



**FOURTH ANNUAL CONFERENCE**

**STATE UNIVERSITY OF NEW YORK AT NEW PALTZ**

**MARCH 25-28, 2010**





## TABLE OF CONTENTS

<b>WELCOME TO NEEPS 2010!.....</b>	<b>2</b>
<b>CAMPUS MAP.....</b>	<b>3</b>
<b>ANNOUNCEMENTS.....</b>	<b>4</b>
<b>BRIEF TIMETABLE.....</b>	<b>5</b>
<b>SPONSORS.....</b>	<b>6</b>
<b>PROGRAM OF EVENTS.....</b>	
<b>THURSDAY, MARCH 25.....</b>	<b>7</b>
<b>FRIDAY, MARCH 26.....</b>	<b>8</b>
<b>SATURDAY, MARCH 27.....</b>	<b>11</b>
<b>SUNDAY, MARCH 28.....</b>	<b>18</b>
<b>POSTER ABSTRACTS.....</b>	<b>22</b>
<b>FIRST AUTHOR INDEX.....</b>	<b>31</b>

## WELCOME BACK TO NEW PALTZ – NEEPS 2010!

Good news – we're back! Four years ago, NEEPS was born at SUNY New Paltz. This fledgling society started as a hair-brained scheme that was plotted in 2006 by me along with several others who dared to dream big. At that point, I was certain that there was no area of psychology that rivaled Evolutionary Psychology in terms of its potential for uncovering our nature. And the resistance to EP that seems to spring up in all kinds of places seemed all the more reason to take steps to ensure the success of this awesome intellectual beast. In 2010, I'm as certain as ever of EP's importance in academia and beyond.

Luckily, I'm not alone – and NEEPS has made this point abundantly clear. While the powerful nature of EP is certainly a pillar of the success of NEEPS, EP is only a slice of the story. What really makes NEEPS special is the NEEPS community. NEEPSters make up a particularly supportive, effective, and well functioning group. Products of the NEEPS community include our highly successful conferences, our world-class invited speakers, our affiliated selective peer-reviewed journal (JSEC), as well as such extra-curriculars as Darwinian charades, whiffle ball, poker, and the beach at Lake Ontario. NEEPSters work hard, play hard, and look out for one another.

I'm thrilled to say that NEEPS continues on its upward trajectory. Submissions for this year's conference were record-breaking – with some 70 total submissions. This year's NEEPSters come from 11 different states – California, Georgia, Florida, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New Mexico, New York, and Pennsylvania – and 5 different countries – Austria, Canada, England, Germany, and the United States. And this year's keynote speakers, Richard Wrangham and Marlene Zuk, allow us to continue to elicit reactions such as “How in the world did you get her?” and “How in the world did you get him?”

Topics covered at this year's conference represent the dauntingly broad scope of modern-day EP, including sexual selection, emotion, resource-allocation, competition, skeletal morphology, literature, irony, abnormal psychology, evolutionary clinical psychology, and the nature of the self. And lots more. Special features of this year's conference will include a session on the international Evolutionary Studies (EvoS) consortium, our first-ever kickball tournament, and the first-annual meeting of our sister society: FEPS – the Feminist Evolutionary Psychology Society.

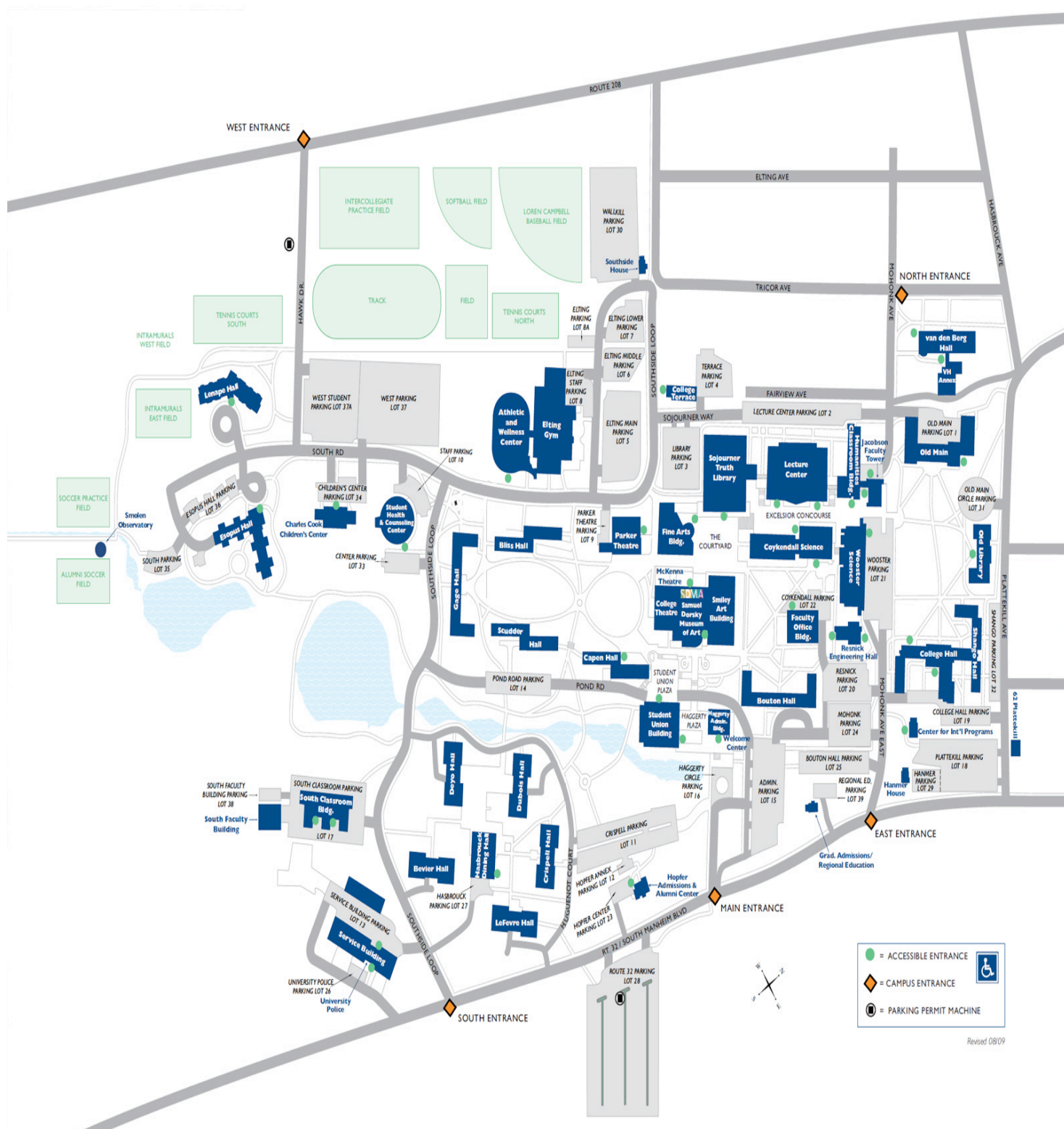
So that's the happy news. Here's the sad news: I write near the end of my third year of a three-year term as president of NEEPS. Starting in June, I'll officially be “past-president of NEEPS.” Doesn't quite have the same ring! Our election of this past fall, implemented skillfully by the one-and-only Jay Landolfi, was perhaps NEEPS' biggest hurdle. Thirteen positions needed to be filled. I was nervous. What if no one stepped up? Who will be the next NEEPS president? What will come of my most precious intellectual offspring?

Well, it turns out there was nothing to worry about at all! Not only is each slot staffed – but the incoming NEEPS officers represent the best of the best. And with Rose at the helm, I can retire knowing full well that the future of NEEPS is bright like the mid-day sun.

On behalf of our local hosts (Alice Andrews, Mike Camargo, Rachael Carmen, Ben Crosier, Haley Dillion, Darlisa Delacruz, Nicole Giordano, Laura Johnsen, Abbey Kurtz, Heather Mangione, Ashley Peterson, Kyle Titus, and myself), this year's never-miss-a-beat program chair (Maryanne Fisher), and NEEPS vice president Rosemarie Sokol Chang, welcome to New Paltz!

Genuinely,

Glenn Geher, NEEPS President



## JSEC-NEEPS SPECIAL ISSUE

This year marks the third year that the *Journal of Social, Evolutionary, and Cultural Psychology* will publish a NEEPS Proceedings special issue. To submit your talk or poster from NEEPS 2010 for consideration in the proceedings, please visit the submission guidelines at <http://www.jsecjournal.com/submissions.htm>. [Note that manuscripts for the NEEPS issue **need not** incorporate multiple disciplinary perspectives].

Conference abstracts will be automatically included in the special issue **unless** a paper form of the presentation is submitted and accepted in the special issue, **or** the author(s) opt-out of having the abstract included. To opt-out, or volunteer to review paper submissions (sorry, no student reviewers) please email Rose Chang at [rischang@gmail.com](mailto:rischang@gmail.com).

The deadline for submission is July 15, 2010 for publication in the December 2010 special issue. Please submit your papers to [jsecjournal@yahoo.com](mailto:jsecjournal@yahoo.com).

## EVOS JOURNAL: CALL FOR PAPERS

*EvoS Journal* is planning a special issue on Evolutionary Theory in the Humanities. If you have a manuscript in mind about an educational experience, the importance of evolutionary theory for teaching in your field, or a pedagogical technique, please submit your manuscript using the guidelines at (<http://evostudies.org/submissions.html>). If you have an idea for a book review related to Evolution in the Humanities, please email Rose Chang at ([evostudies@gmail.com](mailto:evostudies@gmail.com)).

If your undergraduate students have work that incorporates evolutionary theory with one of the Humanities, please encourage them to submit the pieces to *EvoS Journal* as well. Fiction, poetry, and other relevant works are welcome too.

And of course, we are always accepting manuscripts related to evolutionary theory in higher education from all other disciplines as well.

*EvoS Journal* is the official journal of the Evolutionary Studies Consortium. For more information about Evolutionary Studies programs and how to start one at your school, visit (<http://evostudies.org>).

**BRIEF TIMETABLE**

DATE/TIME		EVENT	LOCATION
3/25	12:00–5:00	FEPS Workshop	College Hall
3/25	5:00–7:00	FEPS Night Out	The Gilded Otter
3/25	7:00–9:00	Kickball	Elting Gym
3/26	9:30–12:00	Business Meeting	JFT 1010
3/26	12:00–12:15	Poster Session Setup	College Hall
3/26	12:15–1:45	Poster Session	College Hall
3/26	2:00–2:15	Break	
3/26	2:15–3:55	Talks Session 1	Lecture Center 102
3/26	3:55–4:15	Break	
3/26	4:15–5:30	EvoS Session	Lecture Center 102
3/26	5:30–6:45	Reception	The Terrace
3/26	7:00–8:30	Marlene Zuk Keynote Address	LC 100
3/26	8:30–?	Night on the town!	Bacchus
3/27	9:00–10:40	Talks Session 2	CSB Auditorium
3/27	10:40–11:00	Break/TER Book Signing	
3/27	11:00–1:00	Talks Session 3	CSB Auditorium
3/27	1:00–2:00	Lunch	
3/27	2:00–3:40	Talks Session 4	CSB Auditorium
3/27	3:40–4:00	Break	

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3/27	4:00–5:40	Talks Session 5	CSB Auditorium
3/27	5:40–6:00	Break	
3/27	6:00–7:00	Richard Wrangham Keynote Address	CSB Auditorium
3/27	7:00–9:00	Banquet	The Terrace
3/27	9:00–?	Night on the town!	The Gilded Otter
3/28	9:00–9:40	Talks Session 6	CSB Auditorium
3/28	9:40–10:40	Talks Session 7	CSB Auditorium
3/28	11:00–12:40	Talks Session 8	CSB Auditorium

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**NEEPS WOULD LIKE TO THANK THE FOLLOWING  
SPONSORS:**

The Evolutionary Studies Program

Evolutionary Studies Club

The Honors Program

College of Liberal Arts and Sciences

Major Connections

SUNY New Paltz Psychology Department

School of Science and Engineering

Bacchus Restaurant

The Inn at Orchard Heights

National Science Foundation



## THURSDAY MARCH 25<sup>TH</sup>

### **12:00–5:00 Feminist Evolutionary Psychology Society Workshop**

Please join us for the first workshop–style meeting of the Feminist Evolutionary Psychology Society (FEPS). Everyone is welcome – regardless of gender, species, or disciplinary training. We will be discussing chapters for a related book project, possible future collaborations, and two readings: Sarah Hrdy's book *Mothers and Others: The Evolutionary Origins of Mutual Understanding* and Bobbi Low's paper *Women's Lives, There, Here, Then, Now: A Review of Women's Ecological and Demographic Constraints Cross-Culturally*.

### **5:00–7:00 Informal FEPS gathering at The Gilded Otter**

All are welcome to join us for drinks and conversation, whether or not you attended the FEPS workshop.

### **7:00–9:00 Kickball at the Elting Gym**

**FRIDAY MARCH 26<sup>TH</sup>****9:30–12:00 Business Meeting****12:00–12:15 Poster Set-up****12:15–1:45 Poster Session****2:00–3:40 Session 1 – Evolutionary Psychology, Gender, Literature and Film****Session chair: Maryanne Fisher****Pride and Prejudice or Children and Cheating? Representation of Women's Mating Strategies in the Work of Jane Austen**

Sarah L. Strout (Southern New Hampshire University; s.strout@snhu.edu), Maryanne Fisher (St. Mary's University), Daniel J. Kruger (University of Michigan) & Lesley-Anne Steeleworthy (St. Mary's University)

Past research has examined male mating strategies in Romantic literature. There has been substantially less investigation of female mating strategies, so the goal of the current project was to address this oversight. Furthermore, past work has relied extensively upon work authored by men, so the current study used the immensely popular work of Jane Austen. We created a survey based on descriptions of six female characters described in Austen's novels; three women were described as exhibiting long term mating strategies, such as being loyal and quiet, while three were described as exhibiting short term mating strategies, such as being active, boisterous and untamed. Data collection is still ongoing, but to date we have found that men recognize the distinct strategies and express a preference to marry those exhibiting long term mating strategies and realize those exhibiting short term mating strategies would be more likely to cheat on them. Women realize the women exhibiting the short term mating strategies are those who men would prefer for sexual relations, and those exhibiting long term mating strategies would be better with children and a better mother.

**Sex Differences in Hero Creation: A Sociobiological Analysis of Children's Fantasy Literature**

Victoria A. Ingalls (Marist College; victoria.ingalls@marist.edu)

If there are evolved differences in the subconscious tendencies of human males and females, then these differences should manifest themselves in the fictional characters created by the two sexes. Accordingly, although both sexes should be interested in helping family members while dominating others, males in general will be more interested in power and power displays while females will direct more of their energy to assisting kin. To test these predictions, I have begun an analysis of protagonists found in juvenile fantasy literature. Using the first volume of serialized novels, I examine the characteristics of the protagonist and his or her situation within the story including: special powers possessed by each protagonist, the presence of close family members, and the factors that help drive the plot. Trends in differences between male and female generated protagonists will be examined and discussed with reference to evolved psychological differences.

**Men, Change Thyself (Or At Least Appear To)**

Maryanne Fisher (St. Mary's University; mlfisher@smu.ca), Anthony Cox (Center for Psychology and Computing)

Harlequin romance novels are a well-recognized form of popular romance fiction. As we have previously argued, analyzing these novels provides insight into women's mating preferences, interests, and possible strategies. The novels focus on a heroine and hero who typically meet in the first few pages of the story, with the rest of the novel dedicated to addressing how they overcome obstacles and eventually, begin a committed long-term relationship. We performed a thematic analysis of character development in novels from the long-running Romance series. We found that heroines rarely exhibit substantial development, aside from potentially altering their point of view concerning the hero. In stark contrast, heroes consistently undergo a transformation from a rogue with often hidden positive intentions, to a loyal, caring individual who demonstrates qualities associated with long-term relationships. As we will discuss, this pattern of character development is not unique to romance novels.

**The Quick and the Dead: Gendered Agency in the History of Western Science and Evolutionary Theory**

Leslie L. Heywood (Binghamton University; leslie.heywood@gmail.com)

A gendered concept of agency has been pervasive throughout the history of Western scientific thought. This designation has been replicated to some extent in the various stages of historical evolutionary theory since Darwin, but recent work by female evolutionists such as Sarah Hrdy which emphasizes the importance of cooperatively breeding social groups (1999, 2009) and Eva Jablonka's work on epigenetics and cultural evolution (2005, 2000) shows that it is time to rethink the scientific conceptualization of agency and the way it has been gendered, and that evolution gives us a promising framework in which to do so. This paper will contribute to a different understanding of the gendering of knowledge about human evolution than has been most prevalent in evolutionary psychology.

**3:55–4:15 Afternoon Break****4:15–5:30 EvoS Session****Introducing the Evolution Institute: Using Evolutionary Theory to Inform Public Policy**

David S. Wilson (Binghamton University; dwilson@binghamton.edu)

NEEPS is dedicated to understanding the human condition from an evolutionary perspective. With understanding comes the capacity for improvement, but there is currently no mechanism for connecting the world of evolutionary science to the world of public policy formulation. The Evolution Institute was founded in 2007 to provide this connection and has already made progress on issues such as childhood education, risky adolescent behavior, and the regulation of human social interactions. I will provide an overview of the Evolution Institute and suggestions for how to become involved.

**5:30–6:45 Reception (Wine & snacks available)****7:00–8:30 Keynote Address by Marlene Zuk**

(After the keynote, please join us for an informal night on the town, starting at Bacchus)



## SATURDAY MARCH 27<sup>TH</sup>

### **9:00–10:40 Session 2 – Sexual Competition, Orientation, and Behavior**

**Session chair: Sarah Radtke**

#### **How We View Those Who Derogate**

Sarah Shaw (St. Mary's University; sarah.shaw1@smu.ca), Kerry Worth (University of Ottawa), Lauren Smith (St. Mary's University), Catherine Reeve (York University), Maryanne Fisher (St. Mary's University)

Research on intrasexual competition for mates has focused on self-promotion and competitor derogation. Self promotion is when one attempts to increase their mate value, relative to others, while competitor derogation is when one attempts to decrease a rival's perceived mate value relative to oneself (e.g., making a derogatory statement). Past research shows competitor derogation is used less often than self-promotion, perhaps because derogators might be perceived as mean-spirited and cruel, and hence, this strategy could deter potential mates. Consequently, it may only be used by necessity (e.g., when a potential mate expresses interest in a rival). In the current study, we explore perceptions of women who derogate their rivals, and examine shifts in men's and women's views towards these derogators. Data collection is still in progress; we will present our preliminary results and provide directions for future research.

#### **A New Perspective on Menopause: Female Gamete Competition**

Chris Reiber (Binghamton University; creiber@binghamton.edu)

Why do women run out of eggs? Human female gametes are often presented in a passive light, but the evidence shows otherwise. Many known details of reproductive physiology and endocrinology support the view that a female's gametes actively compete with each other at various stages of development for the chance to continue on the path to ovulation. Female gamete competition is also predictable in comparison with intra-individual gamete competition in males, and from simple gene-level selection favoring selfish behavior. The end result of female gamete competition is the death of massive numbers of gametes well before the expected time of somatic death—that is, menopause.

#### **Human Female Sexual Behavior Across Sexual Orientation: Evolution, Personality and Fluidity**

Sarah Radtke (Ryerson University; srادتke@ryerson.ca)

This study compared women who varied in sexual orientation (based on the Kinsey scale) to assess differences between lesbian, bisexual and heterosexual female scores in sociosexuality and evaluate the impact of strategic interference. Masculine and feminine personality traits were additionally assessed along with fluidity. Results overall indicate that lesbians and heterosexual women had similar scores in sociosexuality, suggesting little effect of strategic interference on lesbian sociosexuality. However, when extreme ends of the Kinsey scale scores were taken into account (i.e. completely heterosexual or completely lesbian), lesbians reported being more restricted in sociosexuality compared to heterosexual women. Bisexual women were statistically significantly more unrestricted sociosexuality scores compared to lesbian and heterosexual women. One novel finding is that lesbians had the highest self ratings of femininity when compared to both heterosexual and bisexual women.

#### **Sex Differences in Post-Coital Behaviors in Long- and Short-Term Mating**

Susan M. Hughes (Albright College; shughes@alb.edu), Daniel J. Kruger (University of Michigan)

This study investigated various post-coital behaviors that we propose may reflect divergent adaptive reproductive strategies of each sex. We administered an online questionnaire to examine sex differences in post-coital compared to pre-coital activities within short- and long-term mating contexts. We found

that females were more likely than males to initiate and place greater importance on several behaviors related to intimacy and bonding following sex with both long- and short-term partners, whereas males were more likely to engage in ones that were extrinsically rewarding and/or increased the likelihood of further coital acts. Males were more likely to initiate kissing before sex, and females, after sex. Intimate talk and kissing were rated by both sexes as more important before intercourse with a long-term partner, whereas cuddling and professing one's love was more important after sex. These findings are discussed in terms of how sex differences in post-coital behaviors are consistent with evolutionary theory.

#### **Variation in Reproductive Strategies Exhibited in the Post-coital Time Interval**

Daniel J. Kruger (University of Michigan; [djk2012@gmail.com](mailto:djk2012@gmail.com)), Susan M. Hughes (Albright College), Steven A. Miller (Argosy University), Shelby Lewis (University of Michigan)

Evolutionary researchers have generated a large body of literature on variance in human reproductive strategies, often focusing on differences between the sexes. In comparison to topics such as mate selection preferences, courting, and sexual activities prior to full sexual intercourse, there has been little attention to psychology and behavior following acts of sex. We generated 16 items to assess post-coital experiences with partners. Consistent with our predictions informed by evolutionary theory, women's satisfaction was inversely related to desires for greater signals of bonding and commitment, whereas men's satisfaction was inversely related to their partners' greater interests in talking about relationship issues. Men were more likely to fall asleep before their partner following sexual intercourse, whereas women were more likely to fall asleep first when not after intercourse. Earlier sleep onset after sex may be a mechanism for males to curtail commitment conversations while reducing adverse reactions from female partners.

#### **10:40–11:00 Break**

#### ***The Evolutionary Review Book Signing***

Join SUNY Press executive director Gary Dunham and *TER* co-editor Alice Andrews for a book signing with *TER* contributors.

#### **11:00–1:00 Session 3 – Intelligence, Decision Making, and Language**

Session chair: Rosemarie S. Chang

#### **The Structure and Predictive Validity of Mating Intelligence**

Benjamin S. Crosier (SUNY New Paltz; [bencrosier@gmail.com](mailto:bencrosier@gmail.com)), Glenn Geher (SUNY New Paltz), Justin R. Garcia (SUNY Binghamton), Melanie S. Hill (SUNY New Paltz)

Mating Intelligence is the hypothesized constellation of mental adaptations that collectively guide mate choice, allowing one to function in the mating market. While the construct has been both theoretically explored (Geher & Miller, 2007) and has seen some empirical validation by means of a mating intelligence scale that was borne from the theory (O'Brien, Geher, Gallup, Garcia & Kaufman, in press), this study seeks further understanding by illuminating the construct's factor structure and predictive validity. A web-based survey sampling 1200 undergraduate students was utilized in this investigation. Using confirmatory factor analysis, the factor structure suggested by Geher and Miller (2006) will be tested within male and female forms of the scale. This study also seeks to replicate O'Brien et al.'s finding that scores on the MI scale are predictive of college-age sexual behavior. Further, the relatively new phenomenon of "hooking up," an extremely short-term strategy, will be investigated to offer additional predictive validity.

**Are Gender Differences In Error Management Limited to the Reproductive Context?**

Elisabeth Oberzaucher (University of Vienna; elisabeth.oberzaucher@univie.ac.at), Emanuela Stockinger (University of Vienna), Chrissoula Filiadis (University of Vienna), Karl Grammer (University of Vienna)

Error management is a mechanism to reduce costly errors. Since erring in the assessment of a potential mate bears different costs for men and women, differential error management evolved: Women underestimate male interest (Type II error); men overestimate female interest (Type I error). 203 men and 201 women participated in the study. On presentation of a patience game (remove a star from a circle), and after manipulation of the puzzle, subjects were asked whether they thought they could solve the puzzle. Men tend to overestimate their capability to solve the puzzle before and after manipulation while women tend to underestimate themselves. Men with masculinized 2D:4D show an even more pronounced type I error management. In this study we showed that sex differences in error management are not limited to the reproductive context. Furthermore, we could link error management to 2D:4D as a measure for prenatal hormone environment.

**Past and Present Environments: The Evolution of Decision Making**

Andreas Wilke (Clarkson University; awilke@clarkson.edu), Peter M. Todd (Indiana University)

The human mind is filled with evolved decision mechanisms designed to meet adaptively important goals. In this talk we lay out a framework for studying those mechanisms from the perspective of evolutionary psychology, emphasizing the importance of multiple influences of the environment on shaping the decision strategies and their operation. These strategies often take the form of simple decision rules constructed from building blocks that draw on evolved capacities, all of which fit to particular information structures in the environment. We illustrate these ideas with two examples of heuristics used in important adaptive domains: deciding when to leave a resource patch, and predicting when a sequence of events will stop or continue.

**Loveyese: Bonding through Intimate Baby Talk**

Rosemarie S. Chang (EvoS Consortium; rischang@gmail.com), Justin R. Garcia (Binghamton University)

Attachment partners employ a variety of vocalizations to get the attention of those to whom they are attached – cries, whines, parentese, and loveyese. We use “loveyese” as a term for a form of parentese used by romantic partners. These vocalizations share with each other a similar acoustic form as well as a similar basic function. All are well suited to an auditory sensitivity shared among humans for vocalizations that display a higher than average pitch, more varied pitch contours, and slowed production. Functionally, they all serve to draw an attachment partner nearer when a physical gap has been created. Loveyese shares with these vocalizations the function of closing the physical gap between romantic partners, but in addition it appears to close the figurative gap created by arguments, functioning as a tool for conflict resolution. In this talk, we will debut loveyese as a research topic, and focus on its functions in romantic relationships.

**Language Sounds Like Physical Events Among Solid Objects**

Mark Changizi (Rensselaer Polytechnic Institute; changizi@rpi.edu)

We show that speech possesses the auditory regularities found for physical events among solid objects, suggesting that languages have culturally evolved to exploit the natural competencies of the human auditory system, and therefore that humans might not have evolved speech-specific auditory mechanisms.

**Touch Me In The Morning: Intimately Affiliative Gestures in Uncommitted and Romantic Relationships**

Justin R. Garcia (Binghamton University; justin.r.garcia@gmail.com), Chris Reiber (Binghamton University), Ann M. Merriwether (Binghamton University), Leslie L. Heywood (Binghamton University), Helen E. Fisher (Rutgers University)

A hug is a display of physical intimacy, and one of the most common signals of human affection. Physical contact such as hugging is socially affiliative, and has been linked to increases in the bonding hormone oxytocin. We propose that affiliative gestures such as cuddling, deep gazing into a partner's eyes, and sexual fondling, will be more desirable in romantic relationships than in uncommitted sexual encounters (hook-ups). We report on a sample of 706 undergraduate university students (38% Male, 62% Female) who participated in a study on intimacy, sexual behavior, and temperament. We show that 95% of participants generally like to engage in cuddling or intimate embracing of others. However, we also show that these rates vary substantially depending on context – uncommitted sexual encounters or committed romantic relationships. We compare these gestures to history of intimate and sexual behaviors, fear of intimacy scale, and the revised sociosexuality orientation inventory.

**1:00–2:00 Lunch****2:00–3:40 Session 4 – Sexual Behavior and Infidelity**

Session chair: Glenn Geher

**Hooking-up and Regret**

Melanie S. Hill (SUNY New Paltz; hillm@newpaltz.edu), Justin R. Garcia (SUNY Binghamton), Glenn Geher (SUNY New Paltz)

Casual sex, more recently termed “hooking up,” among adolescents and college students is rampant and documented by researchers across the country (e.g., Caruthers, 2006; England et al. 2007; Paul et al., 2000). A “hook-up” is defined as a consensual sexual encounter between strangers or acquaintances that are not dating and are not explicitly in a long-term relationship with one another (Caruthers, 2006). Despite media's portrayal of hooking up as positive and empowering (e.g. HBO's Sex in the City), current research findings concerning real college women paint a different picture. For example, research has found that casual sex (but not romantic sex) is associated with symptoms of depression for women (Grello et al., 2006). Similarly, women report more feelings of regret, shame and disappointment following a hook-up than men (Campbell, 2008; Paul & Hayes, 2000). Based on responses from 1,000 heterosexual college students (men and women), this presentation will explore gender differences in expectations, comfort, and experiences of three different types of hook-ups: with a stranger, with an acquaintance, with a friend. Participants were also asked about the occurrence of unwanted sex during each type of hook-up.

**Maintaining Social Relations is a Key to Infidelity Reactions**

Glenn Geher (SUNY New Paltz; geherg@newpaltz.edu), Maryanne Fisher (St. Mary's University), Anthony Cox (Center for Psychology and Computing), Ulrich Tran (University of Vienna), Ashley Hoben (University of Groningen), Andrew Arrabacca (SUNY New Paltz), Chaize Corinna (SUNY New Paltz), Robert Dietrich (SUNY New Paltz)

384 participants completed a survey to assess attitudes about factors associated with infidelity which included sex and relationship-status as well as several within-group factors: (a) vaginal versus oral sex, (b) whether a disease was likely to follow, (c) whether the infidelity would likely be disseminated, and (d) whether the infidelity took place with an intimate. No main effects were found for relationship status or sex. Each within-subject factor had a significant effect: Vaginal intercourse was more distressing than oral. Infidelity with high likelihood of experience damaging reputation was distressful. Infidelity that



would lead to a disease was distressful. And distress toward infidelity increases as the target moves closer to the participant's inner circle, from stranger and prostitute to same-sex best-friend and same-sex sibling. Keeping infidelity outside one's circle seems like a paramount goal of responses to infidelity – more important than fending off disease or maintaining one's reputation within the group.

### **Are There Sex Differences in New Relationship Initiation After a Breakup?**

Joel Wade (Bucknell University; [jwade@bucknell.edu](mailto:jwade@bucknell.edu)), Kaitlin J. Krieger (Bucknell University)

Using an internet based survey with 71 participants, the present research examined: whether or not there are sex differences in the amount of time that individuals will wait before initiating a new relationship after a breakup; and which, if any, Big-5 personality dimensions play a role in this decision. Based on parental investment theory it was hypothesized that women would wait longer than men. It was also hypothesized that Big-5 personality dimensions would play a role since personality plays a role in mate selection. The results obtained supported the hypotheses. Women wait longer to seek a new partner and the Big-5 personality dimensions of Conscientiousness and Openness to Experience are positively correlated with the decision. These results are discussed in terms of prior research.

### **The Impact of Marriage and Divorce on the Male to Female Mortality Ratio**

Laura L. Johnsen (SUNY New Paltz; [laurajohnsen91@yahoo.com](mailto:laurajohnsen91@yahoo.com)), Glenn Geher (SUNY New Paltz)

Beginning in infancy, males have a higher mortality rate than females throughout life. This is caused by a number of different factors including behavior. Young males partake in risky behavior to find a mate (Kruger & Nesse, 2007). The M:F MR increases until around age 25. Men seem to be getting married at around the same time. The reason for the peak at age 25 could be because married men have less incentive to participate in risky behavior. The M:F MR peaks again at 50. At this time men die due mainly to internal causes (Kruger & Nesse, 2006). However, external causes of death may be influenced by some males getting a second divorce on top of going through “mid-life crisis”. At this stage of life, a man comes to terms with his age and may possibly revert to participating in risky behavior in order to feel youthful. They may partake in risky behavior in order to attract a younger mate and prove their dominance over younger males.

### **Spousal Mate Retention in the Newlywed Year and Three Years Later**

Farnaz Kaighobadi (Florida Atlantic University; [fkaighob@fau.edu](mailto:fkaighob@fau.edu)), Todd K. Shackelford (Florida Atlantic University), David M. Buss (University of Texas, Austin)

The function of mate retention tactics is to prevent a long-term partner from defecting from the relationship and to ward off potential mate poachers. The current research is the first to investigate the performance of husband's and wife's mate retention tactics over time. We assessed 49 husbands and 65 wives on their performance of 19 mate retention tactics once as newlyweds and again four years into the marriage. The results indicated that (1) husbands' and wives' performance of mate retention tactics as newlyweds correlate positively with their performance of mate retention tactics three years later, (2) husbands' and wives' performance of mate retention tactics decreases after three years of marriage, and (3) sex differences in performance of mate retention tactics persist over time. Discussion offers speculations on the stability and change found in mate retention performance, suggests potential correlates of mate retention performance, and addresses limitations of this research.

### **3:40–4:00 Afternoon Break**

**4:00–5:40 Session 5 – Attractiveness and Morphology**Session chair: Rebecca Burch**Sex, Ethnicity, and the Face: A Cross–Cultural Analysis of Facial Display**

Daniel Gambacorta (New Mexico State University; [dmg@nmsu.edu](mailto:dmg@nmsu.edu)), Seger M. Breugelmans (New Mexico State University), Bryan Koenig (Singapore Agency for Science, Technology & Research), Timothy Ketelaar (New Mexico State University)

The interpretation of facial expressions is dependent upon the context in which they are found. Contextual influences alter the perception of facial expressions in evolutionarily adaptive ways. We present participants with a series of pictures depicting groups of people. Participants are asked to rate the emotions of one person in the picture based upon their facial expression. The people depicted vary systematically by their sex, ethnicity, and facial expression displayed. The sex and ethnicity of the people depicted affect the perceived emotional content of their facial expressions. Additionally, the culture of the participant affects their perception of others' emotions. We will present the first experiment of a three part cross-cultural study taking place in New Mexico, Singapore and the Netherlands. Results are interpreted in terms of Error Management Theory and Functional Projection.

**Reward Responses to Male Faces Fluctuate Across the Menstrual Cycle: An Event–Related fMRI Study**

Katherine M. Reding (Emory University; [kreding@emory.edu](mailto:kreding@emory.edu)), Steven M. Platek (Georgia Gwinnett College)

Women exhibit a preference shift toward masculine and symmetrical faces during the follicular phase and toward feminine and self-resembling faces during the luteal phase of the menstrual cycle. This effect is pronounced when current or projected (long-term/short-term) relationship status is taken into account. In an effort to better understand the proximate mechanisms of cyclic face preferences we investigated the changes in neural activity during reward conditioning when viewing faces that varied in masculinity, symmetry, femininity, and self-resemblance. We identified a fluctuating pattern of neural activation that increased only when processing self-resembling faces during the luteal phase, suggesting that the menstrual cycle has a biased effect on altering the reward value of self-resembling faces when fertility risk is low. Additionally, we identified an increase in activity in the nucleus accumbens in the follicular phase to all male face stimuli suggesting an up regulation of reward processing during peak fertility.

**Curvaceous Female Bodies activate Neural Reward Centers in Men**

Steven M. Platek (Georgia Gwinnett College; [splatek@gmail.com](mailto:splatek@gmail.com))

Secondary sexual characteristics convey information about reproductive potential and attractiveness. Waist-to-hip-ratio (WHR) is a phenotypic cue to fertility and overall health in women and is a putative indication of 'good genes'. WHR value of 0.7 is consistently rated as attractive and correlates with health and fertility indicators. Here, using functional magnetic resonance imaging (fMRI), we show activation in neural reward centers when men view images of naked female bodies that were surgically altered to express optimal (~0.7) WHR. These results are consistent with literature indicating that WHR is a key component to female attractiveness and also support an "attentional attunement" hypothesis to attractive WHR.

**The International Body Project: Preferences for muscularity in 41 sites across 26 countries**

David A. Frederick (UCLA; [Enderflies1@aol.com](mailto:Enderflies1@aol.com)), Viren Swami (University of Westminster)

Evolutionary scientists propose that exaggerated secondary sexual characteristics are cues of good condition and genes that increase offspring viability. We organized the International Body Project to examine the extent to which one of these characteristics – muscularity – is preferred. Collaborators from

41 sites in 26 countries across 10 world regions collected data from over 7,000 participants. The dataset included college samples (N = 19) and community samples (N = 22) who rated silhouettes of men varying in muscularity and body fat. Two samples were from particularly understudied locales (Sabah, Malaysia, and KwaZulu-Natal, South Africa). In all but 2 of the 41 sites, women reported that the most attractive level of muscularity was greater than the muscularity of the typical man. There was significant variation across cultures, however, in perceptions of the most attractive level of muscularity, suggesting that cultural and ecological factors shift the degree to which muscularity is valued.

**Headlights and Highbeams: The Point of Nipple Erection**

Rebecca Burch (SUNY Oswego; [rburch@oswego.edu](mailto:rburch@oswego.edu))

This presentation will present data from a series of studies on the effect female nipple erection has on the viewer. Data from the effect of nipple erection (in mannequins and real women) on perceptions of personality traits, interpersonal behaviors, health, sexual behavior, and attractiveness in both men and women will be discussed. Strong gender differences are found regarding the effect of nipple erection on perceptions of attraction, trustworthiness, altruism and promiscuity. In short, men associate nipple erection with several positive behaviors and attributes while women perceive just the opposite. While both genders associate nipple erection with sexual arousal, males rate this positively while females rate this as untrustworthy and negative.

**5:40–6:00 Break****6:00–7:00 Keynote Address by Richard Wrangham****7:00–9:00 Banquet**

(After banquet, please join us for a night on the town, starting at The Gilded Otter)

**SUNDAY MARCH 28<sup>TH</sup>****9:00–9:40 Session 6 – Learning Evolutionary Theory**

Session chair: Kilian J. Garvey

**Misrepresentations of Evolutionary Theory in Social Science Textbooks**

Robert O. Deaner (Grand Valley State University; robert.deaner@gmail.com), Benjamin M. Winegard (University of Missouri, Columbia), Bo M. Winegard (Grand Valley State University)

Evolutionary theory has long been attacked by right wing fundamentalists. In recent decades, however, it has become apparent that evolutionary theory, when applied to human behavior, suffers from similar misrepresentation and derogation by many social scientists. We hypothesize that this arises from a cycle of misinformation: scientists ignorant of evolutionary theory endorse scholarly products (e.g., publications, textbooks) that misrepresent evolution and portray it negatively; these products then foster hostility and ignorance among scholars and students. We tested predictions of this hypothesis by studying the fifteen most widely-used social science textbooks that focus on sex differences. As predicted, textbooks with more misrepresentations of evolutionary theory (1) were more popular ( $r=.46$ ), (2) expressed more hostility towards evolutionary theory ( $r=.59$ ), and (3) showed bias in their portrayal of politically-unpalatable empirical findings ( $r=.67$ ). These results collectively suggest that the goal of cross-disciplinary integration is being obstructed by hostility toward, and ignorance of, evolutionary theory.

**The Darwinian Irony: How the Process of Natural Selection Explains the Cognitive Rejection of Natural Selection**

Kilian J. Garvey (University of New England; kgarvey@une.edu)

Based on Lindeman's (1998) exploration of the motivated cognition supporting pseudoscience, a study was designed to explore the underlying mechanisms of the acceptance of biblical creationism and rejection of biological evolution. The acceptance of creationism, a pseudoscientific belief, is a result of the basic social motives and the default cognition selected through evolutionary pressures to facilitate survival in the Environment of Evolutionary Adaptation. 179 participants completed the following surveys: the Creation/Evolution Questionnaire, the Rational Experiential Inventory, and the Tolerance of Ambiguity Scale. Creationists were characterized by higher experiential thinking, lower rational thinking, and a lower tolerance of ambiguity. Creationism, it will be claimed, is, ironically, a rejection of evolution and a way of thinking about the modern world using social and cognitive tools more suited to dealing with the challenges of our evolutionary past. Cognitive rejection of evolutionary theory is explained by the fundamental mechanisms of the evolution of cognition.

**9:40–10:40 Session 7 – Social Alliances and Competition**

Session chair: Andrew Gallup

**Getting By with a Little Help From Friends: Affiliation and Reciprocity Among Female Baboons**

Liza R. Moscovice (Binghamton University; lmoscovi@binghamton.edu), Dorothy L. Cheney (University of Pennsylvania), Marlies Heesen (Max Planck Institute), Robert M. Seyfarth (University of Pennsylvania)

We examined behavioral endocrine correlates of social support among wild female chacma baboons in Botswana. We collected data on proximity, grooming and alliances among 28 females. We also analyzed urine samples to detect the neuropeptide hormone oxytocin, which plays a role in female social bonds. We conducted playback experiments to test whether support in alliances was influenced by recent affiliative interactions. There was variation among females in social support and oxytocin levels. Females were more motivated to form an alliance with an unrelated female if they had recently had an affiliative interaction

than if they had recently had an aggressive interaction. In contrast, decisions about forming alliances with a relative were not influenced by recent interactions. For females with weaker social relationships, balancing exchanges of aid in the short-term may be an important means of developing social bonds. Within established social relationships, interactions may be influenced by long-term emotionally-mediated reciprocity.

#### **Reciprocation in a Sequential Prisoner's Dilemma: The Effect of Peer Aggression During Adolescence**

Andrew C. Gallup (Binghamton University; a.c.gallup@gmail.com), Daniel T. O'Brien (Binghamton University), David S. Wilson (Binghamton University)

Aggression is a context-dependent strategy that can function to obtain status and/or co-opt resources. From an evolutionary perspective, adolescent peer aggression can be understood as one of several social strategies employed within a competitive and hierarchical environment. Extended involvement in these behaviors, however, can lead to negative psychosocial correlates in future social situations. This study investigated whether self-reported peer aggression and victimization during high school was related to how individuals played a sequential Prisoner's Dilemma game in college. Results indicate that both aggressive males and victimized females were significantly less likely to reciprocate cooperation as a second mover, while past aggressive interactions were unrelated to decisions to offer cooperation as a first mover. Interestingly, punishment of non-cooperators did not vary with past peer aggression. These findings are consistent with research on adolescent aggression and development, and provide insight into the evolution of sex differences in social strategies.

#### **A Multilevel, Longitudinal Analysis of the Relationship Between Social Resources and Adolescent Prosocial Development at a City-wide Scale**

Daniel T. O'Brien (Binghamton University; dtumminelliob@yahoo.com), Andrew C. Gallup (Binghamton University), David S. Wilson (Binghamton University)

Prosociality can be successful only if it is prevalent in the local environment. We explored the correlates of prosocial development in a cohort of urban adolescents who reported on their own social behaviors, and the quality of their relationships with adults in 2006, and again in 2009. Using multilevel models predicting prosociality and its development, we found that nearly all forms of social support contributed to levels of prosociality at Time 2, and its growth between Times 1 and 2. A neighborhood's capacity for social control predicted higher levels of prosociality in residents; however, in the longitudinal results, only one neighborhood factor predicted change: those who moved into areas of greater residential stability had greater prosocial growth. These findings further support the relevance of evolutionary theory to the study of prosocial development in urban settings, and provide insight into the social aspects of the adolescent transition from childhood to adulthood.

**10:40–11:00      Break**

#### **11:00–12:40      Session 7 – Emotions and Self Awareness**

**Session chair: Edward D. Sturman**

#### **An Evolutionary Perspective on Personality, Life Events, and Mood**

Edward D. Sturman (SUNY Plattsburgh; estur001@plattsburgh.edu)

The present study sought to investigate the link between personality, life events, and mood within an evolutionary framework. Previous research has shown that the self-critical personality style is related to involuntary subordination following competitive loss. Several evolutionary authors view involuntary subordination as a precursor of depression. The present study expanded on this research by including negative life events as a predictor of involuntary subordination. It was hypothesized that self-critical

individuals would be prone to negative life events, particularly achievement/status events. Negative events should be related to involuntary subordination, which would in turn predict depressive symptoms. A sample of 164 undergraduate students completed baseline measures of personality, involuntary subordination, mood, and life events. After 7 weeks, 94 participants completed the same measures again (omitting personality). Path analysis supported the hypothesized model, suggesting that self-critics are vulnerable to depression through their generation of achievement/status related problems and consequent involuntary subordination.

### **Depression, Evolution, the Brain and Self-Enhancement**

Kelly Jordan (Montclair State University; durank1@mail.montclair.edu), Heather Soder (Montclair State University), Julian Keenan (Montclair State University)

It is encouraging to observe the recent application of evolutionary theory to mental health. In the current study, we examined depression and affect in terms of self-enhancement and the brain. Previous research demonstrated that self-enhancement was reduced following virtual lesioning of the MPFC (Medial Prefrontal Cortex). Because it has been suggested that self-enhancement is an anti-depressant mechanism, we predicted that disrupting the MPFC would increase levels of depression. Our results confirm in part this prediction, suggesting that one evolutionary role of the MPFC is to provide self-enhancing egoistic biases and without such biasing, humans are at a reproductive disadvantage.

### **Depression as an Evolutionary Adaptation: Anatomical Organization Around the Third Ventricle**

Colin A. Hendrie (University of Leeds; c.a.hendrie@leeds.ac.uk), Halisdair R. Pickles (University of Leeds)

This paper will outline the hypothesis that depression is an evolutionary adaptation that emerged where displaced dominants needed to make a transition to lower social status and that is now triggered by damage to reproductive potential from many sources. This analysis predicts that females would be most prone to depression because of the sexual asymmetry in the costs of human reproduction. Behaviors associated with depression include a hunched posture, avoidance of eye contact, loss of appetite for food and sex and sleep disruption. This behavioral cluster serves to reduce an individuals' attack provoking stimuli and so facilitates this social change. When viewed in this context, it becomes clear that many of the brain areas that mediate these behaviors (e.g. the pineal, hypothalamus and amygdala (via the stria terminalis) all lie in close physical proximity to Third ventricle. Therefore, it is proposed that depression has its anatomical origins within this ventricle.

### **Why Have a Self? The Brain and the Evolution of Me**

Heather Soder (Montclair State University; soderh1@mail.montclair.edu), Kelly Jordan (Montclair State University), Julian Keenan (Montclair State University)

The origins of the self remain unknown. Why humans have a self continues to be a mystery and the reasons for its evolution are unclear. Here we pursue one possibility based on deception and intention. Based on recent neuroscientific findings in our lab and others, we examine the theory that the self provides a deceptive mask at a number of levels. Included in these levels is the masking of 'will' or 'intention'. These data indicate that frontal regions may provide a unified sense of intention, while the ultimate origin of behavior is potentially within the motor cortex or the brain stem. The implication that behavior is initiated in lower brain regions and felt to originate elsewhere has profound possibilities for understanding the evolution of human cognition

**Is EP the New Freud: The Evolution of Clinical Evolutionary Psychology (one practitioner's perspective)**

Nando Pelusi (National Association of Cognitive–Behavioral Therapists; npelusi@me.com)

Evolutionary insight into emotional disturbances can serve as a critical component of cognitive behavioral therapy, the most promising clinical paradigm. Disputing cognitive distortions in a clinical setting is made easier and more meaningful when couched in an evolutionary context. Most human disturbances fall into categories well-known to evolutionary psychologists. These include problems accessing and retaining mates, concern about status and resources, social manipulation (which can manifest as anger, depression, rage and anxiety), and conservation of energy and risk aversion (which leads to laziness, dishonesty, procrastination, risk avoidance). Evolutionary psychology answers fundamental clinical questions such as "Why do I find it difficult to change?" and "Why am I depressed when my life is basically pretty good?"

## POSTER ABSTRACTS

### 1) The Neural and Evolutionary Underpinnings of Overclaiming

Franco Amati (Montclair State University; amatif1@mail.montclair.ed), Hanna Oh (Montclair State University), Virginia Kwan (Arizona State University, Tempe), Julian Keenan (Montclair State University)

The tendency to claim more knowledge than one actually has is common and well documented. From an evolutionary perspective, such deception is adaptive, however little research has focused on the neural mechanisms that underlie the overclaiming phenomenon. The present study investigated the cortical correlates of overclaiming by delivering Transcranial Magnetic Stimulation (TMS) to the Medial Prefrontal Cortex (MPFC), Supplementary Motor Area (SMA), and Precuneus while participants indicated their familiarity with a set of words presented as a Cultural IQ test. Participants were not informed that 50% of the words were fabricated. Results demonstrated a significant difference between claiming to know real and fake words across TMS sites, such that overclaiming was reduced following MPFC TMS. Furthermore, decreases in reaction time following MPFC TMS indicated less rumination during the task, suggesting a potential reduction in social monitoring. Results are discussed in terms of the MPFC's role in self-referential processing, as well as the evolutionary benefits of deceptive responding.

### 2) Pretty Women have Petite Feet: An Evolutionary Analysis of the Skeletons of (Un)attractive People

Jeremy A. Atkinson (State University of New York at Albany; ja391266@albany.edu)

To elucidate what kinds of skeletons attractive people have 142 individuals (69 females) had numerous physical measurements and facial pictures taken. Skeletal features from each person were regressed on height and the 8 largest and smallest residual individuals had their faces 'morphed' together. For example foot length was predicted by height and the 8 smallest residuals for foot length were then morphed together and rated individually and in forced-choice comparisons against the large-residual morph on a number of EP-relevant traits. This process was repeated for each of 16 features (total rater N=144). Most morph pairs produced morphs that were exceptionally easy to discern and easily engendered strong preferences in raters, in stark contrast to Boothroyd (2008) where a similar morphing methodology produced very slight differences between morphs. Interestingly, not all morph preferences followed a large/small trait preference. These results will be discussed from a proximate and ultimate evolutionary point of view.

### 3) Pitching a Tent in the Wild: Penile Morphology across Taxa

Rebecca Burch (SUNY Oswego; rburch@oswego.edu)

This poster reviews species differences in penis size and morphology. The review will also focus on the roles female behavior and sperm competition have played in the evolution of the penis of each species featured. Due to the constraints of the format, the review cannot provide an exhaustive list of penile differences, however, general categories of features will be represented. These categories include: length, girth, morphologies such as corkscrews and bifurcated penes, displacement features such as coronal ridges, spicules, barbs, and blades. How these features affect sperm competition strategies such as displacement, copulatory plugs, traumatic insemination, and female sexual behavior will also be discussed.

### 4) How Humor Styles Affect Mate Selection

Rachael Carmen (SUNY New Paltz; Carmen42@newpaltz.edu), Corwin Senko (SUNY New Paltz)

Studies show that women list sense of humor as attractive. Two of the more common humor styles are "self-deprecating" and "other-deprecating." The former is used to convey warmth and humility, while the latter is used to establish dominance. In accord with the "good dad" hypothesis, women should prefer



self-deprecating males for a long-term relationship because that style of humor conveys greater warmth-trustworthiness. However, in accord with the “good genes” hypothesis, women should become increasingly attracted to other-deprecating males for a short-term relationship because that style conveys greater masculinity and, perhaps, genetic fitness. Recent studies show that the preference for masculine qualities and attractiveness in a short-term partner is amplified among women at the most fertile phase of their cycle. Thus, this research examined ovulation stage. 110 women and 52 men rated several humor clips. Analyses will address the evolutionary hypotheses included here.

### **5) Cross-Cultural Differences in the Cognitive Inference of Neighborhood Safety Using Physical Structures**

Jeremy Cohen (Binghamton University; jcohen3@binghamton.edu), Charles Norton (Binghamton University), Daniel T. O'Brien (Binghamton University)

The disorder in physical structures correlates with residents' ability to govern their neighborhood, and previous studies show that observers use this information to accurately estimate the local safety level. We aimed to replicate these findings while also evaluating the role of culture in the development of this adaptation. Subjects described their background as urban, rural or suburban before rating the social quality of pictured suburban neighborhoods. Afterwards, subjects reported the extent to which they used different features of the images. When compared to neighborhood ratings provided by residents, subjects demonstrated the ability to make accurate judgments, however those made by urban individuals were less so. Urban individuals used paved surfaces more than suburban individuals, who used them more than rural individuals. Attention to disorder is an adaptation for assessing the control people have over their local environment, and here we see evidence that its focus is influenced by personal experience.

### **6) The Influence of Women's Pheromones on Mate Selection and Intrasexual Competition**

Michelle G. Conron (St. Mary's University; Michelle.Conron@smu.ca), Maryanne Fisher (St. Mary's University)

Research on human pheromones has tended to focus men's pheromones as used during women's mate selection. The smaller literature on women's pheromones suggests that they may change as a function of reproductive status, thus signaling fertility to prospective mates. This ongoing study aims to document whether men prefer the pheromones excreted by ovulating (high fertility) versus menstruating (low fertility) women. We predict that men will prefer the scent of ovulating women, as they represent maximally fertile mates. The present study also examines the much overlooked phenomena of intrasexual competition. We predict that women will prefer the scent of menstruating versus ovulating women, as menstruating women may represent less competition for mates. Determination of men's and women's preferences for female pheromones excreted at different phases of the menstrual cycle is relevant, as it may provide evidence of an adaptive function, specifically in mate selection and intrasexual competition.

### **7) Factors Contributing to Low Quality Mate Selection**

Haley M. Dillon (SUNY New Paltz; haleymoss@gmail.com)

Mate selection is a key factor in evolutionary theory. Higher quality mates, those with high reproductive fitness, have more opportunities for reproducing, which in turn allows their genetic material to be passed down to the next generation. Settling for a relatively low quality mate would have been strongly selected against throughout hominid evolutionary history. The current research is designed to explore the correlates of mate settling, including the roles of mating intelligence and life history strategy. Approximately 50 mated males and 50 mated females, with data provided as couples, will fill out questionnaires pertaining to their perception of their personal mate quality, their mate's quality, mating intelligence, narcissism, and high-k life history variables. Expected results include higher mating intelligence, high-k, and narcissism leading to less indices of mate settling.

**8) Scores of Schizotypy in Men are Positively Correlated with Measures of Physical and Reproductive Fitness**

Michael J. Frederick (University at Albany; mf7147@albany.edu)

Schizophrenia is a serious mental disorder associated with impaired physical health and a drastic reduction in the probability of reproduction. Vulnerability to schizophrenia is heritable, and healthy relatives of schizophrenics score higher on scales of schizophrenia-proneness or schizotypy. One explanation for why genes associated with high levels of schizotypy persist in the population is balancing selection, whereby non-schizophrenics actually benefit from having elevated levels of schizotypy. Previous research has found scores of schizotypy to be related to creativity and mating success. In the current study, sixty-one male college students completed the Brief Schizotypal Personality Questionnaire (SPQ-B), along with a sexual history survey. Several morphological traits were also measured. Consistent with prior research, a positive relationship was found between schizotypy and number of sexual partners. In addition, schizotypy was found to be positively related to body weight, head circumference, and handgrip strength. These results support the balancing selection hypothesis of schizotypy.

**9) BIS/BAS and Evolution: Avoiding the Existential Threat**

Kilian J. Garvey (University of New England; kgarvey@une.edu), Shannon K. Stevens (University of New England)

This study examined the relationship between Gray's behavioral approach and inhibition systems (BAS/BAS) with the acceptance of creationism as an explanation for the diversity of life on earth. According to Gray individuals scoring high on the BIS scale tend to display avoidant behavior and interpret ambiguous stimuli as threatening. Conversely, individuals scoring high on the BAS scale tend to display more approach behavior and interpret ambiguous stimuli as potentially rewarding. BIS/BAS has been used to explore behavior, affect, and personality but not specific belief systems. It was predicted that individuals scoring higher on the BIS scale would reject evolution in favor of creationism as the former might be interpreted as existentially threatening and the latter might be interpreted as existentially protective and comforting. ANOVA results found that individuals scoring High BIS/Low BAS were significantly more creationist than all other combinations,  $F(3,175) = 20.65$ ,  $p < .001$ .

**10) The Moral Similarity of Creationists and Intelligent Designers**

Kilian J. Garvey (University of New England; kgarvey@une.edu)

Supporters of intelligent design (ID) claim that their discipline is not religious and differs substantially from creationism. Previous research (Garvey, 2007) found multiple affective and cognitive similarities between individuals who accept creationism and those who accept ID. The current research explores possible moral similarities (as measured by the Moral Foundations Questionnaire, MFQ) between those same two groups (as measured by the Creation/Evolution Questionnaire, CE10 and the Intelligent Design Questionnaire, ID10). Two studies were carried out; first, 179 subjects took both the MFQ and CE10, replicating previous research which found significant differences in the moral worldviews of creationists and evolutionists (Garvey, 2009). Next, 119 subjects took both the MFQ and ID10. Results found significant similarities in the moral worldviews of both proponents of creationism and ID, both differing significantly from the moral worldviews of evolutionists.

**11) A Preliminary Investigation of the Relationship Between Second-toe Length and Androgen-mediated Behaviors**

Marissa A. Harrison (Penn State Harrisburg; mah52@psu.edu)

Ontogenic evidence suggests a possible link between second toe length and androgen exposure. In a preliminary analysis of a possible relationship between second toe length and androgenization, 814 individuals provided self-reports of their second toe lengths and completed questionnaires about

behaviors and traits previously shown to be related to testosterone. Although some data do suggest a relationship between second-toe length and craniofacial formation, most results revealed limited evidence for the relationship between second toe length and behaviors/traits related to testosterone, including aggressiveness, competitiveness, and sexuality. As with other digit-length studies, these findings present mixed evidence for connection between digit morphology and behavior.

### **12) Teeth as Ornament Displays Signalling Mate Quality**

Colin A. Hendrie (University of Leeds; c.a.hendrie@leeds.ac.uk), Joanne Martin (University of Leeds), Jennifer Walker

Many species use ornament displays in the competition between rivals and to attract mates. The quality of these displays are dependent on many factors including current disease state, genetic fitness and freedom from developmental adversity (Zahavi, 1975). One of the most important human characteristics in this context is our propensity to show our teeth. The present study investigated the effects of digitally manipulating the teeth of photographs of models on ratings of their attractiveness. Data showed that displays where teeth were widely spaced, yellowed and teeth were missing were viewed as the least attractive, whilst displays where teeth were normally spaced, whitened and with no teeth missing were considered to be the most attractive. It is therefore concluded that teeth do act to signal genetic quality, developmental history and current health but that the intervention of cosmetic dentistry means that these may no longer be honest signals.

### **13) The Influence of Genetic Relatedness on Resource Allocation in Families with Both Biological and Foster Children**

Colin A. Hendrie (University of Leeds; c.a.hendrie@leeds.ac.uk), Diane Stankaitis (University of Leeds)

The influence of genetic relatedness on behavior is well recognized and has been shown to impinge on human family life (e.g. Bishop et al, 2009, Bressan et al, 2009, Casey et al, 2000). The present study was conducted to further examine this phenomenon by investigating resource allocation in the form of Christmas and birthday presents in 55 UK families that had both biological and foster children. Parents reported the particular presents they had bought each of their children and the value of each was estimated using the on-line catalogues of well known UK stores. Data revealed that parents spent approximately twice as much on birthday and Christmas presents for their biological children than they did for their foster children. This effect was somewhat assuaged by the length of time the foster child had spent with the family indicating that temporal considerations may also be of importance in this context.

### **14) Necessity: Mother or Myth of Invention? Analyzing Stress as Facilitator or Inhibitor of Creativity.**

Thomas Hirschmann (University of Mannheim; thomas.hirschmann@gmail.com)

Presented will be the results of a laboratory experiment designed to quantitatively examine the relation between stress and creativity. The underlying hypotheses have been derived from an evolutionary-psychological theory assuming creativity to be a specific social adaption process involving self-imposed empathic eustress. This has been tested by applying different levels of stress upon creatively performing participants in one experimental and three control groups. Goal of this study was to check for mediational effects of stress in so called “crowding-effects” of creativity: creative performance is being reduced by external influences like material rewards, which generally foster performance. To reach that goal, the participants have been exposed to stress in the form of timed unsolvable questions. Following, the creative performance of the participants as well as their stress levels have been monitored. Finally, the creative performance has been correlated with the change of the stress levels of the participants.

### **15) Matching Pairs. Perceived Facial Similarity in a Rural Sample of Long-Term Mates**

Iris J. Holzleitner (University of Vienna; iris.holzleitner@univie.ac.at), Elisabeth Oberzaucher (University of Vienna), Lena S. Pflüger (University of Vienna), Karl Grammer (University of Vienna)

Homogamy is a well-known mating pattern in animals and also appears to apply to humans. In this study we try to evaluate previous findings on homogamy for facial traits, and investigate similarity for the first time in a pool of subjects acquainted with each other before making their “final choice”. We collected facial pictures of 31 long-term couples, as well as photographs of the subjects at the age they met their partners. These pictures were then used in two studies: 412 participants were asked to rate the similarity of randomly paired faces and actual couples (Study I); another 130 participants were asked to rank male stimuli according to their similarity to female stimuli (Study II). Preliminary results suggest that similarity among partners varies greatly; some couples look more alike than others. In a next step, we will investigate whether similarity might be associated with fecundity of couples.

#### **16) More and Less: Evolutionary Underpinnings and Implications of Literary Minimalism and Maximalism**

Tim Horvath (Chester College of New England)

Minimalism and its less-well-known antithesis, maximalism, are movements found in literature, music, and painting. Although they are defined in divergent ways in different fields, their existence across the arts leads one to believe that they might have rationales above and beyond those specific to the particular art form. What is our artistic obsession with paring back and with indulging in excess? I believe that an evolutionary perspective can shed light on these phenomena. Focusing on literature in particular, I will explore what might be some of the evolutionary origins of these impulses. Literary minimalism seems to favor our inferential apparatus, forcing us to extract maximum information from scant cues, while also underscoring a narrator's authenticity and trustworthiness. Maximalism, in contrast, seems to ride on a convergence of a runaway sexual selection model, a handicap principle combined with a ludic sense such as Boyd outlines in *On the Origins of Stories*, applied in this instance to language. Apart from sketching out these possible evolutionary precursors, my talk will connect these to some larger issues of temperament and personality. Most readers seem to be more predisposed toward one or the other extreme on the stylistic continuum, and their preferences might reveal something significant about personality beyond mere “literary taste.”

#### **17) Making Age Assessments Based on Voice: The Impact of Raters' and Speakers' Age and Sex**

Susan M. Hughes (Albright College; shughes@alb.edu), Bradley C. Rhodes (Bucknell University)

This study examined how accurate individuals are at estimating the ages of speakers of varying ages across the lifespan given the raters' own age and sex. We hypothesized that voices are a strong index of reproductive viability and members of both sexes would be most accurate at assessing ages from voices of those at puberty and menopausal females, despite their own age. Voice samples were obtained from 101 individuals of both sexes (aged 2 to 67yrs) and independent raters estimated the exact age of the speakers. Despite the rater's own age, accuracy of voice assessment tended to decrease as the speakers' ages increased, with the best estimates occurring with children's voices. Whereas accuracy in ratings decreased when males reached age 45–55, accuracy remained high for female speakers in menopausal years. These findings further illustrate the fact that the human voice may be used as a cue for assessing reproductive viability.

#### **18) Childhood Injuries as an Early Practice of Intra-sexual Competition**

Laura L. Johnsen (SUNY New Paltz; laurajohnsen91@yahoo.com), Glenn Geher (SUNY New Paltz), Nicole Giordano (SUNY New Paltz)

From infancy until about age 25, males die at a faster rate than females due to external causes (Kruger and Nesse 2006). The purpose of our research is to explore the factors surrounding sex differences in childhood injuries from an evolutionary perspective. For instance, boys injured during rough play may be mimicking the mating strategies practiced by adult males. Using a survey that asks participants about childhood injuries and a Life History Measure, we predict that a) males will report (on average) more

injuries in general and more injuries with high severity, b) more male injuries will be caused by rough play or some display of physical activity, and c) the number of the participants childhood injuries will inversely correlate with k strategy. Participants with a low number of injuries will have “high k” and participants with a high number of injuries will have “low k”.

### **19) The Evolution of a Special Brain: The Neural Correlates of Self-Recognition in Narcissism**

Rachel Kramer (Montclair State University; kramerr1@mail.montclair.edu), Julian Keenan (Montclair State University)

Self-awareness appears reserved for few species. The neural correlates of self-awareness have received significant attention in recent years, and regions such as the right prefrontal, the right parietal, and the medial prefrontal cortex have consistently been correlated with self. Alterations of self-awareness typically are seen in terms of deficits (e.g., Autism). Here we examine the neural correlates of Narcissism in which there is an excess of self. Applying TMS (Transcranial Magnetic Stimulation) to various regions of the brain, it was found that TMS disrupted self-face recognition. Furthermore, the degree of alteration was mediated by degree of narcissism. We argue based on these data that the evolution of lateralization and frontal regions is critical for human evolution, however, alterations to these regions can lead to conditions that likely impede an individual's ability to reproduce.

### **20) Was that Cheating? Perceptions Vary by Type of Behavior and Reproductive Strategy**

Daniel J. Kruger (University of Michigan; djkr2012@gmail.com), Maryanne Fisher (St. Mary's University), Sarah L. Strout (Southern New Hampshire University), Carey J. Fitzgerald (Central Michigan University)

We investigated a range of interpersonal behaviors to determine the extent to which each would be viewed as cheating on a long-term partner. We generated 27 items that included sexual behaviors, erotic behaviors (e.g., texting erotic messages), behaviors implying relationship status (e.g., holding hands), emotional bonding, financial support, socialization, and comparison items (e.g., hugging briefly). We examined sex differences in ratings as well as differences based on attachment style. Attachment anxiety is characterized by worries about being abandoned by one's partner and may be a mechanism to elicit relationship commitments and additional investment from mates. Ratings for items varied considerably (means from 9% to 98%), sexual behaviors were rated highest with the least variation in scores. Erotic behaviors were also rated highly, followed by behaviors implying relationship status and financial support. Item ratings and correspondence with attachment anxiety generally supported predictions from the evolutionary theory of reproductive strategies.

### **21) Unbuckling in the Bible Belt: Conservative Sexual Norms Lower Marital Ages**

Daniel J. Kruger (University of Michigan; djkr2012@gmail.com), Justin R. Garcia (Binghamton University)

Sociosexual norms, as well as marital patterns, vary widely across human history and culture. Yet, humans share an evolved psychobiology of sexual motivation that reliably leads to procreation through incentivizing sexual activity. Adaptive mechanisms promoting sexual activity emerge even in nominally monogamous societies with conservative norms for sexual behavior. We predicted that the interaction of the evolved psychology of sexual motivation and strong discouragement of non-marital sex would lead to relatively earlier marriages on average, as young adults seek a socially sanctioned way of expressing sexuality. We examined this hypothesis with 2000 U.S. Census data. We found that cities in the Bible Belt had significantly lower mean and median marital ages for both men and women, supporting our prediction. These relationships held when controlling for median household income, median family income, and even the Operational Sex Ratio for those 18–64.

### **22) Cognitive Adaptations for Resource Search**

Angela Morgan (Clarkson University; morganal@clarkson.edu), Bonni Curdt (Clarkson University), Danielle Bain (Clarkson University), Clark Barrett (UCLA), Andreas Wilke (Clarkson University)

Wilke & Barrett (2009) proposed that the “hot-hand” phenomenon, expecting that streaks will continue, is not a reasoning fallacy as commonly suggested, but rather reflects an evolved psychological assumption that items in the world come in clumps. We report results from further experiments in which we investigated the proximate mechanisms that people use when reasoning about depletable resources. Earlier research suggested that searching for a sequence of depletable resources may lead to the converse of hot-hand beliefs, namely the “gambler’s fallacy”, in which streaks of hits in time and space lead to reduced probability of nearby hits. In a sequential foraging game, subjects had to imagine either walking along a forest path full of fruit trees or had to sample from a bag of fruits. In both conditions, each fruit was either ripe or unripe, and subjects had to predict whether the next resource they would encounter is ripe/unripe.

### **23) Too Many Cooks in the Kitchen: Group Proficiency as a Function of Social Boldness and Reticence**

Jason Nazimiec (Pennsylvania State University, DuBois; jsn5047@psu.edu), John A. Johnson (Pennsylvania State University, DuBois)

Despite the fitness benefits associated with high rank in a dominance hierarchy, the tendency toward leading or following might be subject to frequency-dependent selection if groups with many leadership-seeking individuals fail to coordinate their activities as well as groups with a mixture of leaders and followers. To test this idea, we administered to 81 research participants a multi-scale personality questionnaire that included a 10-item measure of social boldness. Individuals with the highest and lowest scores on social boldness were identified, and six five-person teams were formed, consisting of 0, 1, 2, 3, 4, or 5 individuals with high social boldness. Each team was given the task of crossing an imaginary river by placing wooden planks over squares representing stepping stones. As predicted, the group with 5 socially bold individuals squabbled the most and took the longest time to cross the river.

### **24) Changes in Voice Attractiveness Across the Menstrual Cycle: Are Some Males More Discerning than Others?**

R. Nathan Pipitone (University at Albany; natepipitone@hotmail.com)

Female voice attractiveness is affected by menstrual cycle status, specifically voices recorded at higher fertility times across the cycle were rated as more attractive. This effect was robust across many raters, although inter-rater differences were not assessed in the initial study. This investigation focuses on whether some male listeners demonstrate more consistent preferences for voices based on female fertility compared to others. It’s conceivable that male raters who have favorable characteristics, such as higher masculinity indices might have marked preferences for traits (in this study, voices) coinciding with fertility in females. The correlations between rater competency and sexually dimorphic traits (i.e. sexual experience, masculine body indices) will be explored.

### **25) Information Foraging in a Patchy Memory Environment**

Rebecca Preston (Clarkson University; prestor@clarkson.edu), Nina Carey (Clarkson University), Rui Mata (Stanford University), Andreas Wilke (Clarkson University)

When resources are distributed in patches animals must decide when to switch from a depleted patch. The optimal policy is given by the Marginal Value Theorem, which has successfully predicted animal behaviors, but as a mechanism it becomes problematic when each patch contains few discrete prey items. Biologists have proposed simple alternative decision mechanisms and calculated in which environments each works well. Hutchinson, Wilke & Todd (2008) and Wilke, Hutchinson, Todd & Czienskowski (2009) tested whether the decision mechanisms that evolved to direct animals when to leave a food patch also underlie human decision making in the same context, and whether humans in an internal-search task (e.g., information in memory) use the same mechanisms as in an external-search task (e.g., physical objects). Here, we extend this research by investigating how subjects search for items in memory when presented

with a category fluency task in which they retrieve names of animals.

#### **26) The Evolutionary Jane Austen: Persuasion, EP, and a Response to Steven Pinker**

Nicholas E. Preus (Luther College; preusn@luther.edu)

This paper demonstrates the potential for consilience between literary studies and evolutionary psychology. It takes up the challenge posed by Steven Pinker (2007), who questions what adaptationist studies can bring to the literary field, other than a rehabilitated notion of human nature. But research into evolved behaviors enables new and more complex understandings of canonical literary texts, and I will demonstrate how literature can, as Pinker surmises, constitute a field of data that raises important questions for evolutionary psychology. Finally, I suggest a way to bridge the current impasse between literary theory and adaptationist study. The paper's target text is Jane Austen's last novel, *Persuasion*; an early version of this presentation appeared as a poster at the European Human Behavior and Evolution Association Conference at St. Andrews, Scotland in April, 2009.

#### **27) Yawning as a Thermoregulatory Mechanism: A Test of the Thermal Window Hypothesis**

Melanie L. Shoup (University at Albany; melshoup@gmail.com), Allyson Impallomeni (University at Albany), Gordon G. Gallup, Jr. (University at Albany)

We tested two predictions that follow from the thermoregulatory hypothesis. The first is that yawning should occur at a lower frequency when the air inhaled during a yawn is warmer than body temperature. Conversely, inhaling extremely cold air would inefficiently over-cool the brain thus diminishing the frequency of yawning at low ambient temperatures. In a within-subject design, we monitored the frequency of human yawning when ambient temperature is above 100 degrees Fahrenheit, at room temperature, and below 40 degrees Fahrenheit.

#### **28) The Comparative Effects of Attractiveness, Intelligence, Wealth and Humor on Female Mate Choice**

Sarah L. Strout (Southern New Hampshire University; s.strout@snhu.edu), Roland Denomme (Southern New Hampshire University), Noelle Bourgeois (Southern New Hampshire University)

This research investigates the comparative effects of various traits on female mate choice. Participants (n=25) rated men of varying attractiveness on traits needed for her to consider different types of relationships with him. Initial analyses show that for dating, participants rated the trait of humor as highest while for sex intelligent was rated highest. For marriage, interested in children was rated highest and lastly, for having children, there were no significant differences in what traits women wanted, probably because all traits were scored high. Interestingly, the attractiveness was not related to any of the traits.

#### **29) I'll Get to That Later! Can Procrastination be a Sexually Selected Trait?**

Aaron M. Turpin (Georgia Gwinnett College; aturpin@ggc.edu), Steven M. Platek (Georgia Gwinnett College)

Procrastination is self-handicapping and generally regarded as dysfunctional. However there are hallmarks of procrastination that bear resemblance to well-known sexually selected traits. Additionally, procrastinators have been described as experiencing less stress and better health when deadlines are far off. Finally, there is variation in the expression of procrastination into at least two forms one called passive (negative) and active (positive). This variance has been associated with differences in self-efficacy, stress-coping style, motivational orientation, and personal outcomes. Thus, we hypothesize that the expression of procrastination (passive/active type) resembles other sexually selected traits (self-handicapping, potentially dysfunctional, and relating to signaling of honest cues of health and stress-

coping) and as such may also be a sexually selected psychological mechanism. We theorize about the means by which people would detect procrastination if it were an honest biosignal as well as the potential evolutionary advantages that might be linked to active procrastination.

### **30) Latency to Solve the Mind in the Eyes Test is Associated with Individual Differences in Regional Gray Matter Variations in Occipito-temporal-parietal Junction and Posterior Cingulate Cortex**

Aaron Turpin (Georgia Gwinnett College; aturpin@ggc.edu), Steven M. Platek (Georgia Gwinnett College)

It has been hypothesized that efficiency, or speed to process social information might account for deficiencies seen in some patient populations. Here we investigated individual differences in variations in regional gray matter associated with latency to solve an advanced theory of mind task: The Mind in the Eyes (Eyes) Test in healthy control subjects. Regional gray matter in the posterior cingulate region and the occipito-temporal-parietal junction was negatively related to latency to solve the Eyes test. That is, people who had more gray matter in these regions were faster at solving the task. This finding suggests that individual variability in structural density of these substrates contribute to the efficiency of social cognitive information processing and provides indirect support for the hypothesis that high functioning patients with social cognitive deficits are limited by the speed with which they deal with this type of information because of neurological variations.

### **31) Oh No She Didn't! Female Intrasexual Competition is Partly Mediated by Physical Characteristics that Men Find Attractive**

Tia Y. Walters, Holly H. Hanes (Georgia Gwinnett College; twalters@ggc.edu), Steven M. Platek (Georgia Gwinnett College)

Women's intrasexual competition remains an understudied realm in evolutionary psychology, although competition is a primary factor for driving sexually selected adaptations. Our focus is to explore female intrasexual competition by reviewing the minimal amount of literature on perceptions of sex, beauty, and female competition, discuss experiments illustrating that females utilize intrasexual competition based partly on waist-to-hip ratio, and discuss a theory of female intrasexual competition based on female sexual self-perception and the desire of females to "negotiate space" and present themselves as the preferred choice to the opposite sex. These pilot studies suggest that women recognize and employ the same phenotypic cues to female attractiveness that men do and that female relational aggression is an intrasexual competitive behavior partly mediated by the female's own phenotypic quality, relationship status, and facultatively utilized in contexts where a high quality male is primed.

### **32) Priming Aggression Following Either Christian or Secular Violent Images**

David R. Widman (Juniata College; widman@juniata.edu), Christopher S. Bender (Juniata College), Ariel A. Mauery (Juniata College), George A. Braun (Juniata College)

Evolutionary psychologists have argued that religion enhances fitness through the formation of in-groups that allows for greater cooperation and possibly greater out-group aggression. The purpose of the present experiment is to examine the relationship between religion and aggression using an aggression priming paradigm. Participants viewed 320 image-word combinations, with Secular and Christian violent and nonviolent images followed by either aggressive, non aggressive or Christian words. They were instructed to say the word aloud as fast as possible. Results of aggression scores indicated that, for Christian images, aggressive words were spoken much quicker following a violent image than a nonviolent image. However, these did not differ from the reaction time following either secular image. Christian priming on each of the three types of words revealed that Christian images affected responding on both Christian and aggressive words for high dogmatic participants, but not non-aggressive words.



# FIRST AUTHOR INDEX

Franco Amati.....22	Kelly Jordan.....20
Jeremy A. Atkinson.....22	Farnaz Kaighobadi.....15
Rebecca Burch.....17, 22	Rachel Kramer.....27
Rachael Carmen.....22	Daniel J. Kruger.....12, 27
Rosemarie S. Chang.....13	Angela Morgan.....27
Mark Changizi.....13	Liza R. Moscovice.....18
Jeremy Cohen.....23	Jason Nazimiec.....28
Michelle Conron.....23	Elisabeth Oberzaucher.....13
Benjamin S. Crosier.....12	Daniel T. O'Brien.....19
Robert O. Deaner.....18	Nando Pelusi.....21
Haley M. Dillon.....23	R. Nathan Pipitone.....28
Maryanne Fisher.....9	Steven M. Platek.....16
David A. Frederick.....19	Rebecca Preston.....28
Michael J. Frederick.....24	Nicholas E. Preus.....29
Andrew C. Gallup.....19	Sarah Radtke.....11
Daniel Gambacorta.....16	Katherine M. Reding.....16
Justin R. Garcia.....14	Chris Reiber.....11
Kilian J. Garvey.....18, 24	Sarah Shaw.....11
Glenn Geher.....14	Melanie L. Shoup.....29
Marissa A. Harrison.....24	Heather Soder.....20
Colin A. Hendrie.....20, 25	Sarah L. Strout.....8, 29
Leslie L. Heywood.....9	Edward D. Sturman.....19
Melanie S. Hill.....14	Aaron M. Turpin.....29
Thomas Hirschmann.....25	Joel Wade.....15
Iris J. Holzleitner.....25	Tia Y. Walters.....30
Tim Horvath.....26	David R. Widman.....30
Susan M. Hughes.....11, 26	Andreas Wilke.....13
Victoria Ingalls.....8	David S. Wilson.....9
Laura L. Johnsen.....15, 26	