



# Society for the Scientific Study of Psychopathy

4<sup>TH</sup> BIENNIAL MEETING

HYATT REGENCY MONTREAL

MAY 19-21, 2011

[HTTP://WWW.PSYCHOPATHYSOCIETY.ORG](http://www.psychopathysociety.org)

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All oral presentations and the business meeting will be in Alfred Rouleau rooms A&B.

Coffee breaks will be in the Foyer Alfred Rouleau.

Poster sessions will be in Jeanne Mance; Thursday's reception during the session will be on the Pavillon.

The closing reception will be in the Terrasse Sainte Catherine.

The student social will take place at La Cage aux Sports at the Centre Bell arena on Thursday night immediately following the poster session. Megan Wampler will lead the group in walking over – please come and enjoy the opportunity to socialize with your fellow students before the oral program!

THURSDAY, MAY 19

- 5:00p-7:00p Executive Board Meeting (**PETT ALFRED ROULEAU**)  
Registration (**FOYER ALFRED ROULEAU**)
- 7:00p-9:00p POSTER SESSION A (**JEANNE MANCE; FOOD ON PAVILLON**)
- 9:30p-11:00p Student social (Megan Wampler, Coordinator)  
**La Cage aux Sports: Centre Bell, 1260 De la Gauchetière Ouest**  
Walk over together immediately after the poster session

FRIDAY, MAY 20

**ALFRED ROULEAU A&B**

- 8:00a-10:00a Registration (**FOYER ALFRED ROULEAU**)
- 8:15a-8:30a OPENING REMARKS (Paul J. Frick, President)
- 8:30a-9:45a ***Reduced Emotionality in Fearless and Unemotional Facets of Psychopathy: Evidence from Behavior, Psychophysiology, and Neuroimaging*** (Stephen D. Benning, Moderator)
- a) *Reduced Processing of Fearful and Angry Faces in Fearless Dominance*  
**Stephen D. Benning**, Vanderbilt University; **George H. Wilson**, Vanderbilt University
  - b) *Understanding the Role of Fear Deficits in Psychopathy*  
**Uma Vaidyanathan**, Florida State University; **Jason R. Hall**, University of South Florida; **Christopher J. Patrick**, Florida State University; **Edward M. Bernat**, Florida State University
  - c) *Do Incarcerated Boys High on Callous-unemotional Traits Show Lower Resting Cortisol Levels?*  
**Eva R. Kimonis**, University of South Florida; **Aisha Howard**, University of South Florida; **Maureen Groer**, University of South Florida; **Richard Dembo**, University of South Florida
  - d) *Youths with Conduct Disorder and Callous-unemotional Traits Show Disrupted Amygdala, Posterior Cingulate, and Caudate Function during Decisions Regarding Environmental Threats and Rewards*  
**Katherine A. Fowler**, National Institute of Mental Health; **R. J. R. Blair**, National Institute of Mental Health
  - e) *Mismatch of Bodily Sensation and Autonomic Reactivity in Psychopathy*  
**Yu Gao**, Brooklyn College of the City University of New York; **Adrian Raine**, University of Pennsylvania; **Robert A. Schug**, California State University, Long Beach
- 9:45a-10:00a Coffee break (**FOYER ALFRED ROULEAU**)
- 10:00a-11:15a ***Psychopathy and the Brain*** (Stuart White, Moderator)
- a) *A Test of Causal Hypotheses of Psychopathic Traits: Reduced Emotional Responsiveness or Anomalous Attentional Control?*  
**Stuart F. White**, National Institute of Mental Health; **Abigail A. Marsh**, Georgetown University; **Katherine A. Fowler**, National Institute of Mental Health; **Julia C. Schechter**, Emory University; **Stephen Sinclair**, National Institute of Mental Health; **Daniel S. Pine**, National Institute of Mental Health; **R.J.R. Blair**, National Institute of Mental Health
  - b) *Aberrant Functional Connectivity in Psychopathy from Youth to Adulthood*  
**K. A. Kiehl**, University of New Mexico – MIND Research Network; **B. J. Shannon**, Washington University; **M. E. Raichle**, Washington University; **A. Z. Snyder**, Washington University; **D. Zhang**, Washington University; **Vince D. Calhoun**, University of New Mexico – MIND Research Network
  - c) *Neural Processing of Rewards and Punishments of Men with Psychopathic Traits*

**Dustin A. Pardini**, University of Pittsburgh; **Amy L. Byrd**, University of Pittsburgh; **Rebecca McNamee**, University of Pittsburgh

- d) *A Functional Neuroimaging Investigation of Emotion Processing and Moral Sensitivity in Female Psychopathy*

**Carla Harenski**, MIND Research Network; **Kent Kiehl**, University of New Mexico – MIND Research Network

11:30a-1:30p POSTER SESSION B (**JEANNE MANCE**)

1:30p-2:30p EARLY CAREER AWARDS (Christopher J. Patrick, Chair)

- a) **Essi Viding**: *Genes, Brains and Parents: What Are Children with Callous-Unemotional Traits and Conduct Problems Made of?*  
b) **Edelyn Verona**: *Psychopathy Dimensions and Etiological Pathways: Phenotypes, Genotypes, and Cognitive-Affective Mechanisms*

2:30p-3:45p *Developmental Characteristics of Psychopathy* (Oral Paper Session I)

- a) *Neural Responses to Affective and Cognitive Theory of Mind in Children with Conduct Problems and Varying Levels of Callous-unemotional Traits*  
**Essi Viding**, University College London; **Catherine Sebastian**, University College London; **Eamon McCrory**, University College London; **Charlotte Cecil**, University College London; **Stephane De Brito**, University College London; **Patricia Lockwood**, University College London; **Nathalie Fontaine**, Indiana University  
b) *The Development of Callous-unemotional Traits during Adolescence*  
**Kostas A. Fanti**, University of Cyprus  
c) *Adolescent Psychopathic Traits: Stability and Change at the Individual-level*  
**Selma Salihovic**, Örebro University; **Metin Özdemir**, Örebro University; **Margaret Kerr**, Örebro University  
d) *Early Childhood Risk Factors for Psychopathic Personality in Adulthood: Findings from the Mauritius Child Health Project*  
**Adrian Raine**, University of Pennsylvania; **Sarah Appelby**, University of Pennsylvania; **Peter Venables**, University of York

3:45p-4:00p Coffee break (**FOYER ALFRED ROULEAU**)

4:00p-5:15p *Examining Relations Between Parents' Behaviors and Callous-unemotional Traits* (Luna C. Muñoz, Moderator)

- a) *Do Childhood Callous-unemotional Traits Drive Change in Parenting Practices?*  
**David J. Hawes**, University of Sydney; **Mark R. Dadds**, University of New South Wales; **Aaron D.J. Frost**, Griffith University; **Penelope A. Hasking**, Monash University  
b) *The Impact of Prenatal Maternal Risk, Fearless Temperament, and Early Parenting on Adolescent Callous-unemotional Traits: A 14-year Longitudinal Investigation*  
**Edward D. Barker**, Birkbeck College; **Bonamy R. Oliver**, King's College London; **Essi Viding**, University College London; **Randall T. Salekin**, University of Alabama; **Barbara Maughan**, King's College London  
c) *Parental Monitoring and Youth Behavior Problems: Moderation by Callous-unemotional Traits over Time*  
**Luna C. Muñoz**, University of Central Lancashire; **Paul J. Frick**, University of New Orleans; **Vilmante Pakalniskiene**, University of Vilnius  
d) *The Associations between Conduct Problems, Parenting Styles, and Callous-unemotional Traits among Adolescents in Hong Kong and in Germany*  
**Cecilia A. Essau**, Roehampton University; **Satoko Sasagawa**, Mejiro University; **Paul J. Frick**,

University of New Orleans

5:15p-5:30p Break (**FOYER ALFRED ROULEAU**)

5:30p-6:45p *Intervention Programmes for Children and Adolescents with Conduct Problems and Callous-unemotional Traits: Perspectives from Parenting, Child-focused and School-based Programmes* (Alice Jones, Moderator)

- a) *Deceitful-callous Behavior in Early Childhood: Links to Externalizing and Role in Intervention*  
**Luke W. Hyde**, University of Pittsburgh; **Daniel S. Shaw**, University of Pittsburgh; **Frances Gardner**, University of Pittsburgh; **JeeWon Cheong**, University of Pittsburgh; **Thomas J. Dishion**, University of Pittsburgh; **Melvin Wilson**, University of Pittsburgh
- b) *Effects of the Coping Power Intervention on Psychopathic Traits in Aggressive Preadolescent Children*  
**Rachel Baden**, University of Alabama; **John E. Lochman**, University of Alabama; **Nicole Powell**, University of Alabama; **Caroline Boxmeyer**, University of Alabama; **Lixin Qu**, University of Alabama
- c) *A School-Based Intervention for Children with Chronic and Severe Behavioral Difficulties: Investigating the Impact of CU on Intervention Success*  
**Alice Jones**, University of London; **Laura Warren**, University of London; **Norah Frederickson**, University of London
- d) *A Mini-Intervention for Detained Youth with Callous-unemotional Traits*  
**Randall T. Salekin**, University of Alabama; **Whitney S. Lester**, University of Alabama; **Mary-Kate Sellers**, University of Alabama; **Jill Rosenbaum**, University of Alabama

7:00p-8:00p Career Conversations (**ALFRED ROULEAU A&B**)

SATURDAY, MAY 21  
**ALFRED ROULEAU A&B**

8:00a-10:00a Registration (**FOYER ALFRED ROULEAU**)

8:30a-9:45a *Corporate Psychopathy: Construct, Concurrent and Ecological Validation Studies of the B-Scan* (Paul Babiak, Moderator)

- a) *Corporate Psychopathy: From PCL-R to B-Scan*  
**Paul Babiak**, Anubis-Research
- b) *The B-Scan Self-Report for Assessment of Psychopathy in Corporate Settings*  
**Craig Neumann**, University of North Texas; **Daniel N. Jones**, University of British Columbia; **Cynthia Mathieu**, Universite du Quebec a Trois-Rivieres; **Paul Babiak**, Anubis-Research; **Robert D. Hare**, University of British Columbia; **Laura Cardona**, University of North Texas
- c) *Concurrent and Ecological Validity of the B-Scan for Assessing Psychopathy in the Corporate World*  
**Daniel N. Jones**, University of British Columbia; **Cynthia Mathieu**, Universite du Quebec a Trois-Rivieres; **Craig Neumann**, University of North Texas; **Paul Babiak**, Anubis-Research; **Robert D. Hare**, University of British Columbia
- d) *The B-Scan Supervisor: Preliminary Findings from a Large Financial Institution*  
**Cynthia Mathieu**, Universite du Quebec a Trois-Rivieres; **Daniel N. Jones**, University of British Columbia; **Paul Babiak**, Anubis-Research; **Craig Neumann**, University of North Texas; **Robert D. Hare**, University of British Columbia

9:45a-10:00a Coffee break (**FOYER ALFRED ROULEAU**)

10:00a-11:15a *Morality, Empathy, and Sadism in Psychopathy* (Oral Paper Session II)

- a) *Do Psychopaths Feel Pain? Moral Judgment and the Perception of Pain*  
**Maaike J. Cima**, Tilburg University; **Franka Tonnaer**, De Rooyse Wissel
- b) *Empathic Accuracy in Psychopathic and Nonpsychopathic Offenders*  
**Michael Brook**, Rosalind Franklin University of Medicine and Science; **David Kosson**, Rosalind Franklin University of Medicine and Science
- c) *Psychopathy and Forensic Characteristics in a Sample of Chinese Murderers*  
**Robert A. Schug**, California State University, Long Beach; **Adrian Raine**, University of Pennsylvania; **Yaling Yang**, University of California, Los Angeles; **Jianghong Liu**, University of Pennsylvania; **Chenbo Han**, Nanjing Brain Hospital
- d) *Psychopathy and Aggression in Inpatients with Schizophrenia*  
**Josanne van Dongen**, Erasmus University Medical Center; **Nicole Buck**, Erasmus University Medical Center; **Hjalmar van Marle**, Erasmus University Medical Center
- e) *The Roles of Psychopathy and Sadism in Sexual and Non-sexual Violence*  
**Raymond Knight**, Brandeis University; **Carrie Robertson**, Brandeis University; **Craig Neumann**, University of North Texas

11:15a-11:30a Break (**FOYER ALFRED ROULEAU**)

11:30a-12:45p *Contrasting the Disinhibitory Psychopathology in Psychopathy and Other Externalizing Disorders* (Joseph P. Newman, Moderator)

- a) *Inhibitory Control and Emotional Processing in Psychopathy and Antisocial Personality*  
**Edelyn Verona**, University of Illinois at Urbana-Champaign; **Jenessa Sprague**, University of Illinois at Urbana-Champaign; **Naomi Sadeh**, University of Illinois at Urbana-Champaign
- b) *Differential Processing of Infrequent Events in Psychopathic and Non-psychopathic Offenders*  
**I. A. Brazil**, Radboud University Nijmegen; **R. J. Verkes**, Radboud University Nijmegen; **B. H. Bulten**, Pompestichting, Nijmegen; **E. R. A. de Bruijn**, Radboud University Nijmegen
- c) *Differential Deficits in Emotional Reactivity and Attentional Selection in Psychopathy vs. Externalizing Psychopathology*  
**Naomi Sadeh**, University of Illinois at Urbana-Champaign; **Edelyn Verona**, University of Illinois at Urbana-Champaign
- d) *Differentiating the Disinhibition of Psychopathic and Externalizing Offenders*  
**Arielle Baskin-Sommers**, University of Wisconsin-Madison; **John J. Curtin**, University of Wisconsin-Madison; **Joseph P. Newman**, University of Wisconsin-Madison

1:15p-2:00p BUSINESS MEETING (**ALFRED ROULEAU A&B**)

2:00p-2:15p CHERYL WYNNE HARE STUDENT POSTER AWARDS (Scott O. Lilienfeld, Chair)

2:15p-3:15p PRESIDENTIAL ADDRESS

**Paul J. Frick**: Callous-unemotional Traits and Conduct Disorder in Youths: Is It Time (Finally) to Integrate Psychopathy into the DSM?

3:15p-4:15p R. D. HARE LIFETIME ACHIEVEMENT AWARD: **Hervey Cleckley** (Randall T. Salekin, Chair)

- a) **Robert D. Hare**: *Hervey Cleckley: Master Clinician and Renaissance Man*
- b) **Christopher J. Patrick**: *The Mirror and the Mask: Hervey Cleckley's Enduring Contributions to the Scientific Study of Psychopathy*

4:15p-4:30p Coffee break (**FOYER ALFRED ROULEAU**)

4:30p-5:45p *The Triarchic Model of Psychopathy: An International Perspective* (Laura E. Drislane, Moderator)

- a) *Elaborating on the Construct Validity of the Triarchic Conceptualization of Psychopathy in Incarcerated and Non-incarcerated Samples*  
**Martin Sellbom**, University of Alabama; **Tasha Phillips**, Wright State University
- b) *The Triarchic Psychopathy Measure (TriPM): A Validation Study in Spanish Undergraduates*  
**Javier Moltó**, Universitat Jaume I; **Rosario Poy**, Universitat Jaume I; **Pilar Segarra**, Universitat Jaume I; **Raúl López**, Universitat Jaume I; **Àngels Esteller**, Universitat Jaume I; **Alicia Fonfría**, Universitat Jaume I
- c) *Disinhibition and Meanness in a Dutch Forensic Psychiatric and Drug Rehab Inpatient Sample*  
**Sabrina Soe-Agnie**, Nijmegen University
- d) *The German Version of the TriPM Questionnaire: Reliability, Validity, and Relationship to Concepts of Aggression*  
**Hedwig Eisenbarth**, University of Regensburg; **B. Braun**, University of Regensburg; **Christopher J. Patrick**, Florida State University
- e) Discussant: **Scott O. Lilienfeld**, Emory University

5:45p – 6:00p Break (**FOYER ALFRED ROULEAU**)

6:00p-7:15p *Novel Methods and Populations in the Assessment of Psychopathy* (Oral Paper Session III)

- a) *Development and Validation of the Elemental Psychopathy Assessment*  
**Donald R Lynam**, Purdue University; **Joshua D. Miller**, University of Georgia; **Thomas A. Widiger**, University of Kentucky
- b) *Facets of PCL-R Psychopathy in Relation to Trauma Exposure and PTSD Symptomatology in an Incarcerated Sample of Women: Mediation via Borderline Personality Traits*  
**Daniel M. Blonigen**, VA Palo Alto Health Care System; **Elizabeth A. Sullivan**, Rosalind Franklin University of Medicine and Science; **Brian M. Hicks**, University of Michigan; **Christopher J. Patrick**, Florida State University
- c) *Psychopathic Traits and Externalizing Behaviors (EB): A Comparison of Self and Informant-Reports in the Statistical Prediction of EB*  
**Shayne Jones**, University of South Florida; **Joshua Miller**, University of Georgia
- d) *Construct Validity of the Three-Factor Model of the Interpersonal Measure of Psychopathy*  
**Sarah L. Tribble**, Rosalind Franklin University of Medicine and Science; **Michael J. Vitacco**, Health Sciences University of Georgia; **David S. Kosson**, Rosalind Franklin University of Medicine and Science
- e) *Pre-morbid Liability Index for Substance Use Disorders and Psychopathic Personality Traits: Boldness and Socialization*  
**Brian M. Hicks**, University of Michigan; **William G. Iacono**, University of Minnesota; **Matt McGue**, University of Minnesota

7:15p-7:30p CLOSING REMARKS (Paul J. Frick, President)

7:30p-9:30p CLOSING RECEPTION (**TERRASSE SAINTE CATHERINE**)

POSTER SESSION A  
THURSDAY, MAY 19: 7:00P-9:00P

**1) Sadism and the Psychopathy Facets as Predictors of Sexual and Non-sexual Violence**

Carrie A. Robertson, Brandeis University; Raymond A. Knight, Brandeis University

Both sexual sadism and psychopathy have been theoretically and empirically linked to violence (Knight, 2010; Porter & Woodworth, 2006). Whereas sadists purportedly derive sexual pleasure from the perceived physical and emotional suffering of another (Knight, 1999), psychopaths can be violent for multiple reasons such as failing to attend to another's distress cues (Psychopathy Checklist [PCL-R] F1; Blair, 2005) or overreacting to perceived aggression (PCL-R F2; Porter & Woodworth, 2006). Few studies have explored the interface of sadism and psychopathy, and the studies that have explored the covariation of violence in each have suffered from limited assessments of violence and a failure to consider all facets of psychopathy. The current study sought to remedy these problems by using detailed analyses of crime behaviors to generate dependent measures of sexual and general violence and by considering all 4 facets of psychopathy. Two independent samples of 314 and 602 adult, male sex offenders were assessed; archival records provided adequate data for rating psychopathy, sadism, general violence, and behavior in sexual crimes. The former sample was administered the Multidimensional Inventory of Development, Sex, and Aggression (MIDSA, 2008) and the Sadism scale was utilized. Exploratory factor analyses yielded 3 moderately or highly consistent sex-crime behavior factors—Violence, Sexual Control, and Sexual Behavior. Hierarchical multiple regressions were performed with sadism and the PCL-R facets as independent variables and with general violence and the sex-crime factors as dependent variables. For each predicted outcome, sadism scores were entered first into the model and the psychopathy facets were entered second. The hierarchical ordering was then reversed. As hypothesized, the facets significantly predicted both sexual and non-sexual violence. Each facet contributed to the prediction of non-sexual violence, whereas facets 2 and 4 covaried with sexual violence. The interaction of facets 4x1 added to the prediction of juvenile assault and the sexual behavior factor. As hypothesized, sadism predicted sexual violence and control, but only predicted 2 of the 3 general aggression measures. The interaction of sadism\*psychopathy added to the prediction of sexual-violence.

**2) Psychopathy as a Moderator of Arousal to Rape**

David Thornton, Sand Ridge Secure Treatment Center; Deirdre D'Orazio, Central Coast Clinical and Forensic Psychology Services

Barbaree and Marshall (1991) proposed that male sexual arousal to depictions of sexual aggression against women is determined by the relative strength of two processes: an excitation to descriptions of sexual activity with a woman and an inhibition to cues indicating the woman's distress. Rapists are said to have weaker inhibitory processes. An alternative view is that rapists are sexually excited by cues indicating coercion. This issue has recently gain significance in the light of the proposal to include paraphilic coercive disorder in the DSM-5 (see Knight, 2009; Thornton, 2009). There is evidence that psychopathic traits may underlie the weakness of these inhibitory processes in rapists (Knight & Sims-Knight, 2003; Lalumiere et al., 2003). The present research explores this possibility by analyzing responses to the MONARCH PPG stimulus-sets in a sample of high-risk sexual offenders. MONARCH PPG stimulus segments depict a man noticing, making an approach to, and then engaging in sexual activity with another person. The approaches are coercive or non-coercive. The kind of inhibitory processes suggested by Barbaree and Marshall should be marked by elevated skin conductance. The male erectile response depends on the parasympathetic nervous system. This should be inhibited activation of the sympathetic nervous system by cues indicating distress. Skin conductance is a good marker for activation of the sympathetic nervous system. Consistent with the above theoretical idea, the common pattern of response during presentation of a MONARCH stimulus segment is for skin conductance to steadily decline during the segment while penile circumference increases. On the basis of this interpretation of the inhibition hypothesis it is proposed that: (1) Segments depicting overtly coercive sexual behavior should lead to elevated skin conductance relative to non-coercive segments. (2) That the difference in skin conductance between coercive and non-coercive segments should be moderated by psychopathic traits. (3) The degree to which offenders' skin conductance response is affected by cues indicating coercion should predict the degree to which their penile response is suppressed by these cues.

**3) The Role of Callous-unemotional Traits in Predicting Bullying, Victimization, and Aggression**

Ashley Hosker, Brock University; Angela S. Book, Brock University; Anthony A. Volk, Brock University

Research has demonstrated that bullying is associated with several negative outcomes for both bullies and victims (e.g. Mynard & Joseph, 1997; Pepler & Craig, 2008). However surprisingly little research has examined the influence of specific personality traits on bullying behaviour. One set of personality features that are clearly related to aggression, and thus, are a likely candidate for predicting bullying behaviour are Callous Unemotional (CU) traits. CU traits are a central part of the definition of psychopathy (Essau et al., 2006; Frick and Hare, 2001) and are often examined using the Inventory of Callous Unemotional Traits (ICU; Frick et al., 2003) which contains subscales designed to assess Callousness, Uncaring and Unemotional personality features. Previous research has found that CU traits are related to a heightened propensity towards aggression and bullying (Fanti, Frick, & Georgiou, 2009; Viding, Simmonds, Petrides, & Frederickson, 2009). However, this is the first study to examine these relationships in multiple contexts. More specifically, the current study sought to examine the relationships between CU traits, bullying, victimization, and proactive and reactive aggression in school and in extracurricular activities. The sample included 310 adolescents (121 boys, 189 girls) who were involved in extracurricular activities (athletics, youth groups) across Southern Ontario. As expected, higher scores on the Callousness subscale of the ICU predicted increased bullying in both contexts. Also as expected, none of the ICU subscales predicted victimization. In addition, proactive aggression was predicted by the Callousness subscale of the ICU, whereas reactive aggression was predicted by the Uncaring subscale alone. The findings of the present study suggest that CU traits play important role in the emergence of bullying and aggressive behaviour both at school and in extracurricular activities. Moreover, the differential prediction of proactive and reactive aggression highlights the need to consider these as two different types of aggression, regardless of the fact that they are correlated with one another.

**4) Psychopathy and Victim Selection**

Kimberly Costello, Brock University; Angela Book, Brock University

The present study investigates the relation between psychopathic traits and accuracy of perceived victim vulnerability. Participants include 47

inmates from a federal maximum security institution in Canada. Psychopathic traits were measured using the Psychopathy Checklist- Revised (PCL-R). Inmates viewed video clips of target individuals walking and rated each target's vulnerability to victimization. Psychopathic traits were positively associated with accurate ratings of vulnerability to victimization. Specifically, inmates scoring higher on Factor 1 of the PCL-R were more accurate in selecting victims, and tended to focus on vulnerable walking gaits when making judgments about victim vulnerability. Implications for reducing victimization are discussed.

#### **5) Primary and Secondary Psychopathic Traits Differentially Predict Costly and Non-costly Aggressive Behaviour**

SN Geniole, Brock University; MA Busseri, Brock University; CM McCormick, Brock University

The conditions under which primary (Fearless Dominance; FD) and secondary (Self-Centred Impulsivity; SI) psychopathic personality traits are associated with aggressive behaviour may vary. Using the Psychopathic Personality Inventory – Revised (PPI-R) and the Point Subtraction Aggression Paradigm (PSAP), we investigated the relationship between FD, SI, and costly proactive (points stolen before provocation) and reactive aggression (points stolen after provocation) in a sample of 85 university students (44 women). PSAP aggression is costly as it detracts from earning money. Half the participants were then tested for non-costly aggression, as determined by the honorarium (up to \$5) allocated to their fictitious PSAP opponent (“non-aggression” = \$5; “aggression” = \$0 to \$4). The other half were given the option to share up to \$5 with the PSAP opponent (“non-aggression” = \$1 to \$5; “aggression” = \$0). Participants gave more in the allocation (mean \$4.39) than in the sharing (mean \$1.41) condition ( $p < 0.0001$ ). Linear regressions of PSAP costly aggression on sex, FD, SI and the interaction of FD and SI revealed a significant effect of SI on proactive aggression (adjusted  $R^2 = .14$ ): Higher SI was associated with greater proactive PSAP aggression ( $p = 0.005$ ). Logistic regression was then used to regress non-costly aggression (non-aggression vs. aggression) on the same predictors in addition to the allocation/share condition and its interactions with FD and SI. The model was significant (pseudo- $R^2 = .35$ ), with the allocation/share condition by FD interaction as the only significant predictor ( $p = 0.001$ ). Within the allocation group, greater FD predicted aggression ( $p = 0.08$ , pseudo- $R^2 = .17$ ); within the share group (pseudo- $R^2 = .41$ ), lower FD ( $p = 0.008$ ) and higher SI ( $p = .015$ ) independently predicted aggression. Cost of aggression thus is an important factor in determining the relationship between psychopathic traits and aggression.

#### **6) N170 ERP Distinguishes between Subclinical Primary and Secondary Psychopathic Traits in Males**

Meghan Weissflog, Brock University; Sidney J. Segalowitz, Brock University

Psychopathy, in addition to its enduring affective and behavioural traits, has also been associated with specific impairments in the recognition of emotional facial expressions. To date, this phenomenon has not been explored using event-related potentials (ERPs). We examined the N170 ERP component in response to affective distractor faces during a word categorization task in 30 undergraduate students varying in psychopathic traits. Because previous research has suggested that the presentation of psychopathic traits may differ between males and females, analyses were conducted separately for the sexes. Psychopathic traits were largely unrelated to N170 characteristics in female participants, except for a relationship between erratic lifestyle traits and N170 latency, such that the N170 peaked later in females high on this trait. This relationship was not observed in male participants. In males, it was found that N170 latency and amplitude independently related to affective (callous affect, manipulateness) and behavioural traits (antisocial behaviour), respectively. Specifically, the latency of the N170 at right hemisphere sites was positively related to callous affect and interpersonal manipulation traits, such that longer ERP latencies were associated with these affective traits. The amplitude of the N170 at both left and right hemisphere sites was positively related to antisocial (behavioural) traits, such that greater antisocial tendencies were related to larger N170 components. The results of the current study suggest that basic perceptual aspects of face processing may be affected in those with psychopathic tendencies, even at subclinical levels. Moreover, these data are also consistent with previous research suggesting that psychopathy manifests itself differently in females and males, further illustrating the importance of accounting for and addressing potential gender differences in the presentation of psychopathy.

#### **7) Coherence among Variants of P3 from Differing Tasks as Indicators of the Antisocial Deviance Factor of Criminal Psychopathy**

Noah C. Venables, Florida State University; Christopher J. Patrick, Florida State University; Edward M. Bernat, Florida State University

Recently, Nelson et al. (2011) described a novel approach to operationalizing diagnostic constructs as physiological composite variables. Specifically, they demonstrated predictive validity for a composite index of disinhibitory (externalizing) proneness consisting of the shared variance among differing brain response measures in non-incarcerated individuals. The current study extended this work by evaluating coherence among differing variants of P3 as indicators of the antisocial deviance factor of Hare's Psychopathy Checklist Revised (PCL-R) in a male prisoner sample. P3 brain responses to target and non-target stimuli were assessed in a visual oddball task, and examined in relation to one another and to a P3 delta-frequency component recorded in a choice-feedback task; the latter was quantified as delta activity to distinguish it from the theta-based feedback negativity. Amplitude scores for the three P3 measures correlated with one another, and were attenuated in each case as a function of scores on PCL-R Factor 2 (which indexes antisocial-externalizing tendencies; Patrick et al., 2005), but not Factor 1 (affective-interpersonal features). Further, a common factor reflecting the covariance among the three P3 measures predicted scores on PCL-R Factor 2 more strongly than any individual brain measure. These results point to a common process underlying reductions in brain reactivity to differing task stimuli associated with the externalizing factor of criminal psychopathy, and suggest that it may be possible to directly assess underlying neurobiological proneness to antisocial-externalizing behavior, using ERP measures.

#### **8) Validity of Psychopathy Facet Scores Derived from the MMPI-2-RF in a Treatment Seeking Sample: Relations With Psychopathology, Familial History, and Suicide Risk**

Noah C. Venables, Florida State University; Megan D. Lucy, Florida State University; Christopher J. Patrick, Florida State University; Martin Sellbom, The University of Alabama; Thomas E. Joiner, Florida State University

This study examined the validity of Fearless Dominance (FD) and Impulsive Antisociality (IA) scores estimated from the MMPI-2 Restructured Form (MMPI-2-RF; Ben-Porath & Tellegen, 2008) scale scores. Previous research has found FD to be negatively related to internalizing psychopathology (i.e., depression and anxiety-related conditions) and IA to be positively related to externalizing problems (i.e., substance abuse, aggression, and antisocial behavior); however, previous studies (e.g., Blonigen et al., 2010) have primarily relied upon questionnaire—rather than interview-based—assessments of psychopathology. Using data from a large ( $N = 1,079$ ), mixed-gender treatment seeking

community sample, we investigated convergent and discriminant validity of FD and IA scores estimated from the MMPI-2-RF (Sellbom, 2007; Sellbom et al., 2007, 2011) in relation to criterion measures obtained at intake including clinician assessed DSM-IV diagnoses of psychopathology, both patient and familial history of psychopathology and problem behaviors, and suicidality. As predicted, FD scores exhibited inverse relations with internalizing diagnoses (depression, social anxiety, generalized anxiety disorder), patient reported familial history of depression and anxiety, and suicide risk. IA scores exhibited positive associations with externalizing criteria such as drug and alcohol dependence, reported patient and familial history of aggression/violence and criminal behavior, and suicidal tendencies. The observed patterns of results provide further evidence for the construct validity of MMPI-2-RF estimated psychopathy scores. Findings will be discussed in terms of implications for clinical assessment of psychopathy facets.

#### **9) P300 is Negatively Related to PCL-R Factor 1 and Factor 2 Shared Variance**

Jeremy Harper, Florida State University; Lacy Olson, Florida State University; Kevin Bache, University of New Mexico; Kent Kiehl, University of New Mexico; Edward M. Bernat, Florida State University

Previous findings have indicated that individuals who score high on Factor 2 (antisocial deviance) of the Psychopathy Checklist - Revised (PCL-R) show reduced amplitude in the P3 component of event-related potentials (ERPs), relative to those lower Factor 2 (Gao and Raine 2009). PCL-R Factor 2, as well as the variance shared between Factors 1 and 2, has been shown to index primarily these 'externalizing' behaviors, such as aggression, impulsivity, and substance dependence (Patrick et al., 2005). Like the PCL-R Factor 2, other work has associated diagnostic status for relevant disorders with reduced P3 amplitude reductions (Iacono et al, 2002), as well as new measures specifically designed to target shared externalizing variance (Patrick et al. 2006). In a sample of incarcerated male offenders (N=76), the current study examined the time-domain ERP waveforms in a standard Go-NoGo task to assess the relationship between P3 and externalizing proneness. Results indicated that PCL-R Factor 2 was significantly and negatively correlated with P3 for the go condition, maximally over CZ. P3 in the go condition was also similarly and negatively correlated with PCL-R Factor 1, also maximally at CZ. To assess whether it is the shared variance between Factors 1 and 2, regression analysis was conducted, with P3 and the dependent variable, and Factors 1 and 2 as the independent variable. As expected, the overall model is significant ( $F(2,66)=4.784, p=0.01$ ). More importantly, in this model, neither Factor 1 or 2 were significant, indicating that it is their shared variance that accounts for the negative relationship with P3. This is consistent with the model proposed by Patrick et al, (2005), as suggested above. An additional, unexpected finding was also observed for the P2 component, strongest in sites consistent with bilateral occipital activations. Results indicate a positive correlation between P2 amplitude and PCL-R Factor 1. This early P2 component increase could be indicative of compensatory effects (i.e., possible increases in the earlier stages of visual processing) for those higher in Factor 1. The positive relationship between P2 and PCL-R Factor 1 is consistent with the idea that increased Factor 1 may be associated with compensatory processes that can counteract or offset effects of Factor 2 (Gao and Raine 2009; Hicks et al., 2006). Implications of these effects for understanding Go-NoGo processing and psychopathy more broadly will be discussed.

#### **10) Brain Activity during Deception in Psychopathy: Lying about Oneself and One's Crimes**

Andrea L. Glenn, University of Pennsylvania; Yaling Yang, University of California, Los Angeles; Adrian Raine, University of Pennsylvania; Robert A. Schug, California State University, Los Angeles

Background: One of the core features of psychopathy is pathological lying. Recent brain imaging studies have begun to identify regions of the brain that are involved in deception, yet it is unclear whether these regions may function differently in individuals with psychopathic traits. Findings in normal individuals have demonstrated different patterns of activity when individuals lie about autobiographical versus nonautobiographical events, suggesting that it may be important to compare these domains. In addition, we wanted to test for differences in activity when lying about criminal versus noncriminal information. Methods: We used functional magnetic resonance imaging (fMRI) to assess brain functioning of participants who were told to lie or tell the truth about information in each of these domains. Psychopathy was assessed using the Psychopathy Checklist - Revised (Hare, 2003). Results: When lying about autobiographical information and about criminal information, participants scoring higher in psychopathy demonstrated increased activity in the middle frontal gyrus, a region involved in the cognitive aspects of deception. In contrast, they showed reduced activity in the ventromedial prefrontal cortex when lying about autobiographical information. This region may reflect an emotional reaction to lying about personal information. Conclusions: Together these results suggest that more psychopathic individuals may have increased cognitive capacity for lying, combined with reduced emotional aversiveness to it.

#### **11) Involvement with Psychopaths - the Effect on Relationships with Others**

Henriette Bergstrom, Carleton University; Adelle Forth, Carleton University

The research on psychopathy has flourished over the past 20 years. However, research on survivors of psychopaths has largely been neglected. A study by Kirkman (2005) of 20 intimate female partners of a psychopath, describes the range of manipulative and abusive experiences experienced by the survivors. More recently, Pagliaro and Forth (2011) reported adult survivors of psychopaths experienced a range of physiological, psychological and interpersonal consequences. The study uses the same data set as Pagliaro and Forth, but analyses the open-ended questions. A sample of 521 male and female adult survivors of psychopaths responded to an online survey about how their involvement with a psychopath had affected relationships with others. The analytic technique utilized was grounded theory, as specified by Strauss and Corbin (1990). From the preliminary analysis of the survivors responses; a theory is currently emerging; "Resilience versus severely damaged". Respondents in the first group were characterized by not being negatively impacted by their relationship with the psychopath. Instead they had become stronger by the encounter and expressed a wish to help others in the same situation. For the other group; distrust in others (especially in men), distrust in self, zero tolerance for psychopathic behaviour, unwanted isolation and self induced isolation emerged as the most central themes. These preliminary results demonstrate the impact a psychopath has varies and is influenced by personal and situational factors. The experience of dealing with a psychopath is both diverse and complex.

#### **12) Identifying Violent and Psychopathic Behaviours from Thin Slices of Behaviour**

Christopher Gillen, Carleton University; Adelle Forth, Carleton University

Researchers have found that it is possible for people to accurately identify personality traits from a brief first impression. The current study is the first to investigate if psychopathic and violent tendencies in female offenders can be reliably and accurately detected by lay raters as "thin

slices” of behaviour. “Thin slices” are brief 10 second excerpts of audio/visual interviews that simulate a first impression. A sample of 60 participants used thin slices to rate and assess 21 female offenders’ overall psychopathy, its four facets (interpersonal, affective deficit, lifestyle, and antisocial personality), proneness to violence, and their likability and attractiveness. The female offenders had previously been assessed using the Hare Psychopathy Checklist-Revised (PCL-R) (scores ranging from 4-34), but participants were blind to these ratings. Based on results from a previous study that examined thin slice ratings of male offenders (Fowler, Lilienfeld, & Patrick, 2009) we predict that thin slice ratings of psychopathy will significantly correlate with PCL-R criterion measures, especially the interpersonal facet of psychopathy. Preliminary results based on 48 participants indicate that mean thin slice global psychopathy ratings correlated weakly with mean PCL-R scores ( $r = .06$ ). However, thin slice interpersonal ratings of psychopathy correlate moderately with mean PCL-R Factor 1 scores ( $r = .30$ ). Mean Factor 2 PCL-R scores also correlated moderately with thin slice lifestyle ratings ( $r = 0.42$ ) and antisocial ratings of psychopathy ( $r = .43$ ). Furthermore, mean thin slice global psychopathy ratings were strongly correlated with mean violence potential ratings ( $r = .81$ ) and negatively correlated with mean likeability ratings ( $r = -.62$ ). These findings partially support the hypothesis that lay people can accurately detect psychopathic traits, as only some facets can be identified accurately from thin slices.

### **13) A Qualitative Examination of Health Issues Present in Survivors of Psychopaths**

Janelle N. Beaudette, Carleton University; Adelle Forth, Carleton University

Voices of survivors of psychopaths have been largely neglected in current theoretical and empirical research. In a previous study, 675 individuals (87 males and 588 females) completed an online survey to gain a deeper understanding of the experiences of victims of psychopaths. Participants were asked to describe any mental and/or physical health problems they have experienced as a result of being in a relationship with a psychopath. These answers were analyzed using grounded theory and Strauss and Corbin’s (1998) coding procedures. The central theme was a perceived loss of control over emotions and physical health. Hunter’s (2010) classification of narrative typologies was used to guide the analysis and the findings partially support previously identified narrative types, namely, ongoing suffering, transformation, and transcendence. The narrative of silence was not present in this sample. A limited number of participants have conveyed that they have now grown stronger as a result of their victimization. Participants who feel they have recovered from this traumatic event do not describe the transformation process. There are temporal discrepancies throughout their narratives, specifically a great deal of attention is given to describing their negative affect and relatively little consideration is given when describing their healthier lives. The majority of participants report symptoms of depression, anxiety, and Post Traumatic Stress Disorder. Further research is needed to investigate the impact of these relationships on the health care system and help-seeking behaviours.

### **14) Psychopathy and Rallying Attentional Resources for a Dichotic Listening Task**

Ian Broom, Carleton University; Adelle Forth, Carleton University; Laura Orton, Carleton University; Courtney Humeny, Carleton University

One common etiological stance regarding psychopathy is that of a lateralized information processing deficit, specific to the left hemisphere. A number of studies have demonstrated this left-hemispheric deficit, particularly with respect to applying attentional resources to a task (Howland, Kosson, Patterson, and Newman, 1993; Kosson, 1993, 1996; Suchy, & Kosson, 2005). The current study examines this hypothesis using a non-verbal auditory task modeled after that employed in Suchy and Kosson (2005). Sixty offenders drawn from a sample of offenders in Canadian provincial institutions were assessed using the Psychopathy Checklist- Revised (Hare, 2003), and separated into higher- ( $n = 30$ ) and lower- psychopathy groups ( $n = 30$ ). Offenders completed questionnaires assessing anxiety, drug and alcohol abuse history, and handedness. The auditory task consisted of tone sequences presented simultaneously to each ear. Offenders were instructed to attend only to the tones lower in overall pitch (targets), and to ignore distractors of lower overall pitch. Targets and distractors consisted of sequences of four pure tones either constant in pitch, monotonically ascending in pitch, or a mixture of constant and ascending sequences (e.g., two tones of equal pitch followed by two tones of progressively higher pitch). The speed at which offenders correctly classified tones determined their level of reward; in a slight departure from the task used by Suchy and Kosson (2005) the current version rewarded participants with points rather than money. Also, in addition to number of correct responses, skin conductance and heart rate changes were collected prior to making selections, and following outcomes. Offenders higher in psychopathy displayed greater overall attention processing in the dichotic listening task. These findings are discussed in the context of the impact of anxiety, addictions, and comorbidity with other mental disorders.

### **15) Facial Affect Discrimination: A Meta-Analysis of Psychopathy Studies**

Ian Broom, Carleton University; Courtney Humeny, Carleton University; Adelle Forth, Carleton University

Deficiencies in processing fearful facial expressions have been identified in populations exhibiting antisocial traits. Meta-analytic evidence to date suggests that a) specific facial affect discrimination deficits exist in antisocial populations, and b) that task difficulty alone is not sufficient to explain observed facial affect classification findings in antisocial populations (Marsh & Blair, 2008). Marsh and Blair’s (2008) meta-analytic review included as a moderator whether or not antisocial populations were psychopathic or not (and found no significant effect). However, some studies challenge the “amygdalian” nature of Marsh and Blair’s (2008) findings (e.g., Pham & Philippot, 2010). The current meta-analysis focuses specifically on 15 studies involving psychopathy as assessed using Psychopathy Checklist instruments. Moderators included in the analysis include age, population type (prison/psychiatric), ethnicity, and stimuli type (i.e., Ekman and Friesen (1976) faces versus others). The differential impact of moderators in the psychopathy sub-set of antisocial offender populations, as well as differential processing of emotional stimuli type are discussed in the context of Marsh and Blair’s (2008) suggested amygdalar dysfunction.

### **16) High Risk Preference with Intact Reversal Learning in High Psychopathic Students**

Lloyd Balbuena, University of Saskatchewan; John Logan, Carleton University; Adelle Forth, Carleton University

Although risk-taking among psychopathic individuals have been demonstrated in the Iowa Gambling Task, a certain tolerance for risk is sometimes advantageous in money investment games (Shiv, 2005; Lawrence, 2008). The purpose of the present study was to examine risk-taking, reversal learning, and impulsivity in high psychopathic university students using the Iowa Gambling Task (IGT) and the Cambridge Gamble Task (CGT). 48 male students, of which 26 were high psychopathic (High P) and 22 low psychopathic (Low P) based on the Levenson Self-Report Psychopathy Scale, were recruited from a cohort of 1,412 students taking first and second year psychology courses. The groups did not differ in age ( $p = .12$ ) nor executive function ( $p = .89$ ) as measured by a Tower of Hanoi task. Points won in the IGT and CGT were converted to cash. No significant difference was found in points won in the IGT or the CGT, but High Ps earned a higher but not statistically

significant amount Ps in the CGT Descending condition ( $p = .08$ ). Both High P and Low P were competent in IGT reversal learning, as shown by positive NET Total scores starting around the 20th move, and a more consistent preference for the good decks in the second half compared to the first. A linear mixed model of the CGT results showed that the amount of bets placed could be predicted by higher risktaking (but not impulsivity) by High Ps and better risk adjustment by Low Ps. However, this between groups difference in risk profile could only be observed in a sub-sample of extreme scorers. These results suggest that high psychopathic characteristics, when combined with good executive function in well-educated individuals need not compromise reversal learning and some preference for risk need not lead to monetary loss. Our findings suggest that if the gains from social dealings outweigh the self-ruining tendencies in psychopaths, then psychopathy can be advantageous.

#### **17) All in! Risky Decision-making as Evidence of Orbitofrontal Cortex Dysfunction in Violent Men with Antisocial Personality Disorder and High Psychopathy Scores**

Stéphane A De Brito, University College London; Essi Viding, University College London; Veena Kumari, King's College London; Nigel Blackwood, King's College London; Sheilagh Hodgins, King's College London, University of Heidelberg, Université de Montréal

Most violent crimes are committed by a small group of males who have displayed antisocial and aggressive behaviour from a young age. This life-long pattern of behaviour is characterised by symptoms of and poor decision making and indexed by diagnoses of Conduct Disorder prior to the age of 15 and Antisocial Personality Disorder (ASPD) thereafter. Among men with ASPD, some present severe enough interpersonal and affective impairments to warrant a diagnosis of psychopathy. to the orbitofrontal cortex (OFC) can result in a similar clinical presentation as that of men with ASPD and high psychopathy scores (ASPD+P). Brain imaging studies have observed reduced OFC volumes in male offenders with ASPD+P. Previous neuropsychological studies that have claimed to demonstrate OFC dysfunction among offenders with ASPD+P have focused primarily on affective decision-making in conditions when outcome probabilities are ambiguous. However, in these conditions impaired performance might result from compromised processes dependent on cortical or subcortical regions other than the OFC. It remains unclear whether violent offenders with ASPD+P like patients with OFC lesions, display impaired affective decision-making under risk, i.e., when outcome probabilities are explicit. The Cambridge Gambling Task was used to assess such decision-making among men, comparing 47 violent offenders with ASPD+P and 26 age-and ethnicity-matched healthy non-offenders. All participants completed the SCID I and II and the PCL-R. In comparison to healthy non-offenders, violent offenders with ASPD+P displayed increased risk taking at unfavourable odds, less appropriate adjustment of responding to varying levels of risk, and poorer quality of decision-making despite increased deliberation times and similar levels of impulsivity. This is the first study among men with ASPD+P to identify a specific deficit of affective decision-making under risk robustly associated with OFC dysfunction.

#### **18) Validation of the Factor Structure of Psychopathy among French Speaking Inmates and Forensic Patients**

H. T. Pham, CRDS; Umons.; D. S. Kosson, Rosalind Franklin University of Medicine and Science; C. Ducro, CRDS; Umons.; M. C. Stafford, Institut Philippe Pinel. Montréal.

The concept of psychopathy has been widely the target of validation studies concerning its factor structure. However less factor structure studies have been conducted among forensic patients. This study addresses the factor structure of the PCL-R (Hare 2003) among a French European population. The sample includes 244 male prison inmates but also 174 male adult forensic patients from a security hospital. We used the M Plus program for conducting confirmatory factor analyses. We conducted separate analyses for the prison and the forensic sample. CFA indexes including Chi Square and RMSEA suggested that the 4 facets (Neumann and Hare, 2005) and the 3 factors models (Cooke & Michie, 2001) applied reasonably to both forensic patients and prison inmates. The implications for the evaluation of psychopathy in France and Belgian mental health forensic systems are discussed.

#### **19) Explosive Matters. Aggression Induction: What Works**

Franca Tonnaer, De Rooyse Wissel, Maastricht University; Maaik Cima, De Rooyse Wissel, University of Tilburg; Arnoud Arntz, Maastricht University

The current study aims to test the effectiveness of different aggression inductions within forensic patients. From June to October 2009 44 male offenders participated in the current study. All participants were presented with three different aggression inductions; Articulated Thoughts during Simulated Situations, Cyberball, and the Body Opponent Bag with harassing feedback. Paired sample T-test with pre and post assessment of aggression was used to investigate the effectiveness of the aggression inductions. Results indicate ATSS and BOB are effective in inducing aggression in a forensic population.

#### **20) Cortisol, Psychopathy Dimensions and Types of Aggression in At Risk Youths**

Johanna Feilhauer, Maastricht University; Maaik Cima, Tilburg University; Nancy Nicolson, Maastricht University

Objective: Previous research has revealed abnormalities in the functioning of the HPA-Axis, including increased cortisol secretion in antisocial behaviour. However, results have been contradictory. More recently, emerging evidence suggests that decreased cortisol secretion may act as a biological marker for a severe antisocial subgroup high on CU-traits (Hawes, Brennan, & Dadds, 2009; Loney, Butler, Lima, Counts, & Eckel, 2006). However, the evidence base for this assumption is still preliminary. Furthermore, it has been suggested that the combination of severe antisocial behaviour and CU-traits puts youths especially at risk to develop psychopathy later in life (e.g. Frick et al., 2003). The present study tests whether daily cortisol secretion is uniquely associated with CU-traits in a sample of juvenile delinquents and in healthy adolescents. Furthermore, associations with other aspects of psychopathy and types of aggression are examined. Method: Juvenile delinquents ( $N = 63$ ) and healthy adolescents ( $N = 62$ ) completed diaries and collected three saliva samples daily on two days, with compliance monitored electronically. Psychopathy dimensions were assessed by self-report (Inventory of Callous-Unemotional Traits [ICU], Narcissistic Personality Inventory for Children [NPIC]) and expert rating (Psychopathy Checklist: YV [PCL: YV]). Furthermore, aggression (Reactive-Proactive Aggression Questionnaire [RPQ]) and externalizing symptoms (Diagnostic interview schedule for children [DISC]) were assessed. We apply multilevel regression analysis. Results: Outcomes and consequences will be discussed for juvenile delinquents and healthy adolescents.

#### **21) The Adolescent Outcomes of Trajectories of Callous-unemotional Traits in Children**

Nathalie M. G. Fontaine, Indiana University; Eamon J. P. McCrory, University College London; Essi Viding, University College London, and

Callous-unemotional (CU) traits (e.g., poverty of emotions, lack of guilt) are a well documented temperamental correlate of severe and persistent antisocial behavior in youths. There is a paucity of longitudinal research that explores the development of CU traits and their outcomes. In previous analyses using the Twins Early Development Study (TEDS), a population-based sample of twins from the U.K., we identified four distinct developmental trajectories (between 7 and 12 years old) of CU traits through general growth mixture modeling: stable high, increasing, decreasing, and stable low. We also found that in most cases, the trajectory-group membership was largely driven by genetic and to a lesser extent by nonshared environmental influences for boys and girls. However, the trajectory-group membership for girls on a stable-high CU traits trajectory appeared to be mostly driven by shared environmental influences. The current study examines the adolescent outcomes (14 years old) of the developmental trajectories of CU traits identified in previous analyses using the TEDS sample. Child- and family-level outcomes are examined, including psychopathic traits, attention-deficit/hyperactivity, and negative parental feelings. Sex differences are also examined. Our findings suggest that high and stable levels of CU traits in childhood are associated with negative outcomes in adolescence. Our findings also suggest that clinical approaches aimed at decreasing psychopathology in youth would benefit from an assessment of CU traits, given their reliable association with later psychopathology.

## **22) How Callous-unemotional Traits Mediate the Association between Parenting Practices and Conduct Problems or ADHD**

Maria - Zoe Hadjicharalambous, University of Cyprus; Alexandros Lordos, University of Cyprus; Kostas Fantis, University of Cyprus

Previous studies have shown that parenting practices, such as parental involvement and positive parenting, influence the development of conduct problems. Furthermore, the literature suggests that parenting practices are unrelated to callous-unemotional (CU) traits because of the existence of other factors that explain the development of CU traits, such as the child's temperament and neuro-biological factors. However, there is a scarcity of research investigating the association between parenting practices and ADHD, and whether this association is mediated by CU traits, which is the purpose of the present study. The sample consisted of 1755 school age Cypriot students, and data were collected from 26 elementary schools. For the initial data analysis we employed Hierarchical Linear Regressions to investigate the research question separately for mother, father, and child reported data. The child reported data suggested that positive parenting predicted conduct problems and ADHD, but that CU traits totally mediated the association between parenting practices and both conduct problems and ADHD. Results based on mother reports showed that maternal involvement predicted both ADHD and conduct problems, and that CU traits partially mediated this association. Finally, based on father reports, paternal involvement predicted ADHD but not conduct problems; positive parenting predicted conduct problems but not ADHD; CU traits partially mediated both of these association. The data that will be presented in the conference will include two time points of measurement, and therefore we will be able to control for initial levels of ADHD and conduct problems. Furthermore, a cross-lag Structural Equation Model with latent factors based on mother, child, and father reports will be employed.

## **23) Why CU Could Stand for 'Callous-Unremorseful': Reconsidering the Factor Structure of the ICU**

Alexandros Lordos, University of Cyprus; Kostas Fanti, University of Cyprus

The factor structure of the Inventory of Callous Unemotional Traits (ICU) has been the subject of several investigations. While factor analyses have suggested the presence of three factors – 'callous', 'uncaring' and 'unemotional' – the validity of this factor structure has not gone unquestioned: The 'uncaring' factor is comprised solely of positively worded items and the 'callous' factor almost entirely of negatively worded items, suggesting that the groupings may have occurred partly due to method variance. In an effort to overcome this method variance problem, separate exploratory factor analyses were conducted on the negatively worded and positively worded items using father, mother and child reports of 1755 elementary school Greek Cypriot children and their families. The resulting factor structure differed on a few items depending on the respondent, but on the whole items loaded on one of three factors – 'callous-unremorseful', 'uncaring-unconscientious' and 'emotionally unexpressive'. Items which did not consistently load on one factor were excluded from further analysis. On this basis, revised scores for the aforementioned factors were calculated. The revised factors included both positively worded and negatively worded items and exhibited satisfactory Cronbach's Alpha in all three data sets. Finally, according to a multinomial logistic regression analysis, the 'callous-unremorseful' factor predicted conduct problems and the 'uncaring-unconscientious' factor predicted ADHD problems, suggesting that the revised subscales have the power to discriminate among different types of psychopathology - providing evidence of the factors' external validity.

## **24) The Inventory of Callous and Unemotional Traits: A Construct Validation Study in an Adolescent Sample**

Joanna Berg, Emory University; Sheethal Reddy, Emory University; Linda Craighead, Emory University; Annelore Roose, University of Leuven; Scott O. Lilienfeld, Emory University

The Antisocial Process Screening Device (Frick & Hare, 2001) was developed to assess callous/unemotional (CU) traits in youth; analyses showed that it did not provide adequate content coverage of these traits, which are thought by some to reflect the core affective deficits of psychopathy. In 2004, Frick developed the Inventory of Callous and Unemotional Traits (ICU) to provide superior coverage of these traits. Participants in our study were 13-15 year olds in the foster system in the Atlanta area (N = 70), randomly assigned to either a 6-week cognitively-based compassion training (CBCT) program or a 6-week waitlist, after which they all received 6 weeks of CBCT; the goal of treatment was to reduce distress and increase empathy. Participants completed a battery of tests, including the ICU, at three points: prior to treatment, after the first 6-week period, and after another 6-10 weeks. Caregivers also completed several measures about the child, including the Child Behavior Checklist and the ICU. Our analyses placed the ICU within a nomological network of correlates potentially relevant to CU traits, including standardized indices of loneliness, emotion regulation, trait anxiety, spirituality, conduct problems, life goals, and compassion. We also examined responsiveness to CBCT as a partial test of the ICU's construct validity. Child and caregiver ICU scores were moderately correlated ( $r = .35, p < .01$ ). Preliminary analyses revealed no significant effect of treatment on either child or caregiver total ICU scores. Positive correlations emerged between child ICU scores and measures of trait anxiety ( $r = .44, p < .001$ ), emotion regulation difficulties ( $r = .43, p < .001$ ), and loneliness ( $r = .42, p < .001$ ). Negative correlations emerged between ICU scores and measures of religion/spirituality ( $r = -.28, p < .05$ ), life goals ( $r = -.59, p < .001$ ), and a newly developed measure of compassion and allied constructs ( $r = -.53, p < .001$ ). Significant positive correlations emerged between ICU scores and several child- and caregiver-reported measures of behavior problems and ADHD. Overall, our analyses provide partial support for the construct validity of the ICU, though they suggest that it may be saturated with negative emotionality and thus may not capture a global absence of affective traits.

### **25) Three Psychopathic Trait Dimensions are Differentially Associated with Reactive and Proactive Aggression in Youth**

Lu Dong, Emory University; Irwin Waldman, Emory University; Scott Lilienfeld, Emory University

Despite growing research in psychopathic traits among children and adolescents in recent years, the factor structure of commonly used measures of psychopathic traits in youth samples is still unresolved and inconsistent across different measures and samples. The present study aims to study the external validity of the three-factor model of psychopathic tendencies in youth by examining differential relations between each of the three psychopathy dimensions (i.e., Narcissism, Callous-Unemotional traits, Impulsivity) and reactive and proactive aggression, which are considered important correlates of psychopathy. Relations between parent-reported psychopathic tendencies as measured by the Antisocial Process Screening Device and aggressive behaviors as measured by Dodge & Coie's reactive-proactive scale were analyzed in both clinic-referred (n=350; mean age=10.7 years) and community samples (n=1735; mean age=10.6 years), both separately and jointly. We used Structural Equation Modeling (SEM) given its allowance of substantial correlations between dimensions of aggression as well as dimensions of psychopathy. Pooled analyses that constrained equitable parameters of the SEM model across samples suggested statistically significant differences in the associations of the three psychopathy factors with reactive and proactive aggression. Specifically, after controlling for appropriate sex and age covariates, Narcissism was significantly and similarly associated with both reactive and proactive aggression, whereas CU was uniquely related with proactive aggression and Impulsivity with reactive aggression. The present findings provide robust empirical support for the external validity of the three-factor model of psychopathic traits in children.

### **26) Development of an Abbreviated Research Screening Version of the Externalizing Spectrum Inventory**

Mark D. Kramer, Florida State University; Christopher J. Patrick, Florida State University; Kristian E. Markon, University of Iowa; Robert F. Krueger, University of Minnesota - Twin Cities

The Externalizing Spectrum Model (Krueger, Markon, Patrick, Benning, & Kramer, 2007) organizes putatively distinct disinhibitory personality, behavior, and psychopathologic constructs into a coherent, hierarchical framework. Other recent work has shown that this domain of problems and traits is closely related to the antisocial deviance (Factor 2) component of psychopathy. Utilizing an iterative, bottom-up approach to test construction, 23 unitary facets of the externalizing domain, the structure of these traits, and a 415-item self-report based operationalization of the model—the Externalizing Spectrum Inventory (ESI)—were delineated. The purpose of the current work was to facilitate further research on this integrative model of externalizing through development of an abbreviated version of the ESI. Analyses were performed on data from a large sample (N= 1,787) consisting of incarcerated as well as non-incarcerated men and women (Krueger et al., 2007). Classical psychometric and item-response based statistical methods were employed in the selection of subsets of items from each facet scale and in the development of item-based measures of the ESI's higher-order factors (general disinhibition, callous-aggression, substance abuse). The resulting inventory is approximately one-third length and retains similar precision in measurement of the lower-order ESI facets, with a higher-order structure mirroring that of the full ESI. The abbreviated version of the ESI provides an efficient method for assessing the domain of disinhibitory problems and traits at both lower order (facet) and higher-order (factor) levels. The brief (19-20 item) measures of the ESI factors nested within the item set of the abbreviated ESI can be administered as stand-alone scales in large-scale screening or laboratory studies in which assessment at the higher-order factor level is prioritized.

### **27) Delineating Distinct Internalizing and Externalizing Factors of DSM Psychopathology in a Brazilian Prisoner Population**

Uma Vaidyanathan, Florida State University; Hudson Carvalho, Federal University of São Paulo; Sérgio Baxter Andreoli, Federal University of São Paulo; Christopher J. Patrick, Florida State University

Structural analyses of common DSM-defined mental disorders in community epidemiological samples have revealed evidence of two broad dimensions – an internalizing (INT) dimension encompassing anxiety- and mood-related disorders, and an externalizing (EXT) dimension encompassing antisocial and addictive disorders. Recent studies examining relations between these broad psychopathology dimensions and scores on instruments such as Hare's (2003) PCL-R and Lilienfeld's (1990) PPI in offender samples have revealed evidence of (a) negative relations between INT and psychopathy Factor 1 (affective-interpersonal features), and (b) positive relations between EXT and psychopathy Factor 2 (social deviance). However, these studies have relied in whole or in part on self-report based assessments of INT and EXT disorders. Importantly, it remains to be demonstrated that distinct INT and EXT dimensions in fact emerge from analyses of interview-based diagnoses in offender samples. The current study was undertaken to fill this gap in the literature. In the current study, using both exploratory (EFA) and confirmatory factor analyses (CFA), we examined the structure of common internalizing and externalizing psychopathology in a sample of Brazilian inmates (N=1837). Non-hierarchical lifetime diagnoses of depression, dysthymia, generalized anxiety disorder, PTSD, alcohol dependence, drug dependence, social phobia, agoraphobia, obsessive-compulsive disorder, and charges of recidivism (as a proxy for antisocial personality disorder) were utilized in analyses. Both EFA and CFA supported the presence of moderately positively correlated INT and EXT factors. However, they also suggested that a structural model where alcohol dependence loaded on both the INT and EXT factors, but with uncorrelated INT and EXT dimensions fit the data better. These results suggest that atypical associations between dimensions of psychopathology might be observed in incarcerated populations. Implications will be discussed.

### **28) Psychopathic Tendencies and Autism Spectrum Traits Predict Differential Empathy Ability Profiles in Typically Developing Adults**

Miriam E. Miller, Goldsmiths, University of London; Kaja Polenik, Goldsmiths, University of London & University of Ljubljana, Slovenia; Alice P. Jones, Goldsmiths, University of London

Recent research argues that empathy is best considered in terms of its constituent cognitive and affective components, which are underpinned by partially separable neural systems (Blair, 2005; Völlm et al., 2006). A recent study of cognitive and affective empathy functioning in children with conduct problems and elevated callous-unemotional (CU) traits and children with a diagnosis of autism spectrum disorder (ASD) suggested that there is a dissociation between the type of empathy dysfunction characterizing psychopathy and autism, two 'disorders of empathy' (Jones et al., 2010). Children with conduct problems and CU were poorer than controls on measures of affective empathy, but in line with controls on cognitive empathy measures. In contrast, children ASD showed the expected cognitive empathy deficit, but were able to demonstrate affective empathy in situations where cognitive empathy was not required. This study aimed to examine this potential double dissociation in empathy abilities in a typically developing sample of over 170 adults using non-clinical ratings of autism spectrum traits (AQ; Baron-Cohen et al., 2001), psychopathic tendencies (PPI-R; Lilienfeld & Widows, 2005) and the Basic Empathy Scale (Jolliffe & Farrington,

2006) to provide ratings of cognitive and affective empathy. Data collection is on-going, but preliminary multiple regression analyses showed that cognitive empathy was significantly predicted by autistic traits, but not psychopathic tendencies. Conversely, affective empathy ratings were significantly and most strongly predicted by psychopathic tendencies, but also by gender and autistic traits. These results suggest that, in line with previous research, there is no cognitive empathy deficit associated with psychopathic traits, but affective empathy deficits can be predicted by psychopathic tendencies or deficits in cognitive empathy. We argue that, in line with Blair's theory, affective and cognitive empathy are only partially dissociable.

### **29) Physical and Sexual Abuse among Adult Male Violent Offenders with Psychopathy: An Exploratory Study**

Nathan J. Kolla, New York University School of Medicine; Charlotte Malcolm, King's College London; Stephen Attard, King's College London; Nigel Blackwood, King's College London; Sarah Gregory, King's College London; Sheilagh Hodgins, King's College London

Maltreatment in childhood has been associated with violent offending in adulthood. It is presently unknown, however, if the occurrence and consequences of maltreatment are similar for violent offenders with and without the syndrome of psychopathy. This study explored the associations between self-reported physical and sexual abuse, self-reported impact of these experiences, and subsequent symptoms of anxiety and posttraumatic stress disorder (PTSD) among violent offenders with the syndrome of psychopathy (P) (Psychopathy Checklist-Revised scores of 25 or higher) or Antisocial Personality Disorder (ASPD). The sample included 42 men – 29 violent offenders (10 P 19 ASPD) and 13 healthy non-offenders matched for IQ and socio-economic status of the family of origin. Participants completed a diagnostic interview (SCID I and II) and the PCL-R interview administered by one psychiatrist and the Early Trauma Inventory administered by another psychiatrist. The violent offenders had not experienced more physical or sexual abuse than the non-offenders, but they did present more current anxiety symptoms and similar numbers of PTSD symptoms. P violent offenders reported a significantly greater burden of physical abuse during childhood, were more adversely affected by their physical and sexual abuse experiences at the time of occurrence, and presented more current anxiety symptoms than the violent offenders with ASPD and the healthy non-offenders. Abuse in childhood was associated with current anxiety symptoms, both among violent offenders with and without P. Physical and sexual abuse may play a role in the development of psychopathy. The results of the present study among adult offenders highlight the importance of specifying the consequences of childhood maltreatment on brain and behavior among children presenting the antecedents of psychopathy.

### **30) The Factor Structure and Predictive Validity of Callous-unemotional Traits Displayed by Boys and Girls in Two Large Community Samples**

Peter Larm, Université de Montréal; Sheilagh Hodgins, Université de Montréal; Frank Vitaro, Université de Montréal; Richard Tremblay, University College Dublin

The importance of callous-unemotional traits (CU) in promoting conduct problems and aggressive behavior has recently been highlighted. The results, however, derive primarily from studies of small samples of boys assessed in adolescence who have been followed for only short periods of time. The present study aimed to extend knowledge by examining the factor structure of teacher-rated CU traits at ages 6 and 10, and the associations of CU traits at ages 6 and 10 with proactive, reactive and relational aggressive behaviour at age 12, in two community samples and among boys and girls. Participants included a representative sample of 1594 boys and 1423 girls in Quebec and 1037 boys recruited from low socio-economic neighbourhoods in Montreal. Two factors, callous and uncaring, were identified at age 6, 10, and 12 in both samples, and among boys and girls. Further, CU traits at age 6 independently predicted proactive and reactive aggression among boys in the disadvantaged sample and relational aggression among girls at age 12. CU traits at age 10 independently predicted proactive and reactive aggression among boys in the Quebec sample but only proactive aggression in the disadvantaged sample. Significant interaction effects revealed that CU traits at age 10 more strongly predicted proactive and reactive aggression at age 12 among girls with high levels of conduct problems. Neither hyperactivity, inattention or anxiety modified these associations. To conclude, the same underlying factor structure for teacher-rated CU traits was identified at ages, 6, 10, and 12 in two large community samples, and both among boys and girls. The predictive value of CU traits for proactive and reactive aggression at age 12 emerged earlier among the boys from disadvantaged neighbourhoods and among girls the associations of CU traits and aggressive behaviour were detected only among those with conduct problems.

### **31) Can Adaptive Psychopathic Traits Be Observed in Hero Populations?**

Diana Falkenbach, John Jay College of Criminal Justice – CUNY; Maria Tsoukalas, John Jay College of Criminal Justice – CUNY

Psychopathy is often conceptualized using a dual-process model where an individual can exhibit the interpersonal and affective traits of psychopathy without displaying the antisocial behavior and vice versa (e.g., Hall & Benning, 2006). The dual-process model is reflective of the primary and secondary subtype theory of psychopathy (e.g., Karpman, 1941, Lykken, 1995, Poythress & Skeem, 2006) in which the traits typically associated with primary psychopathy are not necessarily maladaptive. Rather it is the expression of a cluster of traits and behaviors that can be problematic when they occur together. For example, Lykken speculated that the fearlessness associated with primary psychopathy can be adaptive and demonstrated in society's leaders and heroes; individuals who are truly successful at socialization. Individuals in pro-social occupations have been shown to have levels of thrill seeking that is comparable to incarcerated prisoners and adventure sportsmen; however, pro-social groups differ in that they have higher control of their impulses and a more conforming lifestyle (Goma-i-Freixanet, 1995). The current study investigates the adaptive expression of certain psychopathic traits in an attempt to understand the construct of "successful" psychopathy. In order to understand if individuals who share similar personality traits can diverge when it comes to behavior and lifestyle choices, it is helpful to study a population that exemplifies a pro-social lifestyle while still exhibiting some psychopathic traits; "Hero" populations, such as law enforcement officers. Due to the amount of risk involved in this type of occupation, it is expected that these individuals will share certain traits that are found in successful psychopaths such as low anxiety, low fearfulness, social dominance and stress immunity, associated with scores on Factor 1 of psychopathy measures. It is expected that they will diverge from criminal psychopaths on aggression and the more behavioral aspects of psychopathy associated with Factor 2 scores on psychopathy measures. If so, the study will explore what traits, such as empathy, distinguish this pro-social group from their more antisocial counterparts.

### **32) Exploring the Relationship between Psychopathy and Helping Behaviours**

Mehmet Mahmut, Macquarie University; Louise Cridland, Macquarie University

The aim of the current study was to assess the helping behaviour of participants with low and high degrees of psychopathy on behavioural

measures occurring in and outside of the laboratory. As low degrees of psychopathy is associated with high degrees of empathy which is in turn associated with higher acts of pro-social behaviour, we predicted that high degrees of psychopathy would be associated with less helpful acts compared to those lower degrees of psychopathy. Twenty-nine participants with high and 29 participants with low degrees of psychopathy (as measured by the SRP-III) were recruited from a large screen using the Screening Version of the SRP-III. The measures administered were designed to elicit acts of helpful behaviour from the participants and included an apparently lost confederate seeking directions, a confederate who appeared to have dropped a bunch of papers and a female experimenter feigning an arm injury and appearing to have difficulty completing various tasks (e.g., pouring themselves drink and tying their shoelaces). The results indicated that on both the directions and dropped papers measures, there were no significant differences between the low and high psychopathy groups in the number of helpful acts elicited. There were mixed findings on the measure involving the experimenter feigning an injury. Contrary to predictions, analyses based on participants with the highest and lowest psychopathy degrees, split by gender, revealed that males with the highest degree of psychopathy engaged in more acts of helping the “injured” experimenter than males with lowest degree of psychopathy. The reverse was true for females; those with the highest degree of psychopathy helped the “injured” experimenter less compared to females with the lowest degree of psychopathy. Although the findings with male participants on the “injured” experimenter measure were contrary to the hypothesis, the behaviour of the high psychopathy participants may reflect their superior impression management skills and their motivation and ability to appear charming, especially to the experimenter who was of the opposite sex.

### **33) Neural Mechanisms of Passive Avoidance Learning in Psychopathy**

Eyal Aharoni, Mind Research Network; David S. Kossou, Rosalind Franklin University; Kent A. Kiehl, Mind Research Network

Healthy adults can easily learn to inhibit a trained response in order to avoid punishment. However, individuals with psychopathy often fail to inhibit these responses, suggesting an insensitivity to the typical motivational effects of punishment. The neural basis of these passive avoidance learning (PAL) deficits in individuals with psychopathy is unknown. The present study examined PAL task-dependent differences in neural activation in a sample of adult criminal offenders with varying levels of psychopathy. Sixty participants (20 high, 20 middle, 20 low psychopathy) were presented with a sequential series of numbers. Each set of numbers, when selected with a button press, was followed by either a small point reward or punishment. Participants were asked to learn by trial and error which set of numbers they should select and avoid in order to maximize their returns. Functional magnetic resonance imaging (fMRI) was used to measure brain activity during the task. Activity in several distinct brain regions including the anterior cingulate, orbitofrontal cortex, and hippocampus, was found to be associated with poor performance on the task. These findings complement neuroimaging results for healthy adult performance. These patterns of brain activity could potentially help explain why offenders high in psychopathy are so undeterred by real-world punitive sanctions, and can benefit medical models aimed at improving problems in avoidance learning.

### **34) Quantifying Criminal Success in Psychopathic Offenders**

Eyal Aharoni, Mind Research Network; Kent A. Kiehl, Mind Research Network

Research in psychopathy has conceptualized incarcerated offenders as “criminally unsuccessful.” However, by defining criminal success as the proportion of non-convictions to total crimes, it is possible to explore meaningful differences between the success rates of incarcerated offenders varying in psychopathy. The present study examined criminal success among male incarcerated offenders high and low in psychopathy (N = 192) as assessed by the Hare Psychopathy Checklist Revisited (PCL-R). Non-convictions and convictions were collected using a self-report survey and criminal record review of 20 crime types. Results indicated that psychopathic offenders were reportedly no more criminally successful than non-psychopathic offenders for violent or non-violent crimes. However, participants scoring high in PCL-R Factor 2 (impulsive/antisocial traits) did report greater success than low Factor 2 scorers across crime types. These findings could help explain why individuals with antisocial traits associated with psychopathy are so prone to criminal recidivism.

### **35) Psychopathic Individuals Can Show Neural Reactivity to Negative Images: Evidence from an Emotion Regulation Task**

Matthew Shane, Mind Research Network; Carla Harenski, Mind Research Network

Dominant models of psychopathy argue that the disorder stems from incapacity to experience negative emotions (ie. fear, guilt) at levels sufficient to constrain cruel/maladaptive behavior. It is important to realize, however, that a chronic insensitivity does not necessarily indicate a complete inability, and that the literature thus remains quite silent to the psychopath's actual capacity for emotional experience. In the present fMRI study, an emotion regulation task was employed to evaluate the psychopath's capacity to experience emotion, under conditions in which they were asked to try as hard as possible to do so. Thirty-eight incarcerated male adults were diagnosed for psychopathy via the Psychopathy Checklist - Revised (Hare, 2001), and were administered a modified emotion regulation task (Ochsner et al., 2004) during which neutral and emotionally-valent picture stimuli were presented for a six-second duration. On each trial, prior to picture presentation, participants were provided with an on-screen instruction to either 'WATCH' the presented picture, or to 'INCREASE' their naturally-occurring emotional reaction to the presented picture. While psychopaths showed characteristic hyporeactivity to aversive pictures in the WATCH condition (ie. reduced right insula, bilateral inferior frontal gyrus, and dorsal anterior cingulate), this difference was reduced in the INCREASE condition. Indeed, psychopaths' activity in the INCREASE condition did not differ from that of the nonpsychopaths' WATCH condition activity in any ROI regions. We believe these results question theories of psychopathy that posit incapacity to experience normal levels of emotion, by indicating that under some conditions, at least, psychopaths can show intact emotional responses to negative stimuli.

### **36) Voxel-Based Morphometry Study of Psychopathy and Emotional Intelligence**

Lora M. Cope, Mind Research Network & University of New Mexico; Elsa Ermer, Mind Research Network & University of New Mexico; Prashanth K. Nyalakanti, Mind Research Network; Kent A. Kiehl, Mind Research Network & University of New Mexico

Introduction: Psychopathy presents with certain emotional deficits that may be related to gray matter volume abnormalities in limbic (emotional) areas, e.g., hippocampus, amygdala, insula. Preliminary evidence also suggests that psychopathy may be related to lower emotional intelligence. Given that general intelligence is related to brain structure, we hypothesized that emotional intelligence might be as well. These areas may overlap with those thought to be involved in psychopathy. Method: Two-hundred eleven adult males from a mixed-security prison were scanned on a 1.5T mobile magnetic resonance imaging (MRI) system. Participants were assessed for psychopathy using the Hare Psychopathy Checklist-Revised (PCL-R) and for emotional intelligence using the abilities-based Mayer-Salovey-Caruso Emotional

Intelligence Test (MSCEIT). Voxel-based morphometry (VBM) was used to investigate regional differences in gray matter volume related to psychopathy and emotional intelligence. Results: Total PCL-R score was negatively related to regional gray matter volume in several areas, including posterior cingulate, precuneus, insula, inferior frontal gyrus, and superior and middle frontal gyrus. Emotional intelligence was positively related to regional gray matter volume in the bilateral cerebellum. There was also an interactive effect of psychopathy and emotional intelligence on regional gray matter volume, with a negative relationship in occipital and temporal areas, including middle occipital gyrus, middle temporal gyrus, cuneus, and fusiform gyrus. A positive relationship was found in inferior frontal gyrus, superior frontal gyrus, and anterior cingulate. Conclusions: Psychopathy is associated with profound emotional dysfunction, and may be negatively associated with emotional intelligence. Though emotional intelligence may not have a strong link to regional structural brain differences, it may interact with psychopathy to manifest the observed structural abnormalities as measured by VBM.

### **37) Abnormal Moral Judgments in Psychopathy**

Elsa Ermer, University of New Mexico and Mind Research Network; Joshua D. Greene, Harvard University; Kent A. Kiehl, University of New Mexico and Mind Research Network

Psychopaths' persistent engagement in morally unacceptable behaviors raises questions about the nature of their moral cognition. This behavior may stem from moral judgments made through abnormal (e.g., non-emotional) processes and/or failure to use moral judgments in regulating their behavior. The present study investigated incarcerated psychopaths' moral judgments across three types of scenarios: high conflict, low conflict, and impersonal (control). In High Conflict scenarios, participants were asked whether it was morally acceptable to take an action that would sacrifice one life to save more lives. Thus in these scenarios, "morally acceptable" responses can be interpreted as supporting a utilitarian calculus. Normal individuals are typically divided as to whether these actions are morally acceptable. In Low Conflict scenarios, participants were asked whether it was morally acceptable to take an action that would harm another person for minimal benefit. Normal individuals typically judge these actions as being morally unacceptable. Impersonal scenarios involved a variety of actions that did not fit into the high or low conflict categories. Ninety-two adult males from a mixed-security prison completed this moral judgment task. Participants were assessed for psychopathy using the Hare Psychopathy Checklist-Revised (PCL-R). Overall, participants were more likely to judge harmful actions as morally acceptable in high conflict scenarios compared to low conflict scenarios. Within each scenario type, however, psychopaths, compared to non-psychopaths, were more likely to judge harmful actions as morally acceptable. Psychopaths and non-psychopaths did not differ in their judgments on impersonal scenarios. These results suggest abnormal moral judgments, at least in some situations, may be important for understanding psychopaths' immoral behavior.

### **38) Exploring the Relationship between Emotional Empathy, Morality and Psychopathic Traits in the General Population**

Ana Seara Cardoso, University College London; Craig Neumann, University of North Texas; Jonathan Roiser, University College London; Eamon McCrory, University College London; Essi Viding, University College London

Although psychopathic traits are thought to relate to deficits in empathy and morality, there is a dearth of data utilising several tasks concurrently to investigate associations between empathy and morality and different facets of psychopathic personality/behaviour. 124 adult males from the community were tested on a wide battery of affect, empathy and morality experimental tasks and questionnaires. This battery included: an emotion multimorph task; an emotional empathy image task using the Self-Assessment Manikin (SAM); an emotional empathy eliciting short-stories task using the SAM; the Empathic Concern scale from the IRI; a moral emotions task; and a moral dilemmas task. Zero-order and partial correlations were conducted between these measures and the different scales comprising the SRP-III-SF (Paulhus, Neumann & Hare, in press): Interpersonal, Affective, Lifestyle and Antisocial. Both zero-order and partial correlations indicated that high scores on Interpersonal and Affective scales were associated with lower scores across measures of emotional empathic response, propensity to feel other-oriented moral emotions and moral decision making. Most notably, impairments associated with moral emotional reactivity and moral decision making were specific to Interpersonal and Affective facets of the psychopathic personality. These findings extend previous research and suggest that emotional and behavioural dimensions of psychopathy are associated with different profiles in terms of empathic and moral processing.

### **39) Impairment in Value Judgement Among Adolescents with Conduct Disorder and Callous-Unemotional Traits**

Sarah Brislin, NIMH; Stuart White, NIMH; R.J.R. Blair, NIMH

Objective: The current study tested the hypothesis that youth with Conduct Disorder (CD) and callous-unemotional (CU) traits have impairment in brain regions associated with making value judgments (Blair, 2010). Method: A computer-based task (Mitchell, 1999) was used where participants chose between a delayed monetary reward and a smaller, immediate monetary reward. CD+CU youth (n=8) were recruited from the community (mean age 15.25, mean WASI score 91.75, 62.5% male) and compared with matched controls (mean age 14.18, mean WASI score 98.30, 30% male). Presence of CD was determined using the Kiddie-Schedule for Affective Disorders and Schizophrenia (KSADS) and CU traits were determined using the Inventory for Callous and Unemotional Traits (ICU) (CD+CU mean score 36.19, control mean score 15.57). Results: A repeated-measures ANOVA found a significant main effect for time of delay [ $F(4,13)=6.196, p=0.005$ ], indicating that both groups required larger amounts of reward in return for longer delay of reward. Additionally, a main effect of group approaching significance was observed indicating the CD+CU group preferred smaller immediate reward to delayed larger reward relative to the control group. There was no significant interaction between time and group [ $F(4,13)=0.104, p=0.979$ ]. Conclusions: This trend provides further evidence of impairment in certain types of decision-making in CD+CU youth. These results are consistent with theoretically predicted deficits in ventral medial prefrontal cortex functioning in this group of children.

### **40) Psychopathic Traits as Moderators of the Relationship between Parental Attachment and Adolescent Antisocial Behavior**

Erica Hynes, Rosalind Franklin University of Medicine and Science; Sarah Tribble, Rosalind Franklin University of Medicine and Science; David Kosson, Rosalind Franklin University of Medicine and Science

In recent years, researchers have taken an increasing interest in questions about relationships between psychopathy and parenting variables. Although results are not entirely consistent across studies, several studies have reported evidence that the relationship between ineffective parenting and antisocial outcomes is moderated by psychopathy levels such that ineffective parenting predicts antisocial outcomes for adolescents low in the affective dimension of psychopathy, but not for adolescents high in such traits (Wootton, Frick, Shelton, & Silverthorn,

1997; Oxford, Cavell, & Hughes, 2003 ). However, only one prior study has examined this issue using the Psychopathy Checklist: Youth Version (PCL:YV), and this study, Edens, Skopp, and Cahill (2008), reported opposite effects for the interpersonal and the affective dimensions of psychopathy. In addition, because Edens et al. used child reports of antisocial behavior, no prior studies have addressed this issue with comprehensive measures of psychopathy. Further, to our knowledge, no prior studies have used official records of antisocial behavior. This study was conducted to further examine this potential moderating relationship using the PCL:YV, an adolescent interview about parenting, and official reports of violent and non-violent criminal charges in a sample of 115 male adjudicated adolescents in North Carolina. Ineffective parenting was operationalized by examining measures of harsh punishment and inconsistent parenting. Preliminary analyses provided no evidence that psychopathy moderated the role of harsh punishment on violent charges. In contrast, preliminary analyses of inconsistent parenting indicate a trend towards a significant Affective Traits X Parenting interaction,  $p = .07$ . These analyses indicated that the robustness of the moderating relationship may depend on how ineffective parenting is operationalized. Parenting is a subjective construct, and there is no single gold standard for assessing it. Additional analyses will examine more features of ineffective parenting in an effort to address this issue in an additional way. Current analyses should help to resolve which aspects of parenting contribute to the relationships shown in prior research.

#### **41) Construct Validity of the Three-Factor Model of the Interpersonal Measure of Psychopathy in a Youth Sample**

Kristin Ridder, Rosalind Franklin University of Medicine and Science; Sarah Tribble, Rosalind Franklin University of Medicine and Science; Daniela Vinesar, Rosalind Franklin University of Medicine and Science; David Kosson, Rosalind Franklin University

Interpersonal characteristics are widely considered a fundamental dimension of psychopathy, and scores on the interpersonal dimension have been shown to correlate with a variety of meaningful external criteria ranging from physiological variables (Gao et al., 2010; Isen et al., 2010) to instrumental aggression (Vitacco et al., 2006; Walsh et al., 2009), to substance dependence (Walsh, Allen, & Kosson, 2007). The Interpersonal Measure of Psychopathy (IM-P; Kosson, Steuerwald, Forth, & Kirkhart, 1997) is a 21-item measure of interpersonal behavior and interactions observed during a semi-structured interview. Exploratory and confirmatory factor analytic studies have provided evidence that three factors underlie the pattern of inter-item correlations. These three factors are Dominance, Grandiosity, and Boundary Violations. Previous research with adult offenders has shown that the three IM-P factors exhibit differential correlations with external criteria, including scores on psychopathy dimensions assessed by the Psychopathy Checklist-Revised (PCL-R), personality variables, and intelligence scores. The current study was designed to extend previous research in adults by evaluating the construct validity of these three factors in adolescents. Partial correlations were conducted to investigate the convergent and discriminant validity of the IM-P factors in 150 adolescents. Results indicate a greater positive relationship between scores on the three factors of the IM-P and scores on the Interpersonal factor of the Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003) than scores on the Lifestyle, Affective, or Behavioral dimensions. In contrast, no relationship was found between age or estimated intelligence and scores on the IM-P factors. Additional analyses will be reported. Preliminary analyses provide support for the construct validity of the IM-P factors in youth samples but also suggest some difference between the pattern of findings in adult samples.

#### **42) The Association Between Parental Rejection and Psychopathic Traits in Adolescent Offenders**

Chelsea L. Brieman, Rosalind Franklin University of Medicine and Science; Cody V. Schraft, Rosalind Franklin University of Medicine and Science; Cami McBride, Roosevelt University; Raymond A. Knight, Brandeis University; Maria T. Daversa, Massachusetts School of Professional Psychology; David S. Kosson, Rosalind Franklin University of Medicine and Science

Research indicates certain parenting approaches as protective or risk factors for psychological, emotional, and behavioral development. Positive parental attitudes, such as warmth and affection are typically paired with better social and emotional functioning whereas negative parental attitudes, such as rejection are associated with poor outcomes (Buschgens, et al., 2010). More specifically, individuals who experienced primary caregiver rejection reported more hostility and aggression, impaired self esteem, emotional instability, and negative view of self, others, and the future (Roehner, 2007). The current study investigated the reliability and validity of a parental antipathy measure (PA) adapted from the MASA (Knight et al., 1994). We predicted that scores on this measure would be internally consistent and correlate with scores on measures of maltreatment and internalizing psychopathology. We also examined the degree to which parental antipathy would predict psychopathic traits. We hypothesized that parental antipathy would correlate with psychopathic traits, even after controlling for emotional abuse. 153 adolescents ages 11-17 in custody at a local detention center completed self-report measures assessing parental antipathy, abuse/neglect (CTQ), depression (CDI), anxiety (TMAS), and psychopathic traits (PCL:YV). Two items on the CTQ emotional abuse scale were removed to eliminate redundancy between the CTQ and the parental antipathy measure. Analyses showed that PA scores were internally consistent ( $\alpha = .81$ ) and associated with various adverse life experiences (e.g., physical abuse/ neglect, emotional abuse/neglect.). PA scores correlated positively with PCL:YV total scores, as well as interpersonal factor scores. Hierarchical regressions demonstrated that, controlling for emotional abuse scores, parental antipathy added to prediction of PCL:YV scores,  $\Delta R^2 = .03, p < .05$ ). Similarly, the relationship between PA and CDI scores remained significant even after controlling for CTQ total ( $R^2 = .029, p < .05$ ) and emotional abuse subscale scores ( $R^2 = .028, p < .05$ ). In addition, Significant CTQ total X Parental Antipathy interactions showed that PA scores were uniquely predictive of PCL total and behavioral factor scores at low levels of overall abuse. In summary, perceived parental rejection and hostility may be risk factors in the development of both psychopathic traits and internalizing forms of psychopathology, but future research should be directed at exploring these relationships in an adult sample.

#### **43) Emotional Language Processing and Psychopathy: Adult Psychopathic Offenders' Ability to Classify the Emotional Polarity of Metaphors**

Rebecca E. Riser, Rosalind Franklin University of Medicine and Science; Christine Meltzer, Rosalind Franklin University of Medicine and Science; Daniela Vinesar Porutiu, Rosalind Franklin University of Medicine and Science; Adelle E. Fort, Carleton University; David S. Kosson, Rosalind Franklin University of Medicine and Science

Several theories posit emotional deficits in psychopathic offenders, and prior studies have demonstrated that psychopathy is associated with anomalies in affective language processing. However, few studies have examined psychopaths' ability to process complex forms of language. Using metaphors, Herve, Hayes, and Hare (2003) examined psychopaths' ability to identify affective valence in complex linguistic material. They reported large effect sizes for psychopathic offenders' overall deficits in classifying metaphors as well as their large valence errors (i.e., labeling affective stimuli as extreme examples of one valence when the metaphors actually expressed the opposite valence). We attempted to

examine the robustness of these errors in valence judgment in a sample of 162 male inmates. Adult offenders rated 60 metaphoric statements as being either negative or positive as well as the degree to which each statement fit each valence category (e.g., extremely, moderately, or slightly positive or negative). Consistent with Herve et al., psychopathy was significantly correlated with the total number of large valence errors, and the number of large valence errors with negative metaphors. Correlations between psychopathy and total errors and large valence errors with positive metaphors also approached significance. However, rather than large effects, these correlations were small or small-to-moderate in size. Facet level analyses revealed total errors were significantly correlated only with scores on the antisocial facet, whereas large valence errors correlated with affective facet scores. Moreover, the relationship with total errors was not significant after controlling for estimated intelligence. In contrast, large valence error findings remained significant or approached significance after controlling for intelligence. In summary, psychopaths processed affective language less effectively than nonpsychopaths, but as most of the deficits were due to individual differences in intelligence, psychopaths' emotional language deficits appear less robust than previously thought. In contrast, the replication of psychopaths' proneness to make extreme valence classification errors suggests that this deficit, related to affective features of the syndrome, may have substantial generality.

#### **44) The Relationship of Father Involvement and Family Structure in Psychopathic Offenders**

Rebecca E. Riser, Rosalind Franklin University of Medicine and Science; Chelsea L. Brieman, Rosalind Franklin University of Medicine and Science; David S. Kosson, Rosalind Franklin University of Medicine and Science Rosalind Franklin University of Medicine and Science

A large body of research suggests a relationship between poor parenting behavior and persistent criminal activity, and several recent studies have linked poor parenting or child maltreatment to psychopathy. In addition, family structure variables have been linked to conduct disorder and antisocial behaviors. Some clinical and empirical reports suggest that structural factors also contribute to the development of psychopathy or antisocial personality (e.g., Robins, 1966). However, there are very few published studies of relationships between family structure variables and contemporary measures of psychopathic traits (see Lindberg et al., 2009 for one exception). Evidence of relationships between family structure variables and psychopathic features would suggest the importance of environmental factors in the etiology of psychopathy and could be central to the development of prevention strategies. The current investigation was designed to address this issue. We examined the impact of father absence and involvement, number of changes in caregivers, and number of people in the household on PCL-R total and facet scores of psychopathy. Analyses indicated that the total number of years a biological father was involved and biological father presence before age four were inversely related to psychopathy scores. On the contrary, the total number of years that a non-biological father figure was involved and a non-biological father presence before four were positively related to psychopathy scores, suggesting a protective role for biological father presence, and a risk factor for non-biological father presence on psychopathic traits. Moreover, these correlations remained significant or approached significance after controlling for socioeconomic status. Individual differences in biological father involvement correlated negatively with interpersonal facet scores, whereas the positive association between non-biological father involvement and the interpersonal and lifestyle facet scores approached significance. The number of changes in caregivers and the number of people in the household were not associated with psychopathy scores. These findings suggest that family structural variables may be more important to most aspects of psychopathy than has previously been recognized.

#### **45) The Predictive Validity of the Levenson Self-Report Psychopathy Scale in Late Adolescence/Early Adulthood**

Robert J. McMahon, Simon Fraser University; Katie Witkiewitz, Washington State University; Conduct Problems Prevention Research Group

The current study examined the predictive validity of psychopathic traits, as measured in late adolescence (age 18) by the 16-item Primary Psychopathy subscale of the Levenson Self-Report Psychopathy scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995), in a large longitudinal sample from the Fast Track project (N = 754). Outcomes, assessed in late adolescence/early adulthood, included trajectories of self-reported delinquency from ages 18 to 20; self-reported index offenses from age 18 through age 20, juvenile and adult arrest records through age 19; and antisocial personality disorder symptoms and diagnosis at age 20. Self-reported psychopathy, as measured by the LSRP, was significantly associated with delinquency and offending behavior (B (SE) = .08 (.02),  $p = .001$ ), juvenile and adult arrests (juvenile arrests (B (SE) = .05 (.02),  $p = .02$ ; adult arrests (B (SE) = .05 (.02),  $p = .01$ ), and early adult antisocial personality disorder symptoms (B (SE) = .07 (.01),  $p < .001$ ) and diagnosis (B (SE) = .20 (.04),  $p < .001$ ), over and above lifetime history of disruptive behavior problems (i.e., criteria counts and diagnoses of oppositional defiant disorder, conduct disorder, and attention-deficit hyperactivity disorder). The LSRP was most strongly associated with adult arrests and antisocial personality disorder symptoms, with the LSRP uniquely explaining 7% and 9% of the variance in these early adulthood antisocial outcomes, respectively. Likewise, for each additional point increase in the LSRP, there was a 1.2 increase in the odds of being diagnosed with antisocial personality disorder. Males and African Americans had significantly higher scores on the LSRP, suggesting higher self-reported psychopathy, but gender and race did not moderate the association between LSRP scores and antisocial outcomes (all  $ps > 0.05$ ). Results indicate that the LSRP could be a useful screening device for assessing likelihood of engaging in antisocial behaviors.

POSTER SESSION B  
FRIDAY, MAY 20: 11:30A-1:30P

**1) Associations between Triarchic Psychopathy Domains and the MMPI-2-RF Personality Psychopathology Five Model in Women: Implications for DSM-5**

Tasha R. Phillips, Wright State University; Martin Sellbom, The University of Alabama; Yossef S. Ben-Porath, Kent State University

Patrick, Fowles, and Krueger (2009) proposed a novel conceptualization of psychopathy based on recurring themes evident across various conceptual accounts and measurement modalities of the disorder. They identified three distinct phenotypic components of psychopathy: disinhibition, boldness, and meanness. The current study was designed to examine the utility of the MMPI-2 Restructured Form (MMPI-2-RF) Personality Psychopathology Five (PSY-5) Model (Harkness & McNulty, 1994, 2007) in characterizing these components from an alternative dispositional perspective. The PSY-5 domains (Aggressiveness [AGGR-r], Psychoticism [PSYC-r], Disconstraint [DISC-r], Neuroticism/Negative Emotionality [NEGE-r], and Introversion/Low Positive Emotionality [INTR-r]) correspond closely to five of the six proposed DSM-5 personality domains (e.g., Krueger et al., in press), and have previously been shown to capture elements of psychopathy (e.g., Sellbom et al., 2005, 2007). Participants in the current study were 209 female prison inmates and 200 female undergraduate students. Each sample was administered the Triarchic Inventory and the MMPI-2-RF. Correlation analyses indicated that Boldness was primarily associated with NEGE-r (-), AGGR-r (+), and INTR-r (-); Meanness with AGGR-r (+) and DISC-r (+); and Disinhibition with DISC-r (+) and NEGE-r (+). In multiple regression analyses we found that Boldness was primarily predicted by NEGE-r (-) and AGGR-r (+); Meanness by AGGR-r (+) and, to a lesser degree, DISC-r (+); and Disinhibition by DISC-r (+) and, to a lesser degree, NEGE-r (+). Because Negative Emotionality is a broad domain, and was positively associated with Disinhibition, but negatively associated with Boldness, we tested whether differential aspects of NEGE-r were associated with these triarchic domains. We entered five MMPI-2-RF Specific Problems scales that measure different types of dysfunctional negative emotions into a multiple regression model predicting the Boldness and Disinhibition domains. These results indicated that Boldness was primarily associated with low anxiety and low fear, whereas Disinhibition was largely associated with high anger proneness (but not anxiety or fear). Implications of these results, with an emphasis on the link between DSM-5 and psychopathy, will be discussed.

**2) 'Meanness' but Not 'Boldness' Explains Deficient Startle Potentiation: Psychophysiological Evidence for the Triarchic Model of Psychopathy**

Raúl López, Universitat Jaume I; Pilar Segarra, Universitat Jaume I; Rosario Poy, Universitat Jaume I; Alicia Fonfría, Universitat Jaume I; Àngels Esteller, Universitat Jaume I; Pablo Ribes, Universitat Jaume I; Pablo Ribes, Universitat Jaume I; Javier Moltó, Universitat Jaume I

The triarchic model of psychopathy encompasses three phenotypic constructs: Boldness, Meanness, and Disinhibition (Patrick, Fowles & Krueger, 2009), being assessed by the Triarchic Psychopathy Measure (TriPM; Patrick, 2010). Recently our lab has successfully demonstrated the validity of TriPM scale scores as predicted from the Psychopathic Personality Inventory-Revised (PPI-R) for assessing these three phenotypes. Using estimated TriPM scale scores, we examined in a community sample ( $n = 42$ ) the contribution of Boldness, Meanness, and Disinhibition constructs in deficient fear-potentiated startle, a well-replicated phenomenon observed in incarcerated psychopaths. Eyeblink responses to noise probes were recorded during a passive picture viewing task (erotica, neutral, and mutilation IAPS pictures, 6 s presented). Hierarchical regression analyses showed that the reduced startle potentiation during mutilation vs. neutral scenes was uniquely predicted by PPI-R-estimated Meanness scores (15% of variance) and not by Boldness or Disinhibition scores. These results suggest that the diminished defensive reaction to aversive stimulation is specifically related to the deficient empathy and cruelty features of psychopathy (Meanness) but not to its social dominance and venturesomeness traits (Boldness), even though both phenotypes share the same underlying dispositional factor of low fear. Our findings provide further evidence about the differential association between psychopathy components and affective deficits, and strongly support the validity of the triarchic model of psychopathy in disentangling the etiology of this personality disorder.

**3) Estimating 'Boldness', 'Meanness', and 'Disinhibition' Constructs of Psychopathy from the PPI-R: Relationships with the Five Factor Model**

Rosario Poy, Universitat Jaume I; Pilar Segarra, Universitat Jaume I; Raúl López, Universitat Jaume I; Àngels Esteller, Universitat Jaume I; Alicia Fonfría, Universitat Jaume I; Carlos Ventura, Universitat Jaume I; Javier Moltó, Universitat Jaume I

The triarchic model of psychopathy entails three phenotypic constructs: Boldness, Meanness, and Disinhibition (Patrick, Fowles & Krueger, 2009), being assessed by the Triarchic Psychopathy Measure (TriPM; Patrick, 2010). Here we examined the validity of the TriPM scale scores predicted from the Psychopathic Personality Inventory-Revised (PPI-R) by examining their relations with the Five Factor Model of personality (FFM). Regression equations to estimate TriPM scale scores were obtained from sample 1 ( $n = 291$  undergraduates) and were applied to sample 2 ( $n = 320$  undergraduates). Correlations revealed that PPI-R-estimated Boldness scores were associated with high Extraversion ( $r = .50$ )—mainly with the activity, assertiveness, and excitement-seeking facets—and with low Neuroticism ( $r = -.39$ )—mainly with the self-consciousness, anxiety, and depression facets. Otherwise, PPI-R-estimated Meanness scores were associated with low Agreeableness ( $r = -.51$ )—mainly with the modesty, altruism, and tender-mindedness facets—and with low Conscientiousness ( $r = -.14$ )—mainly with the dutifulness and deliberation facets. Finally, PPI-R-estimated Disinhibition scores were associated with low Conscientiousness ( $r = -.53$ )—mainly with the dutifulness, achievement-striving, and deliberation facets—and with low Agreeableness ( $r = -.33$ )—mainly with the altruism, modesty, and trust facets. This pattern of convergent/discriminant validity relationships paralleled those obtained in sample 1, and is consistent with the conceptualization of psychopathy in terms of the FFM: emotional detachment traits (Meanness) are indexed by low Agreeableness and to some extent by low Conscientiousness, whereas externalizing symptoms of psychopathy (Disinhibition) are indexed by low Conscientiousness and low Agreeableness. In turn, Boldness seems to be an adaptive expression of psychopathy. These findings support the validity of PPI-R content scales to effectively estimate the TriPM scores.

**4) Triarchic Factors in Prediction of Cortisol Response to Stress**

Megan M. Wampler, Florida State University; Amy Mikolajewski, Florida State University; Jeanette Taylor, Florida State University

Previous research has indicated that blunted stress response assessed via cortisol production is associated with the existence of factor 1 psychopathic personality traits in college samples. The current study examined preliminary data from a project being run at a juvenile male

prison to assess whether a similar deficit exists among male prisoners with psychopathic traits. The Triarchic Inventory was used to index of psychopathic traits, which conceptualizes psychopathy into 3 factors: boldness (e.g., social dominance, immunity to stress), meanness (e.g., callous-unemotional traits, cruelty, predatory aggression), and disinhibition (e.g., impulsivity, antisocial behavior). A total of 20 participants (mean age = 18) completed a performance-based stressor, and salivary hormone samples were taken just prior to task onset (baseline) and at 20 min post-stressor. The relation between each of the 3 factors of the triarchic model and cortisol response to stress was analyzed, and it was predicted that the meanness scale would significantly predict cortisol response to stress such that those high in meanness would demonstrate lower cortisol reactivity. Results confirmed that both boldness and disinhibition were not significantly related to cortisol response to stress; however, meanness was a significant predictor of cortisol response to stress,  $F(1, 19) = 4.65, p < .05$ . The present study adds to a small but growing body of work linking psychopathic personality traits with blunted stress response by more specifically identifying which traits are related to impaired functioning of the HPA axis.

#### **5) Triarchic Conceptualization of Psychopathy in Association with Crime and Psychopathology in Adolescents**

Megan M. Wampler, Florida State University; Laura Drislane, Florida State University; Christopher J. Patrick, Florida State University; Norman Poythress, University of South Florida; Janet Kistner, Florida State University

The triarchic model proposes that psychopathy encompasses three distinct phenotypes: boldness, reflecting social dominance, emotional resiliency, and fearlessness; meanness, reflecting propensities toward cruelty and predatory aggression, and deficient empathy; and disinhibition, reflecting proneness to impulse control problems, associated with impulsivity, irresponsibility, dishonesty, and alienation. The current study examined correlates of these triarchic phenotypes in a male adolescent offender sample ( $N = 332$ ). Analogues of the triarchic traits were developed using the Millon Adolescent Clinical Inventory (MACI). Raters familiar with the construct of psychopathy were provided with descriptions of each of the triarchic phenotypes and were tasked to judge the relevance of each MACI item in terms of the three facets. Items that were deemed uniformly prototypic of a trait across all four raters were included as scale indicators. The relationships between each of the triarchic scales and variables such as suicide, aggression, eating pathology, and offense history, were examined. Results indicated that meanness was significantly related to number of commitments to facilities ( $r = .12, p < .05$ ), age of first charge ( $r = -.12, p < .05$ ), total number of public order crimes ( $r = .16, p < .01$ ), and total number of crimes committed ( $r = .102, p = .065$ ). Finally, disinhibition was significantly related to number of prior suicide attempts ( $r = .13, p < .05$ ), total number of public order crimes ( $r = -.18, p = .001$ ), specifically vandalism ( $r = .63, p < .001$ ) and weapons charges ( $r = .24, p < .001$ ). These results provide information regarding the phenotypic expression of these three facets of psychopathy in adolescents. More specifically, it appears that the meanness facet in particular may be identifying a subset of offenders with an early age of onset.

#### **6) The Relationship between Callous/Unemotional Traits and Impulsivity within an ADHD Sample**

Sarah M. Haas, University at Buffalo; Keri Shiels, University at Buffalo; Daniel A. Waschbusch, University at Buffalo; William E. Pelham, University at Buffalo; Larry W. Hawk, University at Buffalo

Little is known about the role of impulsivity in children with conduct problems (CP) and callous/unemotional traits (CU). Examining impulsivity is important since the vast majority of CP/CU children also meet criteria for Attention-Deficit/Hyperactivity Disorder (ADHD), a syndrome of which impulsivity is central. Previous research has suggested that ADHD and CU may be differentially related to impulsivity. First, although ADHD children exhibit higher levels of motor impulsivity (ability to inhibit an ongoing response) and delaying gratification impulsivity (preference for small/immediate rewards over large/delayed rewards) compared to controls, adults with CU perform similarly to controls on traditional tasks measuring these types of impulsivity (Newman & Kosson, 1986; Newman, Kosson, & Patterson, 1992). Second, previous research has demonstrated mixed findings on how impulsive (motor impulsivity) ADHD/CD are compared to ADHD-only children suggesting that CU may elucidate these findings. Third, Loney and colleagues (2003) suggested that although both groups are impulsive, ADHD youth exhibit emotionally-impulsive behavior whereas CP/CU youth do not. Still, it is unknown how CU may function within an ADHD sample when examining types of impulsivity related to ADHD. The current study examines the relationship between CU and motor impulsivity and delaying gratification, two distinct types of impulsivity (Reynolds, Ortengren, Richards, & de Wit, 2006), within 9 to 12 year old ADHD children ( $N = 77$ ). It was hypothesized that the relationship between CU and impulsivity would remain within an ADHD/CP sample. Since all children have ADHD, this means that higher CU would be associated with less motor impulsivity and less delaying gratification. The findings resulted in partial support for the hypotheses and suggested that CU is related to less motor impulsivity among ADHD/CD children. The implications of these findings are discussed.

#### **7) Diminished Distress Responses to Others' Pain in Psychopathy: Development of an Experimental Paradigm**

K. Uzieblo, University College Lessius; L. Caes, Ghent University; G. Crombez, Ghent University; L. De Ruddere, Ghent University; L. Goubert, Ghent University

Psychopathy is characterized by an emotional deficit and by manipulative interpersonal behavior. In order to manipulate successfully, it can be assumed that psychopathic individuals need to process other's emotions to a certain extent. In line with this hypothesis recent research suggests that psychopathic individuals do understand other's emotions in certain circumstances. However, it remains unclear how the emotional deficit manifests itself within the interpersonal context. In the current study a startle paradigm of Bradley, Silakowski, and Lang (2008) was adjusted to examine the emotional reactivity in psychopathy when directly observing signals predicting pain in others. We expected that (1) psychopathic observers would demonstrate diminished defensive responses to signals predicting pain in the other than to safety signals compared to observers low in psychopathy, and (2) that psychopathy would be related to less accurate pain estimation. Seventy-two female undergraduates were randomly assigned to either the role of observed participant (participating in a painful test) or observer. Two coloured screens signalled possible pain (i.e., pain signal) or no pain (i.e., safety signal). Observers' self-reported fear and affective-motivational responses (i.e. eye blink modulation, corrugator activity) towards the pain signal and the safety signal were measured. We also used signal detection analyses to assess observers' sensitivity to the other's pain. In line with our hypotheses, psychopathic individuals (1) exhibited diminished defensive reactivity in anticipation of pain in the other participant (i.e., during a pain signal) compared to observers with less psychopathic traits, and (2) a less accurate pain detection and a greater response bias. Hence, present results indicate a deviant emotional reactivity and a deviant emotional recognition when directly observing others in threatening situations. Future research should further explore the determinants of the emotional deviancy in psychopathy within an interpersonal context and its effect on interpersonal behaviour in psychopathy.

## **8) The Fatal Partner: Psychopathy and Its Effects on the Psychosocial and Relational Well-being of the Partner**

K. Uzieblo, University College Lessius; B. Soetens, University College Lessius; P. Bijttebier, Catholic University Leuven

A vast amount of research indicates callousness-unemotionality, a manipulative and deceitful interpersonal style, and an antisocial, impulsive lifestyle in psychopathy. These traits are related to a wide range of behavioral correlates, as violent behavior, sexual promiscuity, and criminal recidivism, all hampering the life of the psychopathic individual. This bulk of research has mainly focused on the psychopathic individual himself, often disregarding the environment of this individual. Consequently, our knowledge regarding the effect of psychopathy on the well-being of those living with a psychopathic individual, remains mainly restricted to case studies. These case reports suggest that for instance partners of psychopathic individuals often struggle with a whole range of psychosocial problems (e.g. symptoms of depression and anxiety) and often endure several types of abuses (e.g. physical and psychological). Despite its potential clinical value, scientific research on the latter subject remains very limited. In the present study, we aimed to expand current scientific knowledge on the manifestation of psychopathy within a relational context. More specifically, we investigated the relationship between psychopathic traits in the male partner and the psychosocial and relational well-being of the female partner. We expected that psychopathic traits in the male partner would be related to a diminished psychosocial and relational well-being in the female partner. Hundred thirty-six heterosexual couples were recruited in the current study. The Self-Report Psychopathy Scale III (SRP-III; Paulhus, Hemphill, & Hare, 2003), the Dutch Relationship Questionnaire (NRV; Barelds, Luteijn, & Arrindell, 2003) and the International Self-Report Delinquency (ISR; Junger-Tas, 1994) were assessed in the male partner. In the female partner, the NRV, the Symptom Checklist-90 (SCL-90; Arrindell & Ettema, 2003) and the NEO Five Factor Inventory (NEO-FFI; Hoekstra, Ormel, & de Fruyt, 1996) were administered. In addition, the female partner was asked to evaluate the presence of psychopathic traits in the male partner as described in the SRP-III. The latter would allow us to explore the level of convergence between the psychopathic traits reported by the male partner and those reported by the female partner. Data are currently being processed.

## **9) The Fatal Parent: The Parenting Style, the Attachment Style, and the Empathic Ability of the Psychopathic Parent, and Their Effect on the Behavioral Problems in the Child**

K. Uzieblo, University College Lessius; D. Baeyens, University College Lessius; P. Bijttebier, Catholic University Leuven

Psychopathic individuals are characterized by a callousness-unemotionality, a manipulative and deceitful interpersonal style, and an antisocial, impulsive lifestyle. The bulk of research on psychopathy has however mainly been focusing on the individual level. Hence, the way psychopathy manifests itself within an interpersonal context has often been disregarded in the literature. Not surprisingly our current knowledge regarding the latter is mainly, if not only, restricted to information obtained from case studies. These case studies suggest that psychopathic individuals tend for instance to exploit others, to manipulate others for their own benefit, and to neglect the needs of others, in sum showing all kinds of behaviors that may have a serious impact on those living with psychopathic individuals. Nevertheless, on the whole we only know little about the social intercourse of psychopathic individuals with e.g. their family members. The present study aimed to expand current scientific knowledge on the latter subject by exploring the characteristics of the relationship between parents with psychopathic traits and their child. More specifically, we explored the parenting style, the attachment style and the empathic ability towards the child in parents with psychopathic traits. In addition, we investigated the relationship between psychopathic traits in the parents and internalizing and externalizing behavior in the child. Ninety-one mothers and 160 fathers with children ranging from 8 to 12 years old were recruited from the general population. The parents had to fill out the Self-Report Psychopathy Scale III (SRP-III; Paulhus, Hemphill, & Hare, 2003), the Experiences in Close Relationships Scale (ECR; Brennan, Clark, & Shaver, 1998), the Parenting Behavior Scale (SOG; Van Leeuwen, 2002), and the Child Behavior Checklist (CBCL; Achenbach, 1991). The child's teacher also filled out the Teacher Report Form (TRF; Achenbach, 1991). Preliminary results indicate that mothers with higher scores on psychopathy exhibit a diminished empathic ability towards their child and a heightened attachment related anxiety. With regard to their parenting style, it appears that these mothers have the tendency to ignore deviant behavior in the child and to adopt an inconsistent punishment style. The data in the father-sample are currently being processed.

## **10) Familial Attachments and Parenting Behavior of Psychopathic Individuals**

Liane J. Leedom, University of Bridgeport

**Aims:** The present study examined the familial attachments and parenting behaviour of psychopathic individuals. **Rationale:** Psychopathy is commonly described as a disorder where individuals lack "attachments" and connections with other people. Similarly promiscuous mating and failure to care for children ("low parental investment") are part of sociobiologic explanations and diagnostic criteria for this disorder. Still little precise information is available regarding psychopathy, marriage and parenting. **Methods:** Partners of putative psychopathic individuals were accessed anonymously via a support group for victims of bigamy. They also contacted the author who provides parenting information and consultation to the partners of psychopathic individuals who have children with them (non-anonymously). Partners completed the PSCAN and provided narrative descriptions. In three cases, PSCAN data from multiple informants were compared and validated with an independent forensic report. These cases also became the subject of divorce and custody proceedings and were followed longitudinally in detail by the author. **Results:** Although psychopathic individuals are promiscuous and fail to take care of children. They may marry and live in a family. The parenting behaviour of psychopathic individuals is variable and they may desire custody and visitation after marital dissolution. Psychopathic individuals are adept at using deceiving legal and mental health professionals and gaining custody of children. They also are adept at escaping penalty for abusive marital and parenting behaviour. **Conclusions:** Since psychopathy is known to be associated with promiscuous sexuality, and genetic transmission with phenotypic plasticity, it is vitally important to investigate the parenting behaviour of psychopathic individuals. It is also important to understand how psychopathic individuals manipulate social systems in order to continue contact with children and former spouses. This behaviour seems to contradict the idea that psychopathic individuals lack "attachments".

## **11) Antisocial/Psychopathic Personality: What do Family Members, Romantic Partners and Friends Report?**

Liane J. Leedom, University of Bridgeport; Donna Andersen, University of Bridgeport

**Aims:** The present study examined the construct of DSM V antisocial/psychopathic personality through reports of romantic partners, family members and friends of putative antisocial individuals. **Rationale:** We maintain that educated informants who have known subjects for a long period of time have important information to share regarding their behaviour and functioning. **Methods:** Romantic partners, family members

and friends of putative antisocial individuals were accessed through a public education website. These informants completed an anonymous survey which included ratings of proposed DSM V dimensions as well as open ended questions regarding their observations and experiences. Respondents were also asked about their understanding of the terms, “sociopath,” “psychopath” and “antisocial personality disorder”. Results: Respondents (N= 1,378) rated the putative antisocial individuals as quite manipulative, deceitful, callous and narcissistic (in that order). These individuals were also judged to be hostile, aggressive, irresponsible, impulsive and reckless, though overall less so. Males were described as more deceitful, irresponsible and reckless than were females. Contrary to the proposed DSM V language, most respondents indicated that these very antisocial individuals did “articulate love,” and less so, “anxiety.” Interestingly, a minority of the subject antisocial individuals, about 10%, were described as rarely or never articulating love. Conclusions: Informants who have known subjects well for a long period of time are useful sources of information about those subjects and the nature of the antisocial/psychopathic personality pattern. Antisocial/psychopathic individuals do maintain social connections, often for extended periods of time; they also “articulate love” in the service of these connections, which serve their social and material needs. The public would benefit from an agreed upon, precise diagnostic label for this condition. The proposed DSM V term antisocial/psychopathic type is too cumbersome for public education.

### **12) Double Trouble: The Influence of Psychopathy on Multi-perpetrator Homicide Offences**

Michael Woodworth, University of British Columbia; Stephen Porter, University of British Columbia; Marcus Juodis, Dalhousie; Ava Agar, University of Saskatchewan

Despite an increasing prevalence of homicides committed by more than one perpetrator, hardly any research has examined features of the crime, victim, or the perpetrators. Based on detailed file information and interviews with perpetrators, we investigated the features of the crime, victim, and perpetrator characteristics of 84 individual murders versus 40 multi-perpetrator murders in Canada. Psychopathic offenders were likely to act alone in committing sexual murders but typically involved an accomplice in other types of murders. They almost always perpetrated instrumental murders, and they typically committed gratuitous violence against women regardless of whether they acted alone or with a co-perpetrator. Further, there was evidence to suggest that psychopathic individuals were motivating their non-psychopathic co-perpetrators to act in a manner not consistent with single perpetrator homicide offences committed by nonpsychopaths. Relative to multiple perpetrators, individual perpetrators were more likely to be older and to target female victims, and their murders were more likely to contain reactive, sexual, and sadistic elements. Multi-perpetrator murders tended to involve younger offenders, male victims, and instrumental motives. The findings indicate that individual and multi-perpetrator homicides have distinctive dynamics and can be differentiated during investigations. Further, psychopaths and nonpsychopaths each exhibit unique differences in their offending behaviour depending on the number of perpetrators involved in the homicide. Finally, our findings with adult killers will be compared with recent results of a project that examined a large sample of psychopathic and nonpsychopathic youth killers.

### **13) Would I Lie to You?: Psychopathy Predicts Expertise in Control over Deceptive Facial Expressions**

Alysha Baker, University of British Columbia; Leanne ten Brinke, University of British Columbia; Stephen Porter, University of British Columbia

Psychopaths have mastered the art of manipulation to overcome intuitive impressions of their dangerousness, creating willing victims and convincing decision-makers to be lenient in sentencing and parole hearings (Hakkanen-Nyholm & Hare, 2009; Porter, et al., 2009). It has been proposed that psychopaths do so, in part, by charming their audience with convincing emotional displays (e.g., falsified remorse in parole hearings). Darwin (1872) posited that certain facial muscles cannot be intentionally activated in the absence - or suppressed in the presence - of genuine emotion. We predicted that psychopathic traits would be related to the heightened ability to suppress genuine emotion and consequently, display less leakage of genuine emotions during deceptive emotional displays. Participants (N = 100) viewed emotionally arousing (happy, sad, fearful, disgusting) images, responding to each with a genuine or deceptive expression. Each video frame (30/sec) was analyzed for the presence of emotion inconsistent with the intended expression (365,550 frames coded for 2437 expressions). As predicted, psychopathic personality traits – specifically, high levels of interpersonal manipulation – were related to shorter durations of inconsistent/unintended leakage of emotions during deceptive emotional expressions. Further, the erratic lifestyle sub-scale of the Self-Report Psychopathy Scale predicted increased duration of emotional inconsistencies during deceptive displays. At the other end of the spectrum, individuals higher in emotional intelligence (EI) – specifically, the ability to perceive and express emotion – feigned emotions more convincingly and for longer duration than others but were not more immune to emotional leakage, relative to low EI participants. In general, these results add to our understanding of psychopathic affective processes and provide support for the notion that manipulation by psychopathic individuals may be facilitated by convincing emotional deception.

### **14) Psychopathy and Emotional Dot Probe: Selective Attention to Happy Faces**

Hanie Edalati, University of British Columbia; Zach Walsh, University of British Columbia; David S. Kosson, Rosalind Franklin University of Medicine and Science

Differences in emotional processing have been proposed to be important features of the psychopathic personality. Although numerous studies have identified differences between psychopaths and non-psychopaths in the identification of emotional displays, results have been equivocal regarding the nature of these differences. Specifically, some studies report that psychopaths have difficulty identifying fearful faces and voices (Blair et al., 2004; Montagne et al., 2005), whereas others research have found difficulty identifying only sad voices (Stevens, Charman, & Blair, 2001). Similarly, whereas some research on facial affect recognition has identified associations between psychopathy and impaired recognition of sadness and fear (Blair & Coles, 2000; Blair, et al., 2001; Stevens et al., 2001), other studies report no differences (Glass & Newman, 2006). A recent meta-analytic investigation of facial affect recognition, (Wilson, Juodis, & Porter, in press) found that psychopathy was associated with very small deficits for all emotions. The present study presents an alternative approach to examining the association between psychopathy and emotional expression by examining attentional bias to emotional faces and words. We used a dot-probe task consisting of 130 trials in which attention to emotional words and faces was compared to attention to neutral words and faces among a sample of 33 male jail inmates. Results indicated that across categories psychopathy was not associated with differential attention to emotional stimuli. However, disaggregated analyses indicated that higher psychopathy individuals selectively attend to happy faces ( $F(22, 1) = 3.19, p = .09$ ), that this association was attributable to Factor 1 of the psychopathy construct ( $\beta = 5.64$  (SE = 2.36),  $R^2 = .16, p = .02$ ).

### **15) Predicting Self-Directed and Other-Directed Violence: The Roles of Psychopathic Traits**

Zach Walsh, University of British Columbia; Marc T. Swogger, University of Rochester Medical Center; Kenneth R. Conner, University of

Data drawn from the MacArthur Violence Risk Assessment Study (MVRAS) were used to examine whether psychopathic traits are broadly related to both self-directed violence (SDV) and other-directed violence (ODV), or whether unique combinations of these traits specifically predict tendencies toward inwardly or outwardly-directed violence. We tested the unique and combined power of psychopathic traits to predict whether 851 patients discharged from inpatient psychiatric treatment would commit ODV, SDV, or both (i.e., co-occurring violence; COV) during a one-year follow-up period. In order to provide a fine-grained analysis of psychopathic traits, we used the four-factor model of psychopathy. Informed by the literature on ODV and SDV, we included trait anger, substance use disorder diagnosis, gender, and ethnicity as covariates. Consistent with prior literature (Leistico et al., 2008), all four psychopathy dimensions predicted ODV and co-occurring SDV and ODV. Adjusted analyses predicting ODV relative to nonviolent individuals identified unique contributions for interpersonal (OR = 1.20 (95% CI = 1.03-1.41),  $p < .05$ ) and antisocial features (OR = 1.54 (95% CI = 1.43-1.78),  $p < .01$ ), whereas only antisocial features predicted COV (OR = 1.63 (95% CI = 1.38-1.93),  $p < .01$ ). No psychopathy facets predicted SDV in the absence of violence toward others. These results help to clarify the literature on psychopathy and SDV. Prior studies had found that the relationship between psychopathy and SDV was primarily due to the antisocial, and possibly impulsive-antisocial, features of psychopathy (Douglas et al., 2006; Swogger et al., 2009; Verona et al., 2001). However, in the present study antisocial features of psychopathy predicted SDV only among individuals who also committed ODV, suggesting that the relationship between these traits and SDV may be an artifact of the relationship between antisocial features of psychopathy and general violence.

#### **16) Psychopathy Predicts Intimate Partner Violence Perpetration across Gender**

Jennifer I Langille, University of British Columbia Okanagan; Zach Walsh, University of British Columbia Okanagan

Psychopathy has been proposed to play an important role in the perpetration of intimate partner violence (IPV) in men (Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2000; Marshall & Holtzworth-Munroe, 2010). However, further research is required to better understand the role psychopathy might play in female perpetration of IPV. Extant research pertaining to this issue is equivocal; although typological studies have identified a high psychopathy subtype of female perpetrators of IPV (Walsh et al., 2010), another recent study of female IPV perpetration (Dalsey & Mashall, 2009) suggested that psychopathy does not predict intimate partner aggression in women. The current study uses data drawn from the MacArthur Violence Risk Assessment Study (Monahan et al., 2001) to prospectively examine gender differences in the predictive power of psychopathy for IPV among 413 male and 290 female civic psychiatric patients were assessed for IPV and psychopathy across a one year follow-up period. A logistic regression analysis showed that psychopathy predicted future episodes of IPV perpetration in both men (Wald  $X^2 = 9.83$ ; OR = 1.07;  $p < .01$ ) and women (Wald  $X^2 = 14.61$ ; OR = 1.10;  $p < .01$ ), and that the relationship was relatively stronger for women. The findings from the current study suggest that psychopathy may play an important role in the risk for IPV perpetration in both women and men.

#### **17) Group Dynamics of Adolescents with Callous-unemotional Traits and Their Risk-Taking: A Linguistic Inquiry**

Susanne Wolf, University of Central Lancashire; Luna C. Munoz, University of Central Lancashire; Joanne M. McBoyle, University of Central Lancashire

Callous-unemotional traits are related to a more severe, stable, and aggressive pattern of behaviour in antisocial youth (Frick, Stickle, Dandreaux, et al., 2005). Thus, willingness to take risks may be key to these youths' engagement in severe acts of antisocial behaviour. Indeed, youths with callous-unemotional traits show elevated levels of impulsivity and sensation seeking (Frick, Lilienfeld, Ellis et al., 1999). The social dynamics of risk-taking were of interest in the present study, such that young people typically engage in risk with others. One hundred adolescents (16-19 years of age) completed two risk-taking tasks (driving game, Stoplight, Steinberg et al., 2008; Balloon Analogue Risk Task, LeJuez et al., 2002) with two of their friends participating as bystanders. Incentives were provided for the target participant and the bystanders. We examined the influence of the target's callous-unemotional traits (using the Inventory of Callous-Unemotional Traits), having friends with high levels of callous-unemotional traits, and the language that the group used to make decisions in risky situations. Language Inquiry and Word Count was used to measure each participant's language use. Preliminary results revealed that targets who used more self-referential words, such as 'me', 'my', or 'I', took more risks in driving. Also, bystanders who were higher on callous-unemotional traits used more cognitive words, such as 'cause', 'knew', and 'should', possibly indicating greater concern for planning and manipulating the target's behaviour. There was some indication that bystanders can curb risky behaviour by using negative emotional words, such as 'ugly', 'kill', and 'worried'. Finally, youths with CU traits tend to use fewer positive emotional words to bystanders such as 'nice' and 'sweet' possibly consistent with a more goal-directed approach to primarily perform well. Implications for intervention for adolescent risk taking will be discussed, particularly with regard to personality and group dynamics.

#### **18) The Risk Taking of Youths with Callous-unemotional Traits**

Luna C. Munoz, University of Central Lancashire

Automobile accidents are the leading cause of death and injury among adolescents (e.g., The Times, 2009) and accident rates greatly increase when passengers are present. The present study will examine social factors that may increase accident rates among adolescents (Allen & Brown, 2008). In particular, young drivers may 'show off' in front of their peers and take risks to show that they are autonomous and 'adult' (Moffitt et al., 1996). Youths with callous-unemotional traits are known to take risks in response to a reward (O'Brien & Frick, 1998) and to be thrill-seeking. These youths may be particularly vulnerable to peer influence. Two questions are posed in this study: (1) how do callous-unemotional (CU) traits relate to risky behaviour? (2) does the presence of peers influence the relation of CU traits and risk-taking? The present study used a novel methodology. Prior research on this topic has primarily relied on self-report or tasks that do not generalize very well to real life. The present study uses two objective measures of risk: one with a driving simulation in which "passengers" (peers) were present or absent and one using the Balloon Analogue Risk Task. Participants (N=675) were youths ages 16 to 19 years, recruited in groups of three. The findings suggest the level of risk in which youths with CU traits engage is high and does not relate to seeking peer acceptance.

#### **19) Emotion Recognition Skills and Electrodermal Response to Emotional Expressions from Faces and Body Poses of Youth with Callous-unemotional Traits**

Susanne Wolf, University of Central Lancashire; Luna C. Munoz, University of Central Lancashire

Youth with callous-unemotional (CU) traits show deficits in processing emotions. Much of the prior research (e.g. Dadds, Masry, Wimalaweera & Guastella, 2008; Munoz, 2009), supports a deficit in recognizing fear and possibly sadness in faces and body postures. However, recent research is evolving to include more life-like measures of emotions and to assess the physiological response to others' emotions (empathy). Thus, not only is recognition of others' emotions important to guide one's behaviour, but one's physiological response to others' expressions of emotion could also guide behaviour. Based on prior research, the present study will examine emotion recognition skills of children aged 11 to 16 years (N=60), who are enrolled in an alternative school. Participants will complete the Inventory of Callous-Unemotional Traits and the Youth Psychopathic Traits Inventory, and the Self-Report of Delinquency questionnaire. Unique to this study, video clips of moving facial expressions and body poses will be used for assessing emotion recognition skills. Simultaneously, electrodermal responses to the videos will be measured. Results are expected to show that adolescents with CU traits and delinquency have difficulties recognizing fear from dynamic facial and body expressions. It is also expected that adolescents with higher levels of CU traits and delinquency show reduced physiological responses to emotional expressions than their peers.

#### **20) The Association of Callous Unemotional Traits and Conduct Problems: The Role of Violent Media Exposure**

Kostas Fanti, University of Cyprus; Melina Nicole Kyranides, University of Cyprus; Christina Adamou, University of Cyprus

The impact of Violent Media Exposure (VME) on the development of antisocial behavior is well established. Additionally, Callous Unemotional (CU) traits (lack of empathy and guilt, callous use of others for one's own gain) have been related to a more severe and stable pattern of antisocial behavior. However, there is a scarcity of research investigating the association between Callous Unemotional (CU) traits and Conduct Problems (CPs) after taking VME into account. In this longitudinal study, we analyzed data on 1180 adolescents (50.1% female) recruited from 13 middle schools in Cyprus, followed over a three year period. Using self-report measures we examined the association between CU traits, CPs and VME. CPs and CU traits were measured at time 1 and time 3, and VME was assessed at time 2. For the analyses we employed a cross-lag mediational structural equation model. CPs and CU traits at time 1 were used to predict the same variables at time 3, having VME as a potential mediator of this association. The model suggested a longitudinal, reciprocal association between CPs and CU traits over time. The association between CPs and Media Violence exposure was stronger than the association between VME and CU traits. Furthermore, the findings suggested that adolescents VME contributed significantly to the prediction of CPs and CU traits in a similar degree over time. Results also showed that VME mediated the association between CPs and CU traits and vice versa. The current findings build upon recent research and represent an important direction for research on the role of violent media use, as a risk factor for both antisocial behavior and psychopathic traits.

#### **21) Content Scales of Psychopathy in Relation to Impulsive vs. Premeditated Aggression**

Dora Georgiou, University of Cyprus; Melina Nicole Kyranides, University of Cyprus; Christina Adamou, University of Cyprus; Kostas Fanti, University of Cyprus

Psychopathy and antisocial behavior have long been documented as going hand in hand. However, not all individuals with psychopathic characteristics engage in antisocial behavior and vice versa. Research trends that highlight subtypes of psychopathy show a three factor structure (1. arrogant, deceitful interpersonal style; 2. deficient, affective experience; 3. impulsive, irresponsible behavioral style) measured by different content scales. The current study investigates the association between psychopathy content scales and aggressive behavior. Aggression, although generally related to psychopathy, may yield more informative results when separated into premeditated and impulsive aggression. Participants were grouped by type of aggression into four categories (using one standard deviation above and below the mean): impulsive aggression (IA), premeditated aggression (PM), combined impulsive and premeditated aggression (COM) and controls. The Psychopathic Personality Inventory Revised (PPI-R) and the Impulsive Premeditated Aggression Scale (IPAS) were administered to 488 students (M age=20.07, SD=2.18, 62.7% females) at the University of Cyprus. Results using multinomial logistic regression indicated that all three groups (IA, PM, COM) differed from controls on the subscale of Machiavellian Egocentricity, however, no differences on this subscale were identified between IA and PM. In terms of Fearlessness, only the COM group differed from the control group. Additionally, compared to the IA group, the PM group had higher scores on the subscale of Blame Externalization. On the Stress Immunity subscale the IA group scored lower than all other groups. Moreover, the PM and COM groups scored higher on total psychopathy than IA, and the IA group scored higher on total psychopathy compared to controls. In order to clarify the above findings, further research on these groups will employ both implicit (psychophysiological measurements) and explicit measurements.

#### **22) Bullying and Victimization: The Role of Conduct Problems and Psychopathic Traits**

Kostas A. Fanti, University of Cyprus; Eva Kimonis, University of South Florida

Prior research suggests that conduct problems (CPs) and psychopathic traits (callous-unemotional (CU) traits, impulsivity, narcissism) are each independently associated with bullying behavior. The present study builds on prior research by addressing two important gaps in the literature: (1) Do conduct problems and dimensions of psychopathy, and their various combinations, predict bullying and victimization one year later? (2) Do CPs and dimensions of psychopathy differentiate between subgroups of adolescents exhibiting pure or combined forms of bullying and victimization? Variable-centered statistical approaches are used to address our first aim whereas person-centered approaches are used to address the second. An important strength and novelty of this study is its use of a longitudinal design to predict future bullying and peer victimization, controlling for initial levels. The sample consisted of 1416 (50.1% girls) Greek Cypriot adolescents followed across two time points. Hierarchical linear regression analyses suggested that CPs, narcissism, and impulsivity influenced the development of bullying behavior, whereas only impulsivity influenced . . . CU traits bullying one year later when combined with either high levels of impulsivity and narcissism, or with high levels of CPs. Moreover, at high levels of CPs, CU traits were positively related to victimization. Finally, multinomial logistic regression analysis suggested that bullies and bully-victims scored higher on CU traits, CPs, and narcissism compared to victims and non-involved children, although impulsivity did not differentiate between bullies and victims.

#### **23) Temperamental Associations of Psychopathic Traits in Youths**

Annelore Roose, University of Louvain; Patricia Bijttebier, University of Louvain; Laurence Claes, University of Louvain; Saskia Van der Oord, University of Louvain; Scott O. Lilienfeld, Emory University

The idea that temperamental factors underlie and drive the emergence of psychopathic traits is fundamental to several influential conceptualizations of psychopathy. Consistent with the distinction between reactive and self-regulative aspects of temperament, two categories of theoretical frameworks on psychopathy can be distinguished: motivational accounts and self-regulatory accounts. The most dominant theories of the motivational and the self-regulatory accounts are respectively the Low-Fear Hypothesis (Lykken, 1995) and the Response Modulation Theory (Patterson & Newman, 1993). We investigated the associations between psychopathy and both motivational and self-regulatory aspects of temperament in two studies. The first study focused on the associations between psychopathy and the revised Reinforcement Sensitivity Theory (RST) (Gray and McNaughton, 2000) in a community sample of adolescents by means of self-report questionnaires (the Youth Psychopathic Traits Inventory and the Antisocial Process Screening Device). The second study explored the associations between a questionnaire of psychopathic traits and a performance based measure to test hypotheses derived from both the RST as the Response Modulation Theory. We used a modification of the point-scoring reaction time (PRST) paradigm (Avila, 2001). This task was designed to detach different pathways to disinhibition: one associated with high levels of reward sensitivity, low levels of punishment sensitivity and a last one with low levels of self-regulation. This PRST task was completed by 84 participants recruited from a special education program for children with severe behavioral problems. Results of study 1 showed evidence for the existence of two pathways to psychopathic traits, high scores on psychopathy are associated with on the one hand high levels of reward sensitivity (BAS) and on the other hand with low levels of punishment sensitivity (BIS). Data-analyses of study 2 are in progress. We will discuss the similarities and the differences between the questionnaire-based and performance based-measures of the RST on the associations with psychopathy. Furthermore, we will discuss the implications of the associations of psychopathic traits with the RST for theories of the etiology of psychopathy.

#### **24) Callous-unemotional Traits Moderate the Effects of Parenting Changes on Therapeutic Outcomes**

David J. Hawes, University of Sydney; Mark R. Dadds, University of New South Wales; John Brennan, University of New South Wales; Tracey Rhodes, University of New South Wales

Developmental models of psychopathy suggest that among children with high versus low levels of callous-unemotional (CU) traits, conduct problems develop (and are maintained) through somewhat distinct mechanisms. One of the most clinically important implications of this model concerns the differential role of parenting practices in these two pathways. While negative parenting practices are believed to be proximal to the development of conduct problems in children with low levels of CU traits, in high-CU children these problems appear to develop somewhat independently of quality of parenting. In line with this model, our previous research has shown that young conduct-problem boys (aged 4-8 years) with high levels of CU traits benefit less from parent-training intervention than those with low levels of CU traits (Hawes & Dadds, 2005). The current study addressed questions resulting from this research using a 'real-world' intervention trial in which participant sampling captured the patterns of comorbidity, problem-severity, and family dysfunction often excluded from university-based trials such as that previously conducted. Participants were N = 111 clinic-referred children/adolescents aged 3-15 years (22% female), who presented with diagnosable levels of oppositional defiant disorder / conduct disorder and various forms of comorbidity (including symptoms of anxiety/mood disorders, attention-deficit/hyperactivity disorder, and autism). CU traits were characterized using a comprehensive measurement strategy including multi-informant reports, and examined as a moderator of treatment outcome. Following conventional evidence-based intervention for conduct problems – tailored to these presentations – CU traits were found to be associated with poor outcomes at 6-month follow-up. This risk was independent of effects associated with comorbid symptoms and family variables, including levels of parental depression/hostility, quality of parenting practices, and socioeconomic adversity. Also examined – for the first time – was the relationship between treatment outcome and change in parenting practices, as a function of CU traits. The treatment outcomes exhibited by children with low levels of CU traits were strongly associated with change in the parenting practices to which they were exposed. However, as hypothesized, change in parenting did not predict the outcomes of children characterized by high levels of CU traits. These findings will be discussed in the context of emerging developmental models of CU traits and antisocial behavior, and implications for clinical practice.

#### **25) The Treatment of Callous-unemotional Traits and Conduct Problems in Childhood**

Randall T. Salekin, University of Alabama

Psychopathy is a personality disorder that is underpinned by interpersonal, affective, lifestyle and antisocial characteristics. Recent research has shown that the correlates that surround adult psychopathy are similar to those in younger populations (see Frick & Moffitt, 2010; Salekin & Lynam, 2010). Fortunately, there does appear to be some evidence that interventions, for psychopathy, and in particular psychopathic youth, may be beneficial but the research in this area is very limited (Salekin, Worley, & Grimes, 2010). The current study evaluated a treatment designed for children with callous traits and conduct problems. The experimental treatment involved a combination of parent management training for CU and CP and the use of didactics with children. Sessions lasted approximately 60 minutes in length and the treatment consisted of 10 weekly sessions. Eight children ages 8-15 with callous traits and conduct problems were selected for the study. Children were assessed with semi-structured diagnostic interviews and other standardized measures to determine study eligibility. The current study utilized a noncurrent multiple baseline design to evaluate treatment efficacy. Upon selection into the study, children and adolescents were randomized to one of three baseline control conditions (i.e., 2, 3, or 4 weeks of waiting) in order to ensure that change in behavior was associated with implementation of the treatment. Treatment commenced after the respective baseline periods. Youth and families were assessed throughout treatment but more comprehensive assessments were conducted at pre-treatment, mid-treatment, and 1-week post-treatment. Results highlighted significant improvement in conduct problems but more modest gains for callous-unemotional traits in the current investigation. The implications of these findings will be discussed.

#### **26) The Effects of Including a Callous Unemotional Specifier for the Diagnosis of Conduct Disorder**

Rachel Kahn, University of New Orleans; Paul J. Frick, University of New Orleans; Eric Youngstrom, University of North Carolina at Chapel Hill; Robert L. Findling, Case Western Reserve University and University Hospitals Case Medical Center; Jennifer Kogos Youngstrom, University of North Carolina at Chapel Hill

“With Significant Callous-Unemotional Traits” has been proposed as a specifier for Conduct Disorder (CD) in the upcoming revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). A child or adolescent would have to meet full criteria for CD and exhibit two of the following four traits over at least a 12 month period: lack of remorse or guilt, callous-lack of empathy, unconcern about performance at school or work, and shallow or deficient affect. While there is a large body of evidence to support the predictive validity of callous unemotional (CU) traits, the impact of this newly proposed CU specifier on the diagnosis of CD has not been systematically studied. A multi-

site cross-sectional design with community volunteers (n=1136) in the 3rd-7th grades and 566 consecutive referrals (ages 5-18) to a community mental health center were used to estimate the prevalence rates of CD with and without the proposed specifier. In the present study, our first goal was to create symptom counts of CU traits using the proposed DSM-5 criteria and determine the number of youths with CD who would likely meet criteria for this specifier using different informants. Further, we compared the rates of the CU specifier in both the clinic-referred and community samples. Finally, we tested differences between the two groups with CD on the level of their emotional and behavioral problems and clinical impairment. Given the importance of CU traits for designating a particularly aggressive subgroup of antisocial youth, we were particularly interested in whether the proposed specifier would designate a more aggressive subgroup of youth with CD. In the community sample, 10% to 32% of those with CD and 2% to 7% of those without CD met the CU specifier threshold depending on informant. In the clinic-referred sample, 21% to 50% of those with CD and 14% to 32% without CD met the CU specifier threshold depending on informant. Those with CD and the CU specifier showed higher rates of aggression in both samples and higher rates of cruelty in the clinic-referred sample. Across both samples, results indicate between 10% and 50% of youth with CD would be designated with the proposed CU specifier. Those with CD and the CU specifier appear to be more severe on a number of indices, including aggression and cruelty. These findings, combined with past studies showing support for the predictive validity of these traits support the potential utility of this specifier for guiding both clinical practice and research with children and adolescents who show severe conduct problems.

### **27) Improvement of Children with Callous-unemotional Traits in Functional Family Therapy**

Stuart F. White, National Institute of Mental Health; Paul J. Frick, University of New Orleans; Sara K. Lawing, University of New Orleans; Daliah Bauer, Jefferson Parish Health and Human Services Authority

**OBJECTIVE:** The current study examined whether callous-unemotional (CU) traits moderated the effectiveness of Functional Family Therapy for juvenile justice involved adolescents. **METHOD:** Participants were all youths (n= 134) who been arrested and participated an FFT program provided in a community-mental health center over a 20-month period (mean age 15.34, 71.6% male, 59% African-American). Parent and self-report ratings of emotional, behavioral social functioning, multi-informant ratings of treatment progress, and probation/arrest records were used as outcome indicators. **RESULTS:** CU traits were associated with poorer behavioral, emotional, and social adjustment prior to treatment but they were also associated with greater improvements in adjustment over the course of treatment. CU traits were not associated with significantly lower rates of participation or higher rates of treatment dropout and the association between CU traits and risk for violent charges decreased after treatment at 6 and 12-month follow-ups. However, CU traits were still correlated with poorer levels of adjustment at post-treatment, less perceived change over treatment by youth and their parents, and increased likelihood of violent offending during treatment. **CONCLUSIONS:** The results of this study indicate that FFT can lead to improvements in youth with CU traits; however, they enter treatment with a greater number of symptoms and are at higher risk for committing violence during treatment than other youth.

### **28) The Incremental Utility of Callous-Unemotional Traits and Conduct Problem Symptoms in Predicting Aggression and Bullying in a Community Sample of Boys and Girls**

Laura C. Thornton, University of New Orleans; Paul J. Frick, University of New Orleans; Ann Marie Crapanzano, Loyola University; Andrew M. Terranova, Stephen F. Austin State University

Proposed revisions for the 5th Edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-V) include having a specifier for the diagnosis of Conduct Disorder that considers the presence of key traits related to psychopathy (i.e., with Significant Callous-Unemotional Traits). In order to inform this proposed change, the current cross-sectional study tested whether callous-unemotional (CU) traits were associated with self-report of aggression and peer nominations of bullying when controlling for conduct problem symptoms. Participants were a non-referred school-based sample of 282 boys and girls in the 4th through 7th grades. Using multiple regression analyses controlling for gender and race of the child, there were several findings to support the importance of CU traits, even when controlling for conduct problem severity. First, self-reported CU traits were positively associated with peer nominations of being a bullying reinforcer (i.e., encouraging the bullying of others) and negatively associated with being a bullying defender (i.e., helping the victim of bullying), even after controlling for level of self-reported conduct problems. Second, there were significant three-way interactions among CU traits, conduct problems, and gender in the prediction of both overt and relational proactive aggression. Specifically, for boys only, conduct problems were more highly associated with proactive aggression (both relational and physical) in those high on CU traits. Third, there was also a significant three-way interaction for peer reports of bullying behavior. However, for this variable, the association between conduct problems with bullying was stronger for those high on CU traits but this was for girls only. Fourth, there was a stronger association between conduct problems and problems in emotional regulation for students low on CU traits, although this was only significant for non-minority students.

### **29) Neuroendocrine Function of Incarcerated Youth-A Mechanism for the Development of Psychopathic Traits**

Andrew J. Gostisha, University of New Orleans; Elizabeth Shirtcliff, University of New Orleans; Michael Vitacco, Health Sciences University of Georgia; Chelsea Brieman, Rosalind Franklin University; Alexander Graf, Medical College of Wisconsin; Jenna Merz, Mendota Mental Health Institute

Studies on abnormal processing of emotions and attenuated arousal systems have been central to research on mechanisms of psychopathic traits in children and adolescents (Blair, 2007). Shirtcliff and colleagues (2009) posited that aberrant emotional processing and the callous behavior associated with psychopathy are the result of a developmental interplay between environmental stress that attenuates stress physiology resulting in blunted activity in affect-related neurocircuitry and dysregulated emotion processing (see also Susman, 2006). We examined whether multiple stress responsive hormones—cortisol, DHEA, testosterone—were associated with measures of callous-unemotional (CU) traits in 50 incarcerated adolescents (ICU, (Kimonis et al., 2008) and psychopathy (PCL-YV, Forth, Kosson & Hare 2003). Additionally, empathy was indexed via the Interpersonal Reactivity Index (Davis, 1983). Concurrent and lifetime stress were measured through the Life Stress Interview (Rudolph et al., 2000). Hormones were collected through 5 samples daily over 2 separate days (10 total samples) within the first two weeks of admission to control for participants' situational variation in hormones. Hormones were analyzed as outcomes of interest using hierarchical linear modeling. Hormone levels across the day were predicted by time since waking at the within-individual level to capture within-subjects differences in waking basal levels and diurnal slopes. Level 2 captured individual difference factors, including CU traits and life stress. Only cortisol results are available at the moment. Interaction analyses revealed PCL-YV total scores were predictive of cortisol awakening response (CAR) ( $\beta = .0188, p = .004$ ), such that individuals with higher PCL:YV scores had a greater CAR than those with lower scores. Corroborating this finding, low empathy scores were predictive of a higher CAR ( $\beta = -.0087, p = .045$ ). Individuals with high

levels of psychopathic traits but low concurrent life stress had steeper morning cortisol slopes and an uncharacteristic rise in cortisol in the afternoon ( $\beta = .0069$ ,  $p = .005$ ) which has generally signaled HPA dysregulation (Shirtcliff & Essex 2007). This is the first study to our knowledge finding that callousness and psychopathy predict a heightened cortisol awakening response. Examining hormones may shed light on not just a developmental etiology of the emotion deficits associated with psychopathy, but an etiology that may be amenable to interventions.

### **30) Using the ASEBA to Screen for Callous-unemotional Traits in Early Childhood: A Replication of Psychometric Properties and Test of Predictive Validity**

Michael Willoughby, University of North Carolina – Chapel Hill; Roger Mills-Koonce, University of North Carolina – Chapel Hill; Dan Waschbusch, Florida International University

We recently provided initial psychometric properties and utility of a 5-item screening measure of Callous Unemotional (CU) behaviors using items (no guilt following misbehavior, punishment does not change behavior, unresponsive to affection, shows little affect, shows little fear) drawn from the Preschool Form of the Achenbach System of Empirically Based Assessment (Willoughby, Waschbusch, Moore & Propper, in press; *Journal of Psychopathology & Behavioral Assessment*). The current study will extend that work by using data from the NICHD Study of Early Childhood ( $N = 1364$ ). In particular, using item-level data from the 36-month assessment, we will use confirmatory factor analyses to retest our hypothesis that a 3-factor model for ADHD, ODD, and CU items provides a superior fit to data than do 1- or 2-factor models (i.e., we will test whether CU is a distinct, albeit correlated, factor from more commonly assessed dimensions of disruptive behavior). In addition, we will evaluate the psychometric properties of CU items, as well as evaluate cross-informant agreement (parent and caregiver reports), particularly with reference to ADHD and ODD items. Finally, building on previous analyses which demonstrated that approximately 5% of children (6.6% of boys; 4.7% of girls) in the NICHD SECC exhibit a stable, high pattern of aggressive behaviors from 1st through 6th grade (Campell, Spieker, et al, 2010, 2006; NICHD ECRN, 2004), we will test whether parent- and/or caregiver-rated CU behaviors at the 36 month assessment predict membership in the stable high aggressive category, either alone or in conjunction with ODD behaviors (i.e.,  $\text{logit}[\text{stable high aggression}] = \text{ODD} + \text{CU} + \text{ODD} * \text{CU} + \text{covariates}$ ).

### **31) Observed Parenting Behaviors and Perceptions of the Parent-Infant Relationship at Age 1 Year Interact with a Polymorphism of the Brain Derived Neurotrophic Factor Gene to Predict the Emergence of Oppositional Defiant and Callous Unemotional Behaviors at Age 3 Years**

Michael J. Willoughby, University of North Carolina – Chapel Hill; Roger Mills-Koonce, University of North Carolina – Chapel Hill; Cathi B. Propper, University of North Carolina – Chapel Hill; Daniel A. Waschbusch, Florida International University

Using the Durham Child Health and Development Study, this study ( $N = 171$ ) tested whether parental perceptions of their relationship with their infant, beliefs about discipline, and observed parenting behaviors in the context of free play interactions, all measured when children were 6-12 months old, interacted with child polymorphisms of the BDNF gene, in the prediction of emerging oppositional defiant (ODD) and callous unemotional (CU) behaviors in early childhood. Two  $G \times E$  interactions emerged; parental perceptions of relationship difficulties with their infants, as well as their observed harsh and intrusive behaviors during free play, were both more strongly associated with ODD and CU behaviors for children with a Met allele of the BDNF gene. The contribution of observed harsh and intrusive parenting in the prediction of ODD and CU was specific to behaviors that were observed early (6 and 12 months) versus later (24 and 36 months) in life. Although perceptions of general infant difficulty (temperament) and beliefs about discipline were predictive of ODD and CU, they did not interact with the BDNF gene. Observed sensitive parenting were unrelated to ODD and CU. Results are discussed with respect to the ways in which short-term adaptations to the experience of frightening, inconsistent or overly harsh early parenting behaviors may translate into longer-term risks for the emergence of ODD and CU behaviors.

### **32) The Development of Antisocial Behavior and Callous-unemotional Traits: An Imaging Genetics Approach to Mapping Biological Mechanisms**

Luke W. Hyde, University of Pittsburgh; Daniel S. Shaw, University of Pittsburgh; Erika E. Forbes, Western Psychiatric Institute & University of Pittsburgh; Ahmad Hariri, Duke University

Recent studies have suggested that, compared to controls, adolescents with callous/unemotional traits and antisocial behavior (CU+/AB+) display amygdala hyporeactivity when viewing emotional faces (e.g., Marsh et al., 2008; Jones et al., 2008). However, these studies of adolescents have used small groups extreme on both CU and AB and have been unable to disentangle the independent contribution of CU versus AB. Moreover, while serotonin (5-HT) has been broadly implicated in AB and related phenotypes (Manuck et al., 2009), no study has yet to use genetic markers associated with variability in 5-HT to map its possible contribution to the underlying neural mechanisms implicated in AB and CU. To address these issues, we are exploring the relationship between inter-individual variability in threat-related corticolimbic circuit function (using BOLD fMRI), polymorphisms in genes affecting 5-HT transmission, and AB and CU in a community sample of 310 young men at high risk for AB (based on SES at during infancy) followed longitudinally from age 1.5 to age 20 (Shaw et al., 2003). Preliminary analyses on the first 24 participants suggest the following: 1. Greater threat-related amygdala/hippocampal reactivity is associated with greater AB. 2. Greater C/U traits are not related to amygdala reactivity but were related to greater reactivity in the prefrontal cortex. 3. The short allele of a common functional 5-HT polymorphism (5-HTTLPR) is associated with relatively greater amygdala reactivity. 4. A small periamygdalar region exhibits overlap between those high on AB and short allele carriers indicating a possible indirect pathway from genes to brain to behavior. Future analyses will focus on the entire sample ( $n=200$  by the SSSP conference) and extend these analyses to include trajectories of AB and CU across adolescence, other polymorphisms affecting 5-HT signaling (HTR1A, MAOA), and path models to test indirect effects of genes on behavior through brain functioning.

### **33) Do Psychopathic Traits in Adolescence Predict Delinquency Persistence into Early Adulthood?**

Amy L. Byrd, University of Pittsburgh; Dustin A. Pardini, University of Pittsburgh Medical Center

Evidence within the adolescent literature suggests that features of psychopathy demarcate a particularly severe sub-group of delinquent youth (e.g., Frick & White, 2008). While longitudinal work has shown the presence of psychopathic traits to predict the persistence of delinquency over time (Pardini, 2006) and distinguish between desisting and persisting forms of delinquent behavior (Loeber, et al., 2007), these studies

have focused primarily on delinquency in adolescence. Thus, less is known about the extent to which features of psychopathy in adolescence predict the persistence of delinquency into early adulthood. The current study examined this issue using data from the youngest cohort of the Pittsburgh Youth Study (PYS), a comprehensive longitudinal investigation of boys ( $n = 503$ ) that were assessed prospectively from early adolescence to early adulthood. At age 15, psychopathic traits were assessed using parent-report of the Child Psychopathy Scale (CPS; Lynam, 1997). Moderate and severe delinquency was assessed from early adolescence into early adulthood using a combination of official record of conviction and the Self-Report of Delinquency (SRD; Elliot et al., 1985). Correlation analyses examined associations between psychopathic traits in adolescence (age 15) and subsequent delinquency in late adolescence (age 17-19) and early adulthood (age 20-25). Regression analyses assessed the incremental predictive utility of these characteristics after controlling for prior engagement in delinquency. Bivariate correlations found higher levels of psychopathic features in adolescence, as indicated by CPS total and facet scores, to be significantly associated with engagement in moderate and severe delinquency in late adolescence and early adulthood. While the magnitude of these associations was relatively small (i.e.,  $r_s < .25$ ), they remained statistically significant after controlling for prior engagement in delinquency as well as age, race, and family SES. These findings provide further support for the notion that adolescents with psychopathic traits are at heightened risk for patterns of delinquency that persist into early adulthood.

#### **34) The Balloon Analog Insurance Task (BAIT): A Behavioral Measure of Protective Risk Management**

Brian G. Essex, Vanderbilt University; Carl W. Lejuez, University of Maryland, College Park; Rebecca Qian, Vanderbilt University; Katherine Bernstein, Vanderbilt University; David H. Zald, Vanderbilt University

Prior methods used to assess individual differences related to risk have not paid attention to an important component of risk management: how willing individuals are to pay for or take actions to insure what they already have. It is not clear whether this type of risk management taps into the same individual differences as does risk taking propensity. We developed a task to assess this type of risk management, the Balloon Analog Insurance Task (BAIT), which is modeled after the Balloon Analog Risk Task (BART). In the BAIT, individuals must decide how much money they are willing to pay in order to insure a specific fraction of their prior winnings given changing but imprecise levels of risk of monetary loss. 128 individuals completed the BART and BAIT for monetary rewards, and completed six self report questionnaires. The amount of insurance purchased on the BAIT was positively correlated with scores on the Intolerance of Uncertainty Scale and on the Checking Scale of the Obsessive Compulsive Inventory. Conversely, the amount of insurance purchased was negatively correlated with scores on the Domain Specific Risk Taking Questionnaire, and on Factor One, as defined by Wilson and colleagues (1999), of the Psychopathic Personality Inventory (PPI). Relationships between insurance purchased and these scales remained significant after controlling for the BART in regression analyses, and the BART was only a significant predictor for measures on the PPI. Our results reveal that behavior on the BAIT taps into a number of individual differences that are not related to behavior on another measure of risk taking. While both the BAIT and the BART tap into a factor of psychopathy associated with the emotional traits of the disorder, the relationships between this factor and each of these tasks are in opposite directions. We propose that the BAIT may provide a useful complement to the BART or other risk assessment tasks.

#### **35) Psychopathy and Deficits in Empathy and Social Processing**

Stephen D. Benning, Vanderbilt University; Michael A. Bradshaw, Vanderbilt University; George H. Wilson, Vanderbilt University; Katharine N. Thakkar, Vanderbilt University; Sohee Park, Vanderbilt University

Psychopathy is a personality disorder that features deficits in social processing, including empathy and reading others' facial expressions. In a sample of 77 community participants, we examined how fearless dominance and impulsive antisociality in psychopathy were associated with reduced empathy, processing of videos depicting basic emotions and social reasoning challenges in The Assessment of Social Inference Test (TASIT), and reduced mental rotation ability. Both fearless dominance and impulsive antisociality were related to reduced empathetic concern. However, fearless dominance was additionally associated with reduced fantasy and personal distress in empathy. Furthermore, fearless dominance was negatively correlated with the ability to detect white lies designed to spare another's feelings as untruthful in TASIT complex social scenarios. In particular, those high in fearless dominance were less able to identify what the lying speaker was attempting to convey to the listener and the emotions the speaker was feeling during TASIT. In contrast, impulsive antisociality was negatively correlated with the ability to correctly identify TASIT neutral emotional videos. Specifically, those high in impulsive antisociality misidentified neutral TASIT videos as angry. Those high in impulsive antisociality were also less accurate in mentally manipulating rotated people (but not rotated letters). Therefore, those high in impulsive antisociality have difficulty performing mental rotations of human bodies and tend to read threat into innocuous situations, whereas those high in fearless dominance have deficient processing of socially complex white lies.

#### **36) Impulsive Antisociality and a Lexical Decision Stop Signal Task: ERN and N1 Indicate Deficits in Response Modulation and Error Processing**

Allan J. Heritage, Vanderbilt University; Stephen D. Benning, Vanderbilt University

Research has shown that disorders characterized by behavioral disinhibition such as antisocial personality disorder are related to reduced self-monitoring as indicated by reduced error related negativity (ERN) amplitude following the commission of errors. Reduced self monitoring, along with deficits in response modulation, has also been used to explain the failure of psychopaths to respond to peripheral cues and learn from errors in order to adapt their behavior. The present study investigated the relationship between ERN, response modulation, and the impulsive antisociality (IA) factor of psychopathy in a community sample. A lexical decision stop signal task was used in which errors of lexical categorization and stop-signal response inhibition were examined. Participants were asked to decide if the text presented was a word (75%) or a non-word (25%) and respond accordingly. On 20% of trials participants were presented with an auditory stop signal (SS) following the word, signaling that they were to withhold their response. As expected participants high in IA showed reduced ERN amplitudes after failing to inhibit their response on stop signal trials as well as after incorrect lexical decisions, indicating a deficit in their ability to recognize when an error was made. Participants high in IA also showed significantly smaller N1 amplitude (a measure of auditory processing) to all SS and had significantly lower SS accuracy, indicating that they were not processing the SS and in turn, failing to inhibit their dominant response. Partial correlations examining the relationship between IA and ERN after controlling for overall N1 revealed that participants N1 amplitude is a mediating factor in the relationship between IA and ERN. Thus, those high in IA exhibit a deficit in their ability to process stimuli that signal the need to change behavior, and the associated response modulation may be responsible for deficits in self monitoring.

### **37) Facial Emotion Recognition and Processing in Fearless Dominance and Impulsive Antisociality**

George H. Wilson, Vanderbilt University; Stephen D. Benning, Vanderbilt University

Psychopathy has been shown to be associated with deficits in recognizing and processing emotion. We used a face recognition task requiring 83 participants who were screened in the Vanderbilt emergency room to view faces of men and women expressing one of seven possible emotions and identify which emotion each face displayed. During this task, we recorded the participants' accuracy in identifying the emotion portrayed by each face, and their brains' responses to the faces through EEG. These responses were correlated with scores on Fearless Dominance (FD) and Impulsive Antisociality (IA) in psychopathy. We found that whereas FD was unrelated to facial recognition accuracy, IA was negatively correlated with recognition of disgust, and that those high in IA mistook pictures of disgusted faces as angry. The amplitudes of the early P1 magnitude for all faces were inversely related to IA, particularly for the right hemisphere. In contrast, the right frontal vertex positive potential was negatively correlated with FD for all faces. P3 magnitude was significantly more negatively correlated with FD for angry faces than for fearful faces; again, these relationships were observed in the right hemisphere. Taken together, these results indicate that both FD and IA are associated with deviant right hemispheric face processing, but these deficits are reflected in behavioral emotion recognition only in IA.

### **38) Interpersonal Deficits Associated with Psychopathic Traits in the Ultimatum Game**

Rachel V. Aaron, Vanderbilt University; Emily A. Dowgillo, Vanderbilt University; Stephen D. Benning, Vanderbilt University

Psychopathy is associated with many maladaptive interpersonal features, including the misuse of others and an unwillingness to cooperate with people. We used the Ultimatum Game, a well-researched game theory task designed to study social behavior, to examine social interaction deficits in fearless dominance (FD) and impulsive antisociality (IA) in psychopathy. In the current iterated version of the task, participants and the computer alternately proposed a number of points out of 100. If an offer was accepted, the points were divided accordingly, but if it was rejected, both gained nothing. Additionally, the computer was preprogrammed to play lenient, fair, and punishing strategies both in the amounts the computer would propose and decision thresholds for the offers it would accept. We found that FD was positively correlated with valence ratings across conditions; however, it was not associated with point totals. Thus, those high in FD tend to enjoy the simulated social interaction irrespective of how their opponents treated them. In contrast, IA was not correlated with valence ratings but was negatively correlated with points earned in the experiment overall. Specifically, IA was negatively correlated with the number of points obtained because participants high in IA proposed giving the computer fewer points when the computer adopted fair or punishing decision thresholds or made lenient proposals. Therefore, it appears that the deficit in points results from proposal behavior rather than decision behavior. Overall, it appears that those high in IA take advantage of generous opponents. Furthermore, the tendency of individuals high in IA to offer fewer points even when opponents accept fair offers suggests an interpersonal antagonism related to an uncooperative and stingy interpersonal attitude. Overall, this failure to give fair offers is a maladaptive interpersonal approach.

### **39) Emotion and Decision-making in Psychopathy: A Comparison with Prefrontal Brain Injury**

Michael Koenigs, University of Wisconsin-Madison; Michael Kruepke, University of Wisconsin-Madison; Joseph P. Newman, University of Wisconsin-Madison

This research project combines two long-standing perspectives on the psychobiological mechanisms of psychopathy. The first relates to subtyping. For decades, psychopathy researchers have distinguished psychopaths with low levels of trait anxiety from those with higher levels. This distinction presumes that in some cases psychopathy may reflect an innate affective deficit (the low-anxious or "primary" subtype), whereas in other cases psychopathy may arise due to other temperament-related traits—typically excessive emotionality or neurotic anxiety (the high-anxious or "secondary" subtype). The second perspective relates to neurobiology. Neurologists have long recognized that patients with damage to the lower portion of the frontal lobe (the ventromedial prefrontal cortex; vmPFC) exhibit markedly increased anger and aggression with a corresponding loss of anxiety, empathy, guilt, and responsibility (a condition dubbed "pseudopsychopathy"). Integrating these two perspectives, we hypothesized that low-anxious psychopaths and vmPFC lesion patients would evince similar patterns of socio-affective decision-making. To test this hypothesis, we administered several laboratory tests (the Ultimatum Game, the Dictator Game, and the Personal/Impersonal Moral Judgment Test) to a group of prisoners, and compared their responses to previously published neurological patient data. Comparing primary psychopaths to secondary psychopaths and non-psychopaths, we found that primary psychopathy was associated with (1) lower acceptance rates of unfair Ultimatum offers, (2) lower offer amounts in the Dictator Game, and (3) greater endorsement of "utilitarian" harms in the Moral Judgment Test. Moreover, the primary psychopaths' pattern of responses bore remarkable resemblance to that of the vmPFC lesion patients. These results support a connection between psychopathy and vmPFC dysfunction, as well as bolster the distinction between primary and secondary psychopathy.

### **40) Reduced Susceptibility to the Attentional Blink Deficit in Psychopathic Offenders: Implications for the Attentional Bottleneck Hypothesis**

Rick C. Wolf, University of Wisconsin-Madison; Ryan W. Carpenter, University of Missouri; Christopher M. Warren, University of Victoria; Joshua D. Zeier, University of Wisconsin-Madison; Arielle Baskin-Sommers, University of Wisconsin-Madison; Joseph P. Newman, University of Wisconsin-Madison

Newman and colleagues have proposed that psychopathic behavior may be understood as a consequence of an attentional bottleneck that interferes with the processing of contextual information, including the timely processing of affective and inhibitory cues that initiates self-regulation (Newman & Baskin-Sommers, 2010). Despite a wealth of evidence that attention moderates the affective, inhibitory, and self-regulation deficits of psychopathic offenders, there is little evidence that they display attentional abnormalities on more standard assessments of attention. In this study, we employed a traditional attentional blink (AB) task and 37 male prisoners assessed with Hare's (2003) Psychopathy Checklist-Revised to test a novel hypothesis that integrates the attentional bottleneck model with current models of the AB deficit. In the AB paradigm, participants identify targets in a rapid serial visual presentation. Because distracters are presented almost immediately after targets, they elicit a response conflict between attending to the target and attending to the distracters. Greater conflict is associated with larger responses in the locus coeruleus-norepinephrine (LC-NE) system and a larger AB deficit. The attentional bottleneck hypothesis predicts that psychopathic offenders will display less attentional conflict and a smaller AB deficit. As predicted, psychopathic offenders displayed a significantly smaller AB than non-psychopathic offenders (i.e., were significantly more accurate in identifying the second

of two targets;  $F = 2.98$ ,  $p = .025$ ,  $\eta^2 = .081$ ) and this difference was apparent from the earliest possible post-conflict lag time (i.e., lag 2). These results lend support to the attentional bottleneck hypothesis and highlight interesting questions concerning the contribution of the LC-NE system to the attentional abnormalities observed in psychopathy.

#### **41) Feature-based Attentional Selection and Insensitivity to Distracters in Primary Psychopathy**

Joshua D. Zeier, University of Wisconsin-Madison; Joseph P Newman, University of Wisconsin-Madison

Primary psychopathic individuals display impaired response modulation, which inhibits their ability to respond to information outside of their immediate focus of attention. Prior research on this phenomenon altered the focus of attention by cuing attention to different areas of visual space (e.g., Zeier, Maxwell, & Newman, 2009). Using a sample of prisoners assessed with the PCL-R (Hare, 2003), the current study examines the generality of this deficit by using features of the target, rather than spatial location, to focus attention. We administered a response competition (flanker-type) task where, for some trials, a cue appeared indicating the color of the forthcoming target. Per instruction, participants used the cues to create a mental set for the target color. In other conditions, participants received no color cues. We predicted that psychopathic individuals would display significantly less interference to response incongruent information than nonpsychopathic participants when cued but would display normal interference when no prepotent focus existed. The results confirmed these hypotheses, suggesting that the response modulation deficit exists across modalities.

#### **42) Psychopathy, Intelligence and Conviction History**

Hanna Heinzen, Zentrum fuer Integrative Psychiatrie, Christian-Albrechts-Universitaet zu Kiel; Denis Koehler, SRH Hochschule Heidelberg; Nils Godt, Zentrum fuer Integrative Psychiatrie, Christian-Albrechts-Universitaet zu Kiel; Friedemann Geiger, University Medical Center Schleswig-Holstein; Christian Huchzermeier, Zentrum fuer Integrative Psychiatrie, Christian-Albrechts-Universitaet zu Kiel

The study seeks to shed light on the relationship between psychopathy, intelligence and two variables describing the conviction history (length of conviction and number of prior convictions). Psychopathy and IQ were assessed using the PCL:SV and the CFT 20-R. Results indicated no association between interpersonal psychopathy features (Factor 1, two-factor model), IQ and the number of prior convictions but a positive association for this factor and the length of conviction. Antisocial features (Factor 2, two-factor model) were negatively related to IQ and the length of conviction and positively related to the number of prior convictions. Results were further differentiated for the four-factor model of psychopathy. The relationship between IQ and psychopathy features was further assessed by isolating the effect of the two factors of psychopathy. It could be shown that individuals scoring high on interpersonal features of psychopathy are more intelligent than those scoring high on antisocial features, but less intelligent than those scoring low on both psychopathy features. The results underpin the importance of disaggregating psychopathic individuals into subgroups on the basis of personality characteristics and criminological features. These subgroups may identify different types of offenders and may be highly valuable for defining treatment needs and risk for future violence.

#### **43) A Meta-Analytic Factor Analysis of the Psychopathic Personality Inventory**

Edward Witt, Michigan State University; M. Brent Donnellan, Michigan State University; Daniel M. Blonigen, VA Palo Alto Health Care System and Stanford University School of Medicine; Christopher J. Patrick, Florida State University

The Psychopathic Personality Inventory (PPI; Liliensfeld, 1990) is a popular self-report measure of psychopathy. However, the higher-order factor structure of this instrument is a subject of debate, with most solutions arranging from two factors, primarily drawn from community samples (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003) and three factors, derived from a combination of community and forensic samples (Neumann, Malterer, & Newman, 2008). This study entailed a meta-analytic factor analysis of the PPI. Ninety-two studies that administered the PPI were identified, of these we obtained sufficient data for analyses from nineteen studies (21% of total) representing a total sample of 5,893 individuals. The matrices were combined to generate a meta-analytic correlation matrix for the overall sample, as well as for normal (college/community;  $n = 3465$ ,  $k = 8$ ) and forensic (offender/substance abuse;  $n = 2428$ ,  $k = 11$ ) samples. We first used Confirmatory Factor Analyses (CFA) to examine the fit of the existing factor solutions. In all cases, the CFAs produced out-of-range estimates (Heywood Cases). It has been demonstrated that self-report inventories developed and refined using Exploratory Factor Analysis techniques often face difficulties test with CFA (Hopwood & Donnellan, 2010). Therefore, we followed these analyses with EFA techniques. The EFA on the overall matrix yielded results that resembled the structure reported by Neumann et al. (2008). When separated by sample type the EFA results suggested that the Benning et al. (2003) solution best fit the normal sample and Neumann et al. (2008) solution best fit the forensic sample. This suggests that the structure of PPI is dependent on the sample type. Further comparison of matrices revealed that the stress immunity scale was more independent of the other scales in the forensic sample relative to the normal sample. Future analyses, limitations, and implications will be discussed.

#### **44) Generalizing the Nomological Network of Psychopathy across Populations**

David D. Vachon, Purdue University; Donald R. Lynam, Purdue University; Rolf Loeber, University of Pittsburgh; Magda Stouthamer-Loeber, University of Pittsburgh

Psychopathy has high construct validity in samples of Caucasian prison inmates. However, little is known about how well the nomological network surrounding psychopathy generalizes to non-Caucasian and non-incarcerated populations. Using longitudinal and concurrent data from the middle sample of the Pittsburgh Youth Study, the current investigation demonstrates that the of total- and facet-level psychopathy is preserved in African American and non-incarcerated samples. Specifically, similar patterns of association were obtained for child variables (e.g., child psychopathy, SES, risk status, parenting, delinquency, peer delinquency, and impulsivity) and adult variables (e.g., children, education, incarceration, unemployment, personality, substance use, and antisocial personality disorder) across ethnicity and arrest status. The implications of these findings are straightforward—research conducted on Caucasian, African American, convicted, and non-convicted samples is relevant for a general understanding of psychopathy.

#### **45) Examination of Self-report Psychopathy Factors and Their Relations with Basic Personality Traits and Externalizing Behavior**

Lauren R. Few, University of Georgia; Ashley Watts, University of Georgia; Jessica L. Maples, University of Georgia; Lauren F. Wilson, University of Georgia; Joshua D. Miller, University of Georgia

The factor structure of psychopathy is an area of intense interest and debate, with most research supporting the existence of between two and four factors. The vast majority of this work has been conducted using variants of Hare's Psychopathy Checklist. The goal of the current study is to examine the factor structure of three of the most prominent self-report measures of psychopathy (i.e., Levenson Self-report Psychopathy Scale (LSRP), Psychopathic Personality Inventory-Revised (PPI-R), and Self-report Psychopathy Scale – III (SRP-III)). Using data currently being collected (current n = 631 undergraduates), we will examine the factor structure of these measures using the various scales' subscales (i.e., two LSRP scales; eight PPI-R scales, and four SRP-III subscales). The extracted factors will then be examined in relation to basic personality traits (e.g., neuroticism, agreeableness, conscientiousness) and various externalizing behaviors (e.g., intimate partner violence, substance use, gambling, antisocial behavior). The results will be discussed in the context of existing research examining the underlying factor structure of psychopathy, and implications for the assessment and conceptualization of psychopathy will be addressed.

#### **46) Investigating the Convergent Validity of the Elemental Psychopathy Assessment**

Jessica L. Maples, University of Georgia; Lauren Wilson, University of Georgia; Lauren R. Few, University of Georgia; Joshua D. Miller, University of Georgia; Ashley L. Watts, University of Georgia

The construct of psychopathy has been most commonly assessed using the Psychopathy Checklist, which utilizes both a clinical interview and a file review. The necessity of a file review has made it difficult to study psychopathy in noninstitutionalized settings. Although self-report measures have been created (i.e., LSRP, SRP-II), many of these have been explicitly modeled after the Psychopathy Checklist. Given the interest in understanding personality pathology in general and psychopathy more specifically from the perspective of general models of personality, Lynam and colleagues (in press) recently developed a new self-report inventory for the assessment of psychopathy, the Elemental Psychopathy Assessment (EPA). The EPA was constructed based on empirical work examining psychopathy from a Five Factor Model perspective. The goal of the current study is to examine the convergent validity of the EPA scores in relation to other existing self-report psychopathy measures, as well as the relations with basic personality traits and externalizing behaviors. These analyses will be conducted in a large sample of undergraduates (current n = 632; data collection ongoing). The findings will be discussed with regard to the construct validity of the EPA and its potential utility in the study of psychopathy.