusive heterosexual orientation**Menelaos Apostolou (University of Nicosia, m.apostolou@gmail.com)**

A considerable portion of the population experiences same-sex attractions. It is argued that such attractions had been predominantly the outcome of weak selection pressures during the period of human evolution. In particular, parents and intimate partners exhibited considerable tolerance towards such attractions, especially if they came from daughters or wives respectively. On the basis of this evolutionary framework three hypotheses are derived and tested: First, it is hypothesized that men experience less distress than women by the same-sex attractions of their opposite-sex partners. Second, it is hypothesized that parents experience less distress by the same-sex attractions of their daughters than of their sons. Finally, the hypothesis is tested that the distress of partners and parents over the sexual attractions of their mates and children respectively, is contingent upon the degree of the same-sex attractions: The more these attractions deviate from exclusive heterosexual orientation, the stronger the reactions will be. Evidence from two independent studies finds support for all three hypotheses. These findings are applied in understanding the prevalence of same-sex attractions in contemporary populations, where more women exhibit same-sex attractions than men and where heterosexual orientation with same-sex attractions is more prevalent than bisexual and homosexual orientation.

128. Perceived Formidability in Incapacitated Men**Michael Lopez (California State University, Fullerton, michaeldlopez@csu.fullerton.edu),
Arron T. Goetz**

Human history has been plagued by violence and aggressive competition. Because these conflicts often had high fitness costs, we expect selection to have designed mechanisms that facilitate judgments and decision making in these contexts. For example, recent research suggests that a man holding a weapon leads others to perceive him as taller, larger, and more muscular (Fessler, Holbrook, & Synder, 2012). Physical incapacitation has also been shown to decrease participants' estimates of their own formidability and over-estimate that of others (Fessler, & Holbrook, 2013). What has yet to be examined is whether cues of physical injury have an effect on judgements of formidability. That is, does seeing an injured male cause you to think him as shorter, smaller, and weaker? Participants were presented with photos of males in varying degrees of incapacitation and were asked to make various estimates related to the formidability of each male. The results of this study have far reaching implications.

129. Sex Differences in Young Adults' Physical Attraction to their Opposite-Sex Friends: Natural Sampling versus Mental Concepts**Whitney Joseph (University of Wisconsin-Eau Claire, josephwe@uwec.edu), April Bleske-Rechek**

Studies in which men and women are asked to think about and report on their opposite-sex friendships have found that men report more attraction to their friends than women do. Expecting to replicate the sex difference, we approached male-female dyads at a university student center (40 of whom were friends) and surveyed each partner. We failed to document a sex difference in attraction. We conducted a replication. Again, male friends did not differ reliably from their female friends in reported attraction. We reasoned that men's and women's mating adaptations, which differ particularly in proclivity towards short-term sex, are reflected in how men and women conceptualize opposite-sex friends; hence, previous studies may have documented a sex difference in attraction because men and women in those samples had different types of people in mind when they thought about opposite-sex friends. To test that possibility, we asked young adults to "think of an opposite-sex friend" and then choose descriptors for that person. Men less often than women characterized the person as "a friend" and more often than women characterized the person as someone they were "attracted to." We conclude that men's and women's everyday experiences with their opposite-sex friends differ somewhat from their mental definitions of opposite-sex friends.

130. Coalitional Playfighting: Implications for the Evolution of Coalitional Intergroup Aggression**Michelle Scalise Sugiyama (University of Oregon, mscalise@uoregon.edu), Marcela Mendoza, Lawrence Sugiyama**

Human males are hypothesized to have evolved cognitive adaptations specific to coalitional intergroup aggression. Complex adaptations, in turn, are expected to have a developmental mode, which may include an aesthetic component motivating the organism to engage in experiences that provide the module with information and weightings needed for proper construction and/or calibration. We therefore hypothesize that the coalitional intergroup aggression module includes an aesthetic component that motivates males to engage in what we call coalitional playfighting. On this view, coalitional playfighting should be universal in males, and should include motor patterns used in actual coalitional intergroup aggression. To test this hypothesis, we used ethnographic accounts of forager warfare to generate a list of eight motor patterns involved in lethal raiding. Next, Murdock's Ethnographic Atlas was used to generate a sample of forager societies: the search yielded 228 culture groups in 100 culture clusters. For each culture cluster, the ethnographic record was searched for descriptions of team play; information was found for 39 of the 100 culture clusters. Descriptions were then coded for the presence of the predicted motor patterns. Results indicate that the hypothesized behavior is widespread across forager groups.

131. How did Human Morality and Law Co-evolve? -- Survey on the Famous "Trolley Problem" with Possible Legal Punishment as an Example /**Mikihiko Wada (Ph.D. & Professor, Faculty of Law, Hosei University, Tokyo, JAPAN, mwada@i.hosei.ac.jp)**

I address the titled issue by discussing the so-called "Trolley Problem." Much has been discussed on this moral/ethical Problem (Greene 2013; Edmonds 2014), while little has been explored of this as a legal question. I experimented hundreds of subjects, ages 18-73, with diversity. Firstly, I asked them the traditional morality/ethics questions (with no possibility of subsequent legal punishment), as Part I. They were questioned if they would "take action" to save the lives of five men by killing one "fat man." Secondly, I posed the identical questions, mentioning there could be a due legal punishment, as Part II. The results were surprising: approximately half the subjects answered exactly the same for Parts I and II, which may well prove the co-evolution of morality and law, and further support the existence of a so-called "Law Instinct" (Guttentag 2009). The other half, however, significantly changed their answers, and decided to take no or less action, letting the five men die, in Part II. Only the answers by this other half, who draw clear distinction between morality/ethics and law, should be taken up as "real answers" to this Problem as a pure moral/ethical question. Results shed new light on this famous Problem.

132. False-positive responses to 'eyeless gaze-shift' stimuli in human infants and adults**Mikolaj Hernik (Central European University, hernikm@ceu.hu), Gergely Csibra**

Adults expertly perceive direction of static gaze by relying on luminance-contrasts typical of human eyes (with dark pupil surrounded by light sclera), and on eye and head geometry. However, neonates' and young infants' responses to averted gaze direction are driven by motion, and limited to dynamic gaze-shifts and head-shifts occurring in ostensive-communicative contexts. Current series of eye-tracking studies using spatial-cueing paradigm demonstrates that both six-months-old human infants and human adults extract directional information from dynamic shifts in local luminance-ratios by expecting gaze-like luminance-contrast relations even in the absence of the geometric context of human eyes and face. In 6-month-olds spatial cueing by this 'eyeless gaze-shift' cue was limited to conditions in which the luminance-shift cue was accompanied by infant-directed speech. The false-positive response to the eyeless gaze-shift cue in both 6-month-olds and adults, together with its dependence on ostensive context in infants, point to an ontogenetically stable gaze-shift processing system implemented in simple sensorimotor adaptations that might co-evolved in humans alongside our unique eye-morphology and communication system.

133. The past is not a foreign country: Historical knowledge increases altruism in adults and children**Minna Lyons (University of Liverpool, m.lyons@liv.ac.uk),**

Much evolutionarily informed research has focussed on the puzzle of altruism, and the proximate factors that promote it. Breakdown in altruism is a major problem especially in poorer areas of urban cities, and could be related to low sense of belongingness to the community. One aspect of belongingness is emotional connection to the history of the community, based on the human capacity for mental time travel. It is possible that priming people with the history of the local community increases altruism. In two experimental studies on adults and children, we investigated the effects of local history prime, vs future/present prime on Dictator Game contributions. In Study 1, secondary school children who participated in a local history workshop increased their Dictator Game donations after the workshop. In Study 2, adults who browsed historical photographs on the internet had significantly higher donations to a local charity in comparison to participants who browsed contemporary photographs. Our findings suggest that priming people to think about the history of their community may be used as a tool for increasing altruism. The proximate mechanisms, as well as the ultimate connections between mental time travel and altruism should be investigated further in future studies.

134. Prestige signals influence rates of engaging with our surroundings**Miranda Lucas (University of Lethbridge, lucas@uleth.ca), Christina Nord, Josephine Mills, Louise Barrett**

Cultural evolution models suggest that “context biases” exert a strong social influence on people’s public behaviour, and that people are sensitive to indicators of prestige. To address this, we conducted systematic observations of people in four locations on a university campus that varied in prestige signals. We observed i. a bare connecting corridor, ii. a corridor with a view of the surrounding landscape, iii. a corridor containing a display of awards and university regalia (as an obvious display of social prestige of others) and iv. a corridor containing professionally mounted art from the University Gallery (a display that would potentially enable people to signal their own prestige). We recorded the number of people who either i. looked at their surroundings, ii. stopped or iii. moved without engaging in any way. We used ordinal logistic regression to investigate whether prestige and presence of others influenced behaviour. The results suggest that people were more likely to look at displays of prestige than at artworks, but that they were more likely to stop in the presence of art. We also found that the number of other people present in the space influenced the likelihood of looking and stopping.

135. Terror Is What "They" Do To "Us": Coalitional Psychology and Lay Intuitions About Terrorism**Miriam Lindner (Aarhus University, mira.lindner@ps.au.dk), Michael Bang Petersen, ,**

We argue that lay people's intuitions about terrorism are structured by evolved mechanisms designed to identify and respond to coalitional conflicts. Specifically, we predict that the coalitional mind spontaneously equates "terrorism" with instances of coalitional aggression where "they", the outgroup, seek to harm "us", members of the ingroup. To test this prediction, we presented a representative sample of 1006 Danes with 64 vignettes describing various potential terrorism scenarios. This allowed us to test the effect of different sets of cues - including the ingroup/outgroup membership of the perpetrator and victim - on evaluations of (1) whether the act is best viewed as an act of "crime" or "terrorism" and (2) appropriate responses. In line with the coalitional perspective, our findings provide strong evidence that the concept of "terrorism" is particularly likely to be applied to acts where "they" harm "us" and that such scenarios trigger aggressive responses that are likely to curtail democratic rights. These findings shed light on the 'empathy gap' – the fact that foreigners' attacks on Americans or Europeans capture the attention, concern, and outrage of the respective publics in a way that similar atrocities committed either by fellow nationals or in foreign countries often fail to evoke.

136. Direct exchange or indirect exchange; which exchange enables the evolution of cooperation in social dilemmas?**Misato Inaba (Hokkaido University, shangrileaf@gmail.com), Nobuyuki Takahashi**

Since social dilemmas (SDs) are often embedded in other types of social exchange, excluding SD defectors in other exchanges functions as a costless punishment. Recently such 'linkage' (Aoki, 2001) has been considered as one promising solution to resolve SDs. We conducted a series of agent-based simulations to examine the effectiveness of two different types of exchange when linked with SDs. Specifically, we examined direct exchange (DE), in which direct reciprocity could occur between two individuals, and indirect exchange (IE), in which indirect reciprocity could occur between three or more individuals. In the IE condition, several linkage strategies were evolutionarily stable and enabled the maintenance of cooperation in SDs. The common characteristic of the ESSs was utilizing reputation in order to refuse allocating resources both to SD defectors and also to non-linkage SD cooperators. In the DE condition, however, no linkage strategy was an ESS. Since each player did not know their partner's behavior with other players, it was hard to discern whether or not they employed linkage. Consequently, non-linkage players were not excluded from direct exchanges. These findings suggest that cooperation in SDs can evolve only when reputational information of each player are available to all members of society.

137. Gods and Moral Models: Findings from a Brazilian Population**Montserrat Soler (Montclair State University, soler8@gmail.com)**

Recent literature on the evolution and cognitive science of religion has focused on the biological and cultural evolution of religious beliefs (e.g., Johnson 2016; Norenzayan 2016). Much of this work is concerned with the moral content of religious traditions as represented by ideas of supernatural punishment and gods that monitor and reward prosocial behavior. However, there is still a significant dearth of empirical studies that specifically examine the moral content of non-Western traditions. Here, findings from Northeastern Brazil are presented to shed light on these issues. In this area, Christianity and African Diasporic religions have coexisted for at least four centuries. Although the latter have often been characterized as syncretic amalgams of Western, indigenous and African elements, there has been little research to explore how much overlap actually exist between the different models of morality represented by each of these traditions. Ethnographic data on the concerns of both religious adherents and gods representing divergent religious systems is utilized to untangle distinct notions of morality and their possible association with particular ecological conditions.

138. Moralistic anger is triggered by violations of socially shared norms**Naoki Konishi (Kobe University, nkonishi@lit.kobe-u.ac.jp), Kanako Tanaka, Tomoko Oe, Hiroshi Shimizu, Yohsuke Ohtsubo**

People occasionally experience moralistic anger, that is, anger elicited in response to another—unrelated—individual's moral violation. Such moralistic anger is often implicated as a proximate emotional cause of altruistic punishment. However, Batson et al. (2007) showed that people only get angry at moral violations (specifically, violations of fairness) when they are concerned about the victim's welfare. Their conclusion is that apparent moralistic anger is in fact vicarious anger, which is mediated by empathy toward the victim. What, then, happens when moral violations involve no obvious victim (e.g., someone appears naked in a public space)? If people still get angry, how can this be explained? In a series of three studies (two vignettes and one experiment), we revealed that whether people experience moralistic anger hinges on their belief in the social sharedness of the violated norm. In the vignette studies, participants reported stronger anger when they believed that a majority of people would condemn the hypothetical violation. In the experimental study, we manipulated the perception of sharedness with bogus feedback regarding others' opinions. The same violation scenarios caused stronger anger when participants were led to believe that a majority of fellow participants condemned the violations.

139. Female-Directed Violence as a Form of Sexual Coercion in Humans**Nicole Barbaro (Oakland University, nmbarbar@oakland.edu), Todd K. Shackelford**

Male-perpetrated female-directed violence may facilitate greater sexual access to a female. Accordingly, female-directed violence is expected to be associated with greater copulation frequency. Research on nonhuman primates affirms this hypothesis, but no previous research has investigated this relationship in humans. The current research tests the hypothesis that female-directed violence is associated with in-pair copulation frequency and, thus, may function as a form of sexual coercion. It was predicted that men who perpetrate female-directed violence will secure more in-pair copulations than men who do not perpetrate violence (Prediction 1a), and that average monthly rates of female-directed violence would positively correlate with in-pair copulation frequency (Prediction 1b). Male participants ($n = 355$) completed a survey and reported demographic information, in-pair copulation frequency, and history of violence perpetration. As predicted, violent men secured more in-pair copulations, on average, than nonviolent men, and monthly rates of violence positively correlated with in-pair copulation frequency. In humans, as in nonhuman primates, female-directed violence by males may facilitate greater sexual access to a female. We discuss the implications of the current research for an evolutionary perspective on partner violence, and draw on findings in nonhuman primates to highlight profitable avenues of research on female-directed violence in humans.

140. To remove or not to remove: An illustration of the effect of outlier removal on significance testing in testosterone data.**Thomas V. Pollet (VU University Amsterdam / NIAS, t.v.pollet1981@gmail.com), Leander van der Meij**

Outlier removal is common in hormonal research. Here we investigated to what extent removing outliers in hormonal data will lead to differing statistical conclusions. We first show that the most common outlier detection rule is based on a number of standard deviations from the mean (SD). Next, we simulated the degree to which removal based on a 2.5 and 3 SD rule vs. inclusion of those outliers leads to diverging statistical conclusions (at $p < .05$) for independent samples t-test and repeated measures ANOVA designs. Simulations were based on real testosterone (T) data and a theoretical gamma distribution of T data, for different sample sizes (30 to 100) and rules (2.5SD vs. 3SD). Our simulations showed that for the t-test scenarios the statistical conclusions differ for between 14% to 54% of the tests. Estimates of median differences suggest median differences 3% to 6% in terms of p values. For the RM-ANOVA design, the conclusions differed in 7% to 28% of the tests, with median estimates of p value difference ranging from 1 to 3%. We suggest several potential solutions for handling outliers and we strongly recommend a careful assessment of handling outliers in hormonal data.

141. Predictors Of Mother-Infant Adrenocortical Attunement: Potential benefits of synchrony**Nikki Clauss (Oklahoma State University, nikki.clauss@okstate.edu), Kristine Chua, Jennifer Byrd-Craven, Shelia Kennison, Maria Jovanoski**

The purpose of this study was to understand the relationship between mother-infant communication and mother-infant adrenocortical attunement, and whether personality and social support factors play a role in this relationship. It was hypothesized that mothers who talk more to their infants would be more physiologically synchronized with their infants, as measured by salivary cortisol. The relationship between mother-infant adrenocortical attunement and personality and social relationship variables was also explored. Participants were 24 mothers and their infants aged 3-9 months. Mothers were asked to complete a questionnaire inquiring about the average time they spend talking to their infant throughout the day, as well as measures for personality and social support. Saliva samples were collected from the mother and infant immediately following completion of the questionnaire. Mother-infant adrenocortical attunement was obtained by calculating the absolute value of the difference between the mothers' cortisol and the babies' cortisol, with lower numbers reflecting greater attunement. A Pearson correlation analysis revealed a significant relationship between the time mothers reported talking to their infant and adrenocortical attunement. Further, a multiple regression analysis indicated that social support and couple satisfaction were predictive of adrenocortical attunement. These results have important implications for child cognitive and language development.

142. The Dark Side of Female Mating: How the Dark Triad Affects Competitor Derogation in Women**Nina N. Rodriguez (Texas State University, nnr12@txstate.edu), Judith A. Easton**

Previous research suggests possession of the Dark Triad characteristics in men increases the likelihood of their success when competing for access for female partners. However, not much previous research has examined how these traits may influence women's intrasexual competition tactics. Women who possess Dark Triad traits may be able to successfully derogate potential sexual rivals more than women who do not possess these traits. Female college students ($N = 519$, $M = 19.86$, $SD = 2.32$) completed the Short Dark Triad scale (SD3; Jones & Paulhus, 2014), and answered 41 items about use of specific derogation tactics (taken from Buss & Dedden, 1990) in an online questionnaire. Results indicated participants high in all three Dark Triad traits used the following derogation tactics more than participants low in all three: spread rumors about competitor, derogated competitor's habits, socially ignored competitor, and labeled competitor promiscuous, unpopular, exploitative, emotionally unstable, and a tease. Exploratory regression analyses indicated being high in narcissism specifically predicted derogating a competitor by spreading rumors, and being high in psychopathy predicted derogating by calling a competitor emotionally unstable. Current results indicate Dark Triad traits influence intrasexual competition tactics in women- especially the type of derogation used against female competitors.

143. Toward an Integrative Framework for the Evolution of Human Worldviews**Liane Gabora (University of British Columbia, liane.gabora@ubc.ca)**

It is often suggested that culture is an evolutionary process, but it has not been established in what sense culture evolves. To say that culture is Darwinian is not just to say it consists of variation plus selection; it is to say evolution is occurring because selection is affecting the distribution of randomly generated heritable variation across generations. I show this is not the case in culture, and suggest that cultural evolution research could benefit from considering the role of epigenetic (non-Darwinian) evolutionary processes. Recent research indicates that early life evolved through a non-Darwinian process referred to as communal exchange (CE) that does not involve a self-assembly code, and natural selection emerged several hundred million years later from this more ancestral evolutionary process. CE entails self-organization of components into interacting autocatalytic wholes; it is haphazard compared to selectionist evolution but sufficient for adaptive change. In this talk I explain the theoretical basis for a CE based scientific theory of cultural evolution, and explain why it is consistent with high levels of human cooperation. I outline evidence for the theory from experiments with human participants, a computational model of cultural evolution, and a conceptual network based program for documenting material cultural history.

144. Animacy Memory Advantage Across Memory Systems and Development**P. Douglas Sellers II (Pennsylvania State University, pds5183@psu.edu), David Bjorklund, James Nairne**

A memory advantage exists for animate words over inanimate words (Nairne et al., 2013) suggesting an evolved preference for the processing of animate stimuli. This advantage is potentially evidence of a broad cognitive bias for processing animate stimuli, similar to the animacy-monitoring hypothesis (New, Tooby, & Cosmides, 2007). In a series of 3 experiments, the animacy memory advantage was replicated for words and images, extended to a prospective memory paradigm, and the first developmental data on the subject were collected with 2nd and 5th graders. The word ($F(1,46)=52.74, p<.01, \eta^2=.534$ (animate words, $M=55.5\% >$ inanimate words, $M=42\%$)) and image advantage ($F(1,96)=4.50, p<.05, \eta^2=.045$) were replicated, animate words serve as more efficient cues for prospective memory ($t(48)=3.10, p<.01, \text{Cohen's } d = .322$), and the advantage exists in both 2nd ($t(42)=19.9, p<.001$) and 5th graders ($t(30)=4.22, p<.001$). Together, these 3 experiments confirm the existence of the animacy bias in word recall and image recognition, extend the advantage to prospective memory, and provide the first evidence for an animacy bias early in development, a strong argument for an evolutionary processing preference.

145. Most People Keep Their Word Rather Than Their Money

Patricia Kanngiesser (Department of Education and Psychology, Freie Universität Berlin, patricia.kanngiesser@fu-berlin.de), Jan Kristian Woike

It has been suggested that words are cheap and that people will break their word in the absence of a threat of punishment (Hobbes, 1651; Farrell, 1987). Yet, most of us are familiar with situations where promises are kept without external pressure or an opportunity to benefit from reciprocation in future interactions. We conducted a study to gauge the extent to which people will keep their promises in the absence of external incentives to do so. Some of our participants had the opportunity to give a voluntary promise to take an amount of money and pay some of it back at a later point in time (there were no sanctions for breaking the promise). We compared this condition to a baseline condition, in which money was offered without a promise given, yet with the same free choice to return some of it. Most participants took the money, and a large majority of participants (and significantly more than in the baseline conditions) paid money back in the promise condition. The findings suggest that participants are intrinsically motivated to keep their word, even when it means losing money.

146. The Relationship Between Formidability and Aggression in Men: A Meta-Analytic Review

Patrick Durkee (California State University, Fullerton, pachrekd@csu.fullerton.edu), Aaron T. Goetz

Aggression can be understood as a tool for correcting offenses and preventing future transgressions, but the effectiveness of physical aggression is highly dependent on the formidability of the aggressor. Thus, physical aggression should be more likely to be implemented by more formidable individuals than by less formidable individuals. Previous research has found mixed support for this relationship; the current meta-analysis addresses this discrepancy. Studies were eligible for inclusion if a correlation between men's formidability and aggression was reported. The scope of this meta-analysis is limited to men because sex differences in aggression may confound the overall effect size estimate. A total of 19 eligible studies were identified and coded for analysis (N = 2,745). Random effects models indicated a small, but statistically significant, positive correlation between formidability and aggression in men. The estimated effect differed by type of aggression measured, where formidability was positively associated with physical and mixed aggression, but not statistically associated with verbal aggression. Additionally, different measures of formidability, age, and sample population did not moderate the estimated magnitude of the effect. These results contribute to an understanding of aggression as an adaptive behavioral strategy and highlight effective methods for future studies on the topic.

147. Are Political Values Explained By Personality Or Mating Success? - An explorative analysis**Ilmari Määttänen (University of Helsinki, [immumaattanen@gmail](mailto:immumaattanen@gmail.com))**

Political psychology is an old research topic; however, much of it is related to studying political leaders or 'narrow' set-ups studying a certain aspect of political decision-making or opinions. Wide-scale questionnaires studying a wide range of variables simultaneously in the same study, including mating success, personality, well-being, ethical views and political orientation, are rare. In this study we collected a survey sample of 430 people from the University of Helsinki, mean age of 26 years. 24.7 % of the respondents were male. Several variables were collected, including mating success, personality, socioeconomic variables and family background, depression, rumination, general health, ethics, political values and self-esteem, among others. From the political values questionnaires, two major factors were derived exploratively: 'right-wing' orientation (a low level of trust towards the state and high trust to the private sector, valuing money etc.), and 'red/green' orientation (supporting income redistribution and environmental protection). Associations with 'mating success' and political values and other traits were studied. In males, 'mating success' was defined by the number of sex partners and whether they reported being able to attract as 'high quality' long-term partner as they desired. The strongest association with male mating success was self-reported income; no such association among females was found.

148. The Psychopathic Relationship: The Pathway from Psychopathy to Relationship Quality**Phil Kavanagh (University of South Australia, phil.kavanagh@unisa.edu.au), Cheryl Feltham, Samantha James**

What are the factors that characterize an intimate relationship for someone high on the Dark Triad traits (i.e., Machiavellianism, narcissism, and psychopathy)? In the current study (N = 163) we examined the associations between the Dark Triad traits, adult intimate relationship attachment style (anxiety and avoidance), communication patterns (coercive and destructive), and intimate relationship quality. Analyses revealed that higher levels of psychopathy were associated with avoidant attachment, coercive and destructive communication styles, and lower relationship quality. The results from a serial mediation model suggest a dark path of adult intimate relationships starting with psychopathy and ultimately ending with lowered relationship satisfaction. The results add further evidence about the destructive nature of the dark triad personality traits in relationships.

149. Associations Between Psychosocial Adversity And Epigenetic Aging: Avon Longitudinal Study Of Parents And Children.**R Lawn (University of Bristol, rebecca.lawn@bristol.ac.uk), EL Anderson , M Suderman, AJ Simpkin, C Relton, I Penton-Voak**

In environments with high extrinsic mortality and morbidity, it is proposed that 'fast' life history strategies, which prioritise reproduction early in life, may be favoured. Childhood psychosocial adversity is associated with both accelerated reproductive histories and earlier onset of morbidity in adulthood, suggesting accelerated aging is a characteristic of 'fast' life history strategies. Epigenetic clocks predict the rate of aging from DNA methylation, and hence potentially provide a biomarker of life history strategy. Here, we investigate whether exposure to psychosocial adversity during childhood associates with accelerated epigenetic age (the discrepancy between chronological age and epigenetic age). Women from a pregnancy cohort self-reported adverse childhood experiences, which were factor analysed to obtain a psychosocial adversity score. Epigenetic age was derived at 28y (n=904) and 48y (n=868) using the Horvath algorithm. There was weak evidence for an inverse association between childhood psychosocial adversity and accelerated epigenetic age at 48y; per standard deviation increase in the psychosocial adversity score, epigenetic age was 0.35 months lower than chronological age (95% CI: -0.74, 0.05). Psychosocial adversity was not associated with accelerated epigenetic age at 28y. Psychosocial adversity does not appear to associate with accelerated epigenetic age in this cohort of young to middle aged women.

150. "I'd give you the kidney off my back": Social biogeographic antecedents of group-directed altruism**Rafael Antonio Garcia (The University of Arizona, ragarci2@email.arizona.edu)**

Strides have recently been made toward mapping ecological and psychosocial influences on intelligence and cognitive differentiation (Figueredo et al, in prep.). This work extends that class of models into the domain of group-directed altruism. Using data from the fifty United States of America, this talk presents the results of an investigation of various state-level characteristics that influence group-directed altruism (non-directed kidney donations). Preliminary results suggested that a biodemographically- estimated life history factor can account for approximately half of the variance in group-directed altruism, but remained agnostic on any potential causal mechanism(s). In this presentation I will outline and test an evolutionary psychological framework that can (at least partially) account for between state differences in group-directed altruism. This cascade model will explore relations among biological, psychological, and sociological variables to present a hypothetical causal model that explains these differences and expands upon prior research devoid of any evolutionary foundation.

151. When BOLD is Thicker than Water: Processing Social Information About Kin and Friends at Different Levels of the Social Network**Rafael Wlodarski (University of Oxford, rafael.wlodarski@psy.ox.ac.uk), Robin I. M. Dunbar**

The aim of this study was to examine differences in the neural processing of social information about kin and friends at different, matched levels of closeness and social network level. Twenty-five female participants engaged in a cognitive social task involving different individuals in their social network while undergoing fMRI scanning to detect BOLD signals. Greater levels of activation occurred in several regions of the brain previously associated with social cognition when thinking about friends than when thinking about kin, including the Posterior Cingulate Cortex and the ventral Medial Prefrontal Cortex (vMPFC). Linear parametric analyses across network layers further showed that, when it came to thinking about friends, activation increased in the ventral Medial Prefrontal Cortex (vMPFC), Lingual gyrus, and Sensorimotor cortex as individuals thought about friends at closer layers of the network. These findings suggest that maintaining friendships may be more cognitively exacting than maintaining kin relationships.

152. Women, Attraction, And Menstrual Cycle Effects**Rei Shimoda (independent, shimoda.rei@gmail.com), Anne Campbell, Robert Barton**

There has been debate about the extent to which women's attraction to in-pair and extra-pair partners fluctuates over the menstrual cycle. According to the good genes hypothesis, women possess a dual mating strategy, obtaining genetic benefits through mating with extra-pair men with high-fitness genes when fertile, while forming stable pair-bond relationships with men who provide care and/or resources. By contrast, the commitment hypothesis proposes that attachment bonds with primary partners function to strengthen long-term relationships by enhancing attraction towards partners at the high fertility phase, rather than to extra-pair men. In the present study, we tested these two hypotheses by measuring women's sexual and emotional attraction towards their romantic partner and their sexual attraction to other men. There was a general mid-cycle rise in sexual desire for primary partners and extra-pair men. Emotional attraction towards partners showed no variability across cycle phases. Furthermore, partner's sexual attractiveness and mutual commitment did not moderate these findings, providing no support for either the good genes or commitment hypotheses. The results imply that the cycle shift effects might not be directly associated with ovulation, and suggests that in addition to the adaptive interpretations, non-adaptive interpretations should receive more consideration.

153. Welfare-tradeoff Ratios in Children

Rhea Howard (Department of Psychology, Harvard University, rhoward@fas.harvard.edu), Annie Spokes, Samuel Mehr, Max Krasnow

Will I share my sandwich with you? While this may seem like a simple question, the answer depends on multiple features of our relationship (are we kin, are you formidable, will we interact again?) and of the situation (am I hungry? are you? how good is this sandwich, anyway?). These variables coalesce into a single decision – do I or do I not share my sandwich? But this simple output masks a complex internal calculus. Adults display remarkable consistency when making decisions like this, trading off others' welfare against their own. But when does this ability come online? Does this capacity require extensive experience of the social world to learn or mature, or do children reliably develop this capacity even before they have power to allocate anything? One hundred sixty-seven 4-11 year olds ($n = 167$) made resource allocation decisions for a friend and for a stranger in a child-friendly welfare-tradeoff task. Like adults, children reliably allocated resources consistent with a single switch point, and were just as consistent at 4 as they were at 11. The only developmental shift we observed was that children expressed higher WTRs with increasing age.

154. The Evolution of Knowledge Creation

Ruqin Ren (University of Southern California, ruqinren@usc.edu)

Using the evolutionary theory framework of the variation, retention, selection process, this paper explains the collective knowledge creation behaviors online, with Wikipedia as an example. Evolution is presented as a trial-and-error process that produces a progressive accumulation of knowledge. The underlying theoretical assumption is that even though online communities feature very different characteristics than traditional organizations, the basic processes of trial-and-error learning in evolutionary theory still apply to the new forms of organizations. This paper draws from the theory of evolutionary epistemology, and also the evolutionary perspective in organization theory. Using Donald Campbell's blind-variation-selective-retention model, the processes of knowledge variation and selection are explained in depth with examples observed on Wikipedia. By viewing the global knowledge system as a nested system that supports different levels of human practices of knowledge creation, the paper suggests that Wikipedia is one part of a hierarchy of vicarious selectors that the system developed. This is ultimately helpful for finding the most "fit" knowledge-environment interaction. The paper also demonstrates how several structural characteristics in the platform design facilitate the evolution process of knowledge creation.

155. Social and Sexual Risk Taking as Costly Trait Signals**Ruth Sarafin (University of New Mexico, sarafin@unm.edu), Geoffrey Miller**

Costly signaling, a derivation of the handicap hypothesis, posits that humans may engage in dangerous or seemingly-irrational behavior if the action displays an attractive quality about the actor. Recent research suggest that specific actions, such as Meriam turtle hunting, are best explained by costly signaling, as success on a turtle hunt increases social prestige (Bird, R. B., Smith, E., & Bird, D. W. (2001)). However, little research has been done on more universal forms of behavior. In the current study, we seek to understand social risk taking as a form of costly signaling: do high social risk, high social reward actions, such as raising one's hand in class, disagreeing with an authority figure, or approaching an attractive stranger across the bar, signal underlying personality traits that others find attractive in friends and romantic partners? To study this phenomenon, participants read vignettes about individuals who engage in various forms of social risk (either successfully or unsuccessfully) and then rated the protagonist on several personality dimensions and attractiveness scales. The results hold implications not only for costly signaling, but judgement and decision making, biases, and gendered personality differentiation during puberty.

156. Evolved psychology distinctly tracks willingness and ability to protect**Sakura Arai (Department of Psychological & Brain Sciences, University of California, Santa Barbara, arais.torp.513@gmail.com), Michael Barlev, Leda Cosmides, John Tooby**

Parental investment theory (Trivers, 1972) predicts that females will prefer males with willingness and ability to provide resources such as food and physical protection to her and her offspring. However, surprisingly little research has focused on willingness as a variable distinct from ability, despite the fact that even the most resource-rich male is not a desirable mate unless he shows willingness to offer his resources to his mate. The present study teased apart willingness and ability in mate preferences for physical protection, one of the most survival-critical resources men can offer. In a between-subjects design, women rated a man's attractiveness after reading vignettes in which he showed high vs. low willingness to protect them. In contrast to men demonstrating high willingness to protect their mates, men who displayed low willingness were rated as significantly less attractive both as short-term and long-term mates, regardless of their ability to physically protect, as suggested by information about their physical strength. As a predicted sex difference in mate preferences, the effect sizes of willingness were significantly larger in women rating men ($\eta^2 = .50$ to $.68$) than in men rating women ($\eta^2 = .06$ to $.20$).

157. Cross-Cultural Variation Of The Postpartum Care Practices In Traditional Societies**SangKwon Woo (University of Missouri, woosangkwon@gmail.com)**

The practice of traditional postpartum care varies across human populations worldwide, but the conventional medical system has hardly recognized intensive postpartum care or chronic postpartum pain of the women later in life. This study used comparative methods applied to cultural traits in order to explore whether the behavioral variation had stemmed from ecological components, cultural transmission, or human ancestral history. Cross-cultural data were collected from ethnographic literature and analyzed with the cultural traits variables including the extensive care after childbirth, diet, hygiene and physical warmth practices. While ecological conditions do not seem to be fair predictors for the variation of the cultural practice, the results provide an informative method for exploring how the cultural traits initiated and changed, and which human population has maintained certain folk medicine in traditional societies.

158. Evaluating Risk-Taking In A Cooperative Context Using A Tower Building Task**Santiago Gracia Garrido (Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, santiagogg.fadrique@gmail.com), Robyn Hudson, Marcos Rosetti**

Risk-taking behavior has been extensively studied in humans in a large variety of situations. Observations and experimental research have shown that men tend to get involved more frequently in risky situations, while women tend to prefer more predictable outcomes. However, risk-taking behavior has been much less studied in cooperative contexts. What happens when groups of humans cooperate in tasks that involve risks? Is there any modulation effect in mixed gender teams? What effect does age have in the adoption of risky behaviors? The present study attempts to evaluate risk-taking behavior in male, female and mixed gender dyads of age-paired children (6 and 12 yrs old) and college students using a tower building task (TBT). On the TBT, subjects must pool their assigned wood pieces in order to build a tower as tall as possible. Subjects can keep building towers until time is up or stop at any moment if satisfied with their results. We analyzed the association between the number of times the structure collapsed and the cumulative height achieved during the construction process. Preliminary findings show that older male dyads produce taller towers, while younger dyads engage in producing short, repetitive structures.

159. Are Acute Changes In Endogenous Testosterone Associated With Changes In Cellular Immunity?**Sarah Bay (University of California Santa Barbara, Sarahbay@umail.ucsb.edu), Ben Trumble, Leo Kalina, Eli Lustig, Aaron D. Blackwell**

Testosterone (T) has long been thought of as immunosuppressive. Administration of exogenous testosterone reduces immune-responsiveness, and in free-ranging animals and humans, studies find correlations between levels of testosterone and measures of immunity or disease. However, both designs leave open questions. In observational studies it is difficult to assess causality, as individuals in poor condition may simply have both lower T and poorer immunity. In experimental studies, exogenously administered testosterone is often at higher levels than would occur naturally, and administration is outside of context, which may circumvent other physiological regulatory mechanisms. To address these issues, we examine whether naturally induced changes in endogenous T are associated with short-term immunological changes. To naturally induce changes in T we employ two factors that have reliably affected T in past studies. For heterosexual men, even a brief interaction with a female confederate can cause an increase in T. T also increases in the context of competition, particularly when observed by potential mates. Here we employ both of these factors to induce a change in endogenous T. We measure salivary and serum testosterone before and after the interaction, and quantify immunity by measuring total leukocytes, lymphocytes, granulocytes, hematocrit and platelets.

160. Reasons Why Self-Identified Heterosexual Women Engage in Same-Sex Sexual Behavior in Relation to The Allomothering Hypothesis**Sarah Radtke (, marsveg77@hotmail.com)**

Women who self-identify as heterosexual often engage in same-sex sexual behavior. Why does this occur? One theory is the allomothering hypothesis that proposes women engage in same-sex sexual behavior to pair-bond with women and secure allomothering benefits. The study consisted of 115 participants, and examined why heterosexual/mostly straight women (women identified as heterosexual to family and friends) participated in same-sex sexual behavior. Several motivations were presented. Women indicated the reason(s) they engaged in same-sex sexual behavior. The reasons presented were “internal” e.g. “It felt like the right thing to do” and “external” e.g. kissing another woman to receive attention from men. The hypothesis was women who engaged in same-sex sexual behavior for internal reasons would be more likely to rate their same-sex partner as having traits of a good mother. The hypothesis was supported. To further explore why heterosexual women engaged in same-sex sexual behavior, a thematic analysis was performed. 44 of the 115 women answered the question “Please describe the context or situation in which you experienced physical or emotional attraction to a woman.” Five themes were found: Friendship, alcohol/parties/bars, College, being around lesbian/bisexual women, and “other.” Findings will be discussed in reference to the allomothering hypothesis.

161. Sex Hormones And Reproductive Success Are Influenced By Social Status In Adolescent Female Primates**Sean Coyne (The University of Chicago, spcoyne@uchicago.edu), Michael Heistermann, Karent Parker, Dario Maestripieri**

Despite knowing the progression of typically developing individuals, to date little work has been done investigating interindividual differences in timing and development of sexual behavior and maturity among adolescent female primates. In this study we investigated pubertal development, endocrine function, and reproductive success of adolescent female rhesus macaques (*Macaca mulatta*). Subjects were 22 adolescent females from one birth cohort in the Cayo Santiago population. Subjects were observed weekly for four months over their first mating season. Fecal samples were collected every 2-3 days, assayed for sex hormones, and compared using GLMMs. Reproductive success was assessed from pregnancy and parturition data. Across all females, 38 separate estrus cycles were observed. High ranking females had significantly higher levels of estrogen across the mating season compared to middle and low ranking females ($F=4.41, p=0.027$). Further, there was a trend ($F=3.27, p=0.073$) for rank related differences in estrus length. Of the 7 females that conceived, 5 were high ranking, 1 was middle ranking, and 1 was low ranking. These findings indicate that female rank is associated with differences in endocrine function and reproductive success at sexual maturity. This is among the first studies to demonstrate that rank directly impacts developing sexual characteristics which lead to differential reproductive outcomes.

162. Selective Visual Sensory and Testosterone Reactivity during a Competitive Task.**Shannin N. Moody (Iowa State University, shannin@iastate.edu), Yoojin Lee, Elizabeth Shirtcliff, Connie Lamm**

There is emerging evidence of testosterone acting as a reactive hormone to challenge or reward. Literature also shows testosterone as active within affect-related neurocircuitry to help shape social behavior. As such, we explored testosterone reactivity and N1 activation -a neurophysiological event-related-potential that indicates selective visual attention- during a modified Monetary Incentive Delay task. Participants competed for money in two rounds while playing alone and in one competitive round against confederate fictional players. Five saliva samples were assayed for testosterone across the tasks and participants were classified as either reactors (testosterone rise) or non-reactors (no rise or testosterone decrease). Across genders, When not engaged in competition reactors showed significant decrease in sensory arousal when compared to non-reactors, $F(2, 94) = 3.28, p = .05, \eta^2 = .06$. Non-reacting males showed dramatic decreases in sensory activation during competition ($p < .001$) ($p = .03$), while reactor males displayed slightly more sensory activation during competitive ($p = .1$, trend-level). During non-competitive tasks, reactors showed less activation than non-reactors ($p = .03$), whereas during competition, reactors showed more activation than non-reactors ($p = .01$). These results add evidence of testosterone being reactive to reward and challenging stimuli to help individuals confront salient social contexts.

163. The curse of knowledge and false belief reasoning

Siba Ghrear (The University of British Columbia, siba.ghrear@psych.ubc.ca), Taeh Haddock, Vivian Li, Susan Birch

In the animal kingdom, humans have evolved the most sophisticated capacity to reason about others' mental states. This capacity is however prone to bias. For example, current knowledge leads to an overestimation of what others know, limiting the ability to reason about naïve perspectives (the curse of knowledge; CK). The CK is especially influential among young children who are more likely to over-attribute their knowledge to others (Birch & Bloom, 2003). Young children's increased susceptibility to the CK is arguably one reason for their difficulty reasoning about false beliefs (FB) in classic FB tasks (Birch & Bernstein, 2007). The current study examines the effect of the CK on FB reasoning. Three-to-6-year-olds are presented with four stories where a protagonist hides an object in one of four containers. Then, in the absence of the protagonist, another character placed the object in a different container—half of the time children were told exactly which container, the other half of the time they were not. Participants were asked to predict where the protagonist would look for the object. Data collected thus far shows that children more accurately predict the protagonist's false belief when they do not have specific knowledge of the outcome.

164. Do chimpanzees plan the solution in the floating peanut task?

Sonja Ebel (Max Planck Institute for Evolutionary Anthropology, University of St Andrews, sonja_ebel@eva.mpg.de), Martin Schmelz, Esther Herrmann, Josep Call

A recent study showed that chimpanzees (*Pan troglodytes*) can solve the floating peanut task, in which a peanut can be retrieved from a transparent tube by spitting water into it (Hanus, Mendes, Tennie, & Call, 2011). However, the question about what the chimpanzees understood about this task remained open. Did they plan for the peanut to float upwards? We presented naïve captive chimpanzees ($N = 24$) with a new version of the floating peanut task, in which they had to retrieve a peanut from an opaque tube. When chimpanzees did not solve the task, they were presented with additional information (end-state condition and human demonstration). None of the subjects solved the task spontaneously. One chimpanzee solved the task after seeing the end-state condition and two more individuals spat water into the tube. Thus, we did not find strong evidence that chimpanzees plan the solution in the floating peanut task and visual feedback might be crucial for them to solving the task spontaneously. Our results fit well to recent studies showing the importance of visual feedback in nonhuman great ape problem-solving (e.g. Volter & Call, 2012). Hanus, D., Mendes, N., Tennie, C., & Call, J. (2011). Comparing the performances of apes (*Gorilla gorilla*, *Pan troglodytes*, *Pongo pygmaeus*) and human children (*Homo sapiens*) in the floating peanut task. *PLoS One*, 6(6), e19555. Volter, C. J., & Call, J. (2012). Problem solving in great apes (*Pan paniscus*, *Pan troglodytes*, *Gorilla gorilla*, and *Pongo abelii*): the effect of visual feedback. *Anim Cogn*, 15(5), 923-936.

165. Both Religious Believers And Nonbelievers Report Greater Trust In An Outgroup Religious Costly Signaler**Stefanie B. Northover (Arizona State University, stefanie.northover@asu.edu), Yochanan E. Bigman, Adam B. Cohen**

Religious behaviors can be time-consuming (e.g., praying multiple times a day), physically demanding (e.g., fasting, pilgrimage), and/or expensive (e.g., sacrificing animals, tithing), and they often fail to provide obvious benefits. Why, then, might individuals nevertheless engage in religious behavior? Costly signaling theory provides one potential explanation: Costly religious behaviors are signals of commitment to a religious group, indicating a willingness to follow the group's moral code and to cooperate with other group members. Thus, costly signalers may be perceived as especially trustworthy by other group members. The present study investigated the effect of outgroup religious costly signaling on trust as reported by religious/spiritual "believers" and "nonbelievers". The trustworthiness of a Muslim target was rated by non-Muslim participants. Both believers and nonbelievers reported greater trust in the target when he obeyed Islamic dietary law and it was costly for him to do so compared to when he disobeyed Islamic dietary law. Our results are consistent with prior findings that costly signaling can increase trust between religious affiliations. Our data further suggest that believers and nonbelievers use different criteria to form trust judgments – religious obedience and costly signaling, respectively.

166. Wealth, Power, and Fame: Evolutionary Theory Explains Why Attraction and Motivation are Multidimensional**Stephen Hausch (University of Calgary, stephenhausch@gmail.com)**

Evolutionary theory predicts that people are motivated to engage in interactions and behaviours that increase their lifetime fitness. While fitness is the ultimate motivation, work on the evolution of cooperation has identified three discrete mechanisms by which organisms can increase fitness. These are, (1) self-interest – direct gains from a one-off interaction, (2) reciprocal altruism – change in direct gains with mutual cooperation, and (3) inclusive fitness – indirect gains due to shared benefit. The relative benefit of these mechanisms varies with the probability of future interactions and current need. As such, to optimally respond to short term variability among these mechanisms, the estimated value of a partner needs to be partitioned into three components: (1) exploitable value, (2) complementary value, and (3) shared value. Further, this partitioning potentially explains an important source of personality variation as individuals should vary in the general weight they place on each of these components. I show that these three dimensions align with to the different sources of motivation/attraction identified in diverse disciplines such as interpersonal psychology, gamer psychology, business, and common wisdom. This multidimensional framework unifies these observations and generates predictions for human behaviour in the pursuit of wealth, power, and fame.

167. Trust and Gossip in Online Dating

Lara Hallam (University of Antwerp, lara.hallam@uantwerpen.be), Charlotte J.S. De Backer, Sara Pabian, Michel Walrave

In the quest to find a romantic partner trust issues have always influenced partner choice and potential outcomes. Sharing gossip about the veracity of potential partners may have evolved as a mechanism to deal with these issues. Today online dating has amplified the trust issues for those searching romance in cue-poor online environments. This study explored if and how gossip could resolve trust issues of potential online partners. A 2 (male vs. female) x 2 (gossip tag vs. control) survey-experiment amongst 218 singles analyzed the effect of positive gossip tags on online dating profiles. Repeated Measures ANOVA's investigated within-subject differences of perceived trustworthiness, and willingness to go out on a date, controlling for general trust levels. As expected, all respondents rated the potential candidate with the positive gossip tag (vs. without) as more trustworthy. And, compared to high trusting males, low trusting males were more likely to date a girl whose online dating profile had a positive gossip tag. However, regardless of general levels of trust, female participants were less likely to date the boy with the positive gossip tag. Thus, while gossip increases online daters' perceived trustworthiness, it fails to augment one's dating opportunities. These results will be discussed.

168. Social Support, Rank, And Testosterone In Performance Art

Steven Goicoechea (University of Notre Dame, sgoicoec@nd.edu), Mark Golitko, Gabriel A. Torres, Lee T. Getler

Previous research indicates that high testosterone levels are advantageous during intergroup competition and public performance, while low testosterone is correlated with greater empathetic behavior. Less is known about the implications of testosterone during intragroup interactions that require both competitiveness and empathy. Here, we studied a college improvisational comedy group to assess the relationships between social support, rank, empathy, and testosterone. These performers are a useful study population because group members must behave cooperatively to successfully compete for castings. Participants (n=19) rated their intragroup friendships (social support) and ranked other members based on importance to the group. We measured salivary testosterone from five separate samples per subject. Members with more social support tended to be ranked lower than those with less support ($p = 0.1$); this effect was more pronounced among women. Group members' empathy and testosterone levels did not relate to their social support or rank (all $p > 0.3$). Lastly, there was a statistical trend for an interaction between social support and rank in predicting testosterone ($p=0.071$), with highly ranked, highly socially supported subjects having elevated testosterone. While our sample size is somewhat limited, these results inform our understanding of the multidimensional behavioral correlates of testosterone during group interactions.

169. Individual Differences In Cortisol Responsivity To Stress In Women

Szymon Wichary (University of Social Sciences and Humanities, Warsaw, Poland, swichary@swps.edu.pl), Anna Ziomkiewicz

Stress reactivity is an important source of variation in adaptive responding to environment and temperament might determine individual variability in this context. To explore this, we examined the relationship between recent stress and cortisol level across one entire menstrual cycle in 114 healthy, reproductive age women. We assessed 1) subjectively perceived level of stress with the Recent Life Changes Questionnaire and 2) temperament using the Formal Characteristic of Behavior questionnaire. Based on previous studies, we identified specific constellations of temperamental traits associated with reactivity to environmental demands – the high ability to process stimulation (HAPS) and the low ability to process stimulation (LAPS) group. We also measured urinary cortisol levels during entire menstrual cycle. We performed moderation analysis, with stress level as the independent variable, temperamental group (LAPS vs. HAPS) as the moderator, and whole-cycle cortisol level as the dependent variable. Temperament moderated the relationship between recent life stress and cortisol reactivity. In LAPS women, there was a substantial association of stress and cortisol level, whereas in HAPS women, no such relation was found. We discuss these results in light of findings linking temperament with reproductive hormone levels, and point to neuroendocrine mechanisms as important sources of variation in stress reactivity.

170. The Group Size Effect on Cooperation in Social Dilemmas: A Meta-Analysis

Leonard Stijn Peperkoorn (Vrije Universiteit Amsterdam, l.s.peperkoorn@vu.nl), Daniel P. Balliet, Paul A.M. van Lange

While humans evolved in small-scale kin-based groups, modern societies tend to contain larger groups. It is unclear, however, what group size elicits most cooperation. For over several decades, researchers have proposed that group efficiency and cooperation would decrease as the size of the group increases. Yet, past research has showed somewhat inconsistent findings on how group size affects cooperation. To provide a quantitative review of the group size effects on cooperation, we report a meta-analytic review of over 45 papers that manipulated group size and measured cooperation in social dilemmas games (e.g., N-person prisoner's dilemma, commons dilemma, volunteer's dilemma, public goods dilemma). Using meta-regression techniques, we also investigated whether this group size effect was moderated by the K index of cooperation (i.e., the incentive to cooperate), the marginal per capita return (MPCR) (the private benefit for each unit contributed to the group project), the number of iterations in the game (one-shot, repeated one-shot, or repeated iterations) and the type of social dilemmas (e.g., resource dilemmas, step-level public goods, and continuous public goods dilemmas). Preliminary results indicated an overall small negative effect of group size on cooperation. We discuss the broader implications for theory and research on group size and cooperation.

171. Entitlements in the market: a closer look**Tadeg Quillien (University of California, Santa Barbara, tadeg.quillien@gmail.com)**

Assuming that judgments of economic fairness are the output of a system designed to maximize payoffs from social interactions in a context of competition for partner choice, they should be strategically calibrated to the specifics of each transaction. A basic operation of such a system should be to ensure that the payoff to the potential partner is at least more than zero. We show that, if we also assume people to know that firms in market economies typically make a low marginal profit, this explains a robust finding in behavioral economics: common sense norms of fairness allow a firm to transfer the full extent of an increase in production costs to the customer, as if firms were entitled to their usual marginal profit. We provide evidence for three predictions following from the model. First, the symmetrical situation, in which a firm keeps the entirety of a reduction in production costs for itself, is judged to be considerably less fair. Second, fairness judgments are sensitive to information about the firm's initial marginal profit, but only in situations of cost increase. Finally, in a different kind of transaction, that between a firm and its employees, the entitlement principle simply ceases to apply.

172. Psychological Sperm Competition Mechanisms And The Moderating Effect Of Romantic Attachment Style**Tara DeLecce (Wayne State University, fi0645@wayne.edu), Richard B. Slatcher, Catalina Kopetz, Andrew Krisniski, Olivia Franklin**

Evidence for sperm competition theory has mainly been found in non-human animal species. Attempts at testing the physical mechanisms of this theory in humans have been heavily criticized (Baker & Bellis, 1994), and much of the evidence supporting it in humans regards the psychological mechanisms such as men's greater interest in sexual intercourse with their romantic partner when they suspect that she has committed sexual infidelity. However, even research examining psychological mechanisms of sperm competition are overwhelmingly correlational in nature. The current study investigated these psychological mechanisms using an experimental approach. Men in relationships were either primed with the idea of sperm competition or not and results indicated that men who were primed with sperm competition reported significantly greater interest in engaging in sexual intercourse with their partner than men who were not primed in this way. Additionally, this is the first study to see how attachment style interacts with these effects. Results revealed that avoidant men were the least interested in engaging in sexual intercourse in the control condition, however this difference disappeared in the experimental condition. The implications of these findings are discussed in terms of sperm competition theory and the methods for testing it in humans.

173. Facial Symmetry, Masculinity, Testosterone, And Immunocompetence In Adolescent Bolivian Males.

Theodore Samore (Department of Anthropology, University of California, Los Angeles, theo.samore@gmail.com), Carolyn R. Hodges-Simeon, Katherine N. Hanson-Sobraske, Michael Gurven, Steven J.C. Gaulin

Facial symmetry may provide reliable fitness-relevant information, including genetic quality and immunocompetence. Pathogen exposure and other developmental insults are thought to increase facial fluctuating asymmetry (FA—deviations from bilateral symmetry). Further, masculine facial traits (i.e., large lower jaw) are thought to be testosterone (T)-dependent. Because of the handicap imposed by T, these traits may also indicate genetic quality via immunocompetence, and therefore may be negatively correlated with FA. Some research suggests that, in men, low FA is perceived as more masculine. In the present study we examine the associations between facial masculinity, FA, T, and immunocompetence during adolescence—when facial growth is canalized. Theory predicts that facial masculinity should be inversely correlated with FA, and that FA should be negatively associated with immunocompetence, thus providing cues to an individual's tolerance of T's immunosuppressive effects. We examined masculine facial traits, symmetry, salivary T, and mucosal immunity in 91 adolescent Tsimane males, and the predictions were not supported. Although several masculine facial features were significantly correlated with testosterone, there was no significant relationship between symmetry on the one hand and masculine facial features, T, or immune function on the other. These results question the proposed mechanistic links between facial symmetry and fitness.

174. Social Ecology Moderates The Extent To Which Synchrony Enhances Group Cooperation.

Thomas G. McCauley (College of William & Mary, tgmccauley@email.wm.edu), Joanna Schug, Kunihiko Yokota

Synchrony is a form of behavioral coordination wherein two or more individuals coordinate rhythmic movements with respect to spatiotemporal alignment. We propose that the tendency for synchrony to induce cooperation is dependent on the local social ecology. Individuals in societies high in relational mobility, which are replete with opportunities to join new groups, must be vigilant for cues that signal new group membership. In contrast, in societies low in relational mobility, where individuals are entrenched in their social groups. Using an experimental manipulation and a cross-cultural sample, we found that synchrony increases in-group cooperation in the USA (a high-mobility society), but not Japan (a low-fluidity mobility), demonstrating that the impact of synchrony on cooperative behavior is greater in social ecologies where group memberships are fluid.

175. Mind and Culture: A Shared Self-Deception Hypothesis**John O. Beahrs (Oregon Health and Science University, johnbeahrs@gmail.com)**

Among many complex species, how did only human beings evolve “minds” and the capacity for complex cumulative culture? A “shared self-deception hypothesis” (SSDH) proposes that ancestral hominins unknowingly colluded for self-interest beyond in-group norms, concealed this process from their own and others’ awareness, and enforced these tacit contracts by threat of counter-betraying whistleblowers to in-group punishment. Such interactions promote sub-group cooperation where interests otherwise conflict. With sufficient third-party involvement, they can become self-reinforcing and quasi-substantive – “memes”, upon which complex culture evolves, but which differ from genes in being irreducibly complex and socially context-dependent. The SSDH resolves anomalies such as self-contradictions in hypnosis research, consciousness and volition, and symbolic language. Reframability leads to formidable problems for scientific testing, but corresponding opportunities for therapeutic intervention when problematic.

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