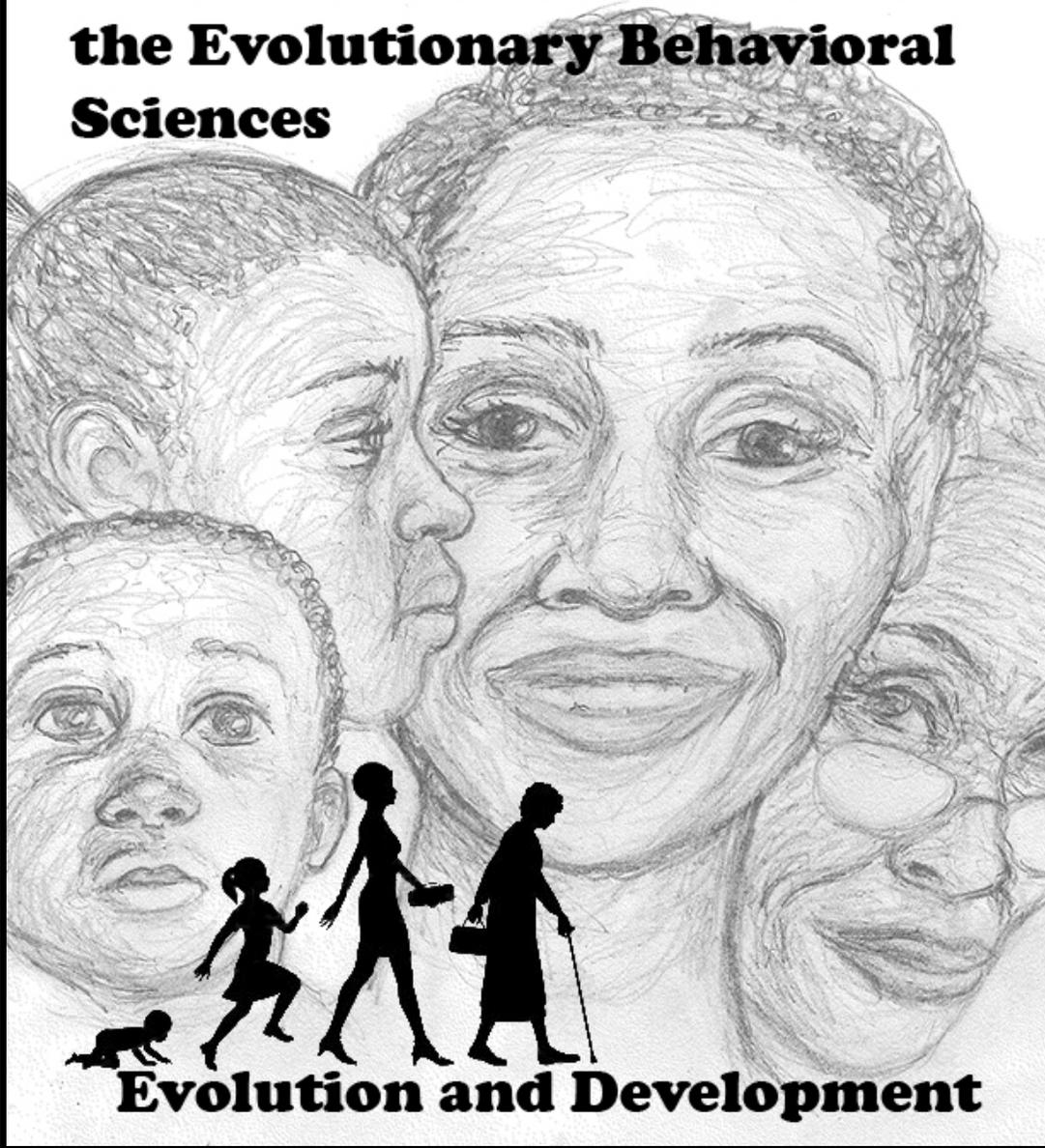


# NEEPS 2015

**Ninth Annual Conference on  
the Evolutionary Behavioral  
Sciences**



SUFFOLK  
UNIVERSITY  
BOSTON

**April 9-11, 2015**



## **Table of Contents**

Welcome to NEEPS 2015.....	3
Boston Maps.....	4
Brief Timetable.....	6
Program of Events.....	
Thu., April 9.....	7
Fri., April 10.....	8
Sat., April 11.....	19
Poster Session.....	
Poster Session 1.....	26
Poster Session 2.....	33

## President's Welcome

It is a great honor to welcome you to the NorthEastern Evolutionary Psychology Society's 2015 Conference on the Evolutionary Behavioral Sciences. Although we like to think of NEEPS as the "best little evolutionary society in the world," it is actually the second largest conference focusing on human behavior from an evolutionary perspective held this year. We continue the NEEPS tradition of prominent and impressive invited speakers, with a slate that will rival any conference: Joyce Benenson, Gary Fireman, David Haig, Steven Pinker, Robert Trivers, and Felix Warneken. This will also be the largest NEEPS held to date in the number of presentations and participants. Those of us who reviewed abstracts were very impressed with the high overall quality of submissions and look forward to intellectually rich presentation sessions. We appreciate organizational efforts of our conference hosts, Daniel Glass and Suffolk University, as well as Program Chair Robert Deaner.

Although NEEPS has grown in size, scope, and geography, we continue the traditions that make NEEPS such a thrilling and enjoyable conference. Everyone at NEEPS is a true NEEPSter, whether they have attended every conference or are here for the very first time. There are no outsiders; we welcome everyone who has seen the light of evolutionary theory. Everyone is encouraged to participate actively, including at the Business Meeting Lunch at 12:00-2:00PM on Saturday. Here we will determine the future of the society, discussing future conference venues, officer positions, and other essential aspects. Please feel free to run for an officer position and/or offer to host a future NEEPS conference, even if it is your first time at the table. Always remember that together, we are all NEEPS. Welcome to Boston and to the Ninth Annual Meeting of the NorthEastern Evolutionary Psychology Society!

Daniel J. Kruger, Ph.D.  
NEEPS President, NorthEastern Evolutionary Psychology Society  
University of Michigan

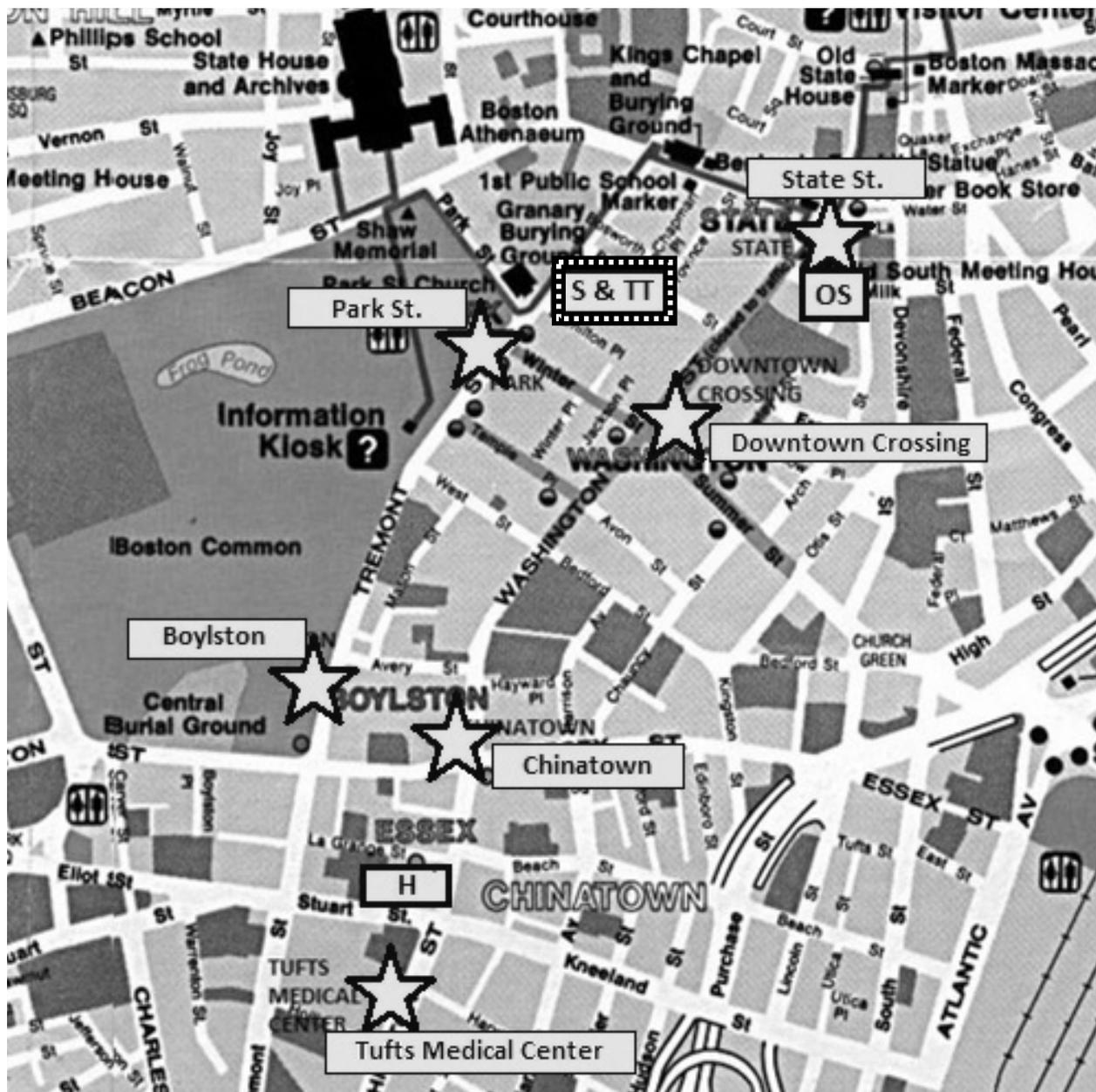
### Acknowledgements

NEEPS would like to thank the following for their contributions to making this conference happen!

*Suffolk University Department of Psychology  
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Suffolk University School of Law  
Gary Fireman  
Jennifer Bonardi  
Alison Tejada*

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T-Shirt Design by Rachael Carmen

## Maps



Here is a map of the downtown area where the conference will be held. **Stars** represent subway stops, **S & TT** represents *Sargent Hall*, the main conference location, and *Tremont Temple*, the location of the Friday night talk. **OS** is the *Old South Meeting House*, the location of the Thursday night talk, and **H** is the official NEEPS *Hostel*. A color version of this map with more of the surrounding area can be found at <http://neeps2015.weebly.com/getting-around.html>.



## Brief Timetable

All events are in Sargent Hall (120 Tremont St.) unless otherwise noted.

Date	Time	Event	Location
<b>Thursday, 4/9</b>	2:30-4:00	FEPS Meeting	Faculty Dining Room (4 <sup>th</sup> Floor)
	4:00-5:30	AEPS Meeting	Faculty Dining Room (4 <sup>th</sup> Floor)
	<b>7:00-9:00</b>	<b>Keynote Address: Steven Pinker</b>	<b>Old South Meeting House (310 Washington St.)</b>
<b>Friday, 4/10</b>	9:00-11:00	Registration/Poster Session 1/ Continental Breakfast	Main Function Room
	11:00-12:15	Paper Sessions 1A & 1B	Rooms 285 (1A) & 235 (1B)
	12:15-2:00	Lunch Break	--
	2:00-3:15	Paper Session 2 & Symposium 1	Rooms 285 (Paper Session) & 235 (Symposium)
	3:20-4:50	Paper Sessions 3A & 3B	Rooms 285 (3A) & 235 (3B)
	5:00-6:15	Paper Sessions 4A & 4B	Rooms 285 (4A) & 235 (4B)
	6:15-6:30	Break	--
	<b>6:30-8:00</b>	<b>Keynote Address: Felix Warneken</b>	<b>Tremont Temple Baptist Church (88 Tremont St.)</b>
<b>Saturday, 4/11</b>	9:00-10:15	Paper Sessions 5A & 5B	Rooms 285 (5A) & 235 (5B)
	10:30-12:00	Symposia 2A & 2B	Rooms 285 (2A) & 235 (2B)
	12:00-2:00	Business Meeting/Lunch	--
	2:00-4:00	Poster Session 2	Main Function Room
	4:00-5:00	Sessions 6A & 6B	Rooms 285 (6A) & 235 (6B)
	5:00-6:30	<b>Development Panel featuring Robert Trivers</b>	Main Function Room
	6:30-7:30	Break	--
7:30	Banquet	Main Function Room	

*\*\*Sessions marked "A" or "B" are concurrent.\*\**

# Full Conference Schedule

Thursday, April 9<sup>th</sup>, 2015

## **2:30pm-4:00pm Feminist Evolutionary Perspectives Society Meeting, Faculty Dining Room (4<sup>th</sup> Floor, Sargent Hall)**

FEPS supports research that: a) is informed by a female perspective, b) directly investigates the active role that females have had in human evolution, and/or c) studies gender in the evolutionary context with scientific theory and methodology (including a close examination into the way research questions are formulated and research subjects selected).

## **4:00pm-5:30pm Applied Evolutionary Psychology Society Meeting, Faculty Dining Room (4<sup>th</sup> Floor, Sargent Hall)**

The mission of the AEPS is to promote the use of evolutionary theory in applied fields such as policy-making, business, law, education, medicine, and mental health. To achieve this goal, AEPS holds academic workshops and conferences to provide resources for, and connections between, researchers on the one hand, and practitioners, policy-makers, executives, and the general public on the other.

## **7:00pm-9:00pm Keynote Address - The Past, Present and Future of Violence** *Steven Pinker, Department of Psychology, Harvard University*

**The Past:** Contrary to the popular impression view that we are living in extraordinarily violent times, rates of violence at all scales have been in decline over the course of history.

**The Present:** Human nature comprises faculties that encourage violence, such as dominance and revenge, but also faculties that inhibit it, such as self-control, empathy, and reason. The level of violence in a given society depends on how its norms and institutions affect the balance between them.

**The Future:** I speculate on how some of the historical changes that reduced violence in the past might be purified and concentrated to reduce violence in the future.



**Steven Pinker** is an experimental psychologist and one of the world's foremost writers on language, mind, and human nature. Currently Johnstone Family Professor of Psychology at Harvard University, Pinker has also taught at Stanford and MIT. His research on visual cognition and the psychology of language has won prizes from the National Academy of Sciences, the Royal Institution of Great Britain, the Cognitive Neuroscience Society, and the American Psychological Association. He has also received eight honorary doctorates, several teaching awards at MIT and Harvard, and numerous prizes for his books *The Language Instinct*, *How the Mind Works*, *The Blank Slate*, and *The Better Angels of Our Nature*. He is Chair of the Usage Panel of the *American Heritage Dictionary*, and often writes for *The New York Times*, *Time*, and *The New Republic*. He has been named Humanist of the Year, *Prospect* magazine's "The World's Top 100 Public Intellectuals," *Foreign Policy's* "100 Global Thinkers," and *Time* magazine's "The 100 Most Influential People in the World Today."

## Friday, April 10<sup>th</sup>, 2015

\*\* Sessions Marked "A" or "B" are Concurrent\*\*

**9:00am-11:00am**            **Poster Session 1, Main Function Room**

**11:00am-12:15pm**        **Session 1A: Comparative, Room 285**

### **Investigating the technical intelligence hypothesis with striped skunks**

*Zoe Johnson-Ulrich (zjohnson@oakland.edu), Oakland University*

The need for efficient foraging could be a selective force favoring the evolution of intelligence (Byrne, 1997). While this force may apply outside primate species (Huber & Gajdon, 2006), many other species that share foraging demands have been neglected. The striped skunk (*Mephitis mephitis*) has a complex foraging ecology; they are omnivorous with a diverse diet that is largely immobile, variably distributed, and requires manipulation to obtain (Cuyler, 1924; Greenwood, Sargeant, Piehl, Buhl, & Hanson, 1999; Thompson & Gilstrap, 1970). I am examining the physical problem-solving skills of striped skunks on the trap-tube task and the string pulling task to determine the extent to which their foraging demands might select for intelligent abilities such as causal reasoning.

### **Hot hand bias in rhesus monkeys**

*Andreas Wilke (awilke@clarkson.edu), Clarkson University; Tommy C Blanchard (blanchard.tommy@gmail.com), University of Rochester; Benjamin Y Hayden (benhayden@gmail.com), University of Rochester*

Human decision-makers often exhibit the hot-hand phenomenon, a tendency to perceive positive serial autocorrelations in independent sequential events. We hypothesize that this bias reflects a strong and stable tendency among primates to perceive positive autocorrelations in temporal sequences, that this bias is an adaptation to clumpy foraging environments, and that it may even be ecologically rational. Several studies support this idea in humans, but a stronger test would be to determine whether non-human primates also exhibit a hot hand bias. We report behavior of three monkeys performing a novel gambling task in which correlation between sequential gambles is systematically manipulated. Monkeys had a better performance for clumped (positively correlated) than for dispersed (negatively correlated) resource distributions.

### **Comparative primatology: Genetic analyses of dopamine receptors, dopamine transporter and catechol-o-methyl transferase according to the mesolimbic reward system**

*Bernard Wallner (bernard.wallner@univie.ac.at), University of Vienna; Katrin Schäfer, University of Vienna; Sonja Windhager, University of Vienna; Helmut Schachl, University of Vienna; Martin Fieder, University of Vienna*

The mesolimbic reward system is one of the best investigated brain areas in medicine and biology. Comparative studies on fishes, amphibians, reptiles, and mammals reveal analogous functional neuro-anatomic structures. The monoamine neurotransmitter dopamine and its two class receptor system seems to be one of the key players in these mesolimbic structures to mediate pleasure associated with predictive, motivational, or attentional sensations in relation to learning processes. / Methodologically, we used CDS of SLC6A3 (human dopamine transporter gene on chr5: 1392905- 1445543), DRD1 (human dopamine receptor 1 on chr5:174867675-174871163), DRD4 (human dopamine receptor 4 on chr11:637305-640705), and COMT (human on chr10:76993729-76995770) for a sequence comparison with of several non-human primate species (old world monkeys, new world monkeys and lemurs) to detect potential selection pressures on CDS regions of these genes, according to availability of sequences in NCBI. / The results show no overall positive selection in any of the CDS sequences on any gene. However, purifying selection processes were detected in pairwise comparisons of CDS primate sequences on every gene and overall all genes show a strong evidence for a purifying selection.

### **Reconstructing Neanderthal personality structure using personal genome mapping technologies**

*Glenn Geher (geherg@newpaltz.edu), SUNY New Paltz; Gokce Sancak Aydin, SUNY New Paltz; Elizabeth Levy, SUNY New Paltz; Jessica Fell, SUNY New Paltz; Rebecca Newmark, SUNY New Paltz; Amanda Colombo, SUNY New Paltz; Bernadine Ganemi, SUNY New Paltz; Jarem Bagnato, SUNY New Paltz*

Until recently, conceptions of Neandertals had suggested that these long-lost cousins had simply been selected out naturally. In recent research examining the genome of Neandertal specimens, this portrait of what happened to the Neandertals is simply inaccurate (see: Hodgson, Bergey, & Disotell, 2010). All the evidence points to Neandertal/Homo Sapien hybridization as having occurred - and most modern humans show evidence of this fact in their genome - based on a percentage of DNA overlap with the Neandertals. The current work seeks to understand the likely personality qualities of the Neandertals by looking at personality correlates of "relative Neandertal percent overlap" and various personality measures in a sample of adults.

**Infants from non-mammalian species requiring parental care elicit greater human care-giving reactions than superprecocial infants do**

*Daniel J Kruger (kruger@umich.edu), University of Michigan*

Ethologists proposed the co-evolution of pedomorphic characteristics in infants and caregiving responses to these features in parents. Previous research demonstrates that neoteny facial characteristics in human infants and adults cue social approach and elicit helping. Convergent evolution for infant pedomorphism across non-human species exhibiting parental care may enhance the elicitation of human caretaking reactions. Current results support the predictions derived from this hypothesis, that people would 1) perceive infants from species requiring parental care as more neoteny (cute, immature, and helpless) than precocial species within the same class, and 2) anticipate greater intentions to interact with and care for semiprecocial than superprecocial infants. Women saw the infants as more neoteny and were more willing to adopt them than men.

**11:00am-12:15pm**

**Session 1B: Sexuality, Room 235**

**The sexually antagonistic gene hypothesis for male androphilia: A replication study in Samoa**

*Scott W Semenyina (scott.semenyina@uleth.ca), University of Lethbridge; Lanna J Petterson, University of Lethbridge; Doug P VanderLaan, Center for Addiction and Mental Health; Paul L Vasey, University of Lethbridge*

The Sexually Antagonistic Gene Hypothesis (SAGH) for male androphilia (i.e. sexual attraction to adult males) posits that the genes associated with male androphilia produce fitness costs in males, but fitness benefits in females (elevated offspring production). Previous research on the SAGH has produced inconsistent results, possibly due to sampling from low-fertility populations. Samoa is a natural fertility population in which most women are reproducing at, or close to, their maximum capacity. In Samoa, androphilic males are known locally as fa'afafine. Consistent with research indicating that genes associated with male androphilia are X-linked, the current study found that the mothers, as well as maternal grandmothers of fa'afafine displayed elevated reproduction when compared to those of Samoan gynephilic (i.e. female attracted) men.

**Polyamory and Monoamory: Alternative approaches to pursuing a strategically pluralistic mating strategy**

*Justin K Mogilski (jkmogils@oakland.edu), Oakland University; Stacy L Memering (slmemeri@oakland.edu), Oakland University; Lisa LM Welling (elling@oakland.edu), Oakland University; Todd K Shackelford (shackelf@oakland.edu), Oakland University*

We examined frequency of partner-directed mate retention behaviors and several self- and partner-rated romantic relationship evaluations (i.e., sociosexuality, relationship satisfaction, mate value, and partner ideal measures) within monoamorous and polyamorous relationships. Measures were compared between 1) monoamorous and polyamorous participants and 2) between two concurrent partners within each polyamorous relationship (i.e., primary and secondary partners). Individuals in monoamorous relationships performed more mate retention behaviors compared to those in polyamorous relationships. Within polyamorous relationships, participants reported engaging in more mate retention behaviors with primary partners compared to secondary partners. We interpret our results within the context of previous research on monogamous and consensually non-monogamous relationships and propose that polyamory and monoamory are alternative strategies for pursuing a strategically pluralistic mating strategy.

### **A natural history of the drag queen phenomenon**

*Michael Arthur Moncrieff (moncrie2@unlv.nevada.edu), University of Nevada, Las Vegas; Pierre Lienard (pierre.lienard@unlv.edu), University of Nevada, Las Vegas*

Drag queens are unusual members of the gay male community who are commonly characterized by their hyperbolic expressions of womanhood and confrontational personas. Traditional sociological theories have failed to explain such typical behavioral features. We argue that costly signaling theory is a robust explanatory framework for understanding drag queen behavior. Survey data were collected among members of the gay community and from a general sample outside of the gay community to assess what traits and dispositions drag queens broadcast through their impersonation. Our findings support a costly signaling account. Additionally, the role of costly signals as a means of broadcasting pro-social dispositions and intentions was not supported by the collected data. Further implications for costly signaling and evolutionary theory are discussed.

### **Viewing time measure of Samoan male sexual orientation**

*Lanna J Petterson (l.petterson@uleth.ca), University of Lethbridge; Barnaby J Dixon (b.dixon@unsw.edu.au), University of New South Wales; Anthony C Little (tony@alittlelab.com), University of Stirling; Paul L Vasey (paul.vasey@uleth.ca), University of Lethbridge*

In many non-Western cultures sexual interactions between transgender androphilic and cisgender gynephilic males are not uncommon. It is unclear what the underlying sexual orientation is of the cisgender partners of transgender androphilic males. To examine this, we compared patterns of sexual attraction to males and females demonstrated by Samoan (1) transgender androphilic males (2) males who exclusively engage in sexual interactions with females and (3) males who engage in sexual interactions with fa'afafine, via measures of self-report and viewing-times. Our findings indicate that males who engage in sexual interactions with fa'afafine demonstrated less dissociated response to males and females. This research contributes toward understanding of how cultural influences male sexual orientation.

### **Sex and sexual orientation differences in flirting behavior**

*Emma T Fortunato (emma.fortunato1@dc.edu), Dominican College; Sarah L Strout (sarah.strout@dc.edu), Dominican College*

As flirting is an important aspect of mating strategies, many studies have examined flirting in humans. However, very few studies have directly compared sex and sexual orientation on flirting. The current study examines both sex and sexual orientation differences on flirting behaviors. We hypothesized that sex differences would occur, but that sexual orientation differences would not. 180 participants (133 female, 47 male) answered demographic questions and were asked to indicate how often they engage in various flirting behaviors. Results supported our hypotheses, revealing sex differences but not sexual orientation differences. Specifically men were more likely to use behaviors that involved touching the other person while women were more likely to use facial expressions and other emotion expressions.

**2:00pm-3:15pm**

**Session 2: Society & Social Issues, Room 285**

### **Countries' public corruption is related to citizens' prenatal testosterone exposure**

*Gregg R Murray (g.murray@ttu.edu), Texas Tech University; Susan M Murray (sumurra@siue.edu), Southern Illinois University at Edwardsville*

Testosterone (T) studies often focus on its negative effects. But several studies have found T has pro-social effects. Wibral et al. (2012) found that doses of T reduce lying. Following these findings, we evaluate the effect of T on public corruption, asserting that increased T is associated with decreased corruption. We use a country-level unit of analysis and aggregated results of a 2005 survey by the BBC of 158,753 respondents from 29 nations. As part of this survey, respondents gave measurements needed to calculate their 2D:4D digit ratio, which is a proxy for in utero exposure. We employ two widely used corruption measures. Results indicate that, after employing appropriate controls, greater prenatal T exposure is associated with less public corruption.

### **Division of labor in the maintenance of the urban commons: Shifts in territorial behavior across a varied landscape**

*Dan O'Brien (d.obrien@neu.edu), Northeastern University, Harvard University*

A major challenge of group living is the maintenance of shared territory. The current study probes the behavioral dynamics of this maintenance, with a particular focus on whether there is a division of labor: does the maintenance of a neighborhood rely on multiple behavioral types? This is done using an archive of requests for government services in the public space (i.e., 311 calls) in an American metropolis. Custodians are divided into typical custodians (1-2 reports/yr.) and exemplars (3 or more reports/yr.). Analyses found differences in reporting between the two groups in keeping with theory on territoriality. Whereas typical custodians specialized on residential areas, exemplars were critical in shared spaces with no presumed owner (e.g., main streets).

### **Exploring how childhood neighborhoods shape life history and behavior using an urban research program in Baltimore**

*Hilary Keil (hilarykeil@gmail.com), University of Baltimore; Matthew Ancona (matthew.ancona@ubalt.edu), University of Baltimore; Madeleine Emanuel (madeleine.emmanuel@ubalt.edu), University of Baltimore; Humama Khan (humamakhan@gmail.com), University of Baltimore; Michael Frederick (mfrederick@ubalt.edu), University of Baltimore*

Growing evidence indicates that the early-life environment can have an enduring influence on an individual's metabolism, neurochemistry, and behavior. Life history theory suggests many of these long-term effects may represent expressions of a 'fast' or 'slow' life history strategy. Urban research programs are particularly useful for assessing the influence of the early-life environment because of the large amount of archival data available at the neighborhood level. Participants from the University of Baltimore, who are primarily lifelong city residents, will provide their childhood address blocks and complete a variety of behavioral surveys. We hypothesize that individuals who were born small or developed in low status environments will demonstrate faster life histories, diminished inhibitory control, and an increased propensity towards short-term gains.

### **An evolutionary approach to crime prevention**

*Russil I Durrant (russil.durrant@vuw.ac.nz), Victoria University of Wellington; Tony Ward (Tony.ward@vuw.ac.nz), Victoria University of Wellington*

Evolutionary explanations have had, to date, a relatively negligible role to play in the efforts of criminologists to understand the causes of crime. Drawing from work in evolutionary medicine we suggest that there are four main evolutionary pathways that can help us to understand problem behaviors – in particular those that are related to criminal offending. These relate to (1) evolutionary adaptations; (2) conditional adaptations; (3) evolutionary mismatch; and (4) cultural evolutionary processes. Although our main aim is to provide an overarching theoretical framework for an evolutionary approach to crime prevention we also consider specific examples of programs and policies that are most (and least) likely to be effective in reducing the prevalence of antisocial and criminal behavior.

### **A life history framework advances understanding of attitudes towards police**

*Daniel J Kruger (kruger@umich.edu), University of Michigan; Joseph L Nedelec (nedelej@ucmail.uc.edu), University of Cincinnati*

Interest in biosocial criminology is growing, and adoption of Evolutionary Life History Theory (LHT) may accelerate progress towards an integrative evolutionarily informed human science. Understanding the ways in which the public view the police has both substantial academic value and practical importance. Most current work on police attitudes is based on Tyler's process-based model of policing focusing on procedural justice (perceptions that the police are fair and trustworthy), and examining the influence of basic demographic factors such as race/ethnicity. We develop additional domains of police attitudes based on a LHT framework for functional social dynamics. All domains exhibited the expected relationships with life history. Perceptions that police maintain social stability were the only uniquely significant predictor of crime reporting intentions.

**2:00pm-3:15pm                      Symposium 1, Room 235****The computational logic of social life: Estimating and negotiating welfare tradeoff ratios****It's not all about the Benjamins: high welfare tradeoff ratios preferred over profitability in partner choice**

*Theresa Robertson (theresa.e.robertson@gmail.com), SUNY Stony Brook; Max Krasnow, Harvard University, Julian Lim, UC Santa Barbara; Leda Cosmides, UC Santa Barbara; John Tooby, UC Santa Barbara*

Many theories of social decision making focus on the benefits other individuals provide. However, in typical ancestral ecologies many factors, like illness, injury, or bad luck, might prevent benefit delivery even by skilled, willing cooperators. Therefore, the absolute level of benefits delivered could be a poor predictor of future benefits. A better predictor of future behavior is how much a potential partner values your welfare—that is, how much they are willing to tradeoff their own welfare for yours. Someone who only delivers benefits to you when it is cheap for them is not going to help you when times are tough. We will present evidence that people extract an accurate estimate of how much another person values their welfare—an estimated welfare tradeoff ratio (WTR) from the other's behavior. In addition we show that, even controlling for the amount of benefits delivered, our psychology dramatically prefers a person signaling a high willingness to trade off their own welfare for our own, even to the point of choosing partners that are objectively less profitable.

**Why do we care so much and achieve so little through our charity?**

*Jason Nemirow (nemirow@fas.harvard.edu), Harvard University; Max Krasnow, Harvard University*

In a second line of work, we will present evidence that the psychology of charitable giving shows design for cultivating a cooperative reputation by broadcasting one's willingness to trade off one's own welfare for others. Much of the overt phenomenology of charity concerns the "warm glow" associated with doing good for others. However, the behavior of charity often seems robustly insensitive to the actual amount of good that is done. Despite the fact that individuals give hundreds of billions of dollars to charity annually, researchers have found that people very rarely try to find out how effectively their dollars are being spent, and that even when this information is made available people rarely use it. We argue this is due to charity's underlying design for signaling willingness to tradeoff one's own welfare for others, which emphasizes costs incurred as well as benefits given. We test this hypothesis against alternative accounts of ineffective charity, and discuss potential applications that should motivate people to give more effectively.

**Psychology inserts the self into third party punishment**

*Max Krasnow (krasnow@fas.harvard.edu), Harvard University; Andrew Delton, SUNY Stony Brook; & Rhea Howard, Harvard University*

Third, we present evidence that estimating others' valuation of oneself from their behavior and negotiating for a favorable standard of treatment occur even when they are not logically warranted. The one-shot, anonymous third party punishment game was designed to test the motivation to punish unfairness when all strategic self-interest was removed. However, if estimating and bargaining over welfare tradeoff ratios was a major adaptive problem, and truly one-shot interactions were rare, our evolved psychology might not interpret the situation as researchers have intended. We find that participants, though objectively anonymous and engaged in a one-shot interaction, nonetheless: a) infer that a perpetrator's mistreatment of a victim means that the perpetrator would also mistreat the observer, b) make this inference more strongly when the observer is more similar to (and thus more substitutable for) the victim, in the eyes of the perpetrator, and c) this inference drives the observer's punishment of the perpetrator. Thus, punitive motivations observed in apparently impersonal contexts may be designed for the defense of personal interest after all.

**The role of welfare tradeoff ratios in personality (dis)order**

*Lawrence Ian Reed (lreed1@skidmore.edu), Skidmore University; & Max Krasnow*

Finally, we will explore how variation in the psychology of welfare tradeoffs may play a role in mental illness, specifically narcissistic personality disorder. Narcissistic personality disorder is characterized by various disturbances to social processing that suggest an underlying basis in the psychology of welfare tradeoffs and the valuation of others, including an exaggerated self-importance and de-emphasis of the needs of others. Using an

internet sample of subclinical variation in narcissistic personality, we find that individuals high on narcissism specifically estimate that others are more willing to tradeoff their welfare for them than they are for others. This effect differs by social relationship and is more pronounced for peers than close friends and family, paralleling the clinical literature, which identifies peers as a common elicitor of pathology in those with the disorder.

**3:20pm-4:50pm**

**Session 3A: Prosociality and Cooperation, Room 285**

**When do humans extend ethical concerns to others?**

*Barty A Thompson (bthompson@albright.edu), Albright College*

This research tests to determine whether kin selection, reciprocal altruism, or rational thinking are more integral in the extension of ethics. Past evidence has shown that humans are inconsistent in the degree to which they extend ethics to both humans and animals. 119 respondents from livestock auctions were randomly interviewed. Findings indicated that when individuals perceived animals as members of their family, their ethical concerns increased significantly, but there was only a limited increase in ethical concerns for animals, which provided benefits. Finally, when they had thought about the issue of animal ethics, they significantly increased their ethical concerns. The implications are that kin selection as well as rational thinking play significant roles in raising ethical concerns for others.

**Prosociality: Learned or inherited?**

*James MacGlashan (james\_macglashan@brown.edu), Brown University; Adam Morris (adam\_morris@brown.edu), Brown University; Michael Littman (michael\_littman@brown.edu), Brown University; Fiery Cushman (cushman@fas.harvard.edu), Harvard University*

The origins of human prosociality are hotly debated. Many evolutionary models portray prosocial behaviors as cooperative fixed action patterns which, under certain conditions, become evolutionarily stable. But there is growing evidence that flexible reward learning mechanisms are involved. We reconcile the two positions by modeling learning agents which, through innate biases for specific actions, can be fixed in some actions and developmentally flexible in others. Using a social game involving theft and punishment, we find that agents evolve innate biases for inflicting punishment but remain flexible towards theft. We also find that humans act similarly, attuning their theft rates, but not their punishment rates, to reinforcement patterns. Our model can help arbitrate between adaptive and ontogenetic explanations of prosociality.

**Evolutionary and cross-cultural investigation of Totemism, Shamanism, and Daoism**

*Yueh-Ting Lee (yt.lee@utoledo.edu), University of Toledo OH; Michelle Beddow (mcbeddow@gmail.com), University of Toledo; Sydney Chan (sydneychan82@gmail.com), University of Toledo; Changjiang Xu (zjnxucj@163.com), Zhejiang Normal University*

Practicing totemism and Shamanism has been documented in Darwin's Voyage of the Beagle which described how American Indians worshipped a tree as the altar of Wallechu (see Darwin, 1845/2006, p. 83). If human beings tend to link themselves with nature, which is the core of totemism, Shamanism and Daoism, natural things (e.g., totems involving animals, plants, and natural objects) outside us are evolutionarily important for our survival and functioning. In a cross cultural study (N= 519) consisting of 195 Americans and 324 Chinese, we hypothesized and found: (a) that totemism and Daoism were interrelated; and (b) that the relationship between totemism and Daoism varied across cultures due to religiosity (or the level of religion).

**Religious collectivity and the behavioral immune system in Limón Province, Costa Rica**

*Christopher D Lynn (cdlynn@ua.edu), University of Alabama; Max J Stein (mjstein1@crimson.ua.edu), University of Alabama; Andrew P.C Bishop (Andrew.Phillipcarson.Bishop@asu.edu), Arizona State University*

Theory suggests that collective organization has been shaped by interactions between disease and a “behavioral immune system.” Where pathogen biodiversity is high, group members should reduce exposure to novel threats via in-group sociality and minimize interactions with strangers, diminishing cultural exchange and increasing between-group diversity. This model was investigated among Costa Rican Pentecostal congregations by combining cultural consensus and religious-commitment signaling approaches. Greater sociality was associated with heightened religiosity and conservatism, urban living, and Afro-Caribbean ancestry. A shared cultural model

for religious commitment was associated negatively with perceived vulnerability to disease and positively with income. Residual agreement within this model was associated with poverty and perceived disease vulnerability. Results emphasize the importance of proximal and distal perspectives on cultural variation.

**Terror management and moral inclusiveness: Death, pain, and saving the family dog**

*Kilian James Garvey (garvey@ulm.edu), University of Louisiana; John Hinshaw (hinshaw@lvc.edu), Lebanon Valley College; Brandon Jablonski (brandon.jablonski@sinclair.edu), Sinclair Community College*

This 3x4x4 study explored the relative influence of moral cognition, cultural worldviews, and mortality salience in a test of the Terror Management Theory. 770 undergraduate participants in three regions of the United States (chosen for differences in setting, SES, and pathogen prevalence: a midsize public university in a small city in Louisiana, a large community college in a large city in Ohio, and a small private college in rural Pennsylvania), four levels of mortality salience (writing about death, dental pain, watching television, and a control group which did not write anything), and pulling a switch to save your pet on a train track versus saving 5, 10, 15, or 20 people. In the high pathogen/public university group there were no differences among levels of mortality salience in saving versus sacrificing the family pet. In the mid-pathogen/community college group both the dental pain and death topics led to greater pet sacrifice while in the low pathogen/private college group the dental pain group was less likely and the death group more likely than the control group to sacrifice their pet.

**Group competitions as thresholds: increases in cooperation during competition do not reflect group-level selection pressures**

*Matthew R Jordan (matthew.jordan@yale.edu), Yale University; Jillian J Jordan (jillian.jordan@yale.edu), Yale University; David G Rand (david.rand@yale.edu), Yale University*

Competition between groups is known to promote cooperation within groups, and this has been interpreted as evidence for the importance of inter-group competition in the evolution of human cooperation. Here, we present evidence group competitions do not promote within-group cooperation because they are competitions, but rather because they create threshold games in which groups are rewarded for reaching a specific goal. Non-competitive and non-social thresholds are as good as group competitions at promoting cooperation and “in-group love,” but do not create “out-group hate.” Our results have theoretical implications for the interpretation of evidence that group competitions promote cooperation, and practical implications for ways to promote inter-group cooperation.

**3:20pm-4:50pm**

**Session 3B: Competition, Room 235**

**Evolved sex differences and intrasexual competition: An examination of life history strategies**

*Laura L Robertson (laurarobertson704@gmail.com), Saint Mary's University; Maryanne L Fisher (mlfisher.99@gmail.com), Saint Mary's University; Daniel J Kruger (kruger@umich.edu), University of Michigan; Steven Carroll (steven.carroll@smu.ca), Saint Mary's University*

Intrasexual competition occurs when individuals of the same sex compete for access to limited resources, and this competition for resources is influenced by individual's life history strategies. We hypothesized that fast life history strategies positively correlate with increased intrasexual competition, and women will be more competitive with a slow life history, whereas men will be more competitive with a fast life history. Previously collected data was analyzed, and results indicate that life history was positively correlated with intrasexual competition, however sex was not a significant predictor. Overall, the results of this study show how life history and environmental factors impact on intrasexual competition for mates, and pending results will assess within-sex differences.

**Examining the adaptive value of competitive mothering**

*Maryanne L Fisher (mlfisher.99@gmail.com), Saint Mary's University; Rosemarie Sokol-Chang (rischang@gmail.com), SUNY New Paltz*

The goal of this presentation will be to review some of the issues faced by women when resources that may impact on their survival, or survival of their children are limited. Moreover, a bigger theoretical issue will be addressed that pertains to how women decide who represents a same-sex rival versus a potential ally. This presentation will outline some issues involved in making this decision, and then focus on various ways that women may be expressing their competitiveness. We propose women use indirect ways to establish their ‘good mothering’ thus

collecting status, and thereby showing their mates that they are 'good mothers.' Simultaneously, these practices are indirect and allow one to disguise their competitiveness, enabling women to remain allies with those they are competing directly against. Examples of these indirect aggression displays will be baking contests, Pinterest crafts, and competition via their children's clothing and involvement in recreational activities.

### **College aggression and social hierarchy formation**

*Daniel J Glass (djglass@suffolk.edu), Suffolk University; Gary Fireman (gfireman@suffolk.edu), Suffolk University*

From an evolutionary perspective, aggression and bullying are proposed to serve several social functions, one of which is to help form hierarchies within social groups. If aggression and bullying serve an evolutionarily adaptive function, they should conform to a number of evolutionarily derived predictions. Other social species utilize aggression to form relatively stable hierarchies of dominance among individuals, with the bulk of aggression tending to occur when unfamiliar individuals encounter each other for the first time. By extension, human bullying might also be expected to increase when new individuals enter a group and decline with time as group hierarchies stabilize. Additionally, aggressive behaviors are expected to increase as the operational sex ratio deviates from 1:1. In our study, a sample of college freshmen responded to a bullying and victimization survey at two timepoints (one in their first semester and one in their second) to test these hypotheses.

### **The effect of copulins on male ratings of female attractiveness, mate guarding tendencies, intrasexual aggression, mating motivation and perceived desirability**

*Megan Williams (megawill8787@gmail.com), Rutgers University; Amy S Jacobson (amyjacobsonphd@gmail.com), Rutgers University; Akash Patel (apatel13093@yahoo.com), Rutgers University; Chirag Patel, (chintupatel1@gmail.com), Rutgers University; Palestis Brian (bpalesti@wagner.edu), Wagner College*

Volatile fatty acids secreted by the vaginal lining (copulins) increase in concentration at ovulation in non-pill using women. Fifty males were exposed to copulin, asked to assess photos for attractiveness and complete questionnaires for 10 female faces. Results were compared to controls to replicate previous findings indicating copulins inhibit the ability of males to discriminate attractiveness in females and to test the hypotheses that subjects would increase self-reported mate guarding behaviors, intrasexual aggression, mating motivation, and perceived desirability as a mate. Preliminary results indicate males under the influence of copulin are less discriminating when assessing female attractiveness and perceive themselves as more sexually desirable. Results indicate that copulin may serve as an olfactory cue to imminent fertility in females.

### **Mutability of the green-eyed monster: Distinguishing between benign and hostile envy in two samples**

*Rachael G Falcon (rfalcon@unm.edu), University of New Mexico*

Research suggests that there are two types of envy, hostile—aimed at depriving the envied person of their advantage—and benign—aimed at gaining the advantage for oneself (Parrott, 1991; van de Ven, Zeelenberg, & Pieters, 2009). I made three predictions about when each type would be functional: hostile envy was expected to be more likely when the advantage isn't attainable, less likely in valuable relationships, and less likely in unfavorable social environments. Two studies provided mixed support for these predictions but, more importantly, the results of both studies contradicted the assumption that benign envy is self-improving and hostile envy is other-harming. The distinction between hostile and benign envy needs to be clarified in order for their functions to be understood.

### **The effects of self-perceived mate value on reactions to infidelity**

*Emily R Beasley (emily.r.beasley@gmail.com), Saint Mary's University; Daniel J Kruger (kruger@umich.edu), University of Michigan; Maryanne L Fisher (mlfisher@smu.ca), Saint Mary's University*

The present study examines the relationship between self-perceived mate value and imagined reactions to infidelity. Previous research demonstrates that males and females are, on average, differentially jealous to sexual and emotional infidelities by their romantic partners. Our hypothesis is that mate value co-varies with self-reported guilt about, and forgiveness of, infidelity. More specifically, we predict that individuals higher in self-perceived mate value will generally report feeling less guilty if they imagine that they are the ones who are being

unfaithful, and they will report being less forgiving if they imagine that their partners are the ones who were unfaithful. We hypothesize that the effects of differential jealousy will be amplified for individuals high in self-perceived mate value.

**5:00PM-6:15PM**

**Session 4A: Fitness Indicators, Room 285**

**The effects of humor and laughter on perceived intelligence and dating success**

*Anthony Garove (anthony.garove@ubalt.edu), University of Baltimore; Sally D Farley (sfarley@ubalt.edu), University of Baltimore*

This study examined the effects of humor and laughter on perceived intelligence and dating success. Previous research suggests that humor production and laughter have characteristics of evolved psychological mechanisms that emerged via sexual selection. Data were collected through MTurk. Participants viewed a woman reading a scripted message she “received” from a man via an online dating service. Participants then rated the male author on various characteristics. Results revealed significant interactions between humor and laughter on the dependent measures (likelihood of obtaining a date, recipient’s receptiveness, perceptions of IQ). When the message was not funny, female laughter did not affect ratings, but when the message was humorous, ratings were significantly higher when she laughed than when she did not. Implications will be discussed.

**An investigation on how mating intelligence relates to self-esteem, self-perceived attractiveness, and partner choice**

*Stefanie Gisler (sg034@bucknell.edu), Bucknell University; T Joel Wade (jwade@bucknell.edu), Bucknell University*

The present study sought to expand research on mating intelligence, which has been defined as the most salient form of intelligence from an evolutionary perspective (Geher & Miller, 2008). Mating intelligence, self-perceived attractiveness, and self-esteem were expected to positively correlate with each other. Individuals with higher mating intelligence scores were expected to select a physically attractive over a physically less attractive partner. The results were partially consistent with the hypotheses. Mating intelligence, self-esteem, and self-perceived attractiveness were all positively related to each other. However, the relationship between self-perceived attractiveness and self-esteem was stronger for males than for females. Both males and females who scored higher on mating intelligence were more likely to select the attractive partner.

**Musical aptitude and emotional intelligence**

*Morgan E Gleason (mgleason@hawkmail.newpaltz.edu), SUNY New Paltz; Glenn Geher (geherg@newpaltz.edu), SUNY New Paltz*

Prior literature has demonstrated a strong link between musical ability and trait emotional intelligence (Juslin & Laukka, 2003; Juslin & Sloboda, 2001; Lima & Castro, 2011; Trimmer & Cuddy, 2008). The current study seeks to expand on this by including variability in quality of music production as a predictor variable and employing comprehensive measures of emotional intelligence. Past literature has operationally defined musical ability as either duration of musical training or self-reported musicianship (Bigand, Vieillard, Madurell, Marozeau & Dacquet, 2005; Resnicow & Salovey & Repp, 2004; Trimmer & Cuddy, 2008). Moreover, prior studies have measured emotional intelligence by assessing participants' ability to identify inflection in speech or valence of musical pieces (Lima & Castro, 2011; Juslin & Lukka, 2003; Juslin & Laukka, 2003; Juslin & Sloboda, 2001; Trimmer & Cuddy, 2008). This study seeks to expand on these findings by identifying a potential mediating effect of musical ability on the moderating effect of musical training on emotional intelligence. We propose that although musical ability enhances emotional intelligence, this relationship is a function of ability rather than the result of mere training.

**Construct validity and behavioral correlates of the evolutionary domain-specific risk scale**

*Julie L Welsch (welschl@clarkson.edu), Clarkson University; Jeremy Liss (lissja@clarkson.edu), Clarkson University; Jasmin Plaza (plazaj@clarkson.edu), Clarkson University; Amanda Sherman (shermaak@clarkson.edu), Clarkson University; Andreas Wilke (awilke@clarkson.edu), Clarkson University*

The evolutionary risk scale (ERS) assesses risk-propensity 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. The present study further develops the validity of this novel risk scale by comparing an individual's responses on the ERS to their responses on other scales measuring psychological constructs that should systematically co-vary with subjects' risk domain responses as well as their behavioral data on two widely used computerized risky decision-making tasks.

**Fertility-related detection of fitness-related stimuli: Evidence for the rape-avoidance hypothesis**

*Hannah L Ryder (hr98@le.ac.uk), University of Leicester; Heather D Flowe (hf49@le.ac.uk), University of Leicester*

Research suggests women have evolved an adaptation to avoid rape specifically during ovulation when costs to reproductive fitness are highest. This study examined the cognitive mechanisms that may underlie rape avoidance. Using a dot-probe paradigm we assessed the speed of detection of angry and neutral male and female faces, as well as threatening versus neutral animals to assess whether fertility-related attentional biases generalised to all threats or were specific to reproductive threats. Fifty-eight naturally cycling and hormonal contraceptive using women participated twice, during days 12-14 and 1-3 or 21-23 of their menstrual cycles. Whilst fertility had no effect on detection of threatening animals, fertile women were significantly faster to detect neutral compared to angry faces, suggesting fertility-related avoidance of threat.

**5:00PM-6:15PM**

**Session 4B: Social Patterns, Room 235**

**The biohistory of feminism**

*Abel A Alves (aalves@bsu.edu), Ball State University; Carol J Blakney (carolblakney@earthlink.net), Independent Scholar*

Although the term “feminism” was first employed in nineteenth-century Europe, behaviors associated with feminism have been exhibited across cultures and in different time periods. Specifically, women have formed coalitions and displayed as alphas to express agency in ways that were assumed to be “male” by their patriarchal cultures. As such, feminist behaviors countered cultural construction and drew on deeply rooted universals also found among our primate cousins (and among other much more distantly related animals as well—including eusocial insects and matriarchal elephants). If the quest to control resources, the forming of coalitions to exert power and the claiming of alpha status are behaviors associated with feminism as a movement of empowerment, then there is a natural evolutionary basis to the movement, and feminism is clearly no aberration. It is an adaptive expression of something big and prevalent in nature. There is a deep history of feminism.

**Religiousness and the development of life history strategies**

*George B Richardson (george.richardson@uc.edu), University of Cincinnati; Patrick H Hardesty (patrickhardesty@yahoo.com), University of Louisville; Blair Sanning (sanninnk@ucmail.uc.edu), University of Cincinnati*

Religiousness has been conceptualized as an expression of slow life history strategy (slow LHS). However, it is not yet clear how religion functions in the development of LHS. In this study, we used structural equations and nationally representative longitudinal data to test whether religiousness translated childhood environmental conditions into middle adult LHS. We also tested whether religiousness mitigated or amplified the effects of childhood environmental conditions on middle adult LHS. We found that environmental conditions did not have significant indirect effects on dimensions of LHS through religiousness, nor did religiousness moderate the effects of environmental conditions on LHS. We present a full description of our model, present limitations, and chart out implications and future directions for life history research.

**The psychology of common knowledge and coordination**

*Kyle A Thomas, (kathomas@fas.harvard.edu), Harvard University; Peter DeScioli (pdescioli@gmail.com), SUNY Stony Brook; Omar S Haque (omarsultanhaque@gmail.com), Harvard Medical School; Steven Pinker, (pinker@wjh.harvard.edu), Harvard University*

Research on human cooperation has concentrated on the puzzle of altruism, and the psychology of reciprocity. We explore the complementary puzzle of mutualism, and the psychology of coordination. Game theorists have demonstrated that coordination is facilitated by common knowledge: the recursive belief state in which A knows X, B knows X, A knows that B knows X, B knows that A knows X, ad infinitum. Ubiquitous opportunities for realizing gains through coordination throughout human evolution likely shaped human psychology to recognize common knowledge. Through a series of experiments involving a Stag Hunt coordination game, we find that humans are indeed sensitive to common knowledge, distinguish it from other forms of social knowledge, and use it to achieve gains through coordination.

**Early menarche is associated with a preference for masculine partners and a younger ideal age to have a first child**

*Carlota Batres (jcb23@st-andrews.ac.uk), University of St. Andrews; David Perrett (dp@st-andrews.ac.uk), University of St Andrews*

One developmental factor that is influential in life history trajectory is pubertal timing. For instance, women who experience earlier menarche, have their first pregnancy earlier. Early menarche may also lead to preferences for masculine faces, but no study has shown such link. We therefore investigated the relationship between pubertal timing, reproductive plans, and masculinity preferences in nulliparous women aged 18-30 from the United Kingdom (N=10,212). We found that women who experienced earlier menarche reported a younger ideal age to have a first child and showed stronger masculinity preferences. This provides evidence that women experiencing early menarche plan to have children earlier. Additionally, our findings suggest that developmental factors influence partner selection, which is instrumental to the implementation of reproductive strategies.

**Frequency tracking of OSR information**

*Haley M Dillon (hmdillon@ksu.edu), Kansas State University; Lora E Adair (lorap@ksu.edu), Kansas State University; Gary L Brase, (gbrase@ksu.edu), Kansas State University; Laura Robertson (laurarobertson704@gmail.com), St. Mary's University*

This work set out to determine whether or not Operational Sex Ratio, or the frequency of sexes in an array could be automatically encoded, as Hasher and Zacks (1979) demonstrated with lexical stimuli. Using conditions where subjects were either informed of the task at hand or uninformed, this work supports the notion that frequency encoding of sex ratio information is in fact an automatic process (shown through a lack of significance in the difference between the two conditions). This work followed Hasher and Zacks' (1979) methodology and found almost identical findings using a different type of stimuli.

**6:30pm-8:00pm Keynote Address - The Origins of Cooperation: Evidence from Children and Chimpanzees**

*Felix Warneken, Department of Psychology, Harvard University & Radcliffe Institute for Advanced Study*

Humans are able to cooperate with others in sophisticated, flexible ways: sharing valuable resources, assisting others who need help, and working collaboratively in teams. These behaviors are regulated by norms of fairness about the best way to distribute resources and how to treat uncooperative individuals. However, the origins of these behaviors are contested. Are humans initially driven by purely selfish motives and must be taught to be cooperative? Or do we have a biological predisposition for cooperation? How do humans learn to share a common resource according to what's 'fair'? Here I present experimental studies that aim to determine the developmental and evolutionary origins of our cooperative skills and how they are shaped by fairness norms. By studying how children's cooperation and fairness emerge in development and then comparing their behaviors to those of chimpanzees, these studies show which aspects are species-unique and which have deeper evolutionary roots.



**Felix Warneken** is the John L. Loeb Associate Professor of the Social Sciences and Director of the Social Cognitive Development Group in the Psychology Department at Harvard University. Trained as a developmental and comparative psychologist, he conducts research on cooperation and social cognitive development in children and great apes. He studied in Germany and the United States, receiving his doctoral degree from the Universität Leipzig while working at the Max Planck Institute for Evolutionary Anthropology as a graduate student and postdoctoral fellow. He joined the Harvard Psychology Department in 2009. His most significant contributions have been on the origins of cooperative behaviors in young children and chimpanzees. His study demonstrating altruistic helping in children and chimpanzees was named one of the 100 most important science stories in 2007 by Discover Magazine. Dr. Warneken has received several awards, including an Early Career Research Award from the Society for Research in Child Development, the Janet Taylor Spence Award for Transformative Early Career Contributions from the Association for Psychological Science, and a National Science Foundation CAREER award, all in 2013. Most recently, he was selected as the 2015 recipient of the Boyd McCandless Award by the American Psychological Association.

In 2014-15, he is a fellow at the Radcliffe Institute for Advanced Study.

## Saturday, April 11<sup>th</sup>, 2015

**9:00am-10:15am**

**Session 5A: Punishment and Reputation, Room 285**

### **Human punishment is not primarily motivated by inequality aversion**

*Jesse Marczyk, (jmarczyk87@gmail.com), New Mexico State University; Rohny Saylor (rsaylors@gmail.com), New Mexico State University*

Previous research has suggested that humans are motivated to avoid inequality per se rather than losses, and are willing to punish individuals who generate or possess unequal amounts of wealth. However, the research purporting to support this conclusion suffers from a number of potential methodological confounds that prevent that conclusion from being reached. The current research removes those confounds and finds that inequality per se does not appear to motivate punishment.

### **To punish or to leave: Distinct cognitive processes underlie partner control and partner choice behaviors**

*Justin W Martin (justinmartin@g.harvard.edu), Harvard University; Fiery Cushman (cushman@fas.harvard.edu), Harvard University*

We investigate the cognitive processes underlying two distinct models of the evolution of cooperation: Punishment (or partner control) and ostracism (or partner choice). Using a “trembling hand” economic game, where an allocator divides a monetary stake between themselves and a responder through a stochastic mechanism, we dissociate between the allocator’s intent and actual outcome. Responders had the opportunity to either punish or reward, or to switch to a different partner for a subsequent round of play. Results suggest a distinction in underlying cognitive processes: Partner control exhibits greater sensitivity to outcomes, while partner choice is influenced overwhelmingly by a partner’s intentions. This cognitive dissociation can be understood in light of the unique adaptive functions of partner control and partner choice.

### **Third-party punishment is a signal of prosociality**

*Jillian J Jordan, (jillian.jordan@yale.edu), Yale University; Paul Bloom (paul.bloom@yale.edu), Yale University; David G Rand (david.rand@yale.edu), Yale University*

Third-party punishment (TPP) is a unique feature of human morality, but its origins are poorly understood. Why pay costs to enforce social norms? We present evidence that TPP bestows reputational benefits by signaling the

punisher's prosociality. Third-party punishers are trusted more, actually are more trustworthy, and use TPP to appear trustworthy. Critically, providing information about punishers' prior prosociality attenuates these effects: TPP is a proxy for prosociality, and thus matters less once a potential punisher's prosocial behavior is directly observable. Furthermore, TPP is a stronger signal of prosociality than willingness to second-party punish (retaliate). Finally, punishment of hypocrites helps to keep TPP an honest signal of prosociality. These results help to provide an ultimate explanation for TPP.

### **Self-infliction of pain as reputational commodity**

*Matthew Martinez (mart1430@unlv.nevada.edu), University of Nevada, Las Vegas; Pierre Lienard (Pierre.Lienard@unlv.edu), University of Nevada, Las Vegas*

Ethnographers have extensively documented societies where high-risk and painful religious activities can be found. A peculiar subset of these practices, the institutionalized public displays of deliberate self-harm, is the aim of the present research, which focuses on the demographic, social and environmental correlates of those practices. We propose that such institutions constitute coordination signals particularly efficient in some socio-political landscapes. To investigate this we conducted a systematic search in the Human Relations Area Files database. The results suggest that such practices typically occur in societies with weak formal political institutions, restricted economic opportunities, low upward social mobility, and often, rigid status hierarchies. In such constrained social worlds, costly acts involving self-harm may serve to bolster one's reputation and standing.

### **Evidence for opposite-sex romantic partner defence: Retrospective reporting and economic game**

*Melanie MacEacheron (mmaceacheron@gmail.com), University of Western Ontario; Lorne Campbell (lcampb23@uwo.ca), University of Western Ontario*

Individual members of opposite-sex romantic partnerships retrospectively reported experiencing rude or obnoxious behavior directed at them (65.42%) or their partner (55.55%) while in each other's presence, from someone the same sex as the victim. Males and females reported these phenomena at equal rates ( $\chi^2$  tests=ns). Staff at 78.26% of bars not primarily catering to homosexual clientele (N=23) within a mid-sized North American city also retrospectively reported such behavior. The victim's partner responded to the offender in 77.78% of bars. Punishment of a same-sex stranger freeloading off one's opposite sex partner was greater than that of the same stranger freeloading off an opposite-sex stranger ( $F(1,55)=7.53$ ,  $p=.008$ ,  $\eta^2=.137$ ), within a third-party punishment economic game. No sex difference was observed ( $p=ns$ ).

**9:00am-10:15am**

**Session 5B: Applications, Room 235**

### **Physiological changes when viewing tryphobic images: Irrational or adaptive?**

*R Nathan Pipitone (npipitone@adams.edu), Adams State University; Brandon J Gallegos (brandonjgallegos@gmail.com), Adams State University; Haley N Lanier-Pratt (lanierpratt@grizzlies.adams.edu), Adams State University*

Trypophobia, or the fear of holes, is a unique and recently discovered phobia to the scientific literature. Recent work has shown that humans have an aversion to tryphobic images and that these images share similar spectral frequencies found in various dangerous animals. Therefore, while tryphobia at first glance seems irrational, these images might be triggering a primitive threat detection system that has adaptive functionality. In the present study, we attempt to replicate previous work that showed levels of comfort shifting as a consequence of viewing tryphobic images. We then assess whether levels of comfort relate to a newly designed scale that measures participants' level of tryphobia. We also measure participant physiology when viewing tryphobic images. The results will be discussed using an evolutionary framework.

### **Ancestral awareness as a clinical heuristic for client and practitioner: Applying EP research to psychotherapy**

*Nando Pelusi (npelusi@me.com), Private Practice*

Clinical conditions such as loneliness, social phobias, avoidance of responsibilities, hostility, compulsive and impulsive behaviors, and neediness are often the misreading or misapplication of natural impulses that would have aided survival and mating for most of human history. Separating components of common clinical symptoms such as anxiety and depression, anger, guilt and rage, with ancestral awareness provides a key into involuntary

submission, status social standing, ego, groups, relationships, alliances, distinguishing friend from foe, sensitivity to stimuli, etc., are of which are informed by EP research. Other clinical areas spotlighted by evolutionary psychology include procrastination, gambling, overeating, compulsions and obsessions. Seemingly irrational behavior often reveals a deeply rational logic that aided our ancestors for many generations. Insights from EP research allows more careful calibration of emotions and behavior. Upon completion of the session participants should be able to: 1. Handle emotional “problems” with faster understanding of “why” they feel certain ways, “why” they act in self-defeating ways. Hint: It’s not your mother. 2. Calibrate emotional responses in the context of an ancestral perspective. 3. Effectively bridge cognitive behavior therapy and evolutionary psychology tailored to one’s goals.

### **Cognitive evolutionary therapy for depression: A clinical trial**

*Cezar Giosan (giosan@outlook.com), Berkeley College/Babes-Bolyai University; Vlad Muresan (vladmuresan99@gmail.com), Babes-Bolyai University; Aurora Szentagotai (auraszentagotai@gmail.com), Babes-Bolyai University; Oana Cobeanu (oanacobeanu@gmail.com), Babes-Bolyai University*

Recent research (e.g., Giosan, 2013) strengthens the support towards the idea that intervening on fitness dimensions can have therapeutic benefits. The goal of the present study is to develop an evolutionary intervention for depression (Cognitive Evolutionary Therapy; CET), inspired from such recent advances in evolutionary psychopathology, and to conduct a preliminary randomized clinical trial comparing its efficacy with Cognitive Behavioral Therapy (CBT), the psychological standard of care in depression. While CBT focuses on the proximate causes of depression, such as correcting dysfunctional beliefs, CET also intervenes on distal, or evolutionary causes of depression. The therapeutic protocol involves using a newly created Fitness Evaluation Scale, administered to patients at intake. Patients’ responses to this instrument guide specific fitness-related behavioral interventions, which can work in conjunction with traditional CBT.

### **Applying the core design principles for the efficacy of groups to businesses**

*David Sloan Wilson (dwilson@binghamton.edu), Binghamton University; Thomas F Kelly (tkelly@binghamton.edu), Binghamton University; Melvin M Philip (Melvin.m.philip@gmail.com), Binghamton University; Kelly A Keill (kkeill1@binghamton.edu), Binghamton University; Xiujian Chen (xichen@binghamton.edu), Binghamton University*

Wilson, Ostrom, and Cox (2012) showed how the core design principles for the efficacy of groups connect with evolutionary theory and apply to many different groups. Applying the design principles to an educational setting can improve the academic performance of at-risk youth (Wilson, Kauffman, & Purdy, 2011). / This project applies the core design principles to business settings. The authors used a database that examines the prosocial and pro-environmental aspects of businesses using surveys. They identified the questions that loaded onto the design principles and used these questions to examine how the design principles affected the “B Scores” of the companies in the database. Initial analyses indicate that the design principles account for a significant amount of variation in survey scores.

### **Humans evolved to create and transmit knowledge in a democratic environment and why we should teach that way**

*Joanne Souza (joanne.souza@stonybrook.edu), Stony Brook University; Paul M Bingham (paul.bingham@stonybrook.edu), Stony Brook University*

Reported are results of a ten-year longitudinal study in a very large human evolution course using democratized student discussion groups designed to emulate the evolved ancestral human relationship to knowledge generation and transmission. Students are incentivized to collaboratively apply social doubt to their current knowledge, the knowledge of others, course content, and the academic literature within asynchronous online discussion groups without initial faculty intervention. Our data show large effect sizes with extremely high statistical significance indicating that this format supports strong student content mastery while providing feedback allowing continuous year-over-year improvement in instruction. We argue that teaching through democratized social doubt assists students to potentially grow into the skeptical, productive citizens on which the survival of democratic governance depends.

**10:30am-12:00pm****Symposium 2A, Room 285****The greatest show on Earth begets the greatest job on Earth**

*Jennifer Bremser (jenna.davis.ua@gmail.com), SUNY Plattsburgh; Edward Sturman (sturman.edward@gmail.com), SUNY Plattsburgh; Nate Pipitone (npipitone@adams.edu), Adams State College; Mike Frederick (mfrederick@ubalt.edu), University of Baltimore; Haley Moss-Dillon (haleymoss@gmail.com), Kansas State University; Lora Adair, Kansas State University; Glen Geher (geherg@newpaltz.edu), SUNY New Paltz*

This symposium is intended for anyone aspiring for a career in Evolutionary Studies. A panel of NEEPSters who have recently survived graduate school and are all too aware of the reality of a shrunken academic job market will pass on their most valuable experiences and advice to the next generation (free of charge!). The symposium will dispel myths about the job market, address the daunting process of creating (and revising) job documents, and provide suggestions for getting past the fear-inducing interviews. Several insiders will share their perspectives on getting into and through graduate school as an Evolutionary Psychologist, and the job market from the perspective of a search committee. This is a perfect opportunity for undergraduate students aspiring to go to graduate school to get a glimpse of what is to come, and for graduate students who are ready to launch, to acquire the skills needed to do so successfully. We have one goal: to give participants the opportunity to learn from our mistakes, so that they can create their own evolutionary legacy.

**10:30am-12:00pm****Symposium 2B, Room 235****Evolving the future of Applied Psychology**

*David Sloan Wilson (dwilson@binghamton.edu), Binghamton University; Kalman Glantz (kalman.glantz@gmail.com); Nick Armenti (Rutgers University); Carlos Enrique Rivera (cerivera@suffolk.edu), Suffolk University; Daniel J Glass (djglass@suffolk.edu), Suffolk University*

Evolutionary psychology (EP) seeks to provide a general theoretical framework for the study of human psychology. The newly formed Applied Evolutionary Psychology Society (AEPS) seeks to apply this knowledge to solve real-world problems in business, law, education, medicine, and mental health. The Association for Contextual Behavioral Science (ACBS) is an older and larger society (over 6000 members) that is based on applied disciplines such as Prevention Science and Behavioral, Cognitive, and Mindfulness-based therapeutic techniques. The purpose of this symposium is to integrate the approaches of the two societies. A recently published target article in Behavioral and Brain Sciences (BBS) titled "Evolving the Future: Toward a Science of Intentional Change" (Wilson, Hayes, Biglan, and Embry 2014; [http://journals.cambridge.org/repo\\_A93SJz6p](http://journals.cambridge.org/repo_A93SJz6p)) attempts to create a broader vision of EP that includes the valid elements of narrow-school EP and the SSSM. This article provides the background text for the symposium. Attendees are encouraged to read this article before the symposium.

**2:00pm-4:00pm****Poster Session 2, Main Function Room****4:00pm-5:00pm****Session 6A: Signaling, Room 285****Is the low male voice a costly signal? Developmental associations between vocal frequencies, testosterone, and condition among Tsimane adolescent males.**

*Carolyn R Hodges-Simeon, Boston University (crhodges@bu.edu); Michael Gurven, University of California, Santa Barbara (gurven@anth.ucsb.edu); Steven JC Gaulin, University of California, Santa Barbara (gaul@anth.ucsb.edu)*

The human voice is highly sexually dimorphic. Low male voices are thought to be costly signals of phenotypic quality; however, no evidence currently links low voices with any indicators of quality (e.g. health or physical condition). We examine condition, testosterone, and vocal parameters in 91 male Bolivian adolescents (the canalization period for vocal fold and tract growth). Condition is operationalized as immune function (based on secretory IgA) and energetic reserves (BMI-for-age), and "masculine" vocal parameters as having low

fundamental frequency, narrow formant position, and low fundamental frequency variation. Results indicate that males in better energetic condition have higher testosterone levels and lower voices, even controlling for age. Further, testosterone mediates the relationship between condition and fundamental frequency. Our results provide support for a costly-signal model of low male voices.

**Faces in motion: An evolutionary analysis of the roles of facial attractiveness and facial expressiveness in first impressions**

*LeeAnn Renninger, Ludwig Boltzman Institute of Urban Ethology; Karl Grammer (karl.grammer@univie.ac.at), Ludwig Boltzman Institute of Urban Ethology; T Joel Wade (jwade@bucknell.edu), Bucknell University*

The purpose of the present research was to investigate the extent to which the characteristics of physical attractiveness and facial animateness interactively influence the perception of a target. Attractive and unattractive and high and low expressive faces were utilized. Participants' impression ratings of these targets revealed that for men and women rating men, and for women rating women, facial expressiveness level, more than physical attractiveness level, altered a target's likeability. When a male target is unattractive, high expressiveness can especially enhance his likeability ratings. Additionally, women were particularly sensitive to the domain of expressive style, and a woman's ovulatory state can alter her interpersonal impressions of male, but not female, targets. Findings are discussed in terms of current evolutionary theory.

**Visually conspicuous vehicle modifications affect perceptions of male owner's life history strategy**

*Jessica Sloan Kruger (Jessica.Sloan2@rockets.utoledo.edu), University of Toledo; Daniel J Kruger (kruger@umich.edu), University of Michigan*

Cross-culturally, male economic power predicts reproductive success. Displays of wealth and social status are an important aspect of male mating effort. Males higher in mating effort may invest more in economic displays. We predicted that participants would rate owners of vehicles with conspicuous upgrade modifications (i.e. larger, shinier wheels) higher on mating effort tendencies and lower on parental investment tendencies. Also, participants would rate owners of upgraded vehicles as more interested in brief sexual affairs and less interested in long-term committed romantic relationships, compared to owners of stock vehicles. Perceptions of women's interests may mirror this pattern. Results largely supported our predictions.

**Conspicuous smartphones serve as intra-sexual signals**

*Christine Hennighausen (christine.hennighausen@uni-wuerzburg.de), Julius-Maximilian's University*

Studies show that men conspicuously purchase and display status products to attract mates, while women do so to deter same-sex mating rivals. Intersexual and intra-sexual signaling are closely related processes, particularly in relation to same-sex competition. Thus, this research examined the signaling function of smartphones in intrasexual mating competition. In two experiments, we found that men rated a male rival who was depicted with an inconspicuous and low-status smartphone as a more desirable long-term mate for women, and a rival depicted with a conspicuous and high-status device as more interested in short-term mating. Women evaluated a female rival's mate value solely by her physical attractiveness. Our results extend previous research, suggesting that men also engage in conspicuous displays in same-sex competition.

**4:00pm-5:00pm**

**Session 6B: Competitive Sports, Room 235**

**Playing in the Dark: The Dark Triad and competitive sports**

*Sarah L Strout, (sarah.strout@dc.edu), Dominican College; Gregory L Carter (g.l.k.carter@durham.ac.uk), University of Durham, UK*

The growth in research on the Dark Triad over the past decade has been dramatic. Studies on the trait constellation have covered myriad subjects, including attitudinal and behavioral competitiveness, with which it is highly correlated. The present research explores how DT relates to competition on the pitch, track, and field. 233 participants from the U.S.A and the U.K. were asked to complete questions about their sports involvement and the Dark Triad Dirty Dozen (Jonason & Webster, 2010). Results supported our hypothesis. Athletes scored higher than non-athletes on the Dark Triad as whole, as well as on the individual traits of psychopathy, narcissism and

Machiavellianism. In addition, differences were found for team sports vs. individual sports and contact vs. non-contact sports.

**What the face can reveal about behavior: Formidability as judged from facial photographs of professional hockey players correlates with aggression on the ice**

*Gordon Bear (gbear@ramapo.edu), Ramapo College; Andrew Koske (akoske@ramapo.edu), Ramapo College*

College students viewing photographs of nine professional hockey players made judgments about their strength, toughness in a physical fight, muscularity, and overall size. The mean of the size judgments correlated with measures of on-ice behavior: number of fights per game, number of penalty-minutes per game, and number of misconduct penalties per game ( $r$  ranged from .70 to .78;  $p < .04$ ). The correlations remained substantial when the players' heights and weights were partialled out. A replication is in progress.

**Does childhood behavior predict adult sports interest? An evolutionary perspective**

*Robert O Deaner (robert.deaner@gmail.com), Grand Valley State University; Lauramarie E Pope (lep161@psu.edu) Penn State University; Nikole LeCompte (lecomptn@mail.gvsu.edu), Grand Valley State University; David A Puts (dap27@psu.edu), Penn State University*

Sports are universal across human societies, but there is great individual variability in sports interest. Evolutionary theory suggests that sex-typed childhood behavior, a correlate of prenatal hormone exposure, will correlate with interest in masculine or feminine sports. We tested this hypothesis by surveying 307 NCAA intercollegiate athletes participating in gymnastics, cheerleading, football, soccer, swimming, and tennis. Among women, soccer players recalled significantly more masculine childhood behavior than women who participated in feminine or gender neutral sports. Among both women and men, those who recalled more masculine childhood behavior reported significantly greater interest in participating in masculine sports. These results inform our understanding of sports and may yield practical insights for improving public health.

**A cultural and macroeconomic perspective on mate selection**

*Samantha L Kanouse (sllkanouse@gmail.com), CUNY: City College; Jón G Sigurjónsson (jon.sigurjonsson@gmail.com), CUNY: City College; Adriana Espinosa (aespinosa@ccny.cuny.edu) CUNY: City College*

Twenty-three culturally westernized countries were analyzed for macroeconomic and cultural variables in order to assess their effect on marriage and birth rates. Six sexual strategy hypotheses were used in order to assess mating behavior in terms of resource depreciation and cultural values. First, a factor analysis showed the relationships between the cultural and economic variables that created component variables. Second, these new components were used in a regression model for marriage and birth rates. Our results support that independent of each other, cultures that are flexible and efficient, or that are conservative with strong traditional values have higher levels of marriages and births.

**5:00pm-6:30pm Special Panel on Evolution and Development**

*Robert L Trivers, Rutgers University*

*w/ invited panelists Joyce Benenson, Emmanuel College (benensjo@emmanuel.edu); Gary Fireman (gfireman@suffolk.edu), Suffolk University; David Haig (dhaig@oeb.harvard.edu)*

Evolutionary and developmental psychology are two complementary perspectives that can help us understand human behavior; yet these two approaches are often considered two distinct domains of psychological research, and integrated theories which fully utilize the depth of both developmental and evolutionary psychology are the exception rather than the rule. In this panel event, evolutionary and developmental psychologists, led by special guest Robert Trivers, describe examples from their own research of how evolutionary and developmental perspectives can inform one another in fruitful ways.



**Robert L. Trivers** is a world-renowned evolutionary biologist whose contributions to the evolutionary behavioral sciences have been foundational to the fields of behavioral ecology and evolutionary psychology. His theories of reciprocal altruism, parental investment, parent-offspring conflict, and self-deception, among others, have answered some of the most mysterious questions about cooperation and conflict that once vexed the life sciences. Dr. Trivers' pioneering work and brilliant insights place him among the most influential evolutionary theorists of our generation. In 2007, he was the recipient of the Royal Swedish Academy of Science's prestigious Crafoord Prize in recognition of over 40 years of critical contributions to the biological sciences. Other honors include – but are not limited to – the Distinguished Animal Behaviorist Award, given by the Animal Behavior Society and a title of Honorary Distinguished Fellow at the University of West Indies, Kingston. In addition to publishing over 50 scholarly papers in the fields of biology, psychology, and anthropology, Dr. Trivers has authored five books, including *Social Evolution* (1985), *Deceit and Self-Deception* (2011), and his latest work, *The Folly of Fools: The Logic of Deceit and Self-Deception in Human Life* (2014). He is currently Professor of Anthropology and Biological Sciences at Rutgers University.

## Invited Panelists

**Joyce F. Benenson** is a professor of Psychology at Emmanuel College in Boston and an Associate Member of the Human Evolutionary Biology department at Harvard University. She has studied children's interactions since she was 19 as an undergraduate at Duke University. After obtaining her Ph.D. from Harvard University in 1988, she was a post-doc at Radcliffe College, an assistant professor at the University of Hartford, an assistant/associate professor at McGill University in Montreal, Canada, and a reader in Ethology at the University of Plymouth in England before her current positions. Dr. Benenson is the author of *Warriors and Women: The Survival of the Sexes* (2014).

**Gary D. Fireman** is professor and chair of Psychology at Suffolk University. His research interest is in the role of emotional complexity, intensity, and experience in relation to judgment, social reasoning, personal narrative, and sleep quality. He is particularly interested in the application of evolutionary theory to understanding children and adolescents who are identified as aggressive, rejected, peer-victimized, and as having poor emotional regulation and limited prosocial skills. Dr. Fireman is also interested in emotion functioning in relation to sleep quality, nightmares and disturbed dreaming, and related cognitive processes. His clinical interests include child, adolescent, and adult therapy; family therapy; psychological and psycho-educational assessment. Dr. Fireman is the author of *Narrative and Consciousness: Literature, Psychology, and the Brain* (2002).

**David Haig** is an evolutionary biologist and geneticist, and is George Putnam Professor of Biology in the Harvard Department of Organismic and Evolutionary Biology. He is a prolific theorist whose interests range from intragenomic conflict and maternal-fetal conflict in human pregnancy to the evolution of plant life cycles. Dr. Haig has a particular interest in genetic conflicts within individual organisms, as exemplified by genomic imprinting and is the author of *Genomic Imprinting and Kinship* (2002).

## Poster Abstracts

For poster abstracts, please see expanded program on the official conference website:  
<http://neeps2015.weebly.com/schedule.html>

### Poster Session 1 (Friday)

#### 1. Mating strategies and health risk behaviors in Peruvian university students from an evolutionary perspective

*Daniel A Rodriguez Ramirez, Springfield College (rr\_daniel@outlook.com)*

In this study, we investigated the relation between mating styles and health risk behaviors in students from a private university in Peru. Participants filled out an anonymous questionnaire assessing mating strategies, depression, alcohol abuse, and condom usage (measured by the Beck Depression Inventory, the Audit Scale, portions of the Revised Sociosexual Inventory, and six complimentary questions). The participants' results showed a significant positive correlation between short term mating styles and the health risk behaviors of alcohol abuse and condom non-usage. This research was the first of its kind in this particular population and more studies are needed in this field in order to affect social policies in sexual education in Peru.

#### 2. A longitudinal assessment of associations between early life environment, adversity perception, and economic status on fertility and age of menarche

*Dorsa Amir, Yale University (dorsa.amir@yale.edu); Matthew R Jordan, Yale University (matthew.jordan@yale.edu); Richard G Bribiescas, Yale University (richard.bribiescas@yale.edu)*

Perceptions of early life environmental adversity can affect the timing of life history transitions and investment in reproductive effort. Here we present evidence of the effects of variables associated with extrinsic mortality and morbidity on reproductive effort in a contemporary American population. We used a longitudinal database that sampled American participants ( $N \geq 1,579$ ) at four points during adolescence and early adulthood to test whether perceptions of environmental adversity were associated with reproductive effort. We found that variables reflective of perceptions of adversity and risk were significantly associated with age of menarche and early adult fertility. While other factors related to energetics and somatic condition could not be assessed, the results of this study support the hypothesis that perceptions of adversity early in life are associated with differences in reproductive effort.

#### 3. Does the thought of death accelerate a fast life history strategy? Evaluating a mortality salience prime

*Humama Khan, University of Baltimore (humamakhan@gmail.com); Madeleine Emanuel, University of Baltimore (madeleine.emmanuel@ubalt.edu); Matthew Ancona, University of Baltimore (matthew.ancona@ubalt.edu); Hilary Keil, University of Baltimore (hilarykeil@gmail.com); Michael Frederick, University of Baltimore (mfrederick@ubalt.edu)*

It has been demonstrated that an individual's metabolism, stress-sensitivity, hormone levels, gene expression, and life history strategy can be influenced by the environment they developed in. Previous research examining the impact of priming conditions on the expression of life history strategies has produced inconsistent results. This study uses survey measures to assess participants' childhood environment in relation to adult behavioral dimensions. Participants will be university students who grew up in various neighborhoods throughout the greater Baltimore area. We hypothesize individuals who developed in environments high in insecurity and resource scarcity will display faster life history strategies and will become progressively more focused on short-term goals after exposure to a mortality prime, specifically writing about their own death.

#### 4. Earlier recalled pubertal timing predicts phenotypic masculinity in men

*Leslie M Doll, Department of Anthropology, Penn State University (lmd330@psu.edu); Rodrigo A Cardenas, Department of Psychology, Penn State University (rac35@psu.edu); David A Puts, Department of Anthropology, Center for Behavior, Brain and Cognition, Penn State University (dap27@psu.edu)*

Evidence suggests that earlier puberty in males is associated with more male-typical psychology and behavior, such as increased mental rotation performance, substance abuse, and delinquency. Predictions about the association of these traits with pubertal timing previously have lacked a theoretical framework. Here, we suggest that life history (LH) theory has the potential to provide this framework. Because faster-LH men emphasize mating over parenting, earlier puberty may lead to more masculine versions of traits that become more sexually dimorphic at puberty and are relevant to mating success. We tested this hypothesis in 253 men. Consistent with our hypotheses, pubertal timing explained approximately 10% of the variance in adult male BMI, facial dominance, systemizing, biceps circumference, and mental rotation ability.

### **5. Gritty and sexually restrictive**

*Adam C Davis, Lakehead University (adavis1@lakeheadu.ca); Mirella L Stroink, Lakehead University (mstroink@lakeheadu.ca); Wendy T Leppanen, Lakehead University (wtleppan@lakeheadu.ca)*

The goal of the present research was to examine the relationship between Grit – the capacity to sustain interest in and allocate effort toward long-term objectives (Duckworth et al., 2007) –, attitudes toward infidelity, and sociosexual orientation (i.e., sociosexuality) – how restricted or unrestricted an individual’s sexual attitudes and behaviours are (Simpson & Gangestad, 1991). Results suggest that individuals’ possessing more grit are less tolerant of infidelity and have more restrictive sexual attitudes and behaviours (i.e., lower sociosexuality). It is contended / that for an individual high in grit, adaptive problems may best be solved by allocating effort toward long-term objectives, being diligent, hardworking, and allocating resources toward long-term mating efforts.

### **6. Beauty pageants, mating effort, and life history: De facto debutant balls in regions of the US with lower life expectancy**

*Kilian James Garvey, The University of Louisiana (garvey@ulm.edu); T Joel Wade, Bucknell University (jwade@bucknell.edu)*

In this study we examined if state by state demographic differences of life expectancy, infant mortality, pathogen prevalence, socioeconomic status, and IQ predict number of beauty pageants. It was predicted that societies characterized by lower life expectancy would, according to the Life History Theory, attempt to speed up mating behavior by “presenting” females at an earlier age. Because the traditional debutante ball ceremony and related rituals (i.e., the Jewish bat mitzvah and the Latin American fiesta de quinceañera) generally don’t present females younger than 15 years of age, an alternative format should be created in areas of excessive mortality salience: in this study the child’s beauty pageant is hypothesized to be the de facto “coming out” ritual and should be more common in regions of the United States where life expectancy is lower. While all measures were strongly correlated with number of beauty pageants per 100K population, a multiple regression analysis found that early death related measures (life expectancy and infant mortality) explained the variance.

### **7. Regional variation in grooming: Exposure to pathogens predicts increased motivation to coif**

*Renee Eastabrooks, Marist College (rlkeastabrooks@gmail.com); Kilian James Garvey, The University of Louisiana (garvey@ulm.edu)*

While beauty may be in the eye of the beholder, there is good reason to believe that what humans look for in other faces, and likely their own, largely centers on symmetry. Numerous studies have found that people living in higher pathogen prevalent regions have a greater desire for symmetrical faces (Little, Apicella, and Marlow, 2007) as well as humans increasing their preference for symmetrical faces after exposure to pathogen relevant stimuli (Little, DeBruine, and Jones, 2013). In the present study, we looked at regional variations of self-grooming, as a product of higher or lower exposure to pathogens, as well as measures of economic disparity, IQ, poverty, life expectancy, physical/medical well-being, and over all happiness scores. It was predicted that individuals would be more concerned with their own looks, as they are with others, in high pathogen regions, and that this would be reflected by a greater amount of time spent on self-grooming.

### **8. Perceptions of conscientious and naturally talented athletes**

*Andrew R Shimkus, SUNY New Paltz (shimkusa1@hawkmil.newpaltz.edu); Glenn Geher, SUNY New Paltz (geherg@newpaltz.edu); Nicole Pemberton, SUNY New Paltz*

This research examines the attractiveness of athletes. This view is predicted to be manipulated by the athlete’s intentions to improve for the future. Specifically, this study assesses how learning about a basketball player’s

conscientiousness or natural talent influences their short or long-term attractiveness. This is done through the use of vignettes and a self-report questionnaire. It is predicted that for both males and females, when choosing intentions of a short and long-term engagement with the target, a hard-working athlete will be seen as more preferable for the long-term, whereas a naturally gifted athlete will be preferred more in the short-term.

**9. Sex differences in sport involvement across countries: Does gender inequality and digit ratio (2D:4D) matter?**

*Shea M Balish, Dalhousie University (sb@dal.ca); Robert O Deaner, Grand Valley State University (robert.deaner@gmail.com); Daniel Rainham, Dalhousie University (dr@dal.ca); Chris Blanchard, Dalhousie University (chris.blanchard@dal.ca)*

Evolutionary hypotheses predict that males are universally overrepresented in sport. This study analyzed data from the World Value Survey (nss = 65,446, ncountries = 47). Hierarchical Bernoulli modeling revealed that those who are younger, unmarried, and male are more likely to report sport involvement, even when controlling for countries' gender inequality. Within-country logistic regressions revealed that a male overrepresentation in sport is near universal, however age and marital effects are less consistent. Across countries, gender inequality was correlated with sex differences in sport involvement,  $r(45) = .66, p < .01$ . However, for a small sub-set of countries ( $n = 10$ ) this relationship decreased when controlling for average sex differences in left and right hand 2D:4D,  $r(8) = .44, p > .05$ .

**10. Environmental, political, and social effects on intellectual creativity: Regional differences in the MacArthur Genius Awards**

*Brandon Jablonski, Sinclair Community College (brandon.jablonski@sinclair.edu); Kilian James Garvey, The University of Louisiana (garvey@ulm.edu)*

In this study we examined state by state variation in creativity by three measures of MacArthur Fellowships (the so-called Genius Grants) awarded: the number by state of awardees birth (MacBorn: where that individual awardee was born), the number of awardees currently residing in a state (MacLive: where they were living when they were awarded the fellowship), and by the likelihood that an awardee moved to that state (MacMoved: if the awardee was not born in the state where they were living when they won). It was our intent to explore the idea that some regions are more amenable for creative work than others, but, more to the point, does it matter if you are born in one of these regions, live in one of those regions, or were born someone where else and moved. Economic, educational, political, religious, intelligence, and pathogen stress were compiled via open sources data files. While each of the Mac groups had someone different "explanations" for variance, the most compelling explanation for differences in awards was the negative effect religion seemed to have on creativity.

**11. The effects of priming jealousy on beauty-enhancement preferences of females**

*Brittany T Cormier, Saint Mary's University (bcormier06@gmail.com); Darren M Fowler, Saint Mary's University (dmfowler67@gmail.com)*

Females faced with infidelity risked losing resources and investment. Evolutionary theory suggests that jealousy evolved to help retain males. Previous research found that both jealousy and the want to attract mates trigger appearance-enhancement behaviours in females (Buss, 1988a; Buss, 1988b), such as using make-up. This study examines the effect of these emotions on female decision-making behavior. We primed anger, sadness, fear, romance, or jealousy and asked females to rate how much of the emotion they felt. They were then asked if they preferred a chance to win a gift card from a beauty-enhancement service or from a restaurant. We hypothesize that females who experience moderate to high romance or jealousy will choose a beauty-enhancement option significantly more often.

**12. Are there sex differences in willingness to repair a relationship after infidelity?**

*T Joel Wade, Bucknell University (jwade@bucknell.edu); Cherra Mathis, Bucknell University (cmm051@bucknell.edu)*

The present research examined whether or not there are sex differences in how likely individuals are to attempt to repair a relationship after a partner has committed a sexual or an emotional infidelity. Men were expected to be more likely to repair a relationship after a partner committed an emotional infidelity while women would be more likely to repair a relationship after a partner committed a sexual infidelity. The results were partially consistent

with the hypothesis. Women were more likely to repair a relationship after a partner committed a sexual infidelity while both sexes are equally likely to repair a relationship after an emotional infidelity was committed. These findings are discussed in terms of prior research.

### **13. Does skin color, facial shape, and facial width to height ratio (fWHR) play a role in Black male facial evaluation?**

*T Joel Wade, Bucknell University (jwade@bucknell.edu); Leeann Renninger, Ludwig Boltzman Institute of Urban Ethology*

The present research sought to determine how skin color, facial shape, and facial width to height ratio (fWHR) affect ratings of 10 Black male facial shapes. Based on evolutionary theory and prior research, the rectangular, quadratic, inverted trapezium, and pentagonal faces were hypothesized to receive the highest attractiveness, dominance, maturity, masculinity, strength, and social competence ratings. Additionally, faces with higher fWHRs were expected to receive higher dominance, strength, and masculinity ratings. Smaller, round or oval faces were hypothesized to receive highest warmth ratings. The results were consistent with these hypotheses. The examination of the effect of skin color was exploratory. Skin color did not affect ratings of the faces. These findings are discussed in terms of evolutionary adaptations and prior research.

### **14. Developmental associations between facial width to height ratio, testosterone, and strength**

*Theodore J Samore, Boston University (theos@bu.edu); Kate Hanson-Sobraske, University of California, Santa Barbara (k\_n\_hanson@hotmail.com); James Griffith (james@jamesdgriffith.com); Michael JC Gurven, University of California, Santa Barbara (gurven@anth.ucsb.edu); Steven JC Gaulin, University of California, Santa Barbara (gaulin@anth.ucsb.edu); Carolyn R Hodges-Simeon, Boston University (crhodges@bu.edu)*

Facial width-to-height ratio (fWHR) has been proposed as a sexually dimorphic characteristic; however, no studies have examined the association between fWHR and testosterone during the phase in which facial growth is canalized--adolescence. We predict that adolescent fWHR should correlate with age, testosterone, and upper-body strength. Testosterone, adiposity, upper-body strength, age, and front-facing photographs were collected from 91 Bolivian peri-adolescent boys. The predictions were not supported. Neither age-related change in fWHR nor zero-order associations with testosterone and strength were observed. However, after controlling for age and adiposity, the relationship between testosterone and fWHR approached significance ( $p=.06$ ). We suggest an alternative measure--facial width-to-lower-face height ratio, which shows a strong age-related trend, as well as associations with testosterone and strength.

### **15. Looking good, sounding better: Face attractiveness moderates voice attractiveness**

*Susan M Hughes, Albright College (shughes@albright.edu); Marissa A Harrison, Penn State Harrisburg (mah52@psu.edu)*

Research shows that both facial and vocal attractiveness play important roles in mate selection; however, the relationship between these two features is unclear. We examined how perceptions of voice attractiveness are influenced by a speaker's facial attractiveness. Independent raters judged vocal attractiveness of speakers featured in a video (i.e., voice-plus-visual) and of the same speakers in an audio-only presentation. We also obtained facial attractiveness ratings independently for speakers. Those perceived as being average looking were rated no differently in terms of vocal attractiveness in the audio-only and video (voice-plus-visual) conditions. However, facially attractive speakers were rated as sounding more attractive, and facially unattractive speakers sounded less attractive when heard in the video compared to when heard in the audio-only condition.

### **16. Dating in the digital age: Camera angle differentially affects perceptions of men versus women**

*Anastasia Makhanova, Florida State University (makhanova@psy.fsu.edu); Jon K Maner, Kellogg School of Management, Northwestern University (jon.maner@kellogg.northwestern.edu)*

Romantic relationships often start online. In this new environment, first impressions - which have profound effects on future interactions - are formed from photographs. Women on dating websites posted more photographs taken from above than from below (Study 1). To examine specific effects of camera angle (Study 2) targets that varied in camera angle were rated on several characteristics. We found that targets (regardless of sex) were rated as younger, shorter, and less dominant when photographed from above than from below. Furthermore,

women's but not men's attractiveness was influenced by camera angle. Findings suggest that subtle changes in digital media affect perceptions of individuals on traits that are relevant to making decisions such as mate choice.

### **17. Self-presentation on profile photographs across the life span: Evidence from a German online dating website**

*Christine Hennighausen, Julius-Maximilians University of Wuerzburg, Germany (christine.hennighausen@uni-wuerzburg.de); Maryanne L Fisher, Saint Mary's University, Halifax, Canada (mlfisher.99@gmail.com); Frank Schwab, Julius-Maximilians University of Wuerzburg, Germany (frank.schwab@uni-wuerzburg.de)*

Online dating websites have become increasingly important in men's and women's search for a partner. Prior findings suggest that men are more likely to promote resources, while women are more likely to emphasize their youthfulness and physical attractiveness. Moreover, there are sex-typical differences in men's and women's self-presentation on the photographs accompanying online dating profiles. While there is evidence that mate preferences are relatively stable across the life span, age has not been investigated with respect to photographs of online personal advertisements. Our goal was to replicate and extend findings of sex differences in self-presentation in online profile photographs, dependent on the mating strategy (short-term vs. long-term) and by using a German sample that included a large age range.

### **18. Evolutionary mismatch and online dating**

*David E Chapleau, SUNY New Paltz (chapplead1@hawkmil.newpaltz.edu); Glenn Geher, SUNY New Paltz (geherg@newpaltz.edu); Nicole Wedberg, SUNY New Paltz*

Through an evolutionary perspective, mate selection is of fundamental importance to reproductive success. According to contemporary evolutionary psychology, humans have evolved various adaptive mating strategies that emphasize specialized traits that signal signs of fitness to prospective mates; based on parental investment theory (Trivers, 1972), life history strategy (Figueredo et al., 2006), strategic pluralism (Gangestad & Simpson, 2000), and sexual strategies (Buss & Schmitt, 1993). This research project aims to identify how individuals advertise themselves to particular audiences using online dating services that utilize personal profile descriptions to attain romantic partners.

### **19. The relationship between various humor dimensions and gender and mating strategies**

*David Chapleau, SUNY New Paltz (chapplead1@hawkmil.newpaltz.edu); Gökçe Sancak Aydın, Middle East Technical University (sgokce@metu.edu.tr); Glenn Geher, SUNY New Paltz (geherg@newpaltz.edu); Briana Tauber, SUNY New Paltz (no1731425@hawkmil.newpaltz.edu)*

This study investigated the relationship between various humor dimensions and gender, and mating strategies. Participants described themselves for potential mates in personal ads. Raters rated these ads according to different humor facets. The results of the study showed different humor facets are significantly correlated with gender, and mating strategies.

### **20. The influence of sociosexual orientation, jealousy, and sex differences on intrasexual competition**

*Laura L Robertson, Saint Mary's University (laurarobertson704@gmail.com); Maryanne L Fisher, Saint Mary's University (mlfisher.99@gmail.com)*

Sex differences in behaviors, such as jealousy in response to emotional and sexual infidelity, sociosexual orientation, and intrasexual competition are well-studied topics. However, there is no research on the effects of jealousy, sex, and sociosexual orientation on intrasexual competition. We proposed that individuals who are more distressed by sexual infidelity are more likely to have high sociosexual orientation, self-rated physical attractiveness, and will be more intrasexually competitive. Results support our hypothesis regarding women, however there was no difference in men, and sociosexual orientation was not significant. Overall, the findings suggest that in women, level of jealousy resulting from sexual infidelity impacts on competition, but not for men.

### **21. Personality attribution due to display of female erect nipples differ according to viewer sex**

*Anthonieta Looman Mafra, Universidade Federal do Rio Grande do Norte (looman.anthonieta@gmail.com); Maryanne L Fisher, Saint Mary's University (mlfisher.99@gmail.com); Rebecca Burch, SUNY – Oswego (rburch@oswego.edu)*

Despite the universality of visual sexual signals, such as erect nipples, minimal research exists on the perception of these displays. Casual observation suggests that erect nipples are typically perceived as a signal of sexual interest. Therefore, we predict women may perceive females with erect nipples as being potential competition for mates, in that the latter are signaling sexual interest as a way to increase mating related attention. In other words, women may perceive women with erect nipples as potential rivals for access to potential or current mates, regardless of the context. In contrast, men may view females with erect nipples in a positive manner, similar to how they perceive smiling women, thereby assuming sexual interest. Results are pending.

**22. “Do you have a sunburn or are you always this hot?” Men’s perceived effectiveness of pick-up lines used by women**

*Sarah Coughlin, Saint Mary’s University; & Maryanne Fisher, Saint Mary’s University  
(mlfisher.99@gmail.com)*

Past research has focused more on the lines being used than the appearance of the people using them. With the exception of Wade et al. (2009), these studies focus on both men and women using pick-up lines rather than women exclusively. Senko and Fyffe (2010) addressed the impact of men’s physical appearance on women’s receptiveness to lines and found that the attractive men were considered for short term relationships, and that physical appearance had less of an effect when considered for long-term relationships. This study had not been replicated with women using the lines. In a second study by Kleinke, Meeker, and Staneski (1986), men and women rated pick-up lines to determine sex differences in preference of lines used. Three main categories of lines were found, and these categories have been used in subsequent studies. It was determined that flippant lines were preferred the least by women, as they perceived the user as being unintelligent and untrustworthy. Women were more receptive to innocuous and direct lines.

**23. Self-deception and self-promotion for the purpose of increasing mate value**

*Takara A Bond, Saint Mary’s University (takarabond@gmail.com); Darren Fowler, Saint Mary’s University (darren.fowler@smu.ca)*

Research by Gino et al. (2009) found that most humans tend to cheat and lie a little when given the opportunity. Trivers (2011) argues that self-deception allows us to convince ourselves that we have more favourable qualities than we actually do, thereby allowing for easier and increased self-promotion to others. Since females seek intelligence in mates more than males do (Prokosch et al., 2009; Li et al., 2013), males tend to engage in self-deception to convince females they possess intelligence. Using Simon and Chabris’s (1999) now well-known test of selective attention, we seek to investigate tendencies to cheat or lie, and whether males show a greater tendency to lie when primed with an attractive female.

**24. Women control male romantic partners to pursue extra-pair partners**

*Dana M Blydenburg, Eastern Connecticut State University (blydenburgd@my.easternct.edu); Emily A Bragg, Eastern Connecticut State University (bragge@my.easternct.edu); Alita J Cousins, Eastern Connecticut State University (cousinsa@easternct.edu)*

Mate guarding occurs in both males and females, however there may be sex differences in the reasons why they mate guard each other. Men are controlling to restrain their partner from being unfaithful. Males respond this way to ensure paternity certainty so they do not waste resources in an unrelated child. We hypothesized that women who are controlling would report less investment in their relationship and having better potential mating alternatives than those who are less controlling. 1,069 women were recruited from a small university and online to participate in the study. Results support this hypothesis this idea. Mating alternatives, having cheated on a partner, and sexualizing others predicted women’s control of their partner.

**25. Male-perpetrated mass murder as a response to status threat**

*Marissa A Harrison, Penn State Harrisburg (mah52@psu.edu); Thomas G Bowers, Penn State Harrisburg (dvo@psu.edu); Susan M Hughes, Albright College (shughes@alb.edu)*

We sought to replicate and expand our findings (Harrison & Bowers, 2010) that mass murders were most frequently committed by men who experienced a status threat as a catalyst to the crime. We found 263 cases (in 29 different countries) of male-perpetrated mass murders committed since 1996. Consistent with our earlier

findings, 86.9% of these crimes were reported to be triggered by a threat to current status or advancement (e.g., job loss, economic problems, educational problems, being bullied), and blue collar workers were overrepresented among the US cases. Additionally, in 72.8% of all cases, the perpetrator experienced mate attraction failure or loss (i.e., single, divorced, separated, widowed). We discuss results through an evolutionary lens.

**26. A university as a fraternal interest group: Does the perception of female migration increase in-group pride and out-group antagonism?**

*Collette L Robert (colletterobert1@gmail.com), Saint Mary's University; Darren Fowler (dmfowler67@gmail.com), Saint Mary's University; James Cameron (jim.cameron@smu.ca), Saint Mary's University*

The purpose of this study is to measure In Group Pride and Out Group Antagonism depending on perceived sex ratio due to perceived migration patterns. Fraternal Interest Group theory states that the more females migrate between groups, and the more males remain in native bands, the greater the antagonism will be between groups. We hypothesize that the perceived migration of female students transferring from SMU (In Group) to DAL (Out Group) will result in SMU males experiencing more SMU pride and more antagonism towards DAL. In accordance with the Fraternal Interest Group theory, we predict no such effect for SMU females who are lead to believe that males are migrating from SMU to Dal.

**27. Evolution of the home: Comparison of ancestral and present day home preferences**

*Amy E Webb, Saint Mary's University (amyewebb22@gmail.com); Maryanne L Fisher, Saint Mary's University (mlfisher.99@gmail.com)*

Architectural structures, like homes, are preferred when there's the promise to function. Attractive homes promote likelihood of survival and reproductive success. Humans' primitive ancestors chose home areas and made structures for these benefits. Ancestral home characteristics included biologically important signs of prospect and refuge. The current study aims to compare preferred ancestral and modern day homes. It is hypothesized that preferred modern homes have significantly more prospect and refuge qualities than non-preferred homes. A catalogue is used to document all positive and negative qualities of homes on reality television shows "House Hunters" and "House Hunters International". These television series document individuals' search for homes. Throughout the show, individuals make comments about what they like and do not like about each property, and ultimately choose their preferred house to purchase. Data collected will make possible to analyze the aspects of modern homes that humans like or dislike and to categorize aspects of prospect and refuge. Data collection is ongoing. It is expected that modern homes will mirror ancestral homes with preferred prospect and refuge qualities.

**28. See no evil: Christians avoid looking at the injuries of the Crucifixion**

*David R Widman, Juniata College (widman@juniata.edu); Adam Caraballo, Juniata College (carabal11@juniata.edu); Forest Miller, Juniata College (millefd11@juniata.edu); Sara Cooper, Juniata College (coopesc11@juniata.edu); Brittini Devlin, Juniata College (devlibp11@juniata.edu); Emily Krause, Juniata College (krauses11@juniata.edu); Shannon Manley, Juniata College (manlesm11@juniata.edu)*

Evolutionary psychologists have argued that religion evolved by increasing the cooperation of strong in-groups. As is common, many have found that this strong in-group identification has led to increased aggression toward out-groups. We propose that religious believers are more tolerant of violence done in the name of that belief. Here, we provide data showing that Christians avoid looking at the injuries of the Crucifixion, suggesting an avoidance of the violence done in the name of their belief. The avoidance of the injuries may reflect an unconscious desire to avoid the unpleasant aspects of the violence of the crucifixion, making that violence more acceptable.

**Poster Session 2 (Saturday)**

**1. PROSOCIAL: Using the science of cooperation to improve the efficacy of groups**

*David Sloan Wilson, Binghamton University (dwilson@binghamtom.edu)*

Abstract: It is common for scientists who study cooperation to describe it as a puzzle before offering their particular piece towards its solution. By now, enough pieces have been put together to make a satisfying picture.

Even better, this picture can be used to evaluate and improve the performance of real-world groups. That is the mission of PROSOCIAL, a practical framework for improving the efficacy of groups that has been under development at the Evolution Institute for several years and is now available for use. The poster will describe PROSOCIAL's core design principle approach and how it can be employed by virtually any group whose members are trying to work together to achieve a common purpose.

## **2. PsychTable.org: Opportunities and challenges for classifying evolved psychological adaptations**

*Daniel Glass, Suffolk University; Niruban Balachandran, The World Bank (niruban25@gmail.com); Amy Jacobson, Rutgers University (amyjacobsonphd@gmail.com); Tim Nabzdyk, SUNY Buffalo (nabzdyk@gmail.com); Neil Oman (nomanic99@gmail.com)*

PsychTable.org, the Web-based taxonomy of human evolved psychological adaptations (EPAs), has in recent years raised questions about the evolutionary behavioral sciences' need for empirical rigor, open science for all, interdisciplinarity, peer evaluations of evidentiary breadth and depth, and international research collaborations. This paper examines opportunities, risks, and lessons learned in taxonomic activities. Newly-strengthened mechanisms for evaluating evidence for EPAs and special design are described for quality control purposes, in addition to new ways that scientists, educators, students, contributors, and the general public can interact with the growing global body of knowledge about evolved behavioral taxa. Guiding principles for increasing efficiency and access to PsychTable.org without sacrificing empirical quality are also discussed.

## **3. Civic ecology on the island of evolution: Educational action-research in Southwestern Madagascar**

*Dustin Eirdosh, PEAR Lab (Dustin@UniToliara.info)*

Now in its third year of development, the PEAR Laboratory, a collaboration of The EvoS Consortium and Madagascar's University of Toliara, has become a cooperation partner in the revival of Betanimena Station, a historic agricultural research center within the southwestern capital city of Toliara. Here, evolution informs both the educational content and context for curriculum development within the universities agricultural sciences faculty. A focus on plant breeding and seed saving provide a foundation for the teaching of biological evolution. While an integrated action-research plan focused on Ostrom's generalized core design principles extends the evolutionary narrative across human culture. The methodology will be presented and preliminary data shared.

## **4. EvoS is for kids: Emerging directions for evolutionary interventions in early education**

*Dustin Eirdosh, PEAR Lab (Dustin@UniToliara.info)*

The US is infamous for its on-going struggles to develop coherent, nationally congruent educational policies and practices around the teaching of evolution. Yet, even within the heated discourse on this topic, the focus is traditionally limited to whether or not we should teach secondary-level students about biological evolution. Discourse on the question of whether to teach a richly extended synthesis of evolutionary studies to the very youngest of students is so scant, even academics within evolution education may not be aware of the prime research and educational opportunities presented by this growing field of study. This poster maps out current initiatives and conceptual opportunities within the topic of teaching evolutionary studies to primary school students. Highlighting developments in the US, Germany, and Madagascar, and concepts ranging from seed saving to neuropsychology, the poster aims to be a resource for investigators and educators seeking innovative solutions to long-standing curriculum design challenges.

## **5. Nonverbal behavior of depressed patients: Comparisons with healthy volunteers and association with severity of depression**

*Juliana T Fiquer, LIM 23, Institute of Psychiatry of the Medical School of the University of São Paulo (FMUSP), São Paulo, Brazil (jufiquer@gmail.com); Andre R Brunoni, Interdisciplinary Center for Applied Neuromodulation & Clinical (CINA) and Epidemiological Research Centre, University Hospital, University of São Paulo, São Paulo, Brazil & Service of Interdisciplinary Neuromodulation (SIN), Department and Institute of Psychiatry, Faculty of Medicine of University of Paulo, São Paulo, Brazil; Ricardo A Moreno, Institute of Psychiatry of the Medical School of the University of São Paulo (FMUSP), São Paulo, Brazil; Fernando Fernandes, Institute of Psychiatry of the Medical School of the University of São Paulo (FMUSP), São Paulo, Brazil; Victoria M Portela, LIM 23, Institute of Psychiatry of the Medical School of the University of São Paulo (FMUSP), São Paulo, Brazil & Faculty of Psychology, United Metropolitan Universities (FMU), São Paulo,*

*Brazil; Clarice Gorenstein, LIM 23, Institute of Psychiatry of the Medical School of the University of São Paulo (FMUSP), São Paulo, Brazil & Department of Pharmacology, Institute of Biomedical Sciences of the University of São Paulo (ICB-USP), São Paulo, Brazil*

Nonverbal expressive behavior is associated to reflex responses and highlights negative emotional and social processes that underlie depression. We analyzed the nonverbal behavior of depressed and healthy individuals during brief interviews. Methods: 56 female depressed outpatients, from public hospitals in Brazil, and 64 female healthy volunteers were evaluated by depression scales and 15-minute recorded interview. A judge analyzed participant's behavior through 21-category ethogram. Results: patients displayed more behaviors related to negative feelings (ex. head down, cry) than controls. Severity of depression was associated with patients' silence, head down and tight lips. Conclusion: nonverbal behavior differentiates depressed patients from controls. Patients display less pro social behaviors than controls. Patients' silence, head down and tight lips may indicate more severe depression.

## **6. The evolution and development of metarepresentations**

*Jay Kosegarten, Southeastern New Hampshire University (jfk45@hotmail.com); Gary Fireman, Suffolk University (gfireman@suffolk.edu); Gary Kose, Long Island University, Brooklyn Campus (gkose@msn.com)*

While the ability to form representations is found in all animals with cognitive capacities, the ability to form metarepresentations is rare. In highly intelligent social animals, such as primates, it has been argued that an ability to interpret and predict the behaviors of others by recognizing their mental states has evolved. Starting with Premack and Woodruff's (1978) pioneering article "Does the chimpanzee have a theory of mind?" some primates have been described as having "second order intentional systems" capable of having beliefs and desires about beliefs and desires (Dennett, 1987). While the level of metarepresentational sophistication of primates is still contentious, that of humans is not. It has been argued that the human lineage may be the only one in which there has been a true escalation of metarepresentational abilities. A brief review of some examples from these various domains will illustrate that metarepresentation is more of a meta-psychological than a met-linguistic activity, the basis of which is in the very nature of human action (Werner & Kaplan, 1968).

## **7. A game of hide and seek: Expectations of clumpy resources influence hiding and searching patterns**

*Dylan Robinson, Clarkson University (robinsdj@clarkson.edu); Tom Langen, Clarkson University (tlangen@clarkson.edu); Joseph Skufca, Clarkson University (jskufca@clarkson.edu); Peter Todd, Indiana University (pmtodd@indiana.edu); Andreas Wilke, Clarkson University (welschjl@clarkson.edu)*

Resources are often distributed in clumps or patches in space, unless an agent is trying to protect them from discovery and theft using a dispersed distribution. We uncover human expectations of such spatial resource patterns in collaborative and competitive settings via a sequential multi-person game in which participants hid resources for the next participant to seek. When collaborating, resources were mostly hidden in clumpy distributions, but when competing, resources were hidden in more dispersed patterns to increase the searching difficulty for the other player. More dispersed resource distributions came at the cost of higher overall hiding (and searching) times, decreased payoffs, and an increased difficulty when the hider had to recall earlier hiding locations at the end of the experiment.

## **8. Illusory pattern detection in habitual gamblers**

*Valaree Bedell, Department of Psychology, Clarkson University (bedellvd@clarkson.edu); Benjamin Scheibehenne, Department of Economic Psychology, University of Basel (benjamin.scheibehenne@unibas.ch); Wolfgang Gaissmaier, Department of Psychology, University of Konstanz (gaissmaier@uni-konstanz.de); H Clark Barrett, Department of Anthropology, UCLA (barrett@ucla.edu); Andreas Wilke, Department of Psychology, Clarkson University (awilke@clarkson.edu)*

Prior research suggested that "hot hand," a tendency to perceive illusory streaks in sequences, may be a human universal, tied to an evolutionary history of foraging for clumpy resources. Like other evolved propensities, this tendency might be expressed more strongly in some people than others, leading them to see luck where others see only chance. If the desire to gamble is enhanced by illusory pattern detection, such individual differences could be predictive of gambling risk. Using a computerized sequential decision-making paradigm, we found evidence that

subjects who have a greater tendency to gamble also have a higher tendency to perceive illusory patterns, as measured by their preferences for a random slot machine over a negatively autocorrelated one.

### **9. A literature review on the hot hand phenomenon and the gambler's fallacy: In which content domains do these biases occur most often?**

*Jasmin Plaza, Clarkson University Department of Psychology (plazaj@clarkson.edu); Jeremy Liss, Clarkson University, ARETE Program (lissja@clarkson.edu); Andreas Wilke, Clarkson University Department of Psychology (awilke@clarkson.edu)*

In the behavioral decision sciences, the hot hand fallacy and the gambler's fallacy are often discussed as two opposing, symmetric biases (i.e., like two sides of a coin) that occur equally likely. From an ecological/evolutionary point of view, however, we would expect that the role of particular content domains in which these two cognitive biases occur have a much larger role than previously assumed, as each of these biases might react to different cues in statistical resource environments. We report on a meta-analytic study that summarizes more than 180 research articles.

### **10. An evolutionary valid domain-specific risk-taking scale**

*Lindsey M Schlaeg, Department of Psychology, Clarkson University (schlaelm@clarkson.edu); Amanda Sherman, Department of Psychology, Clarkson University (shermaak@clarkson.edu); Sumona Mondal, Department of Psychology, Clarkson University (smondal@clarkson.edu); Carey Fitzgerald, Department of Psychology, University of Michigan-Flint (careyfiz@umflint.edu); Daniel J Kruger, School of Public Health, University of Michigan-Ann Arbor (kruger@umich.edu); Andreas Wilke, Department of Psychology, Clarkson University (awilke@clarkson.edu)*

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. Three studies evaluated the scale's properties for a sample of 1,326 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. 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.

### **11. An evolutionary multi-agent model to explore the adaptive significance of risk perception: How do humans judge risks to be perceived to threat future generations as high or low?**

*Hidenori Komatsu, Central Research Institute of Electric Power Industry (komatsu@criepi.denken.or.jp); Hirotada Ohashi, Department of Systems Innovation, School of Engineering, The University of Tokyo*

It has been pointed out that human risk perception—which is based on heuristics for finding good-enough solutions that are not guaranteed to be optimal—is increased or decreased by various factors. Many such factors are known to exist phenomenologically, and evolutionary psychology suggests that our heuristics were evolved in Stone Age environments. However, the adaptive significance of our risk perception remains an open question. One factor is that risks perceived as threatening to future generations tend to be judged as high, yet the mechanism behind this is not fully understood. This factor can potentially be explained by inclusive fitness theory, which suggests an adaptive significance of altruistic behavior toward relatives even at a cost to individual reproduction. Agents have parameters for risk perception and the degree of cost incurred by altruism. The genetic algorithm evolves these parameters to maximize the number of preserved gene copies. The evolved parameters for risk perception are compared between cases with and without altruism. We furthermore define sex differences where females incur a higher cost for altruism toward a single offspring than do males, and we examine differences in evolved risk perception between males and females.

### **12. Through the killer's eyes: Seeing slasher cinema as an evolutionary genre**

*Michael Fonte, SUNY Binghamton (mfonte1@binghamton.edu)*

This poster addresses the use of evolutionary theory in film genre theory. It argues the hypothesis that films can be categorized based on adaptationist thinking. Further, an evolutionary genre system relies on genres that are

constructed around adaptationist elements or memes within the films. This hypothesis is explored by applying it to one specific film genre and the memes within it: the slasher horror genre. The slasher horror genre will be dissected by using dual-inheritance theory and will be reconstructed by using multilevel-selection theory to show how memes are the adaptive building blocks that create adaptive film genres. This methodology will ultimately begin the process of creating an evolutionary film genre theory.

### **13. Catching the crown: An evolutionary analysis of female competitiveness in beauty pageants**

*Rebecca L Newmark, SUNY New Paltz (rebecca.newmark@gmail.com); Laura L Johnsen, Binghamton University (lauraljohnsen@gmail.com)*

Beauty competitions have been a part of our most ancient human history. Research concerning beauty pageants has mainly focused on the shift in physical beauty standards throughout the pageant's history (Singh, 1993). This research project examines the competitive behavior females engage in while participating in the pageant and how it compares to intrasexual competitive tactics for attracting and retaining a mate. We looked at the qualifications for participation, the competition segments, and the interaction between contestants while offstage and found that they mimic behaviors from a mating context. Though beauty pageants are not fully comparable to an every-day situation, we believe that applying an evolutionary framework to this cultural phenomenon can provide new insight into female intrasexual competition.

### **14. M.O.M.S. & P.O.M.S.: A new terminology for sexual strategies among women**

*Amanda E Guitar, Binghamton University, SUNY (aguitar1@binghamton.edu); Rachael A Carmen, State University of New York at New Paltz (rachael.carmen@gmail.com); Laura L Johnsen, Binghamton University, SUNY (ljohnse1@binghamton.edu)*

While an entire body of literature has been established on cads (i.e., males who attempt to enhance their reproductive success by maximizing number of sexual partners while limiting parental investment) and dads (i.e., males who commit to monogamous, long-term relationships and invest heavily in offspring), less focus has been paid to females who differ in offspring investment. Moreover, the current terminology that exists to refer to female sexual strategies is inconsistent and can also be quite flawed and offensive (e.g., Madonna-whore). Given the lack of equivalent terminology for males and females, the current project suggests the introduction of the following terms: M.O.M.S. (Monogamy-Optimizing Mating Strategy) and P.O.M.S. (Promiscuous Opportunistic Mating Strategy).

### **15. Evolutionary roots, cultural branches: Cultural beauty standards and their evolutionary bases**

*Rebecca L Burch, SUNY Oswego (rburch@oswego.edu)*

Throughout human history, people have scarred, painted, pierced, padded, stuffed, plucked, and buffed their bodies in the name of beauty (Etkoff, 1999). This human universal expresses itself differently throughout the world, but the overall emphases follow clear evolutionary principles. This is most obvious in examining gender differences in beauty standards. Regardless of how it is expressed, there is an emphasis on the obvious secondary sex characteristics of men and women. For example, male military uniforms throughout the world emphasize a wide shoulder to waist ratio and male attractiveness standards prioritize height and androgen markers. Although there are large cultural differences in beauty standards, methods, areas of emphasis, and extent of alteration, the overlying themes, as always, are evolutionarily valid. "If everyone was cast in the same mold, there would be no such thing as beauty" (Charles Darwin). This variation creates the concept of beauty, and this variation extends itself into evoked culture differences in beauty standards. This review gives example after example of the evolutionary metaculture being manipulated and expressed differently in evoked cultures throughout the world. Some of these behaviors and practices are said to be rooted in supernatural protection, signals of strength, status, or power, but all of these practices are actually firmly rooted in mate value and competition.

### **16. Evolutionary roots, cultural branches: Cultural sexual behaviors and their evolutionary bases**

*Rebecca L Burch, SUNY Oswego (rburch@oswego.edu)*

Culture is a tool for genetic replication- culture represents a rationalization of fitness maximizing behavior. Cultures create laws regarding marriage, incest, gender roles, and punishment in accord with evolution. This poster examines the obvious human universal of sexual behaviors, but pays particular attention to the evoked culture- the cultural variations on the evolutionary themes of male sexual enthusiasm, female choosiness, and

emphasis on fertility. As with previous examinations of cultural differences (the wedding as a reproductive ritual, for example), the major categories of behaviors will be separated by gender. It is hypothesized that these behaviors have obvious evolutionary bases and functions. For example, Arabian cultures once believed it was poisonous for a man to have sex with an older woman. This folklore reinforces the male preference for young fertile females. Other behaviors show a clear association between sex and agriculture, the importance of birth spacing, pressure for women to choose their partners wisely, and the consequences of infidelity. This review gives example after example of the evolutionary metaculture being manipulated and expressed differently in evoked cultures throughout the world. Examinations such as this one can be done on any number of evolutionarily salient behaviors; standards of beauty, fertility and reproduction, mate choice, pair bonding, infidelity, and parenting, to name a few.

### **17. Historical confirmation of the female reproductive strategy**

*Henry Vandenburg, Windridge Social Science (vandenbu@frontiernet.net)*

Sexual liberation in America, which followed the development of the birth control pill, along with the feminist movement, would broadly predict a liberalization of sexual norms for women. Women would become more sexually independent, and this would be indicated by terms of greater acceptance of open sexuality in culture. If Evolutionary Psychology is generally true, however, this phenomenon is likely to have enjoyed only a brief time of acceptance before women became more self-protective again. This content analysis of media over time shows a predicted return to self-protective norms. The change antedates the social onset of AIDS, so it is more likely that it is likely to be explained by the female reproductive strategy.

### **18. Menstrual cycle phase and theory of mind**

*Erin Rathburn, SUNY Plattsburgh (erath001@plattsburgh.edu); Jennifer Bremser, SUNY Plattsburgh (davi2010@plattsburgh.edu); Nathan Pipitone, Adams State College (npipitone@adams.edu); Edward Sturman, SUNY Plattsburgh (esturo01@plattsburgh.edu)*

Recognizing facial expressions involves an ability to perceive emotions, and accurately doing so, enables humans to successfully engage in social interaction. Accurately recognizing these emotions have been shown to be closely linked to mood states, which is associated with menstrual cycle phase. In the current study, we investigated performance on the Reading the Mind in the Eyes Test (RME), a well-established test of mental state attribution as a function of menstrual cycle phase. We predict that females near ovulation will perform significantly better on the RME than females in other menstrual phases. In addition, we included other variables that may influence social inference ability including hyper-mentalism, empathy and social anxiety and predict that they also vary as a function of menstrual cycle phase. In a sample of 22 naturally cycling females, our preliminary results revealed mean differences between menstrual phases on the RME, the FNE and the SPQ.

### **19. Examining decision-making, emotional and physiological reactions towards perceived risk-taking within a virtual environment in relation to hormone fluctuations over the menstrual cycle**

*Lovedeep Rai, University of Leicester (lr128@student.le.ac.uk); Heather Flowe, University of Leicester (hf49@le.ac.uk); Hannah Ryder, University of Leicester (hr98@le.ac.uk)*

Women with natural and regular menstrual cycles and hormonal contraceptive (HC's) users will experience a virtual environment that is shot from a subjective point-of-view, which takes them through the City Centre at daylight and night time. The pre-recorded video will stop at various points; either at stereotypical crime spots (e.g. alleyways) or stereotypically 'safer' points (e.g. well-lit open areas). We aim to assess whether females vary in their emotional (e.g. fear, perceived risk of crime) and physiological (e.g. heart rate, handgrip strength, skin conductance) reactions over the course of their menstrual cycle as their levels of oestrogen, progesterone, testosterone and cortisol fluctuate when evaluating their risk of sexual assault, and other crimes within a virtual environment.

### **20. Addressing the paradox: Reproductive hypotheses for the evolution of male homosexuality**

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

Homosexuality poses a challenge to human evolutionary science. This challenge rests on four observations: (1) homosexuality has a heritable component (Pillard & Bailey, 1998) (2) homosexuality correlates with reduced male fecundity (King et al., 2005) (3) homosexuality is prevalent (Bagley & Tremblay, 1998), and (4) homoeroticism is

ancient (Parkinson, 1995). A heritable trait that reduces fecundity is a trait that can be expected to produce negative selection, eventually removing itself from the population, thus homosexuality appears inexplicable according to basic evolutionary principles. Because the traits that underlie homosexuality are expressed in culturally dependent forms (with differences in exclusivity, social roles, and sexual behaviors between cultures), it is difficult to know how informative modern practices are in understanding the adaptive relevance of those traits in the ancestral environment. Instead, attention to evidence of design may be of more utility. This presentation will address the enactment and efficacy of alternative reproductive strategies.

**21. Same-sex sexual behavior in self-identified heterosexual women: Testing the allomothering hypothesis**

*Sarah Radtke, Ryerson University (marsveg77@hotmail.com)*

The study argues that sexual fluidity is an evolved predisposition in heterosexual women, and it evolved because of allomothering—helping each other’s offspring survive—and providing assistance with survival of females themselves. The allomothering hypothesis will be presented as to why many heterosexual women have a tendency to engage in fleeting same-sex sexual behavior. A scale was developed to test the hypothesis. Results show that self-identified heterosexual women who had sex with a woman would leave offspring with that female if need be, and rated the woman they had sex with as having traits of a good mother. The more a woman enjoyed sex with another female, the more likely she is to rate that woman as a good mother and as someone she would trust to raise offspring.

**22. The impact of self-esteem on emotional and cognitive reactions to various “Crossing the line” scenarios: The best friend’s sex and sexual orientation**

*Jack Demarest, Monmouth University (demarest@monmouth.edu); Sabrina Alfassa, Monmouth University (salfassa@monmouth.edu)*

This study examined feelings of upset and jealousy when friendships outside of the relationship are being questioned. Six scenarios were provided involving an imagined romantic partner spending a lot of time with a best friend from childhood. The best friend was either the OPPOSITE sex, the SAME sex, or the a GAY/LESBIAN OPPOSITE sex friend. Results are discussed in the context of mate choice and perceptions of deception in mating relationships.

**23. Individual and joint tool making in preschoolers: from cognitive to social processes**

*Gökhan Gönül, Middle East Technical University, Informatics Institute, Departments of Cognitive Science, doctorate student, Turkey (gokhan.gonul@metu.edu.tr); Annette Hohenberger, Middle East Technical University, Informatics Institute, Departments of Cognitive Science, Associate Professor, Turkey (hohenber@metu.edu.tr)*

Making tools and using tools expertly has been considered as one of the most distinctive abilities of humans. However, studies show that some animals use and make tools as well. Developmental studies suggest that pre-school children and infants learn how to use tools and manipulate some simple tools better than other species. However, pre-school children are not proficient in every aspect of tool related behaviors, in particular tool innovation. The present developmental study aims to find cognitive and social facilitative factors in the tool innovation process in preschoolers. It is hypothesized that age, social interaction, executive functioning and hierarchical structuring abilities facilitate tool innovation processes in preschoolers.

**24. Pointing behavior in infants reflects the communication partner’s attentional and knowledge states: A possible case of spontaneous informing**

*Xianwei Meng, Graduate School of Human-Environment Studies, Kyushu University, Fukuoka, Japan (mokeni1211@gmail.com); Kazuhide Hashiya, Faculty of Human-Environment Studies, Kyushu University, Fukuoka, Japan (vez03715@nifty.com)*

Inferring the epistemic states of others is an essential requirement for humans to communicate; however, the developmental trajectory of this ability is unclear. Infants aged 13 to 18 months participated in the study. In the Shared Experience Phase, both the participant and the experimenter experienced an object, and the participant experienced a second object while the experimenter was absent. In the following Pointing Phase, the participant was seated on his/her mother’s lap, facing the experimenter, and the two objects were presented side-by-side

behind the experimenter. The results showed that the participants pointed more frequently to the object that could be considered “new” for the experimenter and suggest that infants spontaneously point, presumably to inform about an object, reflecting the partner’s attentional and knowledge states.

**25. Observations of change in physiology and functioning associated with working on differentiation of self in one’s family system**

*Victoria Harrison, Bowen Center for the Study of the Family (vaharrison@sbcglobal.net)*

This presentation describes Bowen family systems theory as a framework for understanding the family as a natural system in which reactivity to relationships and their importance in survival and adaptation has evolved along a vertebrate lineage. The capacity to function as a somewhat separate individual, to observe and regulate one’s own reactions and relationships is also built into human biology to degrees that vary according to one’s level of differentiation of self. A methodology for family systems psychotherapy is based upon steps for working on differentiation of self that are described in an extensive literature. The variation in improved functioning illustrated by two case examples highlight factors in the family that may constrain change and raise questions for future research.

**26. Stigmatizing the childless: An empirical analysis of the perceived traits of voluntary childless**

*Samantha L Kanouse, CUNY: City College (slkanouse@gmail.com); Jeff B Halford, Keene State College (jhalford@keene.edu)*

While reproduction is a biological necessity of natural selection, until recently sexual drives could not be severed from the chance of pregnancy. In a pronatalist society those who voluntarily opt out of parenting are stigmatized for deviating from normative practices. Men who voluntarily choose not to have children are perceived as less psychologically stable and women are perceived to be unlikeable compared to those who had children or who were involuntarily childless. This evokes the questions: are these personality assessments valid? This analysis uses developmental attachment styles and the Big Five personality traits to assess the validity of the perceptions of the voluntary childless.

**27. A burning question: Fireside relaxation**

*Melinda Carr, Department of Anthropology, University of Alabama (mlcarr1@crimson.ua.edu); Ashley Daugherty, Department of Anthropology, University of Alabama (asdaugherty@crimson.ua.edu); Christopher Lynn, Department of Anthropology, University of Alabama (cdlynn@ua.edu)*

We propose that watching a fire is analogous to watching television. Our previous research demonstrates the calming effect of a fire on participants. The question remains of which effect of the fireside is the most calming. To investigate this further, we expanded the study to include a naturalistic setting of an actual fireside to increase the external validity of our results. Additionally, we added a galvanic skin response component to analyze the data further. Participants were exposed to a variety of controls and were measured after each to give an indication of their relaxation state. Implications of this study will reveal the appeal of television and address growing issues of cyber dependence.

**28. Sex differences in mate preferences, self-rated attractiveness, and self-perceived mating success**

*Miranda Veinot (miranda.veinot@gmail.com), Saint Mary's University; Laura L Robertson (laurarobertson704@gmail.com), Saint Mary's University; Maryanne L Fisher (mlfisher.99@gmail.com), Saint Mary's University*

Self-rated physical attractiveness, used as a proxy for mate value, and self-perceived mating success will be examined for their effects on whether an individual would be more upset by an infidelity involving someone who was more or less wealthy, attractive, athletic, intelligent, or younger/older. Women are hypothesized to report being more upset by an infidelity involving a woman who is either younger or more attractive, while men are hypothesized to report being more upset by an infidelity involving a man who is wealthier, more athletic, and/or more intelligent. Results are pending.

**29. Sex differences in resiliency and coping: An evolutionary perspective**

*Erin Clahane (erinclahane@gmail.com), Saint Mary's University; Miranda Veinot (miranda.veinot@gmail.com), Saint Mary's University; Laura L Robertson (laurarobertson704@gmail.com), Saint Mary's University; Sarah Coughlin (seco@ns.sympatico.ca), Saint Mary's University; Curtis Jennex (curtisjennex@hotmail.com), Saint Mary's University; Robin Nickerson (nickerson\_robin@hotmail.com), Saint Mary's University; Emily Beasley (emily.r.beasley@gmail.com), Saint Mary's University; Julie Quinn (julie.quinn@smu.ca), Saint Mary's University; Maryanne L Fisher (mlfisher.99@gmail.com), Saint Mary's University*

This study explores how the factors of resiliency and sex are related to coping and outcomes in relationships in which an infidelity occurs. It is hypothesized that individuals high in resilience will utilize more active coping strategies and report better outcomes following an infidelity. It is also hypothesized that there will be sex differences in the coping strategies employed by individuals, women will be more likely to engage in instrumental support and emotional support coping in the event of an infidelity, as compared to men.

**30. Green Christianity: The cultural evolution of the church in the context of environmentalism**

*Taylor Zachary Lange, SUNY Binghamton (tlange1@binghamton.edu)*

Christianity and environmentalism are two terms that are not often used in conjunction; however, the growing amount of environmental discourse in the American political arena have made Christian leaders on both sides of the aisle weigh in about where these environmental issues fall on the scope of Christian morality. In a cultural evolutionary frame work, we are surveying Christian beliefs to determine whether or not all denominations of Christianity are in the midst of a cultural group speciation. We hypothesize that this disruptive-style speciation is taking place due to the increasingly polarized political arena, and our research pays special attention to the environmental boundary in this arena.

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