



Society for the Scientific Study of Psychopathy

5TH BIENNIAL MEETING
L'ENFANT PLAZA HOTEL, WASHINGTON, DC
JUNE 6-8, 2013
WWW.PSYCHOPATHYSOCIETY.ORG

PRESIDENT:	DAVID KOSSON
PAST-PRESIDENT:	PAUL FRICK
PAST-PAST-PRESIDENT:	CHRISTOPHER PATRICK
PRESIDENT-ELECT:	SCOTT LILIENFELD
SECRETARY:	EVA KIMONIS
TREASURER:	CRAIG NEUMANN
MEMBERSHIP CHAIR:	LUNA MUÑOZ CENTIFANTI
EXECUTIVE BOARD:	ADELLE FORTH RAYMOND KNIGHT JOSEPH NEWMAN ADRIAN RAINE RANDALL SALEKIN EDELYN VERONA ESSI VIDING ARIELLE BASKIN-SOMMERS (STUDENT REPRESENTATIVE) EX OFFICIO MEMBER: STEPHEN BENNING (HISTORIAN)
CONFERENCE LOCAL HOSTS:	JAMES BLAIR STUART WHITE
PROGRAM COMMITTEE:	ADELLE FORTH, CO-CHAIR JOSEPH NEWMAN, CO-CHAIR STEPHEN BENNING ESSI VIDING

R.D. Hare Lifetime Achievement Award

This award is given to a person who has made significant contributions to the scientific study of psychopathy over the course of his or her lifetime.

- 2011: **HERVEY M. CLECKLEY** (1903 – 1984)
2009: **JOSEPH P. NEWMAN**
2007: **DAVID T. LYKKEN** (1928 – 2006)
2005: **ROBERT D. HARE**

Early Career Contributions Award

The Early Career Contribution Award was created to recognize exceptional young scholars who have shown considerable promise and productivity in the formative years of their career and who have made a significant contribution to the understanding of psychopathy

- 2011: **ESSI VIDING**, University College London. *Genes, Brains and Parents: What Are Children with Callous-Unemotional Traits and Conduct Problems Made of?*
EDELYN VERONA, University of Illinois at Urbana-Champaign. *Psychopathy Dimensions and Etiological Pathways: Phenotypes, Genotypes, and Cognitive-Affective Mechanisms*

Cheryl Wynne Hare Poster Award

This award is given from the Cheryl Wynne Hare Memorial Fund in memory of the daughter of Robert and Averil Hare. The award is given to a student who presents the best poster at the meeting.

- 2011: **JOHANNA FEILHAUER**, Maastricht University, Maaikje Cima, Tilburg University, Nancy Nicolson, Maastricht University. *Cortisol, Psychopathy Dimensions and Types of Aggression in at Risk Youths*
SUSANNE WOLF, Luna C. Muñoz, Joanne M. McBoyle, University of Central Lancashire. *Group Dynamics of Adolescents with Callous-Unemotional Traits and Their Risk-Taking: A Linguistic Inquiry*

Honorable Mentions

- ALEXANDROS LORDOS** & Kostas Fanti, University of Cyprus. *Why CU Could Stand for "Callous/Unremorseful": Reconsidering the Factor Structure of the ICU*
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. *Reduced Susceptibility to Attentional Blink Deficit in Psychopathic Offenders: Implications for the Attentional Bottleneck*
- 2009: **MEGAN O'LEARY** & Jeanette Taylor, Florida State University. *Psychopathic Personality Traits and Cortisol Response to Stress*
ARIELLE BASKINS-SOMMERS, John Curtin, Jeremy Bertsch, Joseph P. Newman, University of Wisconsin-Madison. *Psychopathic Traits Moderate Electrophysiological Activity and Fear Response*
- 2007: **KAREN J. DEREFINKO** & Donald R. Lynam, University of Kentucky. *The Misconception of Psychopathic Low Anxiety: Meta-analytic Evidence for the Absence of Inhibition*
HEDWIG EISENBARTH, Georg W. Alpers, D. Segre, A. Angrilla, University of Wuerzburg. *Psychopathic Women's Evaluation of Emotional Expressions*

WEDNESDAY, JUNE 5

7:00p-9:00p *Executive Board Meeting (MARQUETTE ROOM)*

6:00p-9:00p *Registration (GRAND BALLROOM FOYER)*

THURSDAY, JUNE 6
GRAND BALLROOM

7:30a-10:30a *Registration (GRAND BALLROOM FOYER)*

8:15a-8:30a *Opening Remarks (David S. Kosson, President)*

8:30a-10:00a *Psychopathy and the Brain: Insights from fMRI (Stuart F. White, Moderator)*

In the last several years, considerable effort has been made to understand the nature of psychopathy at the neural level and neuroscience-based models of psychopathy now exist (Anderson & Kiehl, 2012; Blair, 2007). Work to date indicates a primary role in psychopathy of amygdala and ventromedial prefrontal cortex; however, dysfunction in other regions such as anterior insula and striatum has also been reported. This symposium brings together fMRI studies attempting to delve deeper into the neurobiological bases of psychopathy. Arbuckle and Shane report that incarcerated psychopaths can regulate their emotions relative other inmates better than may have been predicted given the emotional deficits associated with psychopathy. Hyde and colleagues take a look at amygdala response to negative emotion and also suggest that the emotional deficits in psychopathy may not be as well understood as previously thought. Seara Cardoso et al. and White et al. both investigate decision-making and its relationship to psychopathic traits. Seara Cardoso et al. add to the literature suggesting a role for ventromedial prefrontal cortex in moral decision-making and in psychopathic traits. White and colleagues report on the computational processes underlying stimulus-reinforcement learning and the role played by both callous-unemotional traits and Disruptive Behavior Disorders in impairment on this type of task. Implications for a neurobiological understanding of psychopathy will be discussed.

- a) *Down-regulation of neural responses to emotional stimuli among incarcerated psychopaths.* **Nathan Arbuckle**, University of New Mexico, **Kent Kiehl**, University of New Mexico, **Carla Harenski**, University of New Mexico, **Prashanth K. Nyalakanti**, University of New Mexico, **Matthew S. Shane**, University of Ontario Institute of Technology

A central characteristic of psychopathy, which has been demonstrated behaviorally (Lykken, 1957), physiologically (e.g., Patrick et al., 1993), and neurally (e.g., Kiehl et al., 2001), is a severely reduced level of emotional responsivity. The extent to which these reductions stem from a core inability to muster sufficient reactivity has become the focus of recent research. In our lab, we have previously utilized an emotion regulation paradigm (e.g., Ochsner et al., 2004) in conjunction with functional neuroimaging to investigate the emotional capabilities of psychopaths. Consistent with the prior literature, this work found baseline hyporesponsivity to emotional stimuli (negatively-valenced pictures) in psychopaths as compared to non-psychopaths; however, when asked to increase their emotional response to negatively-valenced pictures, psychopaths showed just as much or more neural activity within emotion-related regions of the brain (e.g., bilateral insula, anterior cingulate cortex, and inferior frontal gyrus; Shane et al., 2013). In the present work, we undertook additional analyses of this data set to examine psychopaths' performance in a decrease condition, in which participants were instructed to try to reduce their emotional response to the same negatively-valenced stimuli. Thus, we report results from the same 32 incarcerated participants, who were asked to passively view affectively neutral (e.g., a chair) or affectively negative (e.g., a snake) pictures, or to try to decrease (or increase) their emotional responsivity to the pictures. The capacity for psychopaths to undertake such voluntary neural reductions may be telling for several reasons: first, evidence of a significant reduction in neural responsivity would indicate that the psychopath's "baseline" level of response must be somewhat greater than zero. More importantly, evidence of voluntarily-induced reductions in neural response to emotional stimuli would provide additional evidence in support of the notion that psychopathic individuals have a certain level of emotional insight - in this case sufficient for voluntary manipulation of their emotional responses. Analyses comparing watch and decrease conditions found such capacity, as both psychopaths and non-psychopaths (as determined by PCL-R scores) showed less neural activity in emotion-related regions (e.g., insula, ACC) than they did when asked to merely view negative pictures. Importantly, psychopaths demonstrated less neural activity in many of these regions than did non-psychopaths, potentially indicating a greater capacity for reducing their neural response. Further analyses were undertaken to compare psychopath's and non-psychopath's full range of potential emotional reactivity by comparing neural responses in the "increase" and "decrease" conditions. Analyses indicated that the difference between these two modulation conditions was greater for psychopaths than for non-psychopaths. Together, these results suggest that psychopaths, rather than being devoid of emotions, may instead be

capable of flexibly modulating their emotional responses.

- b) *Amygdala reactivity in a community sample of young adults: The role of callousness.* **Luke W. Hyde**, University of Michigan, **Daniel S. Shaw**, University of Pittsburg, **Erika Forbes**, University of Pittsburg, **Ahmad R. Hariri**, Duke University

Recent studies have emphasized deficits (i.e., hypoactivity) in the response of the amygdala to emotional faces in youth high on callousness (CU) and psychopathy (e.g., Marsh et al., 2008; Jones et al., 2008). However, many of these studies have been of small dichotomous samples of youth high on CU and Antisocial Behavior (AB) without the ability to disentangle independent contributions of CU versus AB in their relationship to amygdala reactivity and the two studies that have separated these construct have come to very different conclusions (i.e., Passamonti et al., 2010; Viding et al., 2011). Moreover, previous studies have focused primarily on dichotomous rather than continuous variables of CU and AB, have not evaluated the extent to which these differences are specific to fear faces, and have not examined heterogeneity within the response of the amygdala (i.e., they have not examined if different regions of the amygdala are driving the results). To address these limitations, we examined the relationship between amygdala reactivity to emotional faces and AB and CU in a sample of 159 ethnically diverse community recruited males at age 20 who have been followed since they were 1.5 years old. This sample allowed us to examine the following factors in the relationship between AB and amygdala reactivity: 1. Dichotomous versus continuous conceptions of AB and CU in a sample where AB and CU are only moderately correlated; 2. The independent contribution of fear versus neutral versus angry faces; 3. The relative contribution of the baso-lateral versus central-medial areas of the amygdala; and 4. The use of CU traits versus age-of-onset classification as a method of subgrouping youth with AB in relationship to amygdala reactivity. Contrary to previous studies that suggested CU was driving amygdala hypoactivity, our findings indicate that CU is not significantly related to amygdala reactivity and AB is negatively correlated with amygdala reactivity to emotional faces. When these emerging adults were grouped by levels of AB and CU, the AB+CU+ group had the highest level of amygdala reactivity compared to the other groups (AB+CU-, AB-CU-) and these differences were strongest in the central-medial portion of the amygdala and to all faces rather than specifically to fear faces. Finally, early onset AB youth had the same pattern of amygdala reactivity as those in the AB+CU- group: the lowest level of amygdala reactivity. Results suggest that severity of AB, rather than CU itself, may be driving hypoactivity in the amygdala in AB+CU+ groups shown in past studies. Future analyses before the SSSP conference will also examine potential moderators (i.e., ethnicity, SES) of the link between amygdala reactivity and AB. Results will be discussed in relationship to previous studies, contrasting our findings and the specifics of our sample to previous studies. Finally results will be discussed in relationship to current genetic and behavior work in this sample and how it will be integrated with the neuroimaging results.

- c) *“What have I done?”: Exaggerated neural response in mOFC during moral reflection is associated with antisocial behaviour and lifestyle psychopathic traits.* **Ana Seara Cardoso**, University College London, **Catherine Sebastian**, Royal Holloway, University of London, **Marine Buon**, University College London, **Jonathan P. Rosier**, University College London, **Essi Viding**, University College London

Numerous studies have advanced our knowledge regarding the neural correlates of human morality. However, these studies have tended to use either highly unrealistic scenarios that require extreme moral judgements and lack ecological validity, or more ecologically valid scenarios that lack clear intentionality. In our everyday life, we are not easily faced with the dilemma of sacrificing one person's life to save many, but we might be tempted to behave immorally when facing situations with competing values. For example, we might be tempted to pretend not to see a pregnant woman on the commute home because we are too tired to give up our seat. We developed a highly controlled novel fMRI task with ecologically valid scenarios that allowed us to: 1) identify specific and shared sets of brain areas involved in the perception of one's own everyday moral transgressions and in the reflection of subsequent feelings of moral guilt; 2) test whether responses in the circuits implicated in moral processing of everyday transgressions are associated with inter-individual variability in psychopathic traits after controlling for important confounding factors such as emotional valence and arousal. We demonstrated that perception of personal everyday moral transgressions and reflection on subsequent feelings of guilt are underpinned by two partially separable neural circuits; and that a cluster in the vmPFC/mOFC cortex is commonly activated during both processes. We also identified an association between neural correlates of moral guilt reflection and individual differences in psychopathic traits. Specifically, we found that response in mOFC was positively associated with individual differences in antisocial behaviour. We also found that, not only increased response in the mOFC, but also weaker functional connectivity with this region with the posterior insula were associated with more risk-taking, impulsive, reckless and carefree lifestyle characteristics. Importantly, our highly controlled task allowed us to show that these associations are not due to more general impairments in emotional or mentalising processes but are specific to moral cognition.

- d) *Differential contributions of diagnostic status and callous-unemotional traits to specific decision-making impairments in youth with disruptive behavior disorders.* **Stuart F. White**, National Institute of Mental Health, **Katherine A. Fowler**,

Centers for Disease Control, **Stephen Sinclair**, National Institute of Mental Health **Julia C. Schechter**, Emory University, **Catherine M. Majestic**, University of North Carolina-Greensboro, **Daniel S. Pine**, National Institute of Mental Health, **James Blair**, National Institute of Mental Health

Youth with Disruptive Behavior Disorders (DBD), including Conduct Disorder and Oppositional Defiant Disorder, show impairment on a variety of decision-making tasks (Blair, Colledge, & Mitchell, 2001; Budhani & Blair, 2005; Finger et al., 2011; White et al., in press). It is possible that these decision-making deficits directly contribute to risk for these disorders. Two critical components of successful decision-making involve: (i) the appropriate representation of reinforcement expectancies (representing the expected value [EV] associated with a stimulus/action); and (ii) prediction error [PE] signaling (detecting the difference between the amount of reward/punishment received and that expected so that changes to reinforcement expectancies can be learned). Neuroimaging work on decision-making within this population has indicated reduced representation of EV in vmPFC (Rubia et al., 2009; White et al., in press) and reduced representation of sub-optimal choice selected as a function of EV in anterior insula. Furthermore, several studies have indicated abnormal responses to punishment in vmPFC and caudate (Finger et al., 2008; White et al., in press). Importantly, these regions are implicated in the development of DBD plus callous-unemotional traits (DBD+CU; Anderson & Kiehl, 2012; Blair, 2007). However, the role that CU traits play in the dysfunction seen in these computations remains unclear. Forty youth (20 DBD and 20 healthy controls) underwent functional MRI (fMRI) while completing a reinforcement-learning paradigm. Behavioral data was used to calculate EV and PE at each time point. This was utilized in a model-based fMRI analysis. CU traits were assessed via the Inventory of Callous-Unemotional Traits (parent-report). A 2 (action selection: choose, not choose) by 2 (door type: threat door, appetitive door) by 2 (diagnosis: DBD+PT youth, health comparison youth) ANCOVA using CU traits as a covariate of interest was conducted on the cue data modulated by expected value. A significant action selection-by-door type-by-diagnosis interaction was observed in right caudate, left amygdala and thalamus. Healthy youth showed increased modulated activation when choosing relative to not choosing threat doors, but greater modulated activation when *not* choosing relative to choosing positive doors. DBD youth showed the opposite pattern of response. Furthermore, this pattern was also seen in left AIC and dmFC, albeit at trend levels ($p < .1$). An action-selection-by-CU traits-by-door type interaction was also observed where vmPFC showed greater modulated activation when choosing appetitive doors relative to not choosing appetitive doors and greater modulated activation when not choosing threat doors relative to choosing threat doors at lower levels of CU traits. This relationship diminished with increased levels of CU traits. The current data are consistent with previous work (White et al., in press) showing diminished signaling of sub-optimal action-selection in DBD youth as a function of EV during decision-making. Importantly, in both studies this dysfunction was unrelated to CU traits. Similarly consistent with previous research (Finger et al., 2011; Finger et al., 2008; White et al., in press) and theory (Blair, 2007), we also observed reduced representation of reward as a function of EV in vmPFC. The current data suggest two sets of computational impairments, one specific to CD+CU, another common to CD.

e) Discussant, **James Blair**, National Institute of Mental Health

10:00a-10:30a **Break (GRAND BALLROOM FOYER)**

10:30a-11:20a **Student Paper Session (Joseph Newman, Moderator)**

a) *From mechanism to treatment: Using cognitive remediation as a treatment for psychopathic and externalizing offenders.*
Arielle Baskin-Sommers, John Curtin, Joseph Newman, University of Wisconsin-Madison

Despite the similar behavior problems of psychopathic and externalizing individuals, the dysfunctional cognitive-emotional interactions underlying these disorders are substantially different. Psychopaths are characterized by an attention bottleneck that causes them to be oblivious to contextual information that would otherwise contraindicate their behavior. Externalizers are characterized by high emotional reactivity and cognitive control deficits that are exacerbated in affectively charged situations. Although these disorders are notoriously resistant to standard interventions, it should be possible to achieve greater therapeutic benefit using cognitive remediation strategies that specifically target their respective deficits. Cognitive remediation involves training individuals in particular cognitive skills. Using a 2 group by 2 treatment crossover design, we are currently evaluating the extent to which cognitive remediation may be used to modify the dysfunctional cognitive-emotional interactions associated with psychopathy versus externalizing. More specifically, we are evaluating the extent to which training attention to context (ATC) can alter the deficit associated with psychopathy. Simultaneously, we are evaluating the extent to which practicing affective cognitive control (ACC) enhances self-regulation in prisoners with externalizing. Briefly, all inmates complete a pre-treatment assessment involving five computerized tasks that measure the cognitive-affective deficits associated with psychopathy and externalizing using a combination of task performance and psychophysiological assessments (startle; event-related potentials). Inmates are randomly assigned to ATC or ACC, with half of the inmates receiving a training (3 computerized tasks) that matches their specific deficit and half receiving a training that does not match their deficit (but matches the deficit of the other group). At the end of 6 weeks of training, inmates complete a

post-treatment assessment that is identical to the pre-treatment assessment. Thus far, findings indicate that the psychopathy and externalizing groups display differential deficits (e.g., psychopaths are less sensitive to contextual cues in the Stroop whereas externalizers show no deficit; externalizers display poorer inhibition during reward in the NBack task but psychopaths do not) and differential pre- to post- improvement on nearly all tasks (e.g., only individuals who receive the deficit-matched treatment improve from pre to post.) Moreover, nearly all of the training tasks are showing improvement over time and the improvement is relatively specific to the targeted groups (e.g., only psychopaths perform poorly on the ATC training (e.g., reversal-learning task) on the first day of training but improve by the end of training; only externalizers initially perform poorly on the ACC training (e.g., distress tolerance task), but improve with training over the 6 sessions). Finally, improvement on training predicts improvement on the pre/post tasks for the group receiving the deficit-matched treatment (e.g., for psychopaths reversal-learning training predicts improvement on the Stroop; for externalizers improvement on distress tolerance predicts improvement on the NBack). Overall, this research provides a framework for translating advances in basic cognitive and affective science into increasingly effective and efficient therapeutic interventions for disinhibitory psychopathology.

- b) *Coupling between HPA and HPG hormones among incarcerated adolescents: The influence of callous-unemotional traits.* **Megan Johnson**, University of New Orleans, **Andrew Dismukes**, University of New Orleans, **Michael Vitacco**, Georgia Health Sciences University, **Elizabeth Shirlcliff**, University of New Orleans

Conduct disorder (CD) is a heterogeneous diagnosis, leading researchers to initiate studies focused on neurobiological mechanisms underlying this disorder. One specifier of CD currently considered for inclusion in the DSM-V is callous-unemotional (CU) traits, a key component of psychopathy. CU traits are thought to have neuroendocrine underpinnings, yet little is known about Hypothalamic-Pituitary-Adrenal (HPA) and –Gonadal (HPG) hormones in the context of psychopathic traits. The hypothalamic-pituitary-adrenal (HPA) and gonadal (HPG) axes are major components of the endocrine system that work together to influence a variety of health, developmental, and behavioral outcomes. The HPA and HPG axes are highly interconnected, yet few studies investigate their end-products simultaneously, especially during salient developmental stages (i.e., adolescence) or in relation to important behavioral outcomes (i.e., antisocial behavior). Using a severely antisocial adolescent sample meeting criteria for Conduct Disorder, the current project sought to investigate relationship between CU traits and cortisol, testosterone, and DHEA coupling across the day. Investigating underlying mechanisms or underpinnings related to the components of antisocial behavior will enhance our understanding of risk factors related to the initiation or persistence of antisocial behavior. The Inventory of Callous Unemotional Traits (ICU) was used to assess for callous-unemotional traits, and hierarchical linear modeling was employed to examine whether CU traits moderated the relationship between ten repeated measurements of salivary cortisol, testosterone and DHEA collected over two days in a sample of 50 adolescent males incarcerated at a maximum security facility. Results indicated that in the general sample, cortisol release was tightly coupled with testosterone ($\beta=.61$, $p<.001$) and DHEA ($\beta=.53$, $p<.001$), and testosterone was tightly coupled with DHEA ($B=.95$, $p<.001$). Cortisol and testosterone were strongly decoupled among those with high ICU callousness scores ($B = -.03$, $p < .05$), and the callousness subscale was also related to decoupling of testosterone with DHEA ($B = -.01$, $p < .05$). The present findings regarding CU symptoms illustrate sex and stress hormone coupling may be physiologically meaningful capturing the shift from catabolic toward anabolic/androgenic processes within an individual. DHEA can operate both as a sex and stress hormone; in the context of high callous scores, the results indicate that DHEA is operating more as a stress hormone within the most callous antisocial males, such that when high levels of testosterone are observed, lower than expected DHEA and cortisol (stress) complements HPG-axis functioning. This could be a particularly hazardous combination insofar as high testosterone is associated with dominant or aggressive behavior and low stress hormones (both cortisol and DHEA) are associated with insensitivity to signals of distress or pain in others. Within a high callous individual, both components are likely to operate in concert given that a high testosterone moment is likely to be coupled with lower overall cortisol and DHEA. This is consistent with other research indicating high rates of aggression *and* lack of remorse among children and adolescents who meet criteria for CD with high CU traits and extends these behavioral observations to a unique combination of underlying neurobiological mechanisms for this subtype of CD and potentially the persistence of antisocial behaviors across time. The results highlight the differences in hormonal patterns in relationship to conduct disordered youth with CU traits. Understanding how all three hormones differentially operate in concert in the presence of psychopathic or CU symptomatology has revealed information about a biologically meaningful mechanism that may potentiate destructive behavior; these insights could prove useful to the creation of effective treatment strategies.

- c) *Psychopathic traits and the use of social and non-social information during associative learning: A computational approach.* **Inti A. Brazil**, Radboud University Nijmegen, **Laurence Hunt**, University College London, **Berend Bulten**, Pompestichting, **Roy Kessels**, Radboud University Nijmegen, **Ellen de Bruijn**, Leiden University, **Rogier Mars**, University of Oxford

Psychopathy is a personality disorder repeatedly linked to disturbed reinforcement-guided adaptation of behaviour, and the same core deficit is believed to also lead to impaired learning from social information. Recent work suggests that these

disturbances might be due to a deficit in actively using information to guide changes in behaviour, rather than learning itself. However, the amount of information actually used to guide behaviour has never been quantified. Here, we employ a formal computational model to quantify the amount of information used during associative learning of reward and social values, and isolate specific psychopathic personality traits that covary with estimated computational parameters. Forty subjects were recruited based on their scores on a self-report psychopathy list, and performed a task involving simultaneous learning of reward-based and social information. A computational model was used to parameterize the extent to which subjects used each source of information in guiding their decisions. Subsequently, the psychopathic personality traits that were more strongly related to each parameter were isolated through a variable selection procedure, and we assessed how these covaried with model parameters. Use of reward-history information was negatively related to levels of trait anxiety and fearlessness, whereas use of social advice decreased as the perceived ability to manipulate others and trait guiltlessness increased. These results corroborate previous findings indicating sub-optimal use of information in psychopathy. Moreover they isolate key features of psychopathy that can be related to model-based descriptions of subject behaviour.

11:20a -12:00p **Jevon Scott Newman Award - Inaugural Paper (Joseph Newman, Moderator)**
Controversial Issues in Psychopathy Research. Adrian Raine, University of Pennsylvania

12:00p-12:45p **Lunch (on your own)**
Registration (GRAND BALLROOM FOYER)

12:45p-1:45p **R. D. Hare Lifetime Achievement Award (Paul Frick, Chair)**
Christopher P. Patrick, Florida State University. *Psychopathy Research: Where We've Been, Where We Can Go*

1:45p-3:00p **Parenting the Callous-Unemotional Child (Caroline Moul, Moderator)**

Much is known about the role of the family in pathways to antisocial behaviour, with established models emphasising the various dimensions of parenting and family dysfunction that are known to amplify and transform conduct problems across child and adolescent development. Far less is known about the risk mechanisms through which parenting and family variables operate on developmental pathways characterised by high levels of callous and unemotional (CU) traits, and the implications these may have for clinical intervention. This symposium will focus on emerging conceptualisations of the interactive and transactional processes through which CU traits and family-based risk factors operate on antisocial behaviour across various stages of child development. Research involving longitudinal and intensive observational data will be presented on the reciprocal relationships between parental warmth and CU traits in toddlers at risk of developing conduct problems (Waller), and those with existing patterns of clinically severe conduct problems (Hawes). Cognitive mechanisms associated with CU traits and the interactive role they may play in the development of conduct problems will then be addressed (Moul). The current evidence and future potential of these processes to inform clinical practice will then be discussed (Dadds).

a) *Bidirectional associations between dimensions of parental warmth, deceitful-callous behavior and conduct problems in high-risk pre-schoolers. Rebecca Waller, University of Oxford*

Research suggests that parental warmth and positive parent-child interactions predict development of conscience, empathy, and internalization of social norms in children (e.g., Kiang, Moreno, & Robinson, 2004; Kochanska & Murray, 2000; Kochanska, Forman, Aksan, & Dunbar, 2005). Recent studies also suggest that affective dimensions of parenting, including parental warmth, are associated with lower conduct problems in youth with high levels of CU traits (Kroneman, Hipwell, Loeber, Koot, & Pardini, 2011; Pasalich, Dadds, Hawes, & Brennan, 2011). Emerging evidence also suggests that CU traits may confer risk for conduct problems by uniquely shaping parenting behavior (Hawes, Dadds, Frost, & Hasking, 2011). The current study seeks to address a number of gaps in the literature and add to what is known about associations between early manifestations of CU traits, conduct problems, and dimensions of positive parental affect in very young children. Reciprocal associations between parental warmth and child CU traits are assessed in a younger-aged sample than any previous studies, controlling for associations with emerging conduct problems. In addition, the current study uniquely assesses expressed and directly observed measures of parental warmth to test reciprocal associations. Data from mother-child dyads (N=731; 49% female) were collected from a multi-ethnic, high-risk sample at ages 2 and 3. CU traits were assessed using a previously validated measure of deceitful-callous behavior (Hyde et al., in press, 2012). Models were tested using both a directly observed variable of parental warmth, based on an assessor's impressions of the affective climate of the home, and an expressed variable of parental warmth, coded from five-minute speech samples, which has been previously validated in this sample (Waller et al., 2012). Two- and three-way cross-lagged, simultaneous effects models suggested that parental warmth uniquely predicted child deceitful-callous behavior, over and above associations with conduct problems. Child deceitful-callous behavior predicted parental warmth for the directly observed measure only. Conclusions: Results support the notion that aspects of the early, positive affective climate provided by parents appear to be uniquely and reciprocally related to CU

traits, over and above emerging conduct problems. The results therefore provide support for interventions that target dimensions of parental warmth and parental feelings about their child to prevent development of more severe forms of antisocial behavior. The results also highlight the importance of evocative child-parent effects in undermining the positive affective quality of parent-child interactions. Interventions in early childhood that target children's early socio-emotional processing and empathic concerns both directly and via changes in parenting behavior, are likely to be a key target of future research to reduce development of severe conduct problems.

- b) *Mutually responsive orientation and early childhood callous-unemotional traits: An observational study.* **David J. Hawes**, University of Sydney

Callous and unemotional (CU) traits show a range of biological underpinnings, and it has been speculated that children with high levels of CU traits may develop conduct problems independently of quality of parenting. There is however growing evidence that family environment plays a role in the development and expression of these traits. Furthermore, emerging evidence suggests that family environment may play a role in the amplification of conduct problems among children with CU traits, albeit through processes that differ to those most often implicated in the conduct problems of low-CU children. A number of studies have shown that the conduct problems of children with high levels of CU traits are less directly associated with harsh/coercive parenting practices (e.g., Wootton et al., 1997), yet relatively little research has examined how attachment-related dimensions of the parent-child relationship operate on conduct problems within these putative subgroups. Emerging findings suggest that children with high levels of CU traits may be characterised by a disorganised attachment style (Pasalich, et al., 2011), and by behaviours such as reduced eye-contact with attachment figures (e.g., Dadds et al., 2011) that are likely to interfere with the maintenance of healthy family interactions. It has also been found that a lack of warmth in the parent-child relationship may be more proximal to the conduct problems of children with high levels of CU traits than those of children low in CU traits (e.g., Pasalich et al., 2011). Growing evidence of this kind suggests that the developmental pathways followed by children with high versus low levels of CU traits may implicate distinct risk and protective processes with respect to family environment. Particularly little, however, is known about these processes in early childhood. Early childhood represents a key priority for research in this field, as it is during this time that the most chronic trajectories of antisocial behaviour are often initiated, and that the effects of parent-child dynamics on child adjustment may be most potent. Findings will be reported from an observational study of mother-child interactions in a sample of boys (n=113) aged 2-4 years, 42% of whom were recruited from a clinic for early-childhood disruptive behaviour disorders. Data suggest that not only are CU traits inversely associated with mutually responsive orientation (MRO) - a measure of attachment-related parent-child dynamics - but that CU traits also moderate the relationship between MRO and risk for conduct problems. Contrary to the notion that quality of parenting is unimportant to the conduct problems of children with high levels of CU traits, MRO was found to be most proximally related to behavioural adjustment among high-CU boys. These findings will be discussed in relation to current developmental models of antisocial behaviour and emerging interventions for children with conduct problems and CU traits.

- c) *CU traits, learning-style and the development of parent-child attachment.* **Caroline Moul**, University of New South Wales

There is mounting evidence to suggest that high levels of CU traits may alter the nature of the parent-child relationship. Recent research (Pasalich et al., 2011) has shown that the attachment styles of children with conduct problems and high levels of CU traits are more likely to be disorganised/insecure than their low CU counterparts. It has also been shown (Kroneman et al., 2011; Pasalich et al., 2011) that parental warmth and positive reinforcement may be particularly important in the prevention of the development of conduct problems in children with high levels of CU traits. The question remains, however, as to what it is about high levels of CU traits that influence the parent-child relationship in this manner. In this symposium I will propose that subtle cognitive deficits associated with high levels of CU traits may have a role to play both in the seemingly necessary parental emphasis on warmth and praise and on the development of insecure attachment styles. A novel model of amygdala function in psychopathy (Moul et al., 2012) hypothesises that due to differential activation of sub-regions of the amygdala the associative learning style of a child with high levels of CU traits differs from that of a child without high CU traits. This hypothesis will be briefly explained and data (Moul et al., in press) to demonstrate the bias in learning-style exhibited by children with high levels of CU traits will be presented. The study used a sample of children (N=79, 62 with clinical levels of conduct problems) and a novel computerised learning task to demonstrate that CU traits are positively associated with a learning-style that is dominated by the formation of associations between stimuli and the general valence (good/bad) of the outcome, as opposed to the specific features of the outcome. Next, a mechanism through which this bias in learning style could account for the high CU child's need for warmth and positive reinforcement and the development of insecure attachment will be described. Finally, pilot data from a questionnaire developed to assess the ways in which a bias in learning-style may influence the outcome of parent-training interventions for children with conduct problems and high levels of CU traits will be presented. The ways in which both parent-training interventions for children with high levels of CU traits and treatment programs for adult criminal psychopaths may benefit from the consideration of learning-style bias will then be

discussed.

- d) *Early parenting interventions for conduct problems and callous-unemotional in childhood: Emerging models and evidence.* **Mark R. Dadds**, University of New South Wales

Parenting interventions are the best supported intervention for young children with conduct problems. Their effectiveness is less clear however, for children with high callous-unemotional (CU) traits. Using samples of children referred for behaviour problems from Sydney and London, I will present evidence that problems with emotional attention and responsiveness to caregivers characterise children with high CU traits and may drive cascading errors in development associated with psychopathy. Studies will be presented showing that high CU traits are associated with poor facial emotion recognition in computerised tasks, low eye contact with parents during naturalistic family interactions, and disturbances in oxytocin and serotonin receptor genetics that may influence processes driving eye contact and affiliative behaviours. These data and those from the previous papers in this symposium, show that the presence of high CU traits in children provide unique challenges to parents, but also suggest specific strategies that may help overcome the growth of these traits and associated conduct problems. As such, existing parenting interventions might be fine-tuned to make them more effective for children with high CU traits. These improvements may include adjunctive foci on learning styles, attachment processes, and attention/responsiveness to emotional stimuli, as ways of building reciprocated parent-child warmth early in life. As examples of research into innovative treatments, I will present controlled trials of “Enhanced” versus “Standard” parent training. In the first completed trial, N=195 children (mean age 10.52 years) referred for behavioural/emotional problems were assessed at pre- and 6 months post-treatment. Enhanced treatment involved parent-child exercises designed to build emotion-recognition skills. It provided no advantage overall on the group; however, levels of CU traits moderated outcomes such that the Enhanced intervention produced significant improvements in affective empathy and conduct problems in these high CU trait children. In the remaining trials underway in Sydney and London, children with conduct problems and high CU are receiving standardised parent training versus an enhanced version that includes strategies for enhancing “warmth” in the form of reciprocated emotional attention between caregivers and children. Overall, these data suggest new possibilities for early intervention in the development of psychopathy. First, there are reasons for optimism that theoretically-driven enhancements to evidence-based parenting interventions can provide specific benefits to children with conduct problems and high levels of CU traits. In particular, interventions that build parent-child warmth in the form of reciprocated emotional engagement appear to reduce conduct problems in the presence of high CU traits, and reduce the levels of the traits themselves. Second, new models of learning styles hypothesised to underlie the development of psychopathy should suggest a range of cognitive interventions that can be delivered during sensitive periods and contexts. Finally, emerging evidence that CU traits are associated with variations in serotonin and oxytocin systems underlying affiliative and empathic behaviour suggest that neuroendocrine function, and behavioral strategies that impact these neuroendocrines, may benefit some of the negative emotional/empathic traits associated with the development of psychopathy.

3:00p-3:30p **Break (GRAND BALLROOM FOYER)**

3:30p-5:00p **Paper Session (Stephen D. Benning, Moderator)**

- a) *Speech characteristics mediate the relationships of psychopathic traits with interpersonal presentation and observer emotion.* **Stephen D. Benning**, University of Nevada, Las Vegas, **Emily A. Dowgwillo**, Pennsylvania State University

Individuals with psychopathic traits are renowned for their ability to charm and persuade people. Glibness and superficial charm are hallmarks of the disorder, and they are particularly associated with psychopathy’s interpersonal facet. However, it is unclear *how* those with psychopathic traits influence others and *how* psychopathic traits influence the way others feel and perceive those with psychopathy. This study examined how fearless dominance (FD) and impulsive antisociality (IA) in psychopathy are associated with various interpersonal ratings, along with features of their free-form speech. We selected 103 individuals from a sample of 1023 who had been previously screened in the emergency room to participate in this study. These participants were oversampled to represent the top, middle, or bottom 10% on either FD or IA; scores on the other factor were free to vary. A total of 9 participants produced invalid MPQ profiles in the laboratory, leaving a final sample of 94 participants. Participants delivered a series of two minute talks about themselves and about objects they were told to sell to observers. Observers were instructed not to interact with the participant but otherwise allowing themselves to react normally to the participant’s talk. After all the talks, observers rated how dominant, attention-grabbing, aggressive, agreeable, enjoyable, exciting, nervous, and persuasive the talker was; observers also rated their own emotional valence and arousal using the Self-Assessment Manikin (SAM). We coded participants’ speech with the LIWC engine to categorize and quantify the words used during their talks. We conducted zero-order correlations between FD or IA and both the observers’ ratings and the talker’s speech characteristics. We then conducted mediational analyses to examine whether speech characteristics related to FD and IA mediated relationships of FD and IA to observer ratings. FD was specifically associated with ratings of dominance ($r = .32, p < .01$), aggressiveness ($r = .25, p < .05$), nervousness ($r = -.33, p < .01$), and persuasiveness ($r = .22, p$

< .05); all $|r|$ s with IA < .20. FD and IA were related in opposite directions to ratings of agreeableness (FD $r = .23, p < .05$; IA $r = -.23; p < .05$), enjoyableness (FD $r = .24, p < .05$; IA $r = -.21; p < .05$), excitement (FD $r = .28, p < .01$; IA $r = -.23; p < .05$), and the observer's SAM valence after the talks (FD $r = .27, p < .05$; IA $r = .28; p < .01$). FD was correlated with the number of words spoken, $r = .26, p < .05$. IA was correlated with increased use of the pronoun "I", $r = .35, p < .01$, and with more frequent expressions of anger, $r = .29, p < .01$. All the relationships between FD and observer ratings were mediated by the number of words used during the talks (95% CI with lower band nearest 0: nervousness [-.01, -.38]; 95% CI with upper band farthest from 0: dominant [.10, .46]). The relationship between IA and agreeableness ratings was mediated both by use of the word "I" (95% CI [-.03, -.44]) and the use of anger words (95% CI [-.02, -.47]). However, the relationship between IA and observer's SAM valence was mediated only by the use of anger words (95% CI [-.02, -.22]; 95% CI for "I" use [-.24, .01]). The relationships of IA with enjoyableness and excitement were not mediated by the use of "I" or anger words.

- b) *Indexing the triarchic domains of psychopathy with the Personality Inventory for DSM-5.* **Dustin Wygant**, Eastern Kentucky University, **Martin Sellbom**, The University of Alabama, **Jaime Anderson**, The University of Alabama

Patrick, Fowles, and Krueger (2009) proposed the triarchic model of psychopathy to integrate historical theories and various measurement models, which differ in how they emphasize criminal behavior and affective traits (e.g., fearlessness). This model describes psychopathy in terms of three phenotypic domains of boldness, meanness, and disinhibition. Skeem et al. (2011) suggested that these three domains could be indexed in various assessment instruments; one such candidate is the Personality Inventory for DSM-5 (PID-5; Krueger et al., 2012), a 220-item measure of 5 broad trait domains of nonadaptive personality (negative affectivity, detachment, antagonism, disinhibition, and psychoticism) and 25 trait facets distributed across these domains. The PID-5 was developed to assess a dimensional personality trait model used to define DSM-5 Section III personality disorders. The current study examined the degree to which the triarchic domains could be indexed via the PID-5 as well as their convergence with conceptually relevant phenotypic markers of psychopathy. Based on the theoretical and empirical literature on the triarchic model (e.g., Patrick et al., 2009, Sellbom & Phillips, 2013), we rationally selected 15 facets from the PID-5 to index Boldness (e.g., Risk Taking, low Anxiousness, low Submissiveness), Meanness (Callousness, Hostility), and Disinhibition (e.g., Impulsivity, Irresponsibility). The PID-5 Triarchic scales were examined in samples of 110 male prison inmates and 148 community volunteers. Both samples included the Triarchic Psychopathy Measure (TriPM; Patrick, 2010) and the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005). The inmate sample also included the Psychopathy Checklist-Revised (PCL-R; Hare, 2003) and the Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II; First et al., 1997) Antisocial PD module. The community sample included the Levenson Self-Report Psychopathy Scale (LSRP; Levenson et al., 1995), Interpersonal Reactivity Index (IRI; Davis, 1983), and the SCID-II Antisocial and Narcissistic PD modules. The results showed a substantial degree of convergence between the PID-5 Triarchic Indices and TriPM scores across both samples ($r = .58-.75$; $mdn. r = .68$) and a theoretically expected degree of divergence across constructs ($r = -.18-.54$; $mdn. r = .21$). The results were similar for the PPI-R. In terms of PCL-R scores, PID-5 Boldness was the best predictor of PCL-R Facet 1 ($r = .22, p < .05$); PID-5 Meanness of Facet 2 ($r = .31, p = .001$); and PID-5 Disinhibition of Facet 3 ($r = .44, p < .001$); Meanness and Disinhibition were both associated with PCL-R Facet 4 ($r = .40, p < .001$ and $r = .30, p = .002$). A similar pattern was found for the three LSRP factors. Meanness ($r = .38, p < .001$) and Disinhibition ($r = .33, p < .001$) were the better predictors of Antisocial Personality Disorder in the prison sample, whereas this pattern was less clear in the community sample ($r = .28-.32$). Both PID-5 Boldness ($r = .25, p = .002$) and Meanness ($r = .29, p < .001$) were the best predictors of Narcissistic PD in the community sample. Finally, Meanness was most strongly negatively associated with IRI Empathy scale ($r = -.41, p < .001$), whereas Boldness with the IRI Personal Distress scale ($r = -.51, p < .001$). These findings suggest the PID-5 trait facets can index the triarchic constructs and further research could guide the introduction of psychopathy into future revisions of the DSM-5.

- c) *Corporate psychopathy and leadership.* **Cynthia Mathieu**, Université du Québec a Trois-Rivières, **Robert D. Hare**, University of British Columbia, **Craig Neumann**, University of North Texas, **Paul Babiak**, Anubis-Research

Many of the behaviours exhibited by what the literature describes as "dark leaders" resemble the traits common to corporate psychopaths, as presented by Babiak and Hare (2006). In fact, Babiak, Neumann, and Hare (2010), using a sample of high-level managers, reported that psychopathy was positively associated with in-house ratings of presentation/charisma but negatively associated with ratings of responsibility/performance. A recent study on the relationship between psychopathy and the full-range model of leadership (Avolio & Bass, 2004) used a sample of students and self-report measures (Westerlaken & Woods, 2012). However, as suggested by Hogan and Hogan (2001), employees' ratings are the best single way to evaluate a manager's performance. In the present study we used the B-Scan 360 (Babiak & Hare, 2013), a new measure of corporate psychopathy that extends the four-factor model of psychopathy (Hare & Neumann, 2008) to industrial/organizational samples (Mathieu, Hare, Jones, Babiak, & Neumann, in press). This study is the first to empirically measure the relationship between employees' rating of their supervisor's psychopathic traits and their rating of the same supervisor on the full-range model of leadership (Transactional, Transformational and Laissez-Faire leadership) in a business sample. In total, 491 employees from a public service organization completed the survey during their work hours (participation rate of 91.6%). Participants rated

their immediate supervisor on the Multifactor Leadership Questionnaire (Avolio & Bass, 2004) and on the B-Scan 360 (Babiak & Hare, 2013; Mathieu et al., 2013). The B-Scan 360 total score and all of the B-Scan Factors were strongly negatively correlated with both transactional and transformational leadership styles and positively correlated with laissez-faire leadership and with all of the 12 sub-scales of the MLQ, with one exception: The “management by exception active subscale” (part of transactional leadership) was only correlated with Factor 3 (Unreliable/Unfocussed) of the B-Scan 360. B-Scan 360 total score and all of the B-Scan factors were negatively related with MLQ’s outcomes of leadership (extra effort, effectiveness and satisfaction with the leader). Overall, our results indicate that the B-Scan 360 total score and its four factors are strongly related with every leadership style and outcomes of the full range model of leadership. More specifically, the B-Scan 360 was negatively related to the two positive and effective leadership styles and positively related with laissez-faire leadership. Furthermore, our results confirm the finding by Babiak et al. (2010) that high ratings of psychopathic traits in leaders are associated with lower ratings of leader effectiveness. This study adds to this finding by also indicating that high ratings of psychopathic traits in leaders were related to lower levels of satisfaction with leaders’ abilities and extra effort (motivation to do more than expected of them). Moreover, our results indicate that the B-Scan 360, a measure of psychopathic traits, also seems to tap into leadership behaviours, supporting our hypothesis that at least one of the dark personalities, psychopathy, is at the root of dark leadership behaviours.

d) *Psychopathic traits and victim selection.* **Angela Book**, Brock University, **Kimberly Costello**, Brock University, **Joseph Camilleri**, Westfield State University

Numerous researchers have suggested that psychopaths are social predators (e.g. Book et al., 2007; Hare, 2001; Mealey, 1995), and may be adept at victim selection. We conducted two studies to examine this issue directly. Our research was designed to determine whether psychopathic traits enhance accuracy of perceptions of victim vulnerability. Research has shown that victims display characteristic body language, specifically in their walking style, and that people do use these cues to assess vulnerability to victimization (Grayson & Stein, 1981). Participants in both studies were asked to rate vulnerability to victimization after viewing 12 short clips of targets walking, and were also instructed to give reasons for their ratings. These reasons were then coded into various categories including the mention of body language, gait, dress, sex, body size, and environmental cues. We expected that Factor 1 traits would be positively related to accurate victim selection. As well, we predicted that people scoring higher on Factor 1 would be more likely to mention gait in their reasoning. Participants were 47 male undergraduate students. Psychopathic traits were measured with the Self-Report Psychopathy Scale: Version III. As expected, Factor 1 traits (Callous Affect/ Interpersonal Manipulation) were positively associated with accurate victim selection, even after controlling for Factor 2 traits. However, our second hypothesis was not supported. Factor 1 traits were not significantly related to the frequency of responses in which gait was mentioned as a reason. Participants were 47 inmates from a federal correctional facility, all of whom had been convicted of at least one violent offense. Psychopathic traits were assessed using the Psychopathy Checklist-Revised (PCL-R; Hare, 1993). As in Study 1, Factor 1 was positively correlated with accuracy in judging vulnerability. Contrary to findings in the student sample, inmates higher on Factor 1 were more likely to mention gait as a factor in their ratings. Our findings support the idea that psychopathic traits, specifically, Factor 1 traits may enable successful victim selection. Further, in the inmate participants, who had more experience in actual victim selection, those who scored higher on Factor 1 seemed to be cognizant of the importance of gait in their judgments of vulnerability.

e) *The relation of the hypersexuality to PCL-R facets and self-report factors of psychopathy in sex offenders.* **Raymond A. Knight**, Brandeis University

Etiological and typological models for rape and child molestation propose different roles for both the various components of psychopathy and for hypersexuality. Whereas the psychopathy factors and hypersexuality play a central role in etiological models of rape (Knight, 2010), they play an auxiliary role in child molestation (Daversa & Knight, 2007; Knight & King, 2012). Nonetheless, within both rapists and child molesters the same components of psychopathy have been found to covary with various measures of hypersexuality (Knight, 2012). The proposed talk further explores the nature of this relation, examining the covariation of self-report hypersexuality scales from Multidimensional Inventory of Development, Sex, and Aggression (MIDSA) both with archival file ratings of the four facets of the PCL-R and with MIDSA self-report scale analogues of both the Self-Centered Impulsivity Scale (SCI) of the Psychopathic Personality Inventory (PPI) and the PCL-R Antisocial Facet. Data for this investigation were derived from two offender samples: an incarcerated sample of 314 adult sex offenders from Minnesota and Massachusetts, whose archival records were rated on the PCL-R facets (Hare, 2003), and who were administered the MIDSA, and a second sample of 220 incarcerated sex offenders from Wisconsin and Maine, who were administered the MIDSA. The results yielded consistent covariations across the two independent samples between hypersexuality and both the Interpersonal Facet of the PCL-R and the MIDSA SCI analogue. No consistent relations were found between hypersexuality and either the PCL-R Antisocial Facet or the MIDSA Antisocial Factors. Research indicating potential links of the PPI SCI factor to neurochemical and neurophysiological hyperreactivity of the dopaminergic reward system (Buckholtz et al., 2010), and other results that have linked the reactivity of the same dopaminergic neurocircuitry with

sexual excitation and anticipatory sexual motivation (Bancroft, 2009; Stoleri et al., 2012) suggest a potential neural substrate that might help explain the consistent covariations of SCI and PCL-R Facet 1 with hypersexuality. Hypersexuality has also been found to covary with amygdala functioning. Amygdala deactivation has been found to be associated with hypersexuality and indiscriminate sexual behavior (Klüver & Bucy, 1939), and studies have linked deactivation of the amygdala to sexual arousal (Georgiadis & Holstege, 2005; Holstege et al., 2003). The specific regions of the amygdala related to hypersexuality are, however, not well delineated and require further research (Baird et al., 2007; Stoleri et al., 2012). Hypoactivity in amygdala responsiveness has consistently been found in individuals who are high in callousness-unemotionality (e.g., Sebastian et al., 2012), suggesting another potential neural substrate linkage between PCL-R Factor 1 and hypersexuality hypoactive amygdala responsiveness. Lynam and Miller's (2012) meta-analytic study linking SCI, rather than Fear-Dominance, to PCL-R Factor 1 indicates that the interface among SCI, callousness-unemotionality, hypersexuality, and amygdala-functioning warrants research attention. The fact that the covariations between hypersexuality and psychopathy are specific to PCL-R Factor 1 and the MDSA SCI analogue and do not extend to measures of antisociality has implications for theorizing about the potential subcomponents of psychopathy.

5:00p-8:00p **Registration (SOLARIUM)**

5:30p-6:30p **Welcome Reception, Student/Members Social, Cash Bar & Appetizers (SOLARIUM)**
(In honor of Jevon Scott Newman, student registrants will receive free drink vouchers. Pick these up at registration.)

6:30p-8:00p **Poster Session A (SOLARIUM)**

FRIDAY, JUNE 7
PARALLEL SESSIONS

7:30a-10:30a **Registration (GRAND BALLROOM FOYER)**

8:30a-10:00a **Psychopathy and Substance Use: Parsing Individual Differences in Brain Structure and Function, Kent Kiehl, Moderator (GRAND BALLROOM A & B)**

Psychopathy and substance abuse are comorbid conditions and exhibit overlapping neural substrates. Despite this, studies comparing associations between psychopathy vs. substance abuse and altered brain structure/function are rare, and many questions are unresolved. Which brain regions are linked to psychopathy, substance abuse, or both (and under what conditions)? Do associations depend on how substance abuse is measured? Which substances are included? Whether the interpersonal, affective, lifestyle or behavioral dimensions of psychopathy are examined? This symposium will address these issues while reporting results from neuroimaging studies of >1000 incarcerated psychopaths and nonpsychopaths with various substance use histories. Kent Kiehl will present voxel-based morphometry evidence of associations between psychopathy vs. substance abuse and altered brain anatomy. Carla Harenski will present functional MRI data on the association between psychopathy vs. substance abuse and moral judgment. Lora Cope tests the hypothesis that psychopathy is protective against physiological drug dependence using a functional MRI task of drug craving. Nathaniel Anderson compares the functional brain correlates of auditory oddball detection among groups of psychopathic and non-psychopathic substance abusers and non-substance abusers. This symposium is designed to bring timely attention to the importance of considering co-occurring substance abuse in neuroimaging studies of psychopathy.

a) *Psychopathy, substance abuse, and brain correlates of moral judgment.* **Carla Harenski, Keith Harenski, Kent Kiehl,** University of New Mexico

Functional neuroimaging studies have found that psychopaths show less engagement of limbic and paralimbic brain regions relative to nonpsychopaths while making moral judgments. The brain correlates of moral judgment in substance abuse, which often co-occurs with psychopathy, have not been studied. The extensive overlap between the brain regions implicated in psychopathy, substance abuse, and moral judgment highlights the importance of considering how aberrant functional brain responses associated with psychopathy during moral judgment might be explained by co-occurring substance abuse, and vice versa. In our previous study (Harenski et al., 2010) we found that psychopathy was associated with reduced brain responses to pictures depicting moral transgressions in the anterior temporal cortex and ventromedial prefrontal cortex. In addition, nonpsychopaths showed a positive correlation between amygdala response and moral violation severity ratings that was absent in psychopaths. Here we expanded the previous study (N = 72) by adding N = 128 additional psychopaths and nonpsychopaths and collecting detailed substance use histories from all participants. We examined whether the results of Harenski et al. (2010) were replicated in the larger sample, and whether any of the results were related to substance use measures. Functional magnetic resonance imaging (fMRI) was used to record hemodynamic activity in 200 incarcerated male participants while they made decisions regarding the “severity of moral violation” present in unpleasant pictures that did or did not depict moral transgressions. Participants were assessed for psychopathy using the Hare Psychopathy Checklist-Revised (PCL-R) and for substance use severity with the Structured Clinical Interview for DSM Disorders and modified Addiction Severity Index. Multiple regression was used to examine the correlation between PCL-R scores, total years of regular alcohol and drug use (marijuana, cocaine, amphetamines, heroin), total number of substance dependence diagnoses and hemodynamic responses during moral picture processing. Consistent with hypotheses and the results of Harenski et al. (2010), PCL-R scores were negatively correlated with hemodynamic responses in the anterior temporal cortex during moral picture processing. Nonpsychopaths showed a positive amygdala-severity rating correlation that was absent in psychopaths. Neither result was related to substance use scores. In contrast to the results of Harenski et al. (2010), psychopathy was not significantly correlated with responses in the ventromedial prefrontal cortex. Instead, vmPFC responses were positively correlated with both substance use measures, most strongly with number of dependence diagnoses. The results indicate that both psychopathy and substance abuse are predictive of brain responses associated with moral judgment. Psychopaths show reduced brain responses to morally-salient stimuli, consistent with the moral insensitivity that is characteristic of the disorder. The positive correlation between vmPFC responses, which are implicated in the decision-making processes underlying moral judgment, and substance abuse may reflect heightened sensitivity to morally-salient stimuli, or reduced neural efficiency to subserve moral judgments. These and other possible interpretations will be discussed.

b) *Psychopathy modulates brain responses to drug cues.* **Lora Cope,** University of New Mexico, **Gina Vincent,** University of Massachusetts, **Justin Jobelius, Prashanth Nyalakanti, Vince Calhoun, Kent Kiehl,** University of New Mexico

Recent neuroscientific evidence indicates that psychopathy is associated with abnormal function and structure in limbic (i.e., amygdala, hippocampus, anterior cingulate) and nearby paralimbic areas (i.e., posterior cingulate, insula, orbitofrontal cortex,

temporal pole). Given psychopath's tendency toward impulsivity, stimulation-seeking, and general antisocial behavior, it is not surprising that psychopathy and substance use disorders are highly comorbid. Craving is a fundamental component of substance use disorders, and can be defined as an intense desire or urge to use drugs. Regions that have been associated with craving include the amygdala, anterior cingulate, insula, and basal ganglia. Despite research finding that psychopaths are more likely to abuse drugs than nonpsychopaths, clinical experience suggests that psychopaths are less likely to become physiologically dependent on them and experience less craving. Psychopathy may be protective against dependence; however, the neurobiological mechanisms of this process are unknown. Given the overlap between regions involved in craving and those dysfunctional in psychopathy, we hypothesized a negative relationship between psychopathy and craving in limbic and paralimbic regions. One hundred thirty-seven adult participants (93 females) from two medium/maximum security correctional facilities were scanned on the Mind Research Network's 1.5T mobile magnetic resonance imaging (MRI) scanner. Participants were assessed for psychopathy using the Hare Psychopathy Checklist-Revised (PCL-R), and for drug abuse and dependence using the Structured Clinical Interview for DSM Disorders (SCID). All participants met DSM-IV criteria for lifetime dependence on methamphetamine, heroin, or cocaine. During scanning, participants were presented with pictures depicting drug-related and neutral stimuli. Drug-related pictures depicted specific substances of abuse (e.g., white powder), drug paraphernalia (e.g., needle), or people using drugs. Neutral images were not drug-related and were non-rewarding (e.g., clouds, a pen). After viewing each image, participants indicated their level of subjective craving on a sliding scale from 1-5. Blood oxygenation level dependent (BOLD) activity for drug-related versus neutral pictures was correlated with PCL-R scores to determine the relationship between psychopathy and craving. Consistent with hypotheses, psychopathic traits were negatively correlated with the hemodynamic response in areas that include the anterior cingulate, posterior cingulate, caudate, and right insula during the viewing of drug-related pictures compared to neutral pictures. The negative effect on craving was driven primarily by Facet 4 of the PCL-R, which captures the developmental and life-course persistent aspects of psychopathy. Results were substantively the same when participant sex, age, urinalysis results, and number of substance dependence diagnoses were covaried. Analysis of the relationship between psychopathy and the hemodynamic response to drug cues indicates that psychopathy modulates the neurobiological craving response. Further work is needed to more fully elucidate how the relationship between craving and psychopathy impacts drug dependence symptomology in these individuals. These results also reinforce that individual differences such as psychopathy are important for understanding and treating substance abuse.

c) *Psychopathy and substance dependence: Differential effects in a target detection task.* **Nathaniel Anderson, Prashanth Nyalakanti, Kent Kiehl**, University of New Mexico

A great deal of research has demonstrated abnormal brain responses during oddball, target-detection tasks associated with psychopathy, substance dependence, antisocial behavior, and general externalizing traits. Given recent fMRI evidence demonstrating the involvement of large, distributed brain networks during salient target and novel stimulus processing, these tasks are proving to be rich paradigms for investigating functional processing differences underlying a variety of psychiatric disorders. Extant research has largely demonstrated attenuated brain responses in target detection tasks among substance dependent individuals and populations characterized by externalizing vulnerability. There has been more variability in reports examining psychopathy, with some advocating opposing trends driven by factor elements of the construct. This study examined hemodynamic activity associated with each of three conditions in a target detection task in an attempt to parse the contributing effects of psychopathy and substance dependence on apparent task-related differences. 173 adult male inmates were scored for psychopathy using the Psychopathy Checklist-Revised (PCL-R) PCL-R and substance dependence using the Structured Clinical Interview for DSM disorders (SCID). An additional 35 non-incarcerated healthy controls without a history of substance abuse were recruited to aid in comparisons. All participants completed an auditory oddball task comprised of standard, target, and novel stimuli, while BOLD activations were recorded using a 1.5T fMRI scanner. For incarcerated participants, models accounting for continuous scores on psychopathy and substance dependence severity (total # of SCID substance dependence diagnoses) were used to determine relationships between brain activity, PCL-R scores, and substance dependence. Subsequent group analyses categorized participants as psychopaths, incarcerated non-psychopathic substance-abusers, incarcerated non-psychopathic non-substance-abusers, and non-incarcerated healthy controls. Differences in BOLD activation patterns between groups were examined for each stimulus category. The most robust effects, surviving correction for whole-brain multiple comparisons, demonstrate widespread negative associations between BOLD activity and Factor 1 PCL-R scores, controlling for substance dependence, during frequent standard stimuli. This effect may be responsible for concurrent findings of widespread positive associations between BOLD activation and PCL-R scores during infrequent target and novel stimuli, when the standard stimulus is used as a comparison baseline. In group comparisons, including healthy controls, this effect persists strongly with robust differences occurring between groups differing on psychopathy, but not between groups differentiated by substance dependence. Oddball, target detection tasks tap into basic cognitive processes involved in evaluating and attending to features of our environment. The apparent differential in standard stimulus processing has broad implications for our understanding of basic cognitive features of psychopathy. In addition, the apparent impact this difference has on other task-related comparisons introduces important methodological issues. Cognitive implications, methodological issues, and future directions for this work will be discussed.

- d) *Differential effects of psychopathy and substance use on gray matter volumes in incarcerated adult and adolescent males.* **Kent Kiehl**, University of New Mexico, **Lora Cope**, University of New Mexico, **Elsa Ermer**, Adelphi University, **Prashanth Nyalakanti**, University of New Mexico, **Vince Calhoun**, University of New Mexico

Recent structural imaging studies in both community and prison samples support the view that psychopathy is associated with brain abnormalities in both limbic and paralimbic regions. The pervasive nature of emotional and behavioral symptoms in psychopathy suggests that several associated brain regions may contribute to the disorder, but the relationship between brain structure and function is not fully understood. Psychopathy and substance use disorders are highly comorbid, and several previous studies have linked substance use to differences in regional brain structure. Here we discuss the neurodevelopmental course of psychopathy and its comorbidity with substance use disorders. Incarcerated adult (n = 254) and adolescent (n = 191) males were scanned on the Mind Research Network's 1.5T mobile magnetic resonance imaging (MRI) scanner. Participants were assessed for psychopathy with the Hare Psychopathy Checklist-Revised (PCL-R) or Psychopathy Checklist-Youth Version (PCL-YV), and for substance use with the Structured Clinical Interview for DSM Disorders (SCID) and modified Addiction Severity Index. High resolution structural images were analyzed using voxel-based morphometry (VBM). Psychopathy and substance dependence scores were correlated with regional gray matter volumes to test for structural differences in psychopathy and substance use. All analyses controlled for the effects of age and brain size. Consistent with predictions, psychopathic traits (controlling for substance dependence) were associated with regional gray matter volumes in diffuse paralimbic regions. In adults, psychopathic traits were associated with decreased regional gray matter volume in orbitofrontal cortex, temporal poles, posterior cingulate cortex, parahippocampal cortex, amygdala, and hippocampus. In adolescents, psychopathic traits were associated with decreased regional gray matter volume in orbitofrontal cortex, temporal poles, parahippocampal cortex, and posterior cingulate cortex. In addition, there was a positive association between gray matter volume and PCL-YV scores in prefrontal cortex. Substance dependence in adults (controlling for psychopathy) was associated with increases in occipital areas and decreases in posterior cingulate cortex. There were no regions associated with substance dependence in the adolescents. Gray matter differences related to psychopathy were largely consistent across adolescent and adult males. In contrast, differences related to substance dependence were not the same in adults and adolescents. These results strengthen the interpretation that paralimbic regions are central for understanding neural dysfunction associated with psychopathic traits and that psychopathy is best conceptualized as a neurodevelopmental disorder. These results also address the debate regarding brain structure and its relation to personality versus behavior.

Clarifying the Role of Boldness/Fearless Dominance in the Psychopathy Construct, **Laura E. Drislane**, Moderator
(GRAND BALLROOM C & D)

Recent meta-analytic work on the external correlates of the Psychopathic Personality Inventory (Miller & Lynam, 2012; Marcus, Fulton, & Edens, 2013) has initiated debate surrounding the role of Fearless Dominance (FD; alternatively labeled boldness; cf. Patrick et al., 2009) in the nomological network of psychopathy. Results of these meta-analyses suggest that scores on FD are primarily associated with indices of adaptive functioning, traits not typically associated with mental disorders. In the spirit of scholarly exchange, the present symposium aims to clarify the role of FD/boldness in the psychopathy construct by demonstrating that while FD reflects core features of imperturbability, (1) FD is not entirely adaptive, and (2) FD interacts with other dimensions (e.g., disinhibition) to predict clinical outcomes historically emphasized in the syndrome. Chris Patrick will present findings demonstrating that boldness interacts with disinhibition in the prediction of crimes. Noah Venables will discuss the role of boldness in differentiating psychopathy from APD. Martin Sellbom will describe several studies demonstrating additive and non-additive effects of FD on maladaptive outcomes (e.g., recidivism, treatment failure). John Edens will present data examining layperson and forensic clinician perceptions of boldness and its relation to psychopathy. Finally, Dr. Scott Lilienfeld will reflect on the implications of these findings in the context of current debates in the field.

- a) *Boldness interacts with disinhibition to predict higher criminal offending as indexed by official registry data in a large male epidemiological sample.* **Christopher J. Patrick**, Florida State University, **Andre Sourander**, University of Turku, **Kenneth S. Kendler**, Virginia Commonwealth University, **Guler Arsal**, Florida State University, **Uma Vaidyanathan**, University of Minnesota, **Steven H. Aggen**, Virginia Commonwealth University, **Lauri L. Sillanmaki**, University of Turku, **Henrik Elonheimo**, University of Turku

The Triarchic model of psychopathy, which was based in part on Cleckley's notion of a masked form of pathology, conceives of the disorder in terms of extremes along three separable phenotypic dimensions of boldness (fearless dominance), meanness (callous-unemotionality, or antagonism), and disinhibition (externalizing proneness). The model was proposed as a basis for integrating differing conceptions/measures of psychopathy, for linking the study of psychopathy to other domains of clinical inquiry, and for encouraging new investigative approaches and tackling of novel research questions. One key issue of relevance to the model that has risen to the fore in the literature is whether boldness entails tendencies that are purely

adaptive, and should be considered ancillary to psychopathy, or if it instead contributes directly to maladaptive outcomes along with serving a “masking” role. The current study addressed this question using data from the Finnish Army Recruit Study (FARS), a large-scale (N~4000) epidemiological investigation of young men assessed for psychopathy and other clinical problems in the context of a national military call-up. Archival records of criminal behavior were available in the form of offense data from the Finnish national registry. Participants were adult men recruited from the Finnish military call-up roster during Fall 2009. The call-up is a procedure for assessing suitability for military service that all Finnish male citizens undergo at age 18. Thus, study participants comprised a representative sample of Finnish men born in the year 1991. Call-up respondents were given the option of completing questionnaires that included a Finnish version of the Triarchic Psychopathy Measure (TriPM), an inventory developed for assessing psychopathy through distinct Boldness, Meanness and Disinhibition subscales. Most men in the call-up cohort (93.8%; N = 4,043) consented to completion of questionnaire measures. Consent was also requested (separately) for accessing criminal offense histories from national registry records; of those for whom TriPM scale scores were available, 3,415 consented to having their criminal records accessed. Relations between continuous TriPM scale scores and history of offenses of differing types (theft, vandalism, other property, violent, drug, DUI, traffic, miscellaneous), each coded as 0=no occurrences or 1=one or more occurrences, were evaluated using logistic regression analyses. The interaction of Boldness with Disinhibition was expressed as the product of standardized scores on these TriPM scales. Scores on the Disinhibition and Boldness scales of the TriPM each contributed uniquely to prediction of crimes of all types when entered concurrently as predictors (ORs ranged from 1.50 - 2.70 for Disinhibition, and from 1.21 - 1.51 for Boldness). Additionally, the Boldness x Disinhibition interaction term contributed to prediction of crimes of particular types (theft, vandalism, other property offenses, DUI) over and above the individual scale variables (with ORs ranging from 1.20 - 1.24). These findings provide empirical evidence for a contributory role of high levels of dispositional boldness to maladaptive outcomes consisting of offense behaviors resulting in contact with the criminal justice system.

- b) *Differentiating psychopathy from antisocial personality disorder: A triarchic model perspective.* **Noah C. Venables**, Florida State University, **Jason R. Hall**, University of South Florida, **Christopher J. Patrick**, Florida State University

There is currently considerable debate regarding the boundaries and nomological network surrounding the psychopathy construct, including the status of deficient anxiety or fear as core elements versus peripheral concomitants (Miller & Lynam, 2012; Skeem et al., 2011). The recently proposed Triarchic model of psychopathy (Patrick et al., 2009) represents an effort to reconcile alternative approaches to conceptualizing the disorder, which have varied historically in the degree to which maladaptive criminogenic features (e.g., callousness, aggression, antisociality) have been emphasized relative to features entailing low anxiousness and social efficacy. The Triarchic model proposes that alternative conceptions differ in relative emphasis placed on three distinguishable phenotypic constructs: disinhibition (deficient impulse control behavior and dysregulated negative affect), meanness (deliberate cruelty and aggressive exploitation of others), and boldness (relative fearlessness, resilience to stress, and social dominance). The aim of the present study was to investigate how the Triarchic model constructs are embedded within two commonly used psychopathy measures (Hare’s Psychopathy Checklist Revised and Lilienfeld’s Psychopathic Personality Inventory) as compared to DSM-IV defined Antisocial Personality Disorder (ASPD) in two samples of adult male offenders. Study participants consisted of adult male offenders from two settings: a medium security state prison (N=157) and an inpatient substance use treatment facility (N=169). Disinhibition and Meanness scores were derived from a 159-item version of the Externalizing Spectrum Inventory (Krueger et al., 2007; Venables & Patrick, 2012). The 19-item Boldness scale of the Triarchic Psychopathy Measure (Patrick, 2010) was also administered. We evaluated the validity of the Triarchic constructs in the prediction of psychopathy as assessed both by interview and institutional file review (Psychopathy Checklist Revised; Hare, 2003; PCL-R) and questionnaire (Psychopathic Personality Inventory; Lilienfeld & Andrews, 1996; PPI). Further, symptoms of ASPD were assessed by interview in the prison study and Conduct Disorder symptoms were assessed via self-report in the treatment facility. We found evidence for convergent and discriminant validity of the Triarchic constructs in the prediction of both PPI and PCL-R psychopathy facets, consistent with patterns hypothesized in the Triarchic model. The magnitudes of effects were consistent with previous studies of psychopathy demonstrating the impact of method variance on observed validity coefficients (Blonigen et al., 2010). Additionally, we found evidence for Boldness contributing incrementally (over and above Disinhibition and Meanness) in the prediction of interpersonal (both samples) and antisocial (prisoners only) features of psychopathy, but not ASPD child or adult symptoms. These results suggest that the interpersonal features of psychopathy, which in part reflect Boldness/Fearless-Dominance, importantly distinguish psychopathy from the more prevalent diagnosis of ASPD. Findings are discussed further in terms of how constructs of the Triarchic model are represented in facets of prominent psychopathy measures, the role of boldness in the nomological network of psychopathy, and the construct boundaries of psychopathy as compared to ASPD.

- c) *Examining the association between fearless-dominance/boldness and maladaptive outcomes: Additive and non-additive effects.* **Martin Sellbom**, University of Alabama

Fearless-Dominance (Boldness; Patrick et al., 2009) represents the combination of social dominance, low stress reactivity, and thrill-seeking behavior with little anticipatory fear. Although many of these personality traits can be traced back to Cleckley’s

original conceptualization of psychopathy (Patrick, 2006), this facet's relevance to the psychopathy syndrome has recently been questioned (Miller & Lynam, 2012). A central criticism concerns the lack of association with maladaptive behaviors, but most of the previous findings considered have not focused on non-additive (i.e., interactive) effects of Fearless-Dominance and other psychopathy facets directly predictive of such behaviors. The current investigation examined the additive and non-additive effects of Fearless-Dominance/Boldness and disinhibitory psychopathy traits in the prediction of various types of maladaptive outcomes in four samples. In three of these samples, Fearless-Dominance (FD) and Impulsive-Antisociality (IA) were estimated via the MMPI-2-RF (Kastner & Sellbom, 2012; Rock et al., in press; Sellbom et al., 2012), whereas in the fourth sample the Triarchic Psychopathy Measure (Patrick, 2010) was used to index Boldness and Disinhibition. The first sample consisted of 483 male domestic violence offenders undergoing treatment (Rock et al., in press). Hierarchical logistic regression analyses showed that estimated PPI IA (but not FD) scores were associated with increased risk for treatment failure ($z=3.79$, $p<.001$; $OR=1.16$) and recidivism at 1-year follow-up ($z=2.43$, $p=.016$; $OR=1.11$). Moreover, Fearless-Dominance scores moderated the association between impulsive antisociality and treatment failure ($\Delta\chi^2=6.50$, $p=.011$), in that higher scores strengthened the relationship between IA and treatment failure. A second sample was comprised of 393 university students in which the association between psychopathy and risky sexual behavior was examined (Kastner & Sellbom, 2012). A hierarchical regression analysis showed that both FD ($\beta=.14$, $p<.01$) and IA ($\beta=.31$, $p<.001$) contributed uniquely to this prediction. An interaction effect for the two psychopathy facets was also statistically significant ($\Delta R^2=0.02$, $p<.01$), indicating that high scores on both facets exponentiated this prediction. The third sample consisted of 513 criminal defendants accepted to a probation program for drug intervention in lieu of a felony conviction. A hierarchical logistic regression analysis showed that both MMPI-2-RF-estimated Fearless-Dominance ($z=2.55$, $p<.01$; $OR=1.09$) and Impulsive-Antisociality ($z=3.14$, $p<.01$; $OR=1.10$) scores were uniquely associated with an increased risk of failure to adhere to program requirements (i.e., a formal probation violation) within 12-months. An interaction effect failed to contribute incrementally to this prediction ($\Delta\chi^2 = 1.29$, $p=.26$). The final sample was comprised of 164 community-dwelling individuals of diverse backgrounds and overweighted toward externalizing proclivities. In addition to the TriPM, these individuals had also completed a criminal behavior checklist reflecting criminal versatility. A hierarchical negative binomial regression model showed that both Boldness ($z=4.91$, $p<.001$, $bStdX=1.57$) and Disinhibition ($z=6.74$, $p<.001$, $bStdX=1.77$) contributed uniquely to the prediction of criminal versatility. An interaction term was also significant ($\Delta\chi^2=4.56$, $p=.03$), indicating that high scores on both domains exponentiated this prediction.

- d) *Layperson and forensic clinician perceptions of boldness and its relation to psychopathy.* **John F. Edens**, Texas A&M University, **Shannon Toney Smith**, Texas A&M University, **John Clark**, University of Texas – Tyler, **Marianne Kristiansson**, Karolinska Institutet, **Karolina Sörman**, Karolinska Institutet, **Olof Svensson**, National Board of Forensic Medicine, Sweden, **Katarina Howner**, Karolinska Institutet, **Shilan Caman**, Karolinska Institutet

Although psychopathy is a widely studied phenomenon, relatively little is known about public sentiments concerning the label “psychopath” or the traits that practicing mental health professionals typically associate with this disorder. Examination of both clinician and layperson perceptions of mental disorder is important because these perceptions impact how individuals labeled as “disordered” are treated in society, particularly in the legal system (e.g., Edens et al., 2005; Corrigan et al., 2001). This presentation will review findings from three non-overlapping data sets regarding perceptions of psychopathic traits, focusing in particular on the perceived relationship between putatively adaptive personality features (e.g., boldness) in relation to the more maladaptive traits typically associated with psychopathy. Study 1: 285 community members attending jury duty reviewed a case vignette regarding a capital murder trial and then rated their perceptions of the defendant's psychopathic characteristics, loosely based on the PCL-R and other characteristics potentially associated with psychopathy (Edens et al., in press). Participant ratings of psychopathy were strongly associated with ratings on measures of his perceived boldness, as well as intelligence, violence potential, and perceptions that he was “evil”. New analyses from the Edens et al. data set will be presented at the conference focusing specifically on the boldness ratings and their association with socially undesirable/maladaptive characteristics. For example, preliminary findings indicate that ratings of boldness significantly predicted “evil” ratings ($r=.32$) and the defendant's perceived potential for future violence ($r=.22$). Study 2: 402 U.S. community members attending jury duty were asked to complete prototypicality ratings of what they considered to be “psychopath” based on the Comprehensive Assessment of Psychopathic Personality (CAPP). Three items were added to the standard CAPP prototypicality protocol to more directly tap characteristics of boldness: Socially bold (dominant, socially assured, persuasive); Emotionally stable (self-confident, emotionally resilient, optimistic); and Adventurous (courageous, thrill-seeking, tolerant of uncertainty). Preliminary analyses of this data set indicate that prototypicality ratings (1=not typical 7=highly typical) for these items were moderate for Socially bold (4.40) and intermediate for Adventurous (4.03), but quite low for Emotionally stable (2.81). Participants also provided ratings concerning perceptions of other theoretically relevant constructs, such as perceived violence proneness, and responded to questions concerning how psychopaths should be treated within the legal system. Analyses of the relationship between these constructs, the CAPP ratings, and boldness will be presented at the conference. Study 3: 90 clinical staff members were recruited from the assessment units at the Departments of Forensic Psychiatry (Stockholm and Gothenburg) at the National Board of Forensic Medicine, as well as from two units for forensic psychiatric care in Stockholm, Sweden. Participants completed a Swedish translation of the research protocol

identical to that described in Study 2 above. Data collection has been completed as of January, 2013. Analyses similar to those described in Study 2 above (e.g., prototype ratings of boldness items and correlations with other theoretically relevant constructs) will be presented.

e) Discussant, **Scott O. Lilienfeld**, Emory University

10:00a-10:30a **Break (GRAND BALLROOM FOYER)**

10:30a-12:00p ***Psychopathy Within the Social Context: The Interpersonal Behavior of Psychopathic Individuals and its Underlying Mechanisms*, Kasia Uzieblo, Moderator (GRAND BALLROOM A & B)**

Psychopathy is strongly related to a wide range of antisocial and dangerous health behaviors (e.g. aggression and drug abuse), increasing the risk for institutionalization, and thus, clearly hampering the psychosocial well being of psychopathic individuals. Only a few studies have explored psychopathy beyond the individual level, explicitly taking into account the interpersonal context. The current symposium aims to give an overview of the most recent findings regarding the interpersonal behavior of psychopathic individuals in everyday life, and on the underlying mechanisms influencing this social behavior. First, the effect of psychopathy on the psychosocial well being of significant others, and on the social interactions within the family context, will be explored. In a second presentation the differential effects of the psychopathic facets on the relationship between attachment style and criminal behavior will be investigated in depth. The third presentation will explore the specific contexts in which the characteristic deviant empathic ability in psychopathy becomes apparent. Finally, a specific form of interpersonal behavior, i.e. negotiation behavior, will be investigated in relation to psychopathy.

a) *Psychopathy within the family context: The influence of psychopathy on the relationship with the child and partner.* **Kasia Uzieblo**, Thomas More University College & KU Leuven, **Lien Geukens**, KU Leuven, **Barbara Soetens**, Thomas More University College & KU Leuven, **Patricia Bijttebier**, KU Leuven

Psychopathic individuals are characterized by a callousness-unemotionality, a manipulative and deceitful interpersonal style, and an antisocial, impulsive lifestyle. Despite the exponential growth of psychopathy research we only know little about the social interactions of psychopathic individuals with their family members. Two studies indicating that psychopathic traits significantly influence the interactions with and the well being of family members, will be presented. In a first study, we investigated the relationship between psychopathic traits in parents, attachment style towards the child, parenting behavior and problem behavior in the child. Results show that psychopathic traits in parents were primarily associated with a deviant attachment style, an ignorant parenting style, and problem behavior in the child. Psychopathy in parents was also related with an increase of problem behavior in the child. In a second study, the relationship between psychopathic male partners and the psychosocial and relational well being of the female partner was explored. Results indicate that psychopathic traits in the male partner were related with an increase of psychosocial problems and a decrease of relational satisfaction in the female partner. Implications for our understanding of the manifestation of psychopathy in the family context will be discussed.

b) *The moderating role of psychopathic traits on the relationship between attachment style and criminal behavior.* **Sarah L. Hampton**, Rosalind Franklin University of Medicine and Science, **Erica J. Hynes**, Rosalind Franklin University of Medicine and Science, **Michelle Yeh**, McKinsey and Company, **David S. Kosson**, Rosalind Franklin University of Medicine and Science

As parents and teachers struggle to modify the distressing interpersonal behavior of youth with psychopathic traits, researchers and clinicians are increasingly interested in assessing the impact of environmental factors on the behavior of such youth. Although results are not entirely consistent, several studies have reported evidence that ineffective parenting is associated with 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). On the other hand, Edens, Skopp, and Cahill (2008) examined the relationship between harsh disciplinary practices and psychopathy using the Psychopathy Checklist: Youth Version (PCL:YV) and reported opposite effects for the interpersonal versus the affective dimensions of psychopathy. Harsh/inconsistent discipline was especially associated with antisocial behavior for youth low in affective features and youth high in interpersonal features. The current study was designed to advance knowledge of psychopathic traits as moderators of environmental factors in several ways. First, because no prior studies of this issue have examined overall psychopathy scores, we chose to examine ratings of overall psychopathy as well as several psychopathy facets. In addition, because all prior studies have assessed antisocial outcomes using parent or child reports of conduct problems rather than official records, we examined official criminal charges. Finally, because most prior studies have focused on harsh and ineffective parenting, the current study was designed to examine parent-child attachment, another important component of the parent-child relationship. We examined whether psychopathic traits moderated relationships between parent-child attachment and official reports of total, non-violent, and violent criminal charges in a sample of 100 male

adjudicated adolescents in North Carolina. Regressions indicated significant interactions between psychopathic traits and levels of attachment, but the pattern of these interactions was different for analyses of different types of crime. In particular, among youth with higher scores on overall psychopathy and on the lifestyle facet of psychopathy, stronger attachment to parental figures was associated with fewer criminal charges overall. Similarly, among youth with higher scores on overall psychopathy, stronger attachment was associated with fewer non-violent crimes. In contrast, a different kind of interaction was evident in analyses of charges for violent crimes. At low levels of the affective facet and high levels of the antisocial facet, there was a relationship between stronger attachment and fewer charges for violent crimes. These findings extend our knowledge of the moderating role of psychopathic traits to parent-child attachment and suggest that the implications of parent-child attachment may depend on both the component of psychopathy and the criteria examined. Whereas findings for violent crime corroborated previous research suggesting positive parent-child interactions are only effective for youth low on the affective facet of psychopathy, findings for nonviolent crime and overall crime suggest that healthy attachment can be protective for youth high in psychopathic traits. These results suggest it is important to examine multiple components of psychopathy and to consider the possibility that parent-child factors may be protective for some criteria but not others.

- c) *Shared circuits and empathy in psychopathy.* **Harma Heffert**, University Medical Center Groningen, **Valeria Gazzola**, National Institutes of Health, The Netherlands, **Johan A. den Boer**, University Medical Center Groningen, **Arnold A. J. Bartels**, National Institutes of Health, The Netherlands, **Christian Keysers**, National Institutes of Health, The Netherlands

Psychopathy is a personality disorder associated with a profound lack of empathy. Research shows that empathy and its variation is associated with how strongly people activate brain regions involved in their own actions, emotions and sensations, while viewing those of others. These so-called vicarious responses occur in shared circuits and might provide the observer with an embodied sense of the experiences of others. Because of its suggested relationship with empathy, we were interested to see whether the activation of shared circuits might be less strong in subjects diagnosed with psychopathy. We have therefore compared brain activity of psychopathic individuals with healthy control subjects, while they observe short movies of hand interactions under two conditions: a free viewing observation condition and a directed empathy condition. In order to locate brain regions involved in these hand interactions, we additionally asked our subjects to experience similar interactions themselves with the researcher. The movies that were presented during the first part always displayed two hands interacting with each other in a loving, physically painful, socially painful or neutral way. We used hand interactions in our paradigm, instead of the more often used facial expressions, because our hand interactions show clear goal directed actions, sensations and emotions, and can thereby induce responses in regions associated with the execution of actions and the experience of emotions and sensations at once. We observed that brain regions involved in experiencing these interactions were not spontaneously activated as strongly in the patient group while viewing movie clips in the free viewing condition. However, this group difference was markedly reduced when we specifically instructed participants to feel with the actors in the movies during the directed empathy condition. Our results suggest therefore that psychopathy is not a simple incapacity for vicarious activations, but more related to a reduced spontaneous activation of shared circuits upon observing others performing actions or experiencing sensations or emotions.

- d) *Psychopathic traits in general population and their relationship to self-perception as a negotiator.* **Hilger Schneider**, Stadtallendorf, **Hedwig Eisenbarth**, University of Regensburg & University of Colorado at Boulder, **Kasia Uzieblo**, Thomas More University College & KU Leuven

In criminal populations, the relationship of psychopathic traits and a manipulative and self-centered interpersonal style has been shown repeatedly. However, in non-criminal populations, this relationship can be assumed, but has less been investigated so far, although it has a strong impact on every-day life. Thus, this research investigated how psychopathic traits in a general population sample interact with self-reported negotiation style. Using an online survey, 452 participants from different professional backgrounds were asked to complete a questionnaire on psychopathic traits (Psychopathic Personality Inventory Revised; Lilienfeld & Widows, 2005) and a questionnaire on negotiation styles. In addition, they reported their negotiation behavior for two standard negotiation situations. The results point out a strong predictability of the acceptance of a hard negotiation style by psychopathic traits, especially by fearless-dominance features. Also, there was a significant relationship between high psychopathic traits and lower restraint for the use of manipulation in negotiations. More importantly, the self-reported use of a hard negotiation style in two standard situations could be predicted in participants with higher psychopathic traits. Thus, self-reported negotiation behavior of psychopathic persons in general population seems to be manipulative and dominant.

- e) Discussant, **Mark R. Dadds**, University of New South Wales

Paper Session, Essi Viding, Moderator (**GRAND BALLROOM C & D**)

- a) *Amygdala activity in response to fearful faces in children with conduct problems with/without CU traits.* **Essi Viding,** University College London

The level of Callous-Unemotional traits (CU) appears to be associated with different patterns of emotional reactivity in children with conduct problems (CP). Behavioral data suggest that fear processing deficits in children with high CU may extend to stimuli presented below conscious awareness (preattentively). On the other hand, at least fear recognition deficits may be ameliorated in children with high CU when they are asked to focus on the eye region of the face. Children with low CU, on the other hand, can appear hyper-vigilant to threat cues. Two recent studies from our groups have investigated the amygdala activity to fearful faces in boys with CP and high vs. low CU (CP-HCU and CP-LCU), as compared with typically developing (TD) boys. The first of these studies employed pre-attentive presentations of fearful faces, while the second study deliberately cued the attention to the eye region of the face. Study 1: Functional MRI (fMRI) was used to measure neural responses to fearful and calm faces presented preattentively (for 17 ms followed by backward masking) in boys with CP-HCU traits (N=15), CP-LCU (N=15), and TD boys (N=16). Amygdala response to fearful and calm faces was predicted to differentiate groups, with the greatest response in boys with CP-LCU and the lowest in boys with CP-HCU. This pattern of activation was observed in the right amygdala. The findings were not explained by symptom levels of CP, ADHD, anxiety or depression. These data demonstrate differential amygdala activity to preattentively presented fear in children with CP grouped by CU, with CP-HCU associated with lower amygdala reactivity. Study 2: fMRI was used to measure neural responses to fearful and calm faces in children with CP/HCU, CP/LCU and TD Controls (n=17 per group). On half of trials participants looked for a blue dot anywhere within target faces; on the other half, participants were directed to focus on the eye region. Reaction time (RT) data showed that CP/LCU were selectively slowed in the fear/eyes condition. For the same condition, CP/LCU also showed increased amygdala and subgenual ACC/OFC responses compared with TD Controls. RT and amygdala response to fear/eyes were correlated in CP/LCU only. No effects of focusing on the eye region were observed in CP/HCU. These data contribute to our understanding of affective processing profiles of children with CP and different levels of CU and underscore the usefulness of CU in delineating a meaningful subgroup of children with CP.

- b) *Callous-unemotional traits, aggression, and aversive startle modulation in juvenile offenders.* **Jason R. Hall, Eva R. Kimonis,** University of South Florida

Reduced aversive startle potentiation is a well-replicated physiological correlate of psychopathy in adults (e.g., Vaidyanathan et al., 2011), which is consistent with the notion that psychopathy is associated with a deficit in defensive (or fear) reactivity (Fowles & Dindo, 2006). Likewise, callous-unemotional (CU) traits in adolescence —”considered to be a developmental precursor to adult psychopathy —”are associated with deficits in amygdala response and recognition of fearful emotion displays in others (e.g., Marsh et al., 2008), suggesting that psychopathic traits in both adults and adolescents reflect similar neurobehavioral underpinnings. However, it remains unclear whether callous-unemotional traits are also related to deficits in aversive startle potentiation, which would provide a strong link between adult and juvenile manifestations of psychopathy. Thus, the primary aim of the present study was to examine aversive startle potentiation in relation to CU traits in a sample of male juvenile offenders. In light of research indicating a link between emotional deficits and higher levels of aggression in high-CU children (e.g., Kimonis et al., 2006), we also examined whether high-CU offenders who exhibit startle potentiation deficits would be more prone to aggressive behaviors. Finally, given the complexity regarding the developmental stability of psychopathic traits throughout adolescence (Lynam et al., 2008), we also examined the moderating impact of age in the relationship between CU traits, aggression, and startle modulation. The present sample consisted of 192 adjudicated juvenile offenders (ages 14-19) in a residential treatment facility. CU traits were assessed via the Inventory of Callous-Unemotional Traits (ICU; Frick, 2004), and aggressive tendencies were assessed using the Peer Conflict Scale (PCS; Kimonis et al., 2004). Participants completed an affective picture-viewing task with acoustic startle probes presented at varying intervals during picture presentation; the startle blink reflex was measured via electromyographic recording of orbicularis oculi muscle. Our analytic approach involved creating high and low CU groups using a quartile split on the ICU, and a median split of the sample based on age in years (median = 17). We also created groups on the basis of aversive startle modulation patterns (i.e., inhibition vs. potentiation for aversive pictures). Group analyses revealed a significant CU x Age x Valence interaction, such that high-CU participants evidenced a pattern of reduced startle potentiation for aversive pictures, but only in the older group. Additionally, we found that older high-CU offenders who exhibited an aberrant pattern of startle inhibition for aversive pictures (relative to neutral) reported significantly higher levels of proactive (but not reactive) aggression on the PCS relative to those who exhibited aversive startle potentiation. These findings provide further evidence of a link between CU traits and reduced defensive system reactivity, and suggest that high-CU juvenile offenders with such deficits may present a greater risk for proactive aggression. The results also raise questions regarding the measurement of CU traits at differing developmental stages, and the developmental trajectory of CU traits and their underlying etiology.

- c) *Elevated callous-unemotional traits are associated with altered cortical growth trajectories of the temporal lobe during typical development.* **Gregory L. Wallace, Dede Greenstein, Philip Shaw, Nancy Raitano Lee, Armin Raznahan, Liv Clasen, Alex Martin, Jay N. Giedd,** National Institute of Mental Health Intramural Research Program, NIH

We have previously shown that within a large, longitudinal sample of typically developing youth (>300 individuals, >700 scans) antisocial traits (using the total score from the Antisocial Process Screening Device [APSD]) demonstrate negative correlations with cortical thickness in bilateral anterior prefrontal cortices and that these relationships appear to be stable across childhood and into adulthood (Wallace et al., 2012; *Journal of Neuroscience*). However, cortical correlates with callous-unemotional (C-U) traits from the APSD have not been examined. This is an important gap to fill given that (a) it appears imminent that DSM-5 criteria for conduct disorder will add a C-U traits specifier and (b) the etiological significance of relatively high C-U traits in the context of typical development remains unclear. Therefore, we compared group differences in both cortical thickness and cortical thickness trajectories (i.e., change over time) between those with relatively high (APSD) C-U trait scores (≥ 4) versus those with lower scores (< 3). After correction for multiple comparisons, we found no differences in cortical thickness (i.e., no main effect of group). However, differences in trajectories of cortical thickness were observed. Specifically, we found greater cortical thinning in the high C-U traits group than in the low scoring group within temporal cortex. We will discuss these findings in light of existing models of cortical dysfunction associated with antisocial behavior and prior findings of cortical structure in conduct disorder with and without elevated C-U traits.

d) *Emotion processing among youth with primary vs. secondary CU traits: Evidence from three studies.* **Patricia K. Kerig**, University of Utah

A topic of long-standing interest in the study of psychopathy has been the proposition that a secondary type, characterized by a combination of high callousness and anxiety, can be differentiated from the classic or primary variety (Cleckley, 1976; Karpman, 1941; Porter, 1996). As confirmed in a small body of research involving youth (e.g., Kimonis et al., 2012; Lee, Salekin, & Iselin, 2009; Vaughn et al., 2009), central to the distinction between the two subtypes are purported to be differences in emotion processing and these are theorized to stem from experiences of childhood adversity. To date, the majority of studies conducted have focused on differences between the subtypes in responses to others' emotions, particularly distress cues; however, questions remain as to the accuracy of youths' recognition of emotions in others or in the self that might be associated with primary vs. secondary CU traits. To further investigate these questions, Study 1 included 159 youth recruited from an inpatient psychiatric hospital who completed self-report measures of anxiety and posttraumatic symptoms as well as a task assessing accuracy in facial recognition of emotions; mental health professionals completed ratings of CU. Cluster analysis revealed two distinct groups of high-CU youth and a MANOVA indicated that the secondary group exhibited higher levels of anxiety as well as posttraumatic stress, dissociation, anger, and depression compared to the primary group. ANCOVAs showed that, relative to the youth in the secondary PT group, youth in the primary PT group exhibited lower accuracy in recognizing the emotions of disgust and shame. Study 2 replicated these results in a sample of 360 juvenile justice-involved youth, among whom those in the secondary category similarly showed higher levels of anxiety, trauma exposure, and PTSD whereas those in the primary demonstrated deficits in the processing of disgust and shame. Study 3 included a second sample of 525 detained youth from whom self-reports of emotional awareness, emotional acceptance, and emotion regulation also were obtained. Similar patterns were found, with youth in the secondary category providing higher ratings on measures of anxiety, PTSD, and trauma exposure than those in the primary group. In addition, findings showed that youth in the secondary group reported lower levels of emotional awareness and emotional acceptance than those in the primary category. The findings of these three studies are consistent with theories regarding secondary CU as comprising a distinct variant among youth which is related to childhood trauma. Moreover, the results suggest that whereas primary CU may be associated with deficits in the recognition of emotions in other people, secondary CU may be associated with deficits in the recognition of emotions within the self.

e) *Psychopathic traits relate differentially to men and women's deficits in recognition of emotional faces and eye-movement while processing threatening stimuli.* **Leonardo Bobadilla, Chris Spencer, Lauren Miller**, Western Carolina University, **Elizabeth Lima**, VA Medical Center

Recent studies have focused on how attentional processing of fear cues relate to psychopathic traits (e.g., Baskin Sommers et al., 2011; Sylvers et al., 2011). However, the bulk of these studies have focused on males, both children and adolescents (e.g., Muñoz, 2008; Dadds et al., 2008) or adult prisoners (Baskin-Sommers et al., 2011). This focus on men represents a significant gap in the literature because the etiology and manifestation of psychopathy among women differs in important ways from men (Verona & Vitale, 2006). The two studies herein examined gender differences in attentional processes during a recognition of emotional faces task, and during a task examining participants' gaze patterns while observing threatening, sad, and neutral pictures. In study 1, the Psychopathic Personality Inventory short form (PPI, Lilienfeld & Andrews, 1996) was administered to 261 undergraduate students. Then, participants were presented with six computer morphing emotional expressions (surprise, anger, sadness, disgust, fear and happiness) and were asked to identify them (Frigerio et al., 2002). Participants were scored based on accuracy (0% to 100% correct) for recognition of each expression. The average scores from the identification task were then correlated for the whole sample and for each gender with subscales from the PPI. In study 2, the eye gaze patterns of 98 undergraduate students were recorded with a Tobii Studio eye tracker as they looked at threatening

and sad emotional pictures (e.g., man pointing a gun, child crying) on a computer monitor. Participants then completed the Triarchic Psychopathy Measure (TriPM, Patrick et al., 2009). Areas of interest (AOIs) for each picture were created by averaging the most observed areas of each affective picture by all participants. Then, time to first fixation to the AOI and total duration looking at the AOIs were calculated for each participant. Participants were separated by gender and correlations were run between TriPM subscales, and fixation times on the AOIs. Among females, Social Potency was negatively related to fear recognition ($r = -.248, p = .004$) while Stress Immunity was negatively related to anger recognition ($r = -.201, p = .021$). On the other hand, among males, Machiavellian Egocentricity and Fearlessness were negatively related to anger recognition ($r = -.129, p = .029$ and $r = -.186, p = .035$, respectively). For females, none of the factors of the TriPM had a significant relationship with initial fixation or total gaze duration to the AOIs. Among males there was a significant positive relationship between Disinhibition and total gaze duration for AOIs of threatening and sad pictures (all r s between .35 and .53). Meanness had a significant positive relationship to total gaze duration of pictures depicting threat (dog lunging, $r = .33, p = .04$ and gun pointed at viewer $r = .53, p = .01$). Among women, deficits in recognition of fear and anger are related to Social Dominance and Stress Immunity, which have been related to adaptive outcomes (Benning et al., 2003). Among men a mixed picture emerged as deficient anger recognition was related to Machiavellian Egocentricity, which has been related to negative outcomes but also to Fearlessness, which has been related to adaptive outcomes (Benning et al., 2003). Therefore, gender may moderate the relationship between emotional deficits and psychopathic traits, resulting in more adaptive outcomes for women in general. The second study suggests similar conclusions. Men high in traits characterized by disinhibition of behavior had a difficult time disengaging attention from all negative stimuli and men with high traits characterized by disaffiliative social dominance and aggression, “stare down” threatening stimuli.

12:00p-12:45p **Lunch (on your own)**

12:00p-1:30p **Registration (GRAND BALLROOM FOYER)**

12:45p-1:45p **Business Meeting (GRAND BALLROOM A & B)**

1:45p-3:15p **Novel Approaches to the Treatment of Psychopathic Traits in Youth and Adults, Andrea Glenn, Moderator (GRAND BALLROOM A & B)**

Research examining potential treatments for individuals with psychopathic traits is growing, but still limited. This panel contains four empirical studies which examine new methods for treating psychopathic traits. The first three studies aim to directly target the neurobiological deficits that have been observed in psychopathy, whereas the final study focuses on a cognitive approach focused on influencing motivation levels. The first study, conducted in adult psychopaths, examines the effectiveness of neurofeedback training, in which patients learn to regulate slow cortical potentials, allowing them to gain volitional control of brain activity in the prefrontal cortex. The second study, conducted in community volunteers, investigates the short-term effects of a selective serotonin reuptake inhibitor (SSRI) in reducing aggressive responding to provocation in individuals with primary psychopathic traits. The third study, conducted in conduct disordered youth with high levels of callous-unemotional traits, examines the effectiveness of three months of daily Omega-3 supplementation in reducing antisocial and psychopathic traits in these youth. The fourth study, conducted in youth with callous unemotional traits recruited from a detention center, examines the effectiveness of a motivational intervention in which participants are provided with information that intelligence is either dynamic or stable. Each of these studies provides promise for the treatment of psychopathy.

a) *Brain self-regulation in criminal psychopaths.* **Lilian Konicar**, Eberhard Karls University, **Ralf Veit**, Eberhard Karls University, **Niels Birbaumer**, Eberhard Karls University

Psychopaths belong to a larger group of people with antisocial personality disorders and can be characterized by several symptoms: deficits in empathy, lack of remorse, impulsivity, aggressiveness and lack of behavioral control. Recent studies support the hypothesis that psychopathic offenders show structural and functional deficits in paralimbic and frontal areas associated with anticipatory planning, emotion regulation, empathy and behavioral inhibition and control (Blair, 2007; Craig et al., 2009; Howland, Kosson, Patterson, & Newman, 1993; Raine & Yang, 2006). Additionally psychophysiological findings reveal differences in spontaneous brain activity as well as in event related potentials (Gao, Raine, & Schug, 2011; Hare, 1998; Kiehl et al., 2006). Based on studies using feedback of slow cortical potentials (SCP-Feedback) in children with Attention Deficit-/Hyperactivity Disorder (ADHD; Strehl et al. 2006), we hypothesize that also psychopathic patients can gain volitional control of their brain activity and may profit from learned prefrontal control. 14 psychopathic patients (7 sexual/ 7 violent offenders) from forensic psychiatry (Psychopathy-Checklist Score: mean= 29.64; PCL-R, Hare, 1991) performed a SCP-Feedback training with 26 sessions. During the SCP-Training patients learn to increase and to decrease (inhibit) cortical excitability. Successful learning, as defined by producing consequently negative/positive shifts in the required direction, could be observed. Psychophysiological and questionnaire pre/post- data reveal improvements in attention, impulsivity, empathy,

anger and aggression. Our results indicate that psychopathic patients can gain volitionally control of their prefrontal brain activity. Therefore, the impact of prefrontal SCP- Feedback training as a promising biologically-based treatment for psychopathic offenders has to be further investigated.

b) *What is the role of serotonin in psychopathy-related aggression? Experimental findings and implications for treatment.*

Jennifer Fanning, Yale University, **Mitchell Berman**, Mississippi State University

Psychopathy is a personality disorder that is characterized by disturbances in affective-interpersonal functioning (e.g., lack of empathy and remorse, narcissism, and shallow affect), by impulsive and antisocial behavior, and by high rates of aggression. Both psychopathy traits and impulsive aggression have been associated with neurobiologic abnormalities, particularly in serotonergic (5-HT) functioning. A recent study (Berman et al., 2009) examined the role of serotonin in modulating response to provocation in participants with and without significant histories of aggressive behavior. Eighty men and women participants were randomly assigned to receive either placebo or 40 mg of paroxetine. Paroxetine is a selective serotonin reuptake inhibitor (SSRI) which, when used as a single dose probe, acutely augments serotonin activity. Participants then engaged in a laboratory measure of provoked aggression in which they exchanged shocks with a fictitious opponent who became increasingly provocative by selecting increasingly intense shocks for the participant over the course of the task. The aggressive participants responded more aggressively on the task when provoked (as evidenced by the number of strong shocks they selected for the opponent), but only under the placebo condition. Aggressive participants receiving paroxetine were no more aggressive on the task than their non-aggressive counterparts. The results suggest that serotonin is involved in modulating response to provocation, either by enhancing behavioral control or reducing one's willingness to harm another person when provoked. In order to better understand the psychological constructs reflected in serotonin's role in mitigating aggression, in the present study, the interactive effects of 5-HT augmentation and psychopathy traits on aggressive behavior were examined in a subset of participants for whom psychopathy assessments were available. Forty-seven men and women participants completed a self-report measure of primary psychopathy (e.g., affective-interpersonal psychopathy traits) and secondary psychopathy (e.g., antisocial-impulsive psychopathy traits). Scores on these psychopathy scales were entered into a regression model along with gender, drug, and drug/psychopathy factor interactions, with behavioral aggression as the outcome measure. Primary (but not secondary) psychopathy traits were associated with provoked aggression on the task, but this relationship was mitigated in participants who received paroxetine. The results suggest that affective-interpersonal psychopathy traits are associated with aggressive responding to provocation and that serotonin functioning may play a role in this relationship. Lack of empathy is one feature of primary psychopathy and there is some research linking this construct to 5-HT. Crockett et al. (2010) presented research showing that augmenting 5-HT decreased the acceptability of harming others in hypothetical moral scenarios and decreased "harming" a confederate behaviorally in an economic decision making game. Together these studies suggest that 5-HT may regulate one's willingness to harm another person, a key disturbance in psychopathy. Further research will help to determine whether serotonergic agents (e.g., SSRIs) may be useful in treating psychopathy-related aggression.

c) *A randomized controlled trial of Omega-3 supplementation in youth with callous-unemotional traits.* **Andrea Glenn**, University of Alabama, **Yoon Phaik Ooi**, Institute of Mental Health, Singapore, **Tan Yan Lin**, Institute of Mental Health, Singapore, **Lim Shi Jie**, Institute of Mental Health, Singapore, **Weng Shih Jen**, Institute of Mental Health, Singapore, **Adrian Raine**, University of Pennsylvania, Rebecca Ang, Nanyang Technological University, **Daniel Fung**, Institute of Mental Health, Singapore

A growing body of evidence suggests that biological factors contribute to the development of psychopathy (Ermer et al., 2013; Viding et al., 2012), yet few intervention programs for youth with psychopathic traits have attempted to target biological factors. Omega-3 fatty acid supplementation may be one way of targeting neurobiological risk factors, as it has been found to enhance neural functioning, protect neurons from cell death, stimulate the growth of neurons, and regulate neurotransmitters such as serotonin and dopamine (Kitajka et al., 2004). Positive associations have been observed between reported dietary omega-3 intake and gray matter volume in the anterior cingulate cortex, hippocampus, and amygdala (Conklin et al., 2007), regions which have previously been implicated in psychopathy (Cope et al., 2012; White et al., 2013). The current double-blinded randomized controlled trial examined the effectiveness of either Omega-3 supplementation (400mg EPA, 600mg DHA daily) or placebo (sunflower oil) in reducing conduct problems in youth ages 9-16 recruited from a child behavior clinic in Singapore. Youth in the presently reported sample (n = 67; 15% female; average age = 10.9 years) received a diagnosis of Conduct Disorder and scored in the upper 30% of the total sample (n = 245) on the Callous-Unemotional subscale of the Antisocial Process Screening Device (APSD; Frick & Hare, 2001). Parents completed the APSD and the Child Behavior Checklist (CBCL; Achenbach, 1991) at baseline and after 3 months of supplementation. Repeated-measures ANOVA controlling for initial levels of the respective outcome variable revealed no differences between youth receiving Omega-3 (n=34) versus placebo (n=33) supplements on any of the outcome measures (all $ps > .18$; CBCL: Aggressive behavior subscale, Rule-breaking subscale, total Externalizing problems; APSD total score and subscales). However, in the Omega-3 and placebo groups combined, there was a significant overall reduction in externalizing problems

(CBCL) ($t = 2.8, p < .01$), aggressive behavior (CBCL) ($t = 3.1, p < .01$), callous-unemotional traits (APSD-Parent) ($t = 3.0, p < .01$), and total psychopathic traits (APSD-Parent) ($t = 2.0, p < .05$). No significant reductions were observed in rule-breaking behavior (CBCL), or the Narcissism and Impulsivity subscales of the APSD (all $ps > .16$). Findings were not moderated by age or gender. Of a subset of 45 youth, 84% of children reported that they believed they were taking Omega-3 versus placebo. Similarly, 87% of parents reported that they believed their children were taking Omega-3. These findings suggest that 3 months of daily Omega-3 supplementation at the dosage administered in this study does not produce behavioral improvements over and above those produced by placebo in youth with CU traits. The significant reduction in antisocial behavior and callous-unemotional traits (effect sizes ranging from .25 to .38) in the overall sample suggests the presence of a placebo effect. Future studies altering factors such as dosage, length of supplementation, and age of participants will be useful in exploring whether Omega-3 supplementation has potential in reducing antisocial behavior. In addition, examining various moderators of the effectiveness of Omega-3 will further our understanding of why some individuals may show improvements with Omega-3 supplementation whereas others do not.

- d) *Treatment of conduct problem youth with interpersonal callous traits: Incremental theories of intelligence.* **Randall T. Salekin**, University of Alabama, **Kim Sokolowski**, University of Alabama, **Abby Clark**, University of Alabama, **Marissa M. Abrams**, University of Alabama, **Whitey S. Lester**, University of Iowa, **Edward D. Barker**, University of London

Psychopathy is a severe personality disorder that is thought to be composed by interpersonal, affective, lifestyle and antisocial features. The nomological net that has been established through empirical investigations with adults is also now receiving similar evidence with children and adolescents (Salekin & Lynam, 2010). There is also some research to show that psychopathy may be a treatable condition, but the evidence is still quite thin on this topic (Salekin et al., 2010). In detention centers, a portion of youth display callous unemotional characteristics. Thus, this may be a highly critical group to target for intervention. Building on past research (Salekin et al., 2012), which showed that a message of incremental intelligence impacted thought production with interpersonally callous youth, the current study similarly examined the effect of a motivational intervention on conduct problem youth with psychopathic features but added additional components. Specifically, the current study examined conduct problems youths' theory of intelligence (stable versus incremental) upon task performance. Researchers assessed 40 juvenile offenders with psychopathic features and tested whether providing them with two messages regarding intelligence would affect their functioning on a task related to academic performance. The study utilized random assignment and employed a MANOVA design with 2 motivational conditions and 3 outcomes including fluency, flexibility, and originality. In addition, we examined the youth's performance on an implicit emotional response task named the WCT and the faces in the crowd task. Results showed that youth with psychopathic features who were given a message that intelligence is dynamic, were more fluent and flexible than youth who were informed that intelligence is static. That is, these youth produced more specific uses for a given stimuli (e.g., pencil) and more varied uses for that same object. Youth in the incremental condition also generated more positive words for a separate word completion task which involved filling several blanks in to complete a word. This finding addressed the issue of general mood at an implicit level rather than explicit level further supporting the notion that the intervention increased positive mood in participants when they received the message regarding incremental intelligence. The faces in the crowd task showed a differential relation with those in the dynamic group identifying happy faces in the crowd more quickly than sad faces. There were no significant differences between the groups in terms of originality on the alternate uses task. The implications of these findings suggest that initial motivational session could be quite beneficial for youth with callous unemotional traits. Such sessions may allow for increased broad thinking for youth with callous unemotional traits and may be quite beneficial with respect to preparing them for psychological therapy. In addition, single motivational sessions may prime youth providing for a more positive mindset toward psychological therapy. Limitations as well as future directions will also be discussed.

Paper Session, Daniel A. Waschbusch, Moderator (**GRAND BALLROOM C & D**)

- a) *Callous-unemotional traits and treatment response in elementary school age children with conduct problems.* **Daniel A. Waschbusch**, Florida International University, **Michael T. Willoughby**, University of North Carolina-Chapel Hill, **Sarah Haas**, Florida International University, **Sarah Helseth**, Florida International University, **Kathleen Crum**, Florida International University, **Amy Altszuler**, Florida International University, **J. Megan Ross**, Florida International University, **Erika Coles**, Florida International University

Numerous authors have suggested that developing new treatments for children with CU traits is a high priority (e.g., Farrington, 2005). Based on experimental studies, it has been asserted that modifying behavior therapy (BT) to emphasize reward and de-emphasize punishment may be an optimal approach (e.g., Moffitt et al., 2008). We present the preliminary results of two studies that examined this in a treatment context. Both studies were conducted in a summer treatment program that served children with both CP (defined as receiving an oppositional defiant disorder or conduct disorder diagnosis) and attention deficit/hyperactivity disorder (ADHD). The first study was a pilot project that examined whether BT could be

modified to improve its efficacy for children with CU traits. An alternating treatments design was used with 11 children with CP+CU to test the efficacy of increasing reward, decreasing punishment, or both together as compared to standard BT. Results showed that the best treatment response occurred during reduced punishment days, although there were considerable individual differences in treatment response. The second study used a within-subjects design to test the efficacy of modified versus standard BT as a treatment for children with CP+CU. Participants were 48 elementary school age children with CP and varying levels of CU. In the standard BT condition, rewards and punishment were used in a balanced manner to increase positive behavior and decrease negative behavior. In the modified BT condition, rewards for non-negative behavior were increased in frequency and magnitude and as little attention as possible was given to negative behaviors. In addition, in the modified condition children (versus adults) were given more control over their environment and additional procedures were implemented to foster the relationship between counselors and children. Each treatment condition was implemented for four consecutive weeks, with order of treatment counterbalanced across participants. Results showed that there was considerable variance across participants in their response to the treatments, with some children responding best to the modified BT, some responding best to standard BT, some responding to neither treatment, and some responding to both treatments. However, responses to treatment were not systematically associated with level of CU traits. Overall, results of these two studies provide mixed evidence as to whether emphasizing reward and de-emphasizing punishment is an optimal approach for treating elementary school age children with CP.

- b) *Callous-unemotional traits in children with a history of institutional care.* **Lucy McGoron**, The Center for the Promotion of Child Development through Primary Care, **Charles H. Zeanah Jr**, Tulane Medical School, **Paul Frick**, University of New Orleans, **Charles Nelson**, Harvard Medical School, **Nathan A. Fox**, University of Maryland

Bowlby (1951) used the term “affectionless psychopath,” to describe a group of adolescent thieves that displayed no guilt or compassion. Bowlby suggested that this behavior arises because of maternal deprivation, separation from caregivers and multiple early shifts in caregivers. Given that institutional care is associated with deprivation and exposure to multiple caregivers, it has been speculated that children with a history of institutional care are at risk for displaying “affectionless,” callous and unemotional behavior. Additionally, popular conceptualizations often confuse Reactive Attachment Disorder (RAD), which often develops through early deprivation, with psychopathy. Yet research has not examined associations between institutional care, RAD, and callous-unemotional (CU) traits. Additionally, the often-noted association between CU traits and conduct disorders has not been examined in this population. The present investigation examined three questions to fill this research gap. First, is institutional care related to CU traits? Second, what risk and protective factors (including early attachment security, early caregiving, early externalizing behavior, and number of caregiver transitions) are related to CU traits? Third, are CU traits and risk and protective factors independently or jointly related to RAD and conduct disorder? Participants were children from the Bucharest Early Intervention Project (BEIP) and their caregivers. As part of the BEIP, children living in institutions were randomized to a foster care group (FCG, $n = 68$) or care as usual group (CAUG, $n = 68$). A never institutionalized group (NIG, $n = 68$) was also recruited for comparison reasons. Children were assessed at 30, 42, and 54 months, and 8 years. Age 12 data collection is underway and thus far includes 119 children. During the age 12 assessment, caregivers completed the Callous-unemotional Traits Inventory, the Disturbances of Attachment Interview (to measure RAD), and the Diagnostic Interview Scale for Children (to measure conduct disorder). The Callous-unemotional Traits Inventory was used in two ways: summing all items to create total CU traits score and dichotomizing scores at a clinical cutoff. Analyses first revealed that compared to children in the NIG, children with a history of institutional care averaged higher total CU traits scores ($t [109.09] = 3.42, p < .01; M = 17.83, SD = 7.85$ and $M = 23.95, SD = 11.50$, respectively) and had more children in the clinical range of CU traits ($X^2 [1, n = 119] = 4.03, p < .05$). Compared to the FCG, children in the CAUG had more children in the clinical range of CU traits scores ($X^2 [1, n = 78] = 4.16, p < .05$). Next, only children’s externalizing ($\beta = .35, p < .01$) was related to CU traits. Finally, regression analyses revealed that CU traits and attachment independently predicted disinhibited RAD ($\beta = .40, p < .05; \beta = -.24, p < .05$, respectively) and conduct disorder ($\beta = .31, p < .05; \beta = -.25, p < .05$, respectively). Furthermore, CU traits were independently related to Inhibited RAD ($\beta = .47, p < .01$) and interacted with attachment in relation to inhibited RAD ($\beta = -.20, p < .05$). Children with low attachment security and high CU traits exhibited the most inhibited RAD. Results were generally consistent with speculations about CU traits in children with a history of institutional care and will be discussed in the context of the etiology of CU traits. Final analyses will include additional participants.

- c) *Psychometric properties and correlates of the Triarchic Psychopathy Measure in the Finnish Army Recruit Study (FARS).* **Andre Sourander**, University of Turku, **Christopher J. Patrick**, Florida State University, **Kenneth S. Kendler**, Virginia Commonwealth University, **Guler Arsal**, Florida State University, **Uma Vaidyanathan**, University of Minnesota, **Steven H. Aggen**, Virginia Commonwealth University, **Lauri L. Sillanmaki**, University of Turku, **Henrik Elonheimo**, University of Turku

Studies of psychopathic tendencies in young adults in the population at a large provide a valuable complement to investigation of psychopathy in adult correctional samples. Studies of this type can provide insights into how psychopathy is

manifested in individuals with little or no incarceration history or exposure to conditions associated with institutionalization. A key question in samples of this type is how differing facets of psychopathy may combine to produce differing behavioral outcomes varying in degree of maladaptiveness. The Triarchic model of psychopathy, which parses psychopathy into facets of boldness, meanness, and disinhibition, provides a useful framework for addressing this question. The current presentation focuses on findings from the Finnish Army Recruit Study (FARS), a large-scale (N~4000) epidemiological investigation of young men assessed for psychopathy and clinical problems of various types in the context of a national military call-up. A novel feature of the study is the availability of archival information in the form of official criminal history data as an index of maladaptive outcomes. Participants were adult men recruited from the Finnish military call-up roster during Fall 2009. The call-up is a procedure for assessing suitability for military service that all Finnish male citizens undergo at age 18. Thus, study participants comprised a representative sample of the overall cohort of Finnish men born in the year 1991. All participants were given the option of completing questionnaires consisting of Finnish versions of the Triarchic Psychopathy Measure (TriPM) and the Young Adult Self-Report inventory, which assesses for emotional and behavioral problems of various types including anxiety, depression, delinquency, and substance abuse. Most men in the call-up cohort (93.8%; N = 4,043) consented to completion of questionnaires. Consent was also requested (separately) for accessing criminal offense histories from national registry records; 90% of those completing questionnaires consented to having their criminal records accessed. The Finnish TriPM scales showed acceptable alpha reliabilities and internal-structural properties consistent with expectation, although the Disinhibition and Meanness scales were correlated more strongly than their English counterparts in American samples. Nonetheless, these scales, along with the Boldness scale, showed good convergent and discriminant validity in relation to YASR problem-behavior criteria--particularly when accounting for their overlap in regression models. Additionally, TriPM scores as a whole were positively predictive of criminal offense histories, such that extreme scorers as a group showed very high rates of offending compared with participants scoring at or below the median. Results of this study demonstrate how insights can be gained into the expression of psychopathic tendencies in the population at large through use of easily administrable self-report measures in conjunction with archival file records.

- d) *The predictive value of the TriPM and PPI-R in Dutch addiction care patients and non-clinical subjects.* **Sabrina E. Soe-Agnie, H. Nijman, Cor de Jong**, Nijmegen Institute for Scientist Practitioners

Antisocial and criminal behaviors are a major problem in the substance abusing clinical population. The role of psychopathy in this issue is often hard to investigate, since file information on criminal records, necessary for PCL-R scoring, is usually not available in Dutch addiction care. In addition, comparisons between forensic and community subjects are usually hard to make, due to the lack of (criminal) file information in the latter population. In the presented study, the Triarchic model of Psychopathy and the Psychopathic Personality model, which both focus on personality characteristics instead of criminal history, are examined on their predictive values for externalizing and internalizing behaviors in clinical samples from Dutch addiction care facilities. Next, these predictive values are compared to predictive values in non-clinical subjects. A sample of 181 inpatients from regular addiction care and forensic addiction care and 200 non-clinical subjects were included in the study. Subjects were eligible if they were 18 years or older, did not suffer from organic brain damage or severe psychotic disorder, were capable of reading the Dutch language, and had an IQ above 80. Both male and female subjects were included. We aimed at recruiting 20% female subjects and 80% male subjects, which is a representative distribution of the Dutch forensic and addiction care population. The Dutch versions of the Triarchic Psychopathy Measure (TriPM) and the Psychopathic Personality Inventory-Revised (PPI-R) were administered. Externalizing and internalizing behaviors in the month prior to the test administration was assessed with the Adult Behavior checklist, and the Adult behavior self-report version of Achenbach and Rescorla (2003). Next, regression models were applied to examine the predictive values of TriPM factors (Disinhibition, Meanness, Boldness) and the PPI-R factors (Fearless Dominance, Impulsive Antisociality) on problem behaviors. Both TriPM and PPI-R factors showed significant discriminant and convergent predictive validity for internalizing and externalizing behaviors in both clinical and non-clinical samples. However, some behaviors were predicted better by the TriPM (aggression for instance), while the prediction of other behaviors was enhanced by applying the PPI-R. For each different type of behavior and for each subgroup (clinical/non-clinical) different TriPM and PPI-R profiles were identified, which showed optimal prediction. In conclusion, both TriPM and PPI-R seem to be useful measures for research on psychopathy in Dutch addiction care and non-criminal populations. Further implications for clinical studies in addiction care and studies in non-criminal samples will be discussed in the presentation.

- e) *Mapping the triarchic model of psychopathy onto theoretical conceptualizations.* **Patrick J. Kennealy**, University of South Florida, **Jason R. Hall**, University of South Florida, **Jennifer L. Skeem**, University of California-Irvine.

Patrick, Fowles, and Krueger (2009) developed the Triarchic model of psychopathy to reconcile recurrent themes in historic and contemporary accounts of the disorder. This conceptualization focuses on three phenotypic constructs. Boldness is characterized by fearlessness, stress immunity and interpersonal dominance, which are consistent with primary psychopathy. Meanness is distinguished by callousness, a lack of empathy and predatory aggression, which are central to the theory of McCord & McCord. Disinhibition is characterized by impulsivity and under control of negative emotions, which are

congruent with secondary psychopathy. This study investigates if the Triarchic model of psychopathy relates to prominent psychopathy theories (Cleckley, 1941; Karpman, 1948; Lykken, 1995; McCord & McCord, 1964; Mealey, 1995) using construct validity coefficients (Westen & Rosenthal, 2003). Based on the hypotheses outlined by Patrick and colleagues (2009), we predicted that Boldness would be distinguished by primary psychopathy theories whereas Disinhibition would be characterized by secondary psychopathy theories. Participants were 1,281 male offenders that were approximately 30 years old and predominantly Caucasian (64.0%). The Triarchic model of psychopathy was assessed using PPI-based Triarchic scales. Developed by Hall and colleagues (under review) via a consensus rating approach, these self-report scales demonstrate strong convergence with the subscales of the Triarchic Psychopathy Measure (TriPM; Patrick, 2010) and good psychometric properties. Westen and Rosenthal's (2003) rcontrast-CV construct validity coefficient was calculated in three steps. First, we characterized alternative conceptions of psychopathy by specifying the relevance of 13 criterion measures (e.g., affective deficits, anxiety, lovelessness) to each, based on how strongly each theorist emphasized the construct as central to psychopathy. For example, because Lykken (1995) considered fearlessness the trait that explained all other psychopathy-related constructs, a large association with the criterion measure of fearlessness was specified for his theory. Next, bivariate correlations were computed between each of the Triarchic scales and the 13 criterion measures, yielding a profile of correlations for each psychopathy scale. Third, rcontrast-CV coefficients were calculated to index the degree of correspondence between patterns of hypothesized and observed relations. Overall, the findings were largely consistent with the hypotheses. Boldness most strongly emphasized primary theories, in particular Lykken's theory (rcontrast-CV = .76). Meanness emphasized primary more than secondary theories, and was highest for the McCords' theory (rcontrast-CV = .45). Disinhibition most strongly emphasized secondary theories, in particular Karpman's secondary theory (rcontrast-CV = .51). Findings suggest that each element of the Triarchic model is essential for indexing different groups of psychopathy theories (i.e., primary versus secondary). Further, in contrast with recent reviews that question the importance of boldness and fearless dominance in psychopathy (e.g., Miller & Lynam, 2012), our findings indicate that Boldness is a prominent feature of primary psychopathy theories--and that, by extension, if items assessing Boldness were excluded from measures of psychopathy (2012), something more akin to secondary psychopathy would be indexed.

3:15p-3:30p **Break (GRAND BALLROOM FOYER)**

3:30p-5:00p ***Physiological Reactivity to Pleasant and Unpleasant Stimuli in Children and Young Adults With High and Low Callous-Unemotional Traits*, Luna C. Muñoz Centifanti & Kostas A. Fanti, Moderators (GRAND BALLROOM A & B)**

Callous-unemotional (CU) traits are associated with severe levels of antisocial behavior during childhood, adolescence, and adulthood. Of note, the lack of fear and lower responsiveness to unpleasant/violent stimuli and others' distress cues characterizing individuals with CU traits may explain their antisocial behaviors. The studies comprising the symposium compare the reactions of adolescents and young adults with high and low CU traits to emotional stimuli by measuring their physiological responses, including respiratory sinus arrhythmia (parasympathetic activity), facial electromyography (EMG) and cardiac responses. Dr. Centifanti presents findings with a stratified community sample showing less physiological arousal after watching 3D rollercoaster simulations for boys high versus low on CU. Dr. de Wied et al. present findings in children with disruptive behavior disorders and CU traits and showed lower levels of empathic sadness as suggested by self-report, EMG, and heart rate reactivity during emotional film clips. Dr. Fanti et al. present findings on a stratified sample of adults and showed diminished eye-blink startle reaction during viewing of violent film scenes compared to neutral scenes and uninhibited startle during viewing of comedy scenes in comparison to neutral scenes. In addition to these findings, the studies also provide evidence for different physiological responses among youth with antisocial behavior. Dr. Chris Patrick will discuss the findings.

a) *Mapping the autonomic space: Cardiovascular psychophysiology, emotion recognition, and callous-unemotional traits in boys.* **Luna C. Muñoz Centifanti**, University of Durham

Certain characteristics seem to predict a severe pattern of antisocial behaviour, such as callously disregarding other people's values, failing to care about performance within society rules, and being disingenuous in their feelings – the collection of behaviours are termed callous-unemotional (CU) traits. Prior research finds that the underlying difficulties for these youths are of an emotional nature; youths with high levels of CU traits lack the fear that typically-developing youths feel when they do something wrong and this may stem from a general lack of fear. Thus, a lack of fear could explain the conduct problem behaviour of youths with CU traits (Blair, 2001). Recently, recognition of fear displays in other people's faces has been examined. Indeed, being able to recognize fear displays in other people's faces well has been related to greater pro-social behaviour (Marsh, Kozak, & Ambady, 2007), and a deficit in fear recognition has been related to CU traits and antisocial behaviour (Muñoz, 2009). A novel idea to test directly with psychophysiology is whether the ability to recognize fear in others may be based in personal experience of fear. That is, it is possible that one comes to understand fear displays by having personal experiences of fear, yet youths with high levels of CU traits may lack the roots of understanding others' emotional

displays. The next question is how fearlessness and fear recognition underlie conduct problems. Is it possible that lacking fear hinders the recognition of fear in others and therefore conduct problems are the result? Because bodily reactions may be unknown to the person experiencing them, physiological measures were taken. Indeed, Neurobiological assessments may be the future of forensic/clinical assessment (Popma & Raine, 2006; Bradshaw et al., 2012). Although research shows that CU traits relate to low sympathetic reactivity, parasympathetic activity may also aid in assessment of CU. Indeed, respiratory sinus arrhythmia (RSA; indexes parasympathetic activity) relates to emotion regulation tasks. A community sample was recruited using two-step stratified sampling technique, selecting the bottom and top 20% of males on self-reported CU. Participants (N=35) and their parents were followed up with a laboratory assessment. Participants watched two 3D rollercoaster simulations and a control video. Participants self-reported arousal and valence and cardiovascular psychophysiological measures were taken. The participants' parent(s) completed measures of CU and conduct problems. Finally, participants completed an emotion-recognition task. The results showed the high CU group reported less arousal to the roller-coaster than the low CU group. Conduct problems was also associated with less self-reported arousal. Psychophysiological measures did not differentiate groups. Instead, conduct problems were associated with poor recognition of sad faces, but only for the high CU group. This may indicate that recognition of distress plays a part in conduct problem behaviour while arousal may be less prominent for those high on CU traits. However, greater RSA was related to better recognition of sad faces for the low CU group only. Thus, in the low CU group, better emotion regulation may explain better emotional understanding with regard to distress.

b) *State empathy in disruptive male adolescents with high versus low callous-unemotional traits.* **Minet de Wied**, Utrecht University, **Anton van Boxtel**, Tilburg University, **Walter Matthys**, University Medical Center Utrecht

Children and adolescents with disruptive behavior disorders (DBD), including oppositional defiant disorder (ODD) and conduct disorder (CD), may have empathy problems that are most striking in those with callous unemotional (CU) traits. The current study examined state empathy in DBD male adolescents with high versus low CU traits, and age-matched healthy controls. CU traits were assessed by Frick and Hare's (2001) Antisocial Process Screening Device (APSD). Relative to those with low CU, the high CU subtype showed higher levels of aggression and delinquency, and lower levels of resting respiratory sinus arrhythmia (RSA), confirming that CU traits designate a distinct subtype of DBD adolescents. State empathy was assessed by verbal, facial electromyography (EMG) and heart rate (HR) responses to empathy-inducing film clips displaying sadness, anger or happiness. In agreement with expectations, the high CU subtype showed lower levels of empathic sadness than healthy controls across all response systems. The low CU subtype showed a more diffuse pattern of empathy dysfunction. Between DBD subtypes a significant difference emerged at the level of autonomic (not verbal or facial) responses to sadness, with high CU respondents showing less HR change from baseline than low CU respondents. Results suggest that the mechanisms underlying empathy problems may be different for DBD subtypes.

c) *Startle reactivity during violent and comedy film scenes: Comparing individuals with high and low callous-unemotional traits.* **Kostas A. Fanti**, **Georgia Panayiotou**, University of Cyprus

Individuals scoring high on psychopathic traits show deficits in the aversive system of the brain resulting in deficient fear and emotional reactivity, and deficits in the appetitive system of the brain resulting in high sensation seeking. Prior physiological work indicates that eye-blink startle reactivity during viewing of threatening or unpleasant stimuli compared to neutral stimuli is diminished among individuals with psychopathic traits, but is typically potentiated among normal controls. Further, compared to individuals scoring high on psychopathy, normal controls show inhibited startle reflex responses during viewing of pleasant stimuli in comparison to neutral stimuli. Importantly, evidence suggests that individuals scoring high on the affective-interpersonal features of psychopathy and not the antisocial lifestyle component show these deficits in startle potentiation. Callous-unemotional (CU) traits represent the hallmark of the construct of psychopathy, and refer to a specific affective (absence of guilt, constricted display of emotion) and interpersonal (failure to show empathy, callous use of others for one's own gain) style. These traits have been associated with severe levels of antisocial and aggressive behavior during childhood, adolescence, and adulthood. A seeming contradiction in the literature is that while individuals who act aggressively do so because of strong emotions, such as anger, psychopathic individuals who show reduced emotional reactivity tend to show the most severe aggressive behaviors (Patrick, 2001). Taking into account different types of aggression might provide evidence to resolve this contradiction. The current study investigates how impulsive (i.e., defensive, retaliatory, triggered in response to a real or perceived provocation) and premeditated (i.e., instrumental aggression; using purposeful and goal directed aggression to achieve a desired goal) aggressive tendencies are associated with startle potentiation and inhibition among individuals with low or high CU traits. Violent film clips were used as unpleasant (violent) stimuli and comedy scenes as positive stimuli. Eighty University students (46% male) scoring high (n = 39) and low (n = 41) on CU traits were selected from a large sample of approximately 1000 students who completed a battery of questionnaires, including the Inventory of Callous-Unemotional traits and the Impulsive Premeditated Aggression Scale. Participants viewed a total of 24 randomly presented 1 minute videos depicting 8 comedy, 8 violent and 8 neutral scenes. Acoustic startle probes were presented binaurally at different time points during 3/4 of the scenes. Miniature electrodes were placed at the orbicularis oculi muscle to

record the participants startle reflex eyeblink responses. Findings suggested that among individuals with low levels of CU traits, impulsive aggression was associated with high startle potentiation during viewing of violent scenes and inhibited startle reflex during viewing of comedy scenes. Individuals high on CU traits, irrespective of aggressive behavior, showed diminished eye-blink startle reaction during viewing of violent stimuli compared to neutral stimuli and uninhibited startle reflex during viewing of pleasant stimuli in comparison to neutral stimuli. The importance and implications of these findings for the understanding of aggression and psychopathy are discussed.

- d) *Emotion recognition in children and adolescents with conduct problems: The influence of callous-unemotional-traits and gender.* **Christina Schwenck**, Goethe University Frankfurt

Children and adolescents with conduct problems are impaired in social adaptation and display deficits in social competence. A deficit in emotion recognition has been discussed to underlie these social problems. Though several studies have been conducted on this topic so far, most of the studies concentrated on male participants and did not differentiate subtypes within this heterogeneous disorder. Particularly, the differentiation regarding the callous-unemotional-trait proved to be meaningful in scientific studies. The aim of the current study was to compare recognition of moving emotional faces in boys and girls with conduct problems (CP) with elevated or low callous-unemotional (CU+ vs. CU-) traits and a matched healthy developing control group (CG). Forty-eight participants with CP-CU+, 49 participants with CP-CU- and 97 controls (mean age: 12.47 years, $sd = 2.48$ years) were included. The sample consisted of 61 girls and 133 boys, and gender was equally distributed over groups. Video clips with a neutral facial expression changing continuously to an emotional expression were presented in order to assess emotion recognition. Reaction times and the number of correctly identified emotions served as dependent measures. Multivariate analysis of variance with the factors group and gender was performed. Participants with CP-CU+ outperformed participants of the group CP-CU- in the identification of fearful faces. Girls in general recognized happy and disgusted faces better than boys, and there was an interaction term group \times gender indicating that gender differences were most prominent in the group CP-CU-. Results emphasize the importance of a differentiation of subgroups according to their antisocial traits and gender, which might result in specific diagnostic and therapeutic recommendations as well as a better understanding of this multifaceted disorder.

- e) Discussant, **Christopher P. Patrick**, Florida State University

A Multi-Faceted Examination of Callous-Unemotional Traits: Construct Validity, Predictive Utility, and Treatment Implications, Amy Byrd, Moderator (**GRAND BALLROOM C & D**)

Callous-unemotional (CU) traits are consistent with the affective features of psychopathy and include callousness, lack of guilt/remorse, shallow affect, and failure to accept responsibility for wrongdoing. Research suggests that the presence of CU traits has relevance for understanding the development and persistence of serious antisocial behavior from childhood through adulthood. The current collection of studies examined CU traits using the Inventory for Callous-Unemotional Traits (ICU; Frick, 2004) at different developmental stages, focusing factor structure and predictive utility as well as measure refinement and treatment outcomes. The first study examined these CU traits in adulthood and examined the factor structure of the ICU as well as its external validity and incremental predictive utility within a racially diverse community sample of adult males. The second study used item response theory techniques to develop a more psychometrically sound and efficient short-form of the ICU using a clinic-referred sample of boys with significant conduct problems. The final study examined CU traits, using a short-form of the ICU, as both an outcome and moderator of treatment effectiveness within the context of a randomized clinical control trial. Together, results provide further evidence for the utility of CU traits and highlight the importance of continued measure refinement.

- a) *Callous-unemotional traits in early adulthood: Validation of the Inventory of Callous-Unemotional Traits and incremental predictive utility.* **Amy L Byrd**, University of Pittsburgh, **Rachel E. Kahn**, University of New Orleans, **Samuel W. Hawes**, University of Pittsburgh Medical Center

Callous-unemotional (CU) traits have been shown to delineate a subgroup of individuals at heightened risk for exhibiting severe and persistent criminal behavior (Frick & White, 2008). In light of these findings, there is increasing interest in understanding factors that contribute to the developmental continuity and change in CU traits over time (Burke et al. 2007; Lynam et al. 2008). Given that the transition from adolescence into early adulthood is a period of considerable developmental change, research in this area would benefit from the development of a comprehensive measure of CU traits that has been validated for use across this time period. The Inventory of Callous-Unemotional Traits (ICU; Frick 2004) was developed as a comprehensive rating scale designed to measure multiple facets of CU traits. However, validation of this measure has been limited to youth in adolescence and emerging adulthood (age range~11 to 20), leaving questions about the utility of this measure in early adulthood unanswered. The current studies sought to evaluate the factor structure of the ICU as well as its external validity and incremental predictive utility within a racially diverse and well characterized community sample of adult

males (N=425; mean age=25.78). The first study employed an exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA) Mplus 4.0 (Muthen & Muthen 2006) to examine the factor structure of the ICU. While results found the best fitting model to be the three-bifactor structure that has been previously reported in adolescent samples, the fit indices were only marginally acceptable and suggest the need for scale refinement. Nonetheless, bivariate and partial correlation analyses found total and subscales scores to demonstrate significant and distinct associations with a broad range of concurrent adult outcomes, including delinquency, psychopathy, alcohol/drug use, internalizing and externalizing psychopathology, and psychosocial impairment. The second study examined the unique contribution of CU traits in the prediction of future criminal offending using regression analyses conducted in STATA 11 (College Station, TX). Official criminal record information was collected approximately 3.5 years later using multiple sources. Results indicated that after controlling for several other well-established predictors of future offending (e.g., prior arrests, marital status, peer delinquency, etc.), men with elevated CU traits had a greater number of arrests and criminal charges and were more likely to be charged with a serious offense and obstruction of justice. Taken together, results suggest that while refinement of the ICU may be warranted, CU traits show unique associations with concurrent levels of delinquency, psychopathy, psychopathology and broader psychosocial functioning. Moreover, CU traits in adulthood significantly add to the prediction of future offending, even after controlling for several other risk factors.

- b) *Refining the Inventory of Callous-Unemotional Traits in boys with conduct problems using item response theory.* **Samuel W. Hawes**, University of Pittsburgh Medical Center, **Amy L. Byrd**, University of Pittsburgh, **Craig E. Henderson**, Sam Houston State University, **Rebecca L. Gazda**, University of Pittsburgh Medical Center, **Craig E. Henderson**, University of Pittsburgh Medical Center, **Rolf Loeber**, University of Pittsburgh Medical Center

The term callous-unemotional (CU) traits has been used to refer to a set of features in children and adolescents that are analogous to the affective features of adult psychopathy. These features have been shown to delineate a unique subgroup of children with severe and persistent conduct problems that seem to have unique etiological origins. However, commonly used measures of CU features in young children may not adequately capture the full range of these characteristics in a developmentally appropriate manner. As a result, the 24-item Inventory of Callous-Unemotional Traits (ICU; self, parent and teacher-report versions) was recently developed as a more extensive assessment of CU features. However, studies examining the psychometric properties of this measure have focused almost exclusively on the self-report ICU in adolescents and have identified problems with the factor structure of the measure. The current study is designed to address several limitations in the literature evaluating the psychometric properties of the ICU measure. Specifically, this study is the first to examine the adequacy of the previously reported three-bifactor model, by inspecting the parent-report version of the ICU in a relatively large sample of clinic-referred children (ages 6-11) with significant conduct problems. Item response theory techniques were used to develop a more psychometrically sound and efficient short-form of the ICU consisting of two factors (i.e., callousness and uncaring) using 12 of the original 24 items. The revised version demonstrated high internal consistency, good discrimination across the continuum of the CU construct and adequate short-term, test-retest reliability. As expected, the revised ICU total score demonstrated stronger correlations with problems related to conduct disorder and low prosociality compared to internalizing problems. Associations between the callous and uncaring subscales on the revised ICU and externalizing problems showed a very similar pattern of bivariate correlations. However, once the overlap between the two factors was statistically controlled for, the callousness scale continued to exhibit strong associations with external criteria related to conduct problems, whereas the unique associations with the uncaring factor were non-significant or small in magnitude. In contrast, partial correlations indicated that the uncaring dimension was more strongly associated with low prosocial behaviors than the callousness factor. Taken together, these findings indicate that the callousness facet of the ICU seems to overlap more substantially with ODD/CD symptoms than the uncaring dimension, with the later facet exhibiting a negative association with anxiety as expected based on previous studies. While the number of items on the ICU measure was reduced by nearly half, content coverage of the latent trait according to IRT analysis was good and the measure continued to display strong levels of reliability. Given that the presence of CU traits will likely be used as a specifier for CD in DSM-5, it is imperative that this construct be accurately captured as intended with current measures. This study reflects the importance of continual measure refinement, especially at a time when the clinical relevance of this construct is becoming more germane to the field.

- c) *The effectiveness of the Stop Now and Plan (SNAP) Program with conduct problem boys exhibiting callous-unemotional traits.* **Dustin A. Pardini**, University of Pittsburgh Medical Center, **Samuel W. Hawes**, University of Pittsburgh Medical Center, **Amy L. Byrd**, University of Pittsburgh, **Jeffery D. Burke**, University of Pittsburgh Medical Center, **Rolf Loeber**, University of Pittsburgh Medical Center

There is widespread speculation that children with CU traits may be relatively unresponsive to traditional cognitive-behavioral interventions. Along these lines, some studies have found that youth with high CU traits exhibit more disruptive behaviors both during and after treatment relative to youth without these traits (Haas et al., 2011; Hawes & Dadds, 2005). However, children with CU traits are by no means “untreatable”, particularly when exposed to intensive, empirically-based

interventions (Kolko & Pardini, 2010). Importantly, there are now several studies indicating that treatments for young children with conduct problems can lead to reductions in CU traits over time (Hawes & Dadds, 2007; Kolko et al., 2009; McDonald, Dodson, Rosenfield, & Jouriles, 2011; Somech & Elizur, 2012). However, most of these studies have not included a randomized control group, making it unclear whether observed reductions in CU traits are being caused by the treatment program being examined. In addition, there is some emerging evidence that children with CU traits may not exhibit poorer behavioral improvements over the course of treatment when exposed to intensive, multi-modal interventions that are founded on empirically-supported cognitive-behavioral techniques (Kolko & Pardini, 2010). One intervention that has shown promise for addressing early CP in boys is the Stop Now and Plan (SNAP) program. SNAP is a multi-modal, manualized treatment that uses cognitive behavioral principles within the context of group-based parent and child treatment sessions that are administered over the course of three months. Children are taught a set of general cognitive and behavioral skills and are given structured practice experiences in order to apply these skills to specific circumstances. Parents are provided education about behavioral strategies, are taught the cognitive and behavioral self-control techniques that children are learning, and are lead in discussions about dealing with particular child behaviors and coping with their emotional reactions. While evidence suggests that SNAP is an effective treatment for children with CP (Lipman, Kelly, Sniderman, Kemp, & Racine, 2006), it is unclear whether this program is effective in reducing CU traits in youth, and whether children with CP and high levels of CU traits exhibit positive behavioral gains following treatment. The current study examined CU traits, as measured by a short-form of the ICU, as both an outcome and moderator of treatment effectiveness within the context of a large randomized clinical control trial of the SNAP program with conduct problem boys (N=252; mean age=8.5, SD=1.8). At study initiation, boys were randomly assigned to receive either the manualized SNAP program or standard mental health services within the community. Analyses indicated that children who received SNAP services did not experience greater reductions in parent-reported CU traits compared to those assigned to standard services. Boys who received the SNAP program did exhibit greater reductions in parent-reported CP problems relative to boys in the standard services condition. Moreover, the positive impact that SNAP had on the boys CPs did not vary based on their level of pre-treatment CU traits. However, there was some evidence that boys with higher pre-treatment CU traits (particularly callousness) in both intervention conditions exhibit higher levels CP following treatment completion.

- d) *Adapting parent-child interaction therapy to treat young children with callous-unemotional conduct problems.* **Eva R. Kimonis**, University of New South Wales, **Elizabeth Hunt**, University of South Florida, **Daniel Bagner**, Florida International University

Traditional parent training (PT) interventions are less effective at treating CP among children with CU traits than for children without them (Hawes & Dadds 2005). Treatment outcomes may be improved by enhancing the affective quality of the parent-child relationship. Specifically, parenting styles promoting greater attachment security (warm, sensitive responding to child emotion) are believed to be critical to socializing and fostering conscience development among young children with the fearless temperament believed to underlie CU traits (Kochanska 1997). Parent-Child Interaction Therapy (PCIT) is a PT intervention that integrates concepts from attachment and behavioral theory to enhance the parent-child relationship. A multi-phase study to adapt PCIT to treat young CP+CU children will be presented. The first phase involved testing whether CU traits moderate outcomes following standard PCIT among very young children. Results indicated that children with and without CU features showed subclinical levels of CP post-PCIT; however, post-treatment CP were still higher for treated children with CU traits compared to children without them. In delivering PCIT it was clear that while it successfully fosters a more positive parent-child relationship it does not fully address the specific needs of children with CU traits in training parents to be more nurturing and warm/affectionate. In subsequent study phases, PCIT was adapted in this way and used as a platform for the delivering more individualized interventions to children with CU traits. Evidence suggests that reward-based parenting strategies may be particularly effective at reducing CP in children with CU traits (Hawes & Dadds, 2005, 2007). Existing CP interventions, such as PCIT, may be adapted by more explicitly emphasizing positive reinforcement over punishment to modify child behaviors. The second study phase involved testing whether adapting PCIT by implementing an adjunctive token economy system was successful at modifying severe CP in a young boy with marked CU traits. This case study will be presented to illustrate how adapted PCIT was successful at reducing CP to below clinically significant levels (Kimonis & Armstrong 2012). Interventions previously tested for CP+CU youth are limited by failing to address their unique deficits in sensitivity to others' distress, which distinguish them from CP only youth (Blair 1999). The third phase of this study was a follow-up to the above case study in which the efficacy of an adjunctive emotional skills building module (e.g., recognition, affective perspective taking), employing empirically validated strategies originally developed for young children and children with autism spectrum disorders in order to increase empathy and reduce CU traits, was tested. The results of this study and details of the module, called Coaching and Rewarding Emotional Skills (CARES), will be presented. These findings highlight the promising potential of empirically based adjunctive interventions for addressing core emotional deficiencies in CP+CU children. The fourth phase of this study integrated prior phases by testing the efficacy of CARES and an adapted version of PCIT designed specifically for children with CU traits (PCIT-CU), which explicitly incorporated techniques to increase parent-child warmth and responsiveness. The results of promising preliminary pilot testing of this intervention will be presented.

e) Discussant, **Paul Frick**, University of New Orleans

5:30p-7:00p **Poster Session B (SOLARIUM: CASH BAR & CHEESE/CRACKERS)**

SATURDAY, JUNE 8
GRAND BALLROOM

7:30a-8:30a **Registration (GRAND BALLROOM FOYER)**

8:30a-10:00a **Neurobiological Correlates of Psychopathic Personality (Josanne van Dongen & Hedwig Eisenbarth, Moderators)**

During this symposium, participants will learn about different neurobiological findings that relate to psychopathy and its different aspects. Findings include results on different brain imagining techniques (i.e. EEG and fMRI), psychophysiological measures (i.e. skin conductance and heart rate), hormones (i.e. cortisol) and eye-tracking. Additionally, these neurobiological underpinnings of psychopathy are studied in different populations, including prisoners, forensic inpatients and healthy controls. Thus, the main aim of this symposium is, to point to differential aspects of neurobiological correlates of psychopathic personality traits. Results presented in this symposium show that psychopathic individuals demonstrate reduced defensive mobilization as an index of the affective deficits, which is likely to reflect distinct dispositional tendencies underlying both fearless and callous traits of psychopathy. The results also show alterations in gazing emotional expressions in individuals scoring high on the emotional detachment and antisocial facets of psychopathic personality. In addition, current data show that both healthy controls and in forensic patients with psychopathic traits show hyporeactivity to negative events, but also hyperreactivity to reward related events. These insights have implications for risk assessment and management of violent behavior posed by individuals with psychopathic traits. This will be evaluated by a discussant at the end of the symposium.

- a) *Reduced cortical “call to arms” is associated with the affective features of psychopathy.* **Laura Drislane**, Florida State University, **Uma Vaidyanathan**, University of Minnesota, **Casey M. Strickland**, Florida State University, **Christopher J. Patrick**, Florida State University

Amplitude of the P3 component of the event-related potential (ERP) response in relation to abrupt, acoustic stimuli (“probe P3”) is an index of the brain’s natural orienting response to sudden aversive events (Schupp et al., 1997). Greater probe P3 amplitude reflects the degree to which attention is diverted from foreground stimulus engagement toward processing of an unexpected event for purposes of ascertaining the need for sustained defensive mobilization, reflecting a cortical “call to arms” (Graham, 1979). Given the centrality of deficient affectivity in most conceptualizations of psychopathy, probe P3 response may serve as a valuable index of emotional reactivity deficits underlying this disorder. The present studies examined P3 reactivity to aversive noise probes presented within an affective picture-viewing task in two separate samples, male prisoners ($N = 140$) assessed for DSM-IV Antisocial Personality Disorder (APD) and PCL-R psychopathy, and same-sex community twins ($N = 433$) recruited based on trait fear. Community twin participants were also assessed for levels of externalizing proneness using the Externalizing Spectrum Inventory (ESI; Krueger et al., 2007). Results from study 1 indicated that psychopathic inmates ($n = 49$) displayed overall reduced probe P3 amplitude across picture types relative to non-psychopathic ($n = 29$) inmates ($F[1,76] = 4.53, p < .05$; Drislane, Vaidyanathan, & Patrick, 2013). Further, these reductions in probe P3 amplitude were associated specifically with the affective-interpersonal features of psychopathy (Factor 1; $r = -.26, p < .002$) and were unrelated to impulsive-antisocial traits (Factor 2; $r = -.11, p = .21$). In contrast, participants meeting for a diagnosis of APD ($n = 91$) did not differ from non-APD participants ($n = 48$) in probe P3 amplitude ($F[1,137] = .34, p = .56$). Finally, psychopathic participants did not differ from non-psychopathic participants in relative amplitude reduction of probe P3 during neutral-picture trials as compared with no-picture (intertrial interval) trials ($F[1,76] = 1.56, p > .20$), suggesting that the observed results reflect an emotional rather than attentional deficit (i.e., inability to shift attention toward the auditory startle probe once attention is already engaged in processing the emotional picture stimuli). In study 2 (Drislane et al., 2012), variance in overall probe P3 amplitude across picture types was uniquely predicted by both Trait Fear (TF; $\beta = .11, p < .05$) and the callous-aggression (CA) subfactor of the ESI ($\beta = -.20, p < .001$). Further, TF and CA displayed distinct relations with affective modulation of the probe P3 response. Whereas low TF was specifically associated with less differentiation of probe P3 response between neutral and aversive picture types ($r = .17, p < .001$), high CA was associated with a blunting of affective modulation for both pleasant ($r = -.13, p < .01$) and aversive ($r = -.15, p < .01$) pictures. These results suggest that psychopathic individuals demonstrate reduced defensive mobilization in the context of abrupt, auditory stimuli. Thus, probe P3 amplitude may be used as an index of the affective deficits displayed in psychopathic individuals. Further, attenuation of the probe P3 response likely reflects the confluence of distinct dispositional tendencies underlying psychopathy, including both fearlessness (or boldness; Patrick, Fowles, & Krueger, 2009) and callousness (or meanness).

- b) *When psychopaths search for emotion in facial expressions: Does the subtype matter?* **Hedwig Eisenbarth**, **Susanne Meyer**, **Michael Osterheider**, University of Regensburg

Previous research has shown that highly psychopathic individuals show a different way of processing emotional facial

expressions, especially for negative valence. This is reflected in lower capacity of categorizing emotional facial expressions and in a reduced psychophysiological responding to those facial expressions. Also, it has been shown that callous unemotional children gaze less the eyes and mouth regions of emotional facial expressions, the important regions for deciding on the emotional content of a face, similar to autistic children. Therefore, we hypothesized that high and low psychopathic patients differ in how they gaze emotional facial expressions. We included 13 high (PCL-R > 28) and 15 low psychopathic (PCL-R < 15) male patients of a forensic-psychiatric hospital in the study. Groups were built using median splits according to the factors of the PCL-R. Two tasks were presented: a search task, which asked participants to decide whether there was an emotional facial expression in a crowd of neutral expressions or not, and a free viewing task, asking to watch facial expressions of different emotions. Eye movements were recorded, using an infrared camera eye-tracking system. In the search task, we found group differences for the number of errors as well as for the time participants spent on the target, with more errors for the high antisocial patients and longer dwell time for high emotionally detached patients. There was no difference in latency to detect the target. For the free viewing task, we found no group differences in fixations durations for eye and mouth regions, however groups differed in latency to look at the eyes and the mouth regions. Again high emotionally detached and high antisocial participants took longer to focus on the eyes and the mouth regions. There were no significant correlations with ratings of valence and arousal and gaze variables. Thus, high emotionally detached and high antisocial patients do differ in how they gaze emotional facial expressions. However, the differences are specific for those facets and do not apply to the interpersonal nor the lifestyle facets. In addition, a global fixation difference as it has been shown for callous unemotional children has not been found in this group of adult forensic inpatients.

c) *Psychopathy and the low arousal hypothesis.* **Josanne van Dongen, Andrié Wierdsma, Hugo van Steenis, Hjalmar van Marle**, Erasmus University

Recently Patrick et al. (2009) have proposed a new conceptualization of psychopathy. Their Triarchic Model includes boldness, meanness and disinhibition as three distinct phenotypic constructs that are central to understanding psychopathy in its varying manifestations. However, neurobiological correlates of these constructs are not clearly understood. One influential hypothesis on psychopathy is that persons with psychopathic traits have a lower arousal level resulting in low fear (e.g. Raine, 1993). The current study investigated the association between boldness, meanness and disinhibition assessed using the Dutch Psychopathic Personality Inventory-Revised (Uzieblo et al., 2006) and measures of autonomic response and salivary cortisol levels in a community sample of 22 males and 50 females. We found that in males, but not in females, resting heart rate (HR) was negatively related to disinhibition, explaining 21.1% of the variance, $F(1,21) = 5.61$, $p = 0.028$. Consistent with data for antisocial behavior in youth (Ortiz & Raine, 2004), this model showed that as the level of disinhibition increased, baseline HR level decreased, $b = -.46$, $t(21) = 2.37$, $p = .028$. These results were consistent with the findings that disinhibition was negatively related to the cortisol awakening response in males, $b = -.53$, $t(21) = -2.77$, $p = .012$, and salivary cortisol levels in males during rest, $b = -.62$, $t(21) = -3.56$, $p = .002$. Additionally, we found a negatively associated between disinhibition and cortisol levels during the task in females, $b = -.31$, $t(44) = -2.15$, $p = .037$. These findings indicate that the diverse psychopathy constructs differentially support the low arousal hypothesis of psychopathy across autonomic and hormonal measures.

d) *Reward anticipation in psychopathy.* **Katinka von Borries, D. Geurts, I. Volman, R. J. Verkes, B. H. Bulten, R. Cools**, University Medical Centre Nijmegen

Psychopathy has been associated with increased sensitivity to rewards. A recent neuroimaging study has shown hyperactivity of the nucleus accumbens during reward anticipation in non-clinical samples with high psychopathic traits (measures with the psychopathic personality inventory [PPI]). We aim to replicate and extend these results to clinical samples of psychopathic offenders diagnosed with the psychopathy checklist-revised [PCL]. Ten subjects scoring low on impulsive aggressive psychopathic traits measures with the PPI, 10 subjects scoring high on these traits and a group of subjects with PCL-R scores > 25 scoring equally high on the PPI as the latter group, underwent fMRI while performing a monetary incentive delay task known to elicit an increase in BOLD signal in the nucleus accumbens (NAcc, Knutson, et al. 2000). Results confirm earlier findings in that healthy controls scoring high on the IA facet of the PPI show hyperreactivity in the right NAcc during reward anticipation compared to low scoring healthy controls. We extended this finding by showing that PCL-R defined criminal offenders scoring equally high on PPI_IA traits as the high scoring healthy controls, showed the same hyperreactivity. Importantly, results show that the medial prefrontal cortex is differentially involved in regulation of aberrant ventral striatal signals in PCL-R defined psychopaths and healthy controls with high PPI_IA scores. Furthermore these data suggest a strong relationship between behavioural lifestyle of psychopaths (PCL-R factor 3) and this aberrant functional connectivity. It is concluded that reward hypersensitivity generalizes from subclinical to clinical samples. Importantly, it is suggested that the difference between criminal and non-criminal psychopathy may be explained by how the hypersensitivity is controlled by frontal areas.

e) Discussant, **Edelyn Verona**, University of Illinois

- 10:00a-10:30a **Break (GRAND BALLROOM FOYER)**
- 10:30a-11:30a **Presidential Address (David S. Kosson, President)**
Get Mad, Not Sad: Parental Rejection, Attachment, and Emotion Regulation in Individuals with Psychopathic Traits
- 11:30a-12:00p **Lunch (on your own)**
- 12:00p-1:30p **Poster Session C (SOLARIUM)**
- 1:30p-3:00p **A Review of Recent Developments in the Assessment of Psychopathy Using Self-Report Measures (Joshua D. Miller, Moderator)**

There is a growing interest in the use of self-report inventories in research on psychopathy, particularly research conducted in non-forensic settings. This symposium addresses several important advances and questions related to the use of these assessments. In the first talk, Dr. Jones examines whether psychopathic individuals have sufficient insight to provide valid self-reports and how much the collection of informant-reports supplement these data. The next three talks concern specific self-report inventories developed using alternative methods. Dr. Neumann describes the current literature on the Hare Self-report Psychopathy, which was developed as a self-report analogue to the PCL-R, including data on its structural validity and relations to other important constructs. Dr. Miller describes a relatively new psychopathy assessment — the Elemental Psychopathy Assessment — which assesses psychopathy using traits drawn from a structural model of basic personality functioning. He reports on its performance in relation to existing measures of psychopathy, general personality traits, and externalizing behaviors. Dr. Lynam discusses results from two meta-analytic reviews of the Psychopathic Personality Inventory (PPI) and describes controversies surrounding the validity/importance of one of its two primary factors (i.e., Fearless Dominance). Finally, Dr. Lilienfeld serves as the Discussant and builds upon and/or challenges several of the points discussed in the four talks.

- a) *Who knows best? Assessing self-and other-reports of psychopathy and their relations to externalizing behaviors.* **Shayne Jones**, University of South Florida

Although self-report measures of personality are widely used, they are also commonly criticized, particularly when used to assess psychopathy. With respect to psychopathy specifically, two issues are of particular concern: (1) psychopathic individuals may lack insight into their pathology and (2) are recalcitrant liars (Cleckley, 1988). One means of overcoming these potential barriers is to rely on a knowledgeable informant (e.g., a romantic partner, a clinician), which allows for an assessment of the validity of self-report measures. There are two key questions addressed in the current research. First, what is the relationship between self- and informant-reports of psychopathy? This can be addressed by examining relative (i.e., correlations) and absolute (i.e., differences in scores) agreement. Previous research suggests that self-other agreement is modest for PDs, with both the self and informant ratings providing valuable insight (Klonsky et al., 2002). To date, little research has examined this issue in relation to psychopathy. The second key question is whether informant-reports add incremental validity above and beyond self-reports in explaining relevant outcomes. Connelly and Ones (2012) found that other-reports predicted trait first impressions, academic achievement, and job performance just as well, and in some cases better, than self-reports. Carlson, Vazire, and Oltmanns (in press) found that self- and other-reports of personality varied in how well they predicted personality disorders. Of particular relevance in the current research, other-reports were more strongly related to antisocial personality disorder than self-report. The current analyses extend the prior literature by examining three indices of psychopathy, and their relations to externalizing behaviors. Results indicated that relative self-other agreement was high across the psychopathy measures (median $r = .67$). Absolute agreement was also high, with only a few differences of moderate magnitude. Both self- and other-reports of psychopathy provided unique information in the statistical prediction of externalizing behaviors, although self-reports were typically more useful. In sum, self-other agreement for psychopathy is just as strong as found in relation to general personality traits and better than that found for many of the personality disorders. In addition, these data suggest that self-reports of psychopathy provide relevant and useful information with regard to our understanding of externalizing behaviors. Both self- and other-reports of psychopathy provide valuable data, at least in non-forensic settings. Given the relatively small literature that addresses these issues and the implications of these questions, further empirical study is warranted.

- b) *The Elemental Psychopathy Assessment: A review of its development and extant support.* **Joshua D. Miller**, University of Georgia, **Donald R. Lynam**, Purdue University

A robust literature exists documenting the relations between general trait models of personality such as the Five-Factor Model (FFM) and psychopathy. Across a number of modalities — meta-analyses (Decuyper et al., 2009), expert ratings (Miller et al., 2001), and translations of the PCL-R (Widiger & Lynam, 1998) — the same general set of traits emerge as central to the description of psychopathy. These traits are derived primarily from the domains of agreeableness and conscientiousness but also include aspects from neuroticism and extraversion. Although the evidence suggests that measures of general personality can be used to assess individual's levels of psychopathy (e.g., Miller & Lynam, 2003; Benning et al., 2005), these measures may not capture the most extreme variants of the traits. The Elemental Psychopathy Assessment (EPA) was created using the existing literature on the relations between the FFM and psychopathy as a starting point. In the developmental study (Lynam et al., 2011), maladaptive variants of each of the 18 facets were created and compared to the original NEO PI-R scales, as well as established measures of psychopathy. The EPA scales were significantly correlated with the original NEO PI-R scales (mean $r = .66$) but demonstrated substantial incremental validity in the prediction of psychopathy scores. Several studies have now documented robust relations between the EPA scales and explicit measures of psychopathy both in undergraduate and prison samples (Few in press; Lynam et al., 2011; Wilson et al., 2011). The criterion validity of the EPA has also been examined by testing the EPA scales in relation to externalizing behaviors such as reactive and proactive aggression ($r_s = .28$ and $.45$), antisociality ($r = .42$), and substance use ($r = .30$; Wilson et al., 2011), as well as officially recorded disciplinary infractions ($r = .44$; Lynam et al., 2011). Similarly, the EPA scales have been again shown to be related to the FFM dimensions from which they were derived when the FFM dimensions are rated via self or stranger ratings (Miller et al., 2011). The EPA scales are also associated with related forms of personality pathology including narcissistic, antisocial, and borderline personality disorders. With regard to structural validity, exploratory factor analyses of the EPA in two large samples of undergraduates (Few et al., in press) suggested that four-factors can be extracted from the EPA: antagonism, disinhibition, narcissism, and emotional stability. These four factor are correlated with alternative psychopathy measures and externalizing behaviors in a hypothesized manner (EPA Antagonism — SRP-III Callous Affect: $r = .75$; EPA Antagonism — Antisocial Behavior: $r = .33$). In conclusion, the EPA is a promising measure of psychopathy due its comprehensive coverage of psychopathic traits and its explicit ties to a prominent model of general personality, which facilitates the use of the existing literature on these traits for explicating unresolved issues in the study of psychopathy.

- c) *Casting a nomological net around the Psychopathic Personality Inventory.* **Donald R. Lynam**, Purdue University, **Joshua D. Miller**, University of Georgia

Since its publication, the Psychopathic Personality Inventory and its revision have become increasingly popular such that it is now among the most frequently used self-report inventories for the assessment of psychopathy. The current meta-analysis examined the relations between the two PPI factors (factor 1: Fearless Dominance; factor 2: Self-centered Impulsivity), as well as their relations with other validated measures of psychopathy, internalizing and externalizing forms of psychopathology, general personality traits, and Antisocial Personality Disorder symptoms. Across 61 samples reported in 49 publications, we found support for the convergent and criterion validity of both PPI factor 2 and the PPI total score. The nomological network surrounding PPI Factor 2 was quite consistent with theoretical expectations and supports ScI as a general index of psychopathy. ScI manifested substantial positive relations with externalizing behaviors such as aggression, ASB, substance use; personality traits such as interpersonal antagonism, disinhibition/impulsivity; and pathological personality such antisocial personality disorder (APD). PPI ScI demonstrated good convergent validity as indicated by strong correlations with factor 2 and total scores from other psychopathy instruments. Much weaker support was found for PPI factor 1, which manifested limited convergent validity and a pattern of correlations with central criterion variables that was inconsistent with most conceptualizations of psychopathy. The strongest relations with PPI Factor 1, all weighted mean correlations greater than $.40$, were obtained for Neuroticism, Extraversion, BIS functioning, sensation seeking, positive emotionality, and fun seeking. The weakest relations, all correlations under $.10$, were obtained for conscientiousness, impulsivity, aggression, externalizing, substance use, ASPD, Factor 2 psychopathy, reward responsiveness, and empathy. The implications for the PPI Factor 1 as an index of psychopathy are discussed. It is suggested that FD cannot be taken as an indicator of psychopathy on its own, cannot serve as a self-report indicator for Factor 1 scores from the Revised Psychopathy Checklist, and does not align well with Lykken's low-fear construct. Finally, potential roles for FD in psychopathy, consistent with the evidence base, are discussed. It is suggested that FD might serve as an important diagnostic specifier; future research directions are also outlined.

- d) *Construct validity of the Hare Self-Report Psychopathy (SRP) Scale.* **Craig Neumann**, University of North Texas, **Robert D. Hare**, University of British Columbia, **Del Paulhus**, University of British Columbia

This presentation will describe an array of new findings from studies that used the Hare Self-Report Psychopathy scale (SRP; Paulhus, Neumann, Hare, in press), with emphasis on the psychometric and structural properties of the SRP, and on its correlates with a variety of relevant variables, including PCL-based and other measures of psychopathy. A key finding is the strong evidence for a stable item-level four-factor latent structure of the SRP across diverse cultural samples. This particular finding is notable, given that some other traditional self-report measures of psychopathy appear to lack a coherent latent

structure (e.g., Neumann, Malterer, & Newman, 2008; Neumann et al., in press). The unclear dimensionality of psychological measures is a fundamental problem in psychology as a whole (Smith, McCarthy, & Zapolski, 2009), and importantly, the clarity of a self-report measure's structure is tied to the viability of identifying endophenotypes linked with psychopathic traits. Finally, new findings and data on how the latent SRP dimensions are linked to underlying neurobiology will be presented.

e) Discussant, **Scott O. Lilienfeld**, Emory University

3:00p-3:30p **Break (GRAND BALLROOM FOYER)**

3:30p-3:45p **Cheryl Wynne Hare Student Poster Award (Randall Salekin, Chair)**

3:45p-5:00p **Early Career Contribution Awards (James Blair, Chair)**

a) **Brian Hicks**, University of Michigan. *Developmental Interplay Between Disinhibition and Boldness*

b) **Dustin Pardini**, University of Pittsburgh Medical. *Developmental Conceptualizations of Psychopathy: What Do We Know and Where Do We Go?*

5:00p-5:30p **Closing Remarks (David S. Kosson, President & Scott O. Lilienfeld, President-Elect)**

POSTER SESSION A
THURSDAY, JUNE 6: 6:30P-8:00P (**SOLARIUM**)

1. **Ariel K. Berman & Raymond A. Knight**, Brandeis University. *The Relation Between the Facets of Psychopathy and Hypersexuality in Juveniles Who Have Sexually Offended.*

Juveniles who have sexually offended (JSOs) are responsible for approximately 20% of reported sexual crimes in the USA, and require concerted research attention. Too frequently decisions about their treatment, management, and the prevention of sexual aggression has been generated from empirical investigations of adults who sexually offend (ASOs). A previous study using hierarchical regression on data from 315 male ASOs found that the Interpersonal Facet of the Psychopathy Checklist, Revised (PCL-R; Hare, 2003) covaried significantly with all three components of a Sexualization latent trait measured by the Multidimensional Inventory of Development, Sex, and Aggression (the MIDSA) - Sexual Compulsivity, Sexual Preoccupation, and Hypersexuality. The current study replicates these analyses on JSOs (n = 215), using the same measures of the MIDSA Sexualization latent trait and the four facets of Hare's Psychopathy Checklist: Youth Version. Moreover, the components of psychopathy and sexualization will be integrated into a well-replicated model of sexually coercive behavior against age-appropriate victims (Knight & Sims-Knight, 2004). The results will be compared with the findings for the adults and implications for treatment and management will be discussed.

2. **Hyemin Jeon**, Sam Houston State University, **Eunkyung Jo**, Hallym University, **Hyejin Jang**, Chuncheon Probation and Parole Office, **Carla Munoz**, Sam Houston State University, **Marcus Boccaccini**, Sam Houston State University. *The Relationship Between Personality Traits, Psychopathy, and Recidivism Among Korean Juvenile Offenders.*

Although there is broad research about psychopathy in adults, there is lack of research looking into the effects of psychopathic traits and individual differences for recidivism among juvenile offenders. In this study, psychopathy levels of 82 Korean male juvenile offenders were assessed using the Psychopathy Checklist-Youth Version (Forth, Kosson, & Hare, 2003; PCL-YV) as well as the Personality Assessment Inventory (PAI). Twelve months after the initial data collection, reoffenders were identified by official record. Although neither the total score of PCL-YV or PAI predicted general recidivism among these juveniles, there were significant differences in terms of relationships between PCL-YV and PAI scores between recidivists (N=56) and non-recidivists (N=26). The total score of the PCL-YV was significantly related to AGG ($r=.30, p<.05$) of the PAI in recidivists. Factor 2 and Factor 4 were also significantly related to RXR of PAI, respectively ($r=.34, p<.05$; $r=.35, p<.01$) in recidivists. Interestingly, among non-recidivists, the total score of the PCL-YV was significantly related to BOR ($r=.52, p<.05$), as well as Factor 1 ($r=.55, p<.01$). Also, ANX was associated with the total score of the PCL-YV and Factor 2, respectively ($r=.45, p<.05, r=.40, p<.05$) in non-recidivists. While recidivists and non-recidivists shared some unstable affective problems, recidivists showed more externalizing problems than non-recidivists. This finding suggests that risk assessment should include dynamic interaction between risk factors.

3. **Roberto C. Guerra & Bradley A. White**, Virginia Polytechnic Institute and State University. *Moderation of Drug Use Problems in Young Men and Women by Psychopathy Dimensions, Gender, and Age.*

Previous research has suggested that dimensions of psychopathy may interact in predicting drug use problems, but such findings may differ by age and gender, and few studies have simultaneously considered the potentially interactive roles of psychopathic traits and demographic factors on drug abuse, particularly in emerging adulthood. Based on previous research, we hypothesized that primary psychopathy and gender would moderate effects of secondary psychopathy on drug use problems. We also considered age as another potential moderator. A mixed-gender sample of undergraduate students (N = 673; 69.2% female) ages 18-21 (M=18.88) completed the Levenson Self-Report Psychopathy scale (LSRP; Levenson et al., 1995) and Drug Abuse Screening Test-10 (Skinner, 1982). Predictions were tested using multiple regression. Drug abuse was associated with age ($b=.01, p<.001$) and with the interaction of gender with primary and secondary psychopathy ($b=.01, p<.001$). In particular, a positive relationship between secondary psychopathy and drug abuse was only evident in males who reported moderate to high primary psychopathy. We also consider Sellbom's (2011) 3-factor LSRP model in comparison to the conventional 2-factor model. Our findings add to the literature on the role of personality traits in substance use problems in young adults, suggesting a more nuanced manner in which psychopathy facets interact with one another and with demographic variables to predict drug abuse in emerging adulthood.

4. **Sabrina Demetrioff**, Dalhousie University, **Stephen Porter**, University of British Columbia-Okanagan. *I Know How You Feel: Psychopathic Traits and Judgment Accuracy for Brief Emotional Expressions.*

There is some evidence that individuals who are high in psychopathic traits may have an enhanced ability to judge others' traits and emotional states. The current study examined the association between level of psychopathic traits and the ability to accurately judge brief emotional expressions. Male and female undergraduate students (N=132) watched 20 videos of brief

displays of emotion, and were asked to judge which of five emotions was present in each video. Increased psychopathic traits were significantly related to decreased judgment accuracy for happiness and to increased judgment accuracy for sadness, but this relationship was partially mediated by a tendency to choose happiness less often and sadness more often. In particular, increased psychopathic traits in female judges were related to increased judgment accuracy for sadness, and increased psychopathic traits in male judges were related to increased judgment accuracy for disgust. The results of the current study indicate that psychopathic traits may be associated with enhanced judgment accuracy for brief emotional expressions rather than deficits. As well, the qualities associated with psychopathic traits may manifest differently in males and females, and it is important to consider sex differences when examining psychopathic traits in non-criminal populations.

5. **Rebecca M. Kastner, Alexandria K. Johnson, Martin Sellbom**, University of Alabama. *Associations Between Psychopathy and Latent Representations of Common and Distinct Forms of Aggression in a Young Adult Sample.*

Current conceptualizations of psychopathy recognize the significant presence of antisocial and aggressive acts as characteristic of the disorder (Hare & Neumann, 2010; Patrick & Zempolich, 1998), but more research is needed to better link specific psychopathy facets to distinct forms and functions of aggression. The present study evaluated several psychopathy measures, including the Triarchic Psychopathy Measure, Self-Report Psychopathy Scale-III (SRP-III), and Levenson Self-Report Psychopathy Scale (LSRP), in relation to an alternative latent bifactor structure of the Reactive Proactive Aggression Questionnaire (RPQ; Raine et al., 2006). We used two undergraduate samples of 325 and 602 participants each. Generally, global psychopathy and its facets were associated more strongly with a latent residual variable reflecting proactive ($r_s = .027-.516$; $mdn. = .348$) rather than reactive aggression ($r_s = -.182-.298$; $mdn. = -.031$) with only LSRP Antisocial ($r = .298$) being significantly and meaningfully correlated with this factor. All psychopathy measures were substantially correlated with latent global aggression ($r_s = .157-.641$; $mdn. = .498$). Thus, when the effect of higher-order aggression is removed, it allowed for better elucidation of the associations among specific psychopathy facets and more distinct measures of proactive and reactive aggression in comparison to general higher-order aggression. Further implications will be discussed.

6. **Chelsea L. Brieman & David S. Kosson**, Rosalind Franklin University of Medicine and Science. *Relationships Between Psychopathy, Socioeconomic Status and Substance Use Disorders: The Importance of the Interpersonal Component of Psychopathy.*

The current study examined the additive and novel interactive effects of psychopathy and socioeconomic status (SES) in the prediction of substance use disorders (SUDs) among 421 county jail inmates in Illinois. The primary aim was to examine the potential moderating impact of psychopathic traits (using PCL-R total and facet scores) on the relationship between a combined parental and individual measure of SES and four different categories of SUDs. Various components of psychopathy interacted with SES to heighten the risk for cannabis and opioid symptoms. At high levels as opposed to low levels of psychopathy, lower SES predicted a greater number of cannabis symptoms whereas higher SES was associated with a larger number of opioid symptoms. In addition, SES interacted with scores on the interpersonal facet in the prediction of cannabis dependence symptoms. For individuals with high scores on the interpersonal facet, lower levels of SES were associated with a higher number of cannabis symptoms. PCL total and the lifestyle and antisocial components were positively associated with most categories of substances. Unexpectedly, interpersonal and affective components were also associated with SUDs. Replicating a finding by Walsh, Allen, and Kosson (2007), the number of cocaine symptoms was positively associated with interpersonal facet scores. This challenges previous findings that SUDs are primarily related to the lifestyle and antisocial facets. The relationship between SUDs and the interpersonal facet warrants further examination. In conclusion, current findings replicated prior studies of psychopathy and SUDs, but the current study also found unique individual and interactive effects of psychopathy and SES in the prediction of SUDs.

7. **Felicia Keith**, Uniformed Services University, **Patrick Kennealy**, University of South Florida, **Jennifer L. Skeem**, University of California-Irvine, **Sarah Manchak**, University of California. *Criterion-Related Validity and Predictive Utility of MPQ Estimated TriPM Scales.*

There has been much debate over criminal behavior's role in psychopathy. Investigations of this have been limited because the predominant measure of psychopathy (i.e., PCL-R) includes several items scored based on criminal behavior. The recent Triarchic Model of Psychopathy (TriPM), which consists of Boldness, Meanness and Disinhibition, offers an opportunity to explore the relative importance of different psychopathic traits in criminal behavior because they are not scored based on crime. First, to help establish the construct validity of the recently developed MPQ-estimated TriPM scales (Driscoll et al., in prep), we investigated the convergent and discriminant validity of these scales with measures of personality and psychopathology (i.e., PAI) in a sample of 156 probationers. Consistent with research on Patrick's (2010) original TriPM scales, we found that Boldness was correlated with lack of anxiety, Meanness was correlated with lack of interpersonal warmth, and Disinhibition was correlated with drug problems. Once support for the validity of the MPQ-based scales was established, we next explored the predictive utility of the TriPM for recidivism. Consistent with expectations, we found that

only Disinhibition predicted arrests during an 18-month follow up. This suggests that the scales most consistent with the views of classic psychopathy theories (e.g., Cleckley, 1941), in particular Boldness, were not associated with an increased risk for recidivism.

8. **Amy R. Altszuler, Kathleen I. Crum, Daniel A. Waschbusch**, Florida International University. *Understanding the Public Perception of Psychopathy and Callous-Unemotional Traits.*

As common public concerns may inform research, treatment, and policy decisions involving individuals with psychopathic traits, it is important to understand popular knowledge and attitudes toward these individuals. The current study investigated major themes in the public's perception of psychopathy and callous-unemotional (CU) traits. Two independent coders analyzed reader responses to the Kahn (2012) New York Times Magazine article, "Can you call a 9 Year-Old a Psychopath?". With over 90% reliability, coders segmented original responses (n = 420) into distinct units of data that represented the smallest relevant pieces of information. Units were grouped based on commonality. Preliminary analysis of 30% of responses yielded six general themes, listed by frequency: concern/support (24%); description of psychopathy (21%); references to cultural or personal examples of psychopathy (16%); treatment and prevention (13%); diagnosis and labeling (7%); and negative judgment of those involved with the study, treatment, or care of individuals with psychopathic traits (7%). These findings contribute to the understanding of the public's perception of psychopathy, providing insight into the experience of psychopathic individuals. To gain a more detailed understanding of this experience, as well as its potential impact on long-term outcomes in this population, continued analyses will examine sub-themes within response groups.

9. **Rachel E Kahn**, University of New Orleans, **Paul J Frick**, University of New Orleans, **Eric A. Youngstrom**, University of North Carolina at Chapel Hill, **Jennifer Kogos Youngstrom**, University of North Carolina at Chapel Hill, **Norah C. Feeny**, Case Western Reserve University, **Robert L. Findling**, Johns Hopkins University. *Informant Differences Among Primary and Secondary Variants of Callous Unemotional Adolescents.*

Karpman (1948) proposed an influential theory of psychopathy subtypes, including a primary (innate/heritable affective deficit) and secondary (product of environmental factors like trauma/abuse) variant. Using a sample (n=286) of clinic-referred youths, we conducted model-based cluster analyses and confirmed a three-cluster solution, including a group low on CU traits, as well as two groups high on CU traits (primary and secondary variants) that differed on levels of anxiety and past trauma. Results include a clear and consistent pattern of informant effects, with youths in the primary cluster under-reporting levels of narcissism, impulsivity, CU traits, and total scores on the Antisocial Process Screening Device (Frick & Hare, 2001), relative to what is reported by parents. In addition, youth in the primary cluster under-reported their level of internalizing and externalizing symptoms on the CBCL and YSR (Achenbach, 2003) compared to parent report. Further, subjective ratings of credibility of parent and youth reports revealed clinicians were significantly more likely to rate credibility as poor for youth in the primary cluster compared to the secondary cluster; however, clinicians' subjective ratings of parent credibility did not differ across clusters. Our results suggest primary psychopathy may be associated with a tendency to under-report problems and this tendency could help explain inconsistent findings from past research, which often relied on self-report.

10. **Tina D. Wall**, Eastern Kentucky University, **Dustin B. Wygant**, Eastern Kentucky University, **Martin Sellbom**, University of Alabama. *Boldness Explains a Key Difference Between Psychopathy and Antisocial Personality Disorder.*

Although Antisocial Personality Disorder (APD) represents the closest diagnostic equivalent to psychopathy in the DSM-IV, it has long been recognized as failing to capture the full range of the construct. The current study examined the degree to which *boldness*, a trait domain within the triarchic conceptualization of psychopathy (Patrick et al., 2009) that captures fearlessness, dominance, and low stress reactivity, represents a distinct difference between psychopathy and APD. Utilizing a sample of 108 male prison inmates, the current study examined the extent to which boldness, relative to meanness and disinhibition (indexed by the Triarchic Psychopathy measure; Patrick, 2010), accounted for incremental variance beyond APD symptom counts (indexed by the SCID-II APD module) in predicting the PCL-R total score. Hierarchical linear regression analyses were conducted in which the SCID-II APD symptom count was entered in the first step of the model, and the three Triarchic domains were entered in the second step. APD accounted for 30% of variance ($p < .001$) in predicting PCL-R total scores. The Triarchic domains added 5% of additional variance ($p < .05$). In the final regression model, Boldness ($\beta = .21, p = .01$) was the only significant predictor of PCL-R scores in addition to APD ($\beta = .47, p < .001$). The results indicate that Boldness is a significant trait that helps to explain differences between APD and psychopathy.

11. **Laura E. Drislane**, Florida State University, **Christopher J. Patrick**, Florida State University, **Kenneth S. Kendler**, Virginia Institute for Psychiatric and Behavioral Genetics, **Lauri L. Sillanmaki**, University of Turku, **Steven H. Aggen**, Virginia Institute for Psychiatric and Behavioral Genetics, **Henrik Elonheimo**, University of Turku, **Andre A. Sourander**, University of Turku. *Identifying Primary and Secondary Psychopathy Subtypes in a Population-Based Sample of Finnish Solders.*

It has been assumed that a distinct, albeit small, proportion of individuals in the general population show marked psychopathic tendencies. Systematic research on noncriminal psychopathy variants has proceeded slowly due to uncertainties about how to recruit psychopathic individuals from the community at large in an efficient, valid manner. This study used model-based cluster analysis to identify subtypes of high psychopathic men ($\geq 95^{\text{th}}$ percentile on the Triarchic Psychopathy Measure; $n = 193$) from a larger sample screened for service in the Finnish military ($N = 4043$). Psychopathy facet scores and a measure of anxiety were used as cluster variates. The best-fitting model included two clusters, representing 'primary' ($n = 110$) and 'secondary' psychopathy ($n = 83$). Relative to a low-psychopathy comparison group ($n = 1878$), both psychopathy subgroups showed marked levels of externalizing symptoms and criminal behavior accessed via Finnish National Police Registry. Secondary psychopaths also reported high levels of internalizing problems (e.g., withdrawal, somatization), and scored higher on the disinhibition facet of psychopathy relative to the primary group. Primary psychopaths reported fewer internalizing problems than either the secondary or comparison groups, scored higher on the boldness dimension of psychopathy, and had higher rates of violent crimes than the secondary psychopaths. Implications for conceptualizing psychopathy in non-forensic populations will be discussed.

12. **Allan Heritage**, Vanderbilt University, **Stephen Benning**, University of Nevada, Las Vegas. *Stimulus Processing and Stop Signal Performance in Fearless Dominance and Impulsive Antisociality.*

Individual differences in impulsivity are related to performance on stop signal tasks as well as to processing of the stop signal itself. However, it is unclear how processing of the go stimulus influences stop signal processing and task performance. The current study used event-related potentials to examine the relationship between go stimulus processing, stop signal processing, and performance on a lexical decision stop signal task. Specifically, we focused on how these relationships differed as a function of fearless dominance (FD) and impulsive antisociality (IA). IA was related faster go reaction time, reduced stop signal processing (reduced N1 and P3 amplitude), reduced inhibition accuracy, and longer stop signal reaction time. Fearless dominance showed increased early go stimulus processing (larger P1) followed by decreased later processing (smaller P2), leading to no differences in go task performance. FD showed no relationship with stop signal processing or stop task performance. The finding that FD was differentially related to text processing but not to performance whereas IA was related almost exclusively to deficits in SS processing suggests that FD and IA differentially influence stimulus processing and the task performance strategies used.

13. **Ashley L. Watts**, Emory University, **Sarah Francis Smith**, Emory University, **Wenting Kang**, Emory University, **Scott O. Lilienfeld**, Emory University, **Robert D. Latzman**, Georgia State University. *Implications of Psychopathic Personality Traits for Rape Myths and Attitudes.*

Research demonstrates that individuals who endorse more supportive rape attitudes report a more extensive history of sexual aggression. Rape myths, which are false beliefs used to shift the blame of rape from perpetrators to victims, are associated with hostile attitudes and behaviors toward women. Because psychopathy has long been associated with sexual aggression, we examined the relations among psychopathy, attitudes toward rape victims, and acceptance of rape myths. A sample of 308 undergraduates completed the Psychopathic Personality Inventory-Revised (PPI-R), Attitudes Toward Rape Victims Scale, and a Rape Myths Acceptance Scale, among other measures not examined here. PPI-R total scores and Self-Centered Impulsivity were significantly associated with higher levels of rape myth acceptance ($r=.18$, $p=.04$ and $r=.21$, $p=.01$, respectively). PPI total scores and Coldheartedness were associated with adhering to more supportive attitudes toward rape ($r=.21$, $p=.02$ and $r=.28$, $p=.001$, respectively). Fearless Dominance was not associated with higher levels of rape myth acceptance or supportive rape attitudes. Taken together, these findings suggest that Self-Centered Impulsivity and Coldheartedness, but not Fearless Dominance, are associated with looser attitudes toward rape victims and the acceptance of rape myths, findings that may bear important implications for the contribution of psychopathic traits to sexually aggressive behavior.

14. **Sarah J. Brislin**, Florida State University, **Jens Foell**, Florida State University, **Dongju Seo**, Yale University, **Christopher J. Patrick**, Florida State University. *The Influence of Trait Fear and Disinhibition on Emotion Regulation.*

Prior research has shown that difficulty regulating emotion contributes to a wide range of problems including impulsive aggression (Davidson et al., 2000). This study used functional magnetic resonance imaging (fMRI) to examine the influence of traits closely associated with psychopathy on brain activity during an emotion regulation task. Forty-two females undergraduates (M age=19.64) completed an emotion regulation task involving processing of pleasant, neutral, and unpleasant pictures in a 3T scanner. Trials included a preparatory phase, in which participants prepared either to simply view or down-regulate their emotions to an upcoming picture stimulus, and a presentation phase, during which pictures appeared and were processed as prepared for. Of particular interest was how trait constructs of fear/fearlessness and disinhibition moderate affective ratings of participants and BOLD activation in brain regions including the amygdala, anterior cingulate cortex (ACC), orbitofrontal cortex (OFC), and prefrontal cortex (PFC) during the preparatory and presentation phases of the procedure. Consistent with prior findings, increased dorsolateral PFC and OFC activation were evident for participants as a

whole during the preparatory phase, and increased ventromedial PFC and ACC activation was evident during active down-regulation of emotional response to both positive and negative stimuli. Findings from analyses of trait/brain-response relations will also be presented and discussed.

15. **Noah C. Venables**, Florida State University, **Martin Sellbom**, The University of Alabama, **Laura E. Drislane**, Florida State University, **Kenneth S. Kendler**, Virginia Commonwealth University, **Andre Sourander**, Turku University, **Thomas E. Joiner**, Florida State University, **Christopher J. Patrick**, Florida State University. *Interactive Effects of Boldness and Disinhibition in the Prediction of Suicide Risk.*

The mitigating effect of psychopathy on suicidal behavior was first introduced in Cleckley's (1946) classic monograph *The Mask of Sanity*. Contemporary research has found consistent evidence for a positive association for impulsive-antisocial features of psychopathy in the prediction of suicide risk, whereas affective-interpersonal features (more consistent with Cleckley's notion) tend to be negatively predictive. However, no research to date has examined whether these two components of psychopathy interact to predict suicidal behavior. The present study sought to address this question by examining the interactive effects of Boldness and Disinhibition dimensions of the Triarchic model of psychopathy (Patrick et al., 2009) in predicting suicide risk in two samples: outpatient clinic patients (N=957) and a cohort of Finnish soldiers (N=3,856). Boldness and Disinhibition were operationized as MMPI-2-RF estimated Fearless-Dominance and Impulsive-Antisociality scores in the patient sample, and through scores on the Triarchic Psychopathy Measure in the soldier sample. We found evidence for Boldness and Disinhibition interacting to predict clinician assessed risk in the patient sample, and self-reports of previous suicidal behaviors and ideation in both samples. These results provide evidence for a mitigating impact of Boldness on suicide risk in high Disinhibition individuals. Implications for current debates regarding the role of Boldness in psychopathy will be discussed.

16. **Melissa Straiton & David Hawes**, University of Sydney. *Callous-Unemotional Traits and Peer Cooperation in Late Childhood.*

Callous-Unemotional (CU) traits in childhood represent a robust predictor of chronic and severe antisocial behaviour, including adult patterns of psychopathic traits. Much is known about the antisocial and aggressive behaviour of children and adolescents high in CU traits, however relatively little research has been devoted to the broader social processes that characterise the peer relationships of these children. The aim of the current study was to investigate patterns of cooperation expressed by children high in CU traits while engaged in a paradigm designed to assess reciprocal altruism and social strategy. The results indicated that children high in CU traits are significantly less likely to cooperate than their peers, regardless of social context or level of antisocial behaviour. Furthermore, they report experiencing less shame following non-cooperative behaviours than their peers. These results provide support for the CU traits subtyping model of childhood antisocial behaviour, as well as further differentiate the subtype based on their distinct approach to social situations. Finally, the results appear to replicate existing findings regarding the social strategies of adults high in psychopathic traits, thus contributing to the conceptualisation of their specific developmental pathway.

17. **Rachel Bencic, Elizabeth Krusemark, Arielle Baskin-Sommers, Joseph Newman**, University of Wisconsin – Madison. *Self-Relevance, Attentional Biases, & Externalizing: Characterizing Attention Responses to Salient Stimuli.*

Dysfunctional processing of salient stimuli is a hallmark of many psychiatric disorders. Research indicates that trait externalizing is associated with over-allocation of attention to motivationally-salient cues (Baskin-Sommers & Newman, in press). The current study sought to characterize salience processing in externalizing through examination of dot probe task performance. Criminal offenders with substance abuse completed a dot probe task incorporating self-relevant, motivationally-salient (drug or alcohol) and neutral images. Following Baskin-Sommers et al. (in press), we predicted that higher levels of externalizing would be associated with stronger orienting to and impaired disengagement from the salient, substance-related stimuli. Externalizing was measured using a composite of MPQ-Negative Affectivity and MPQ-Constraint (i.e., high NA, low CON). Results were consistent with predictions: during short inter-stimulus-interval (ISI) trials (500 ms pictures), higher externalizing scores were associated with faster responding when the probe followed salient cues (i.e., stronger orienting) and lower accuracy when the probe followed a neutral image (i.e., impaired disengagement). Furthermore, higher externalizing scores were associated with greater accuracy on the long-ISI (i.e., 1000 ms pictures) orienting trials. Given the phenotypic overlap between psychopathy and externalizing, we also address the implications of this self-relevant attentional dysfunction for psychopathy.

18. **Yelena Khvatskaya**, Binghamton University, **Mark F. Lenzenweger**, Binghamton University & Cornell University. *Which Empathy Do Psychopaths Lack?*

The present study aims to examine three aspects of empathy: affective, cognitive, and motor in male and female individuals

with psychopathic traits. Psychopaths exhibit deficits in affective but not cognitive empathy. However, no research has looked at motor empathy in psychopathic individuals, which we propose will be deficient in this group. Participants were undergraduate students at Binghamton University (N=200). In the first part of the study, participants completed the Psychopathy Personality Inventory (PPI), the State-Trait Anxiety Inventory (STAI; trait), and the Interpersonal Reactivity Index (IRI). Based on the results from the first part of the study, using extreme-groups strategy, we invited participants scoring in the top and bottom 25th percentile on the PPI to complete the second part of the study. In part II of this study, participants viewed positive, negative, and neutral images and their facial expressions were analyzed to identify emotion displayed during the viewing. In addition, participants identified which of the six basic emotions each image displayed and completed the STAI (state), the Social Desirability scale, and the Bem Sex Role Inventory. In addition to the main hypothesis, we are interested in examining differences in anxiety and between genders among individuals scoring high on the PPI.

19. **Samantha J. Fede**, University of New Mexico, **Jana Schaich Borg**, Duke University, **Lora M. Cope**, University of New Mexico, **Carla L. Harenski**, University of New Mexico, **Prashanth K. Nyalakanti**, University of New Mexico, **Walter Sinnott-Armstrong**, Duke University, **Joseph P. Newman**, University of Wisconsin-Madison, **Kent A. Kiehl**, University of New Mexico. *Neural Basis of Positive Moral Processing in Psychopathy.*

Psychopaths are notorious for profound moral insensitivity. Prior studies of psychopathy suggest abnormal engagement during moral processing in the amygdala, ventromedial prefrontal cortex (vmPFC), insula, anterior cingulate (ACC), posterior cingulate (PCC), and temporoparietal junction (TPJ). Since these studies only examined negatively valenced moral stimuli, here we included positive moral items to examine whether similar impairments are found. Incarcerated adult males (n = 245) were scanned on a 1.5T mobile magnetic resonance imaging system. Psychopathy was assessed using the Hare Psychopathy Checklist-Revised (PCL-R). Participants rated 150 controversial (e.g. cloning) and noncontroversial (e.g. sharing) moral stimuli as wrong or not wrong. PCL-R scores negatively correlated with hemodynamic activity for controversial versus noncontroversial stimuli in the PCC, ACC, vmPFC, TPJ and dorsolateral PFC. For all “not wrong” stimuli versus baseline, PCL-R scores positively related to engagement of areas associated with controversial choices, including the vmPFC, PCC and ACC. In conclusion, psychopathy was associated with impairments in moral processing across the paralimbic system. Additionally, these results suggest that psychopaths experience abnormal conflict-related activity in response to positive moral stimuli, despite normal judgment.

20. **Nathalie Gauthier**, Brock University, **Narnia Worth**, Brock University, **Tabatha Methot**, Brock University, **Angela Book**, Brock University, **Adelle Forth**, Carleton University. *Psychopathy and Feigned Remorse.*

Two studies examined the ability of people high on Factor 1 (F1) traits to effectively feign remorse. Frank (1988) suggested that the social emotions play a key role in giving the appearance of honesty, which allows individuals who can feign them to take advantage of others, and also stated that faking these emotions is a difficult task. One who did not seem to possess remorse or empathy would not likely win the trust of others. We felt that individuals high on F1 traits would be able to effectively feign remorse, given their manipulative nature and ability to effectively deceive others. Participants in both samples were instructed to tell a true story about a time when they did NOT feel remorse/guilt, but were also asked to tell the story as though they had. In other words, only the remorse was feigned. First, we examined the relationship between F1 and perceived genuineness in faking remorse in a sample of university students. Students with higher F1 scores on the PPI-SF (Lilienfeld & Hess, 2001) were rated as more genuine when feigning remorse, even after controlling for F2. Our second study sought to replicate this finding in an inmate sample. While the number of videos was small, offenders with higher F1 scores on the PCL-R (Hare, 2003) were perceived as more genuine when feigning remorse. The results are consistent with the social predator hypothesis, and with the use of feigned remorse as an effective tool to manipulate other people

21. **Alexandros Lordos**, **Nataly Loumba**, **Evita Katsimicha**, **Kostas Fanti**, University of Cyprus. *Planning Ahead for the Clinical Assessment of Callous Unemotional Traits: Development of a New Standardized Instrument.*

It has been established in the literature that the presence of Callous Unemotional (CU) traits delineates a sub-group of children and adolescents with particularly severe and chronic Conduct Problems. While the clinical importance of CU Traits has been widely acknowledged, few reliable assessment instruments are currently available beyond self-report questionnaires. In this context, a 20-item Sentence Completion Task for Callous Unemotional Traits (CU-SCT) was constructed on the basis of latest theoretical research findings, with sentence stems designed to elicit relevant dimensions such as lack of empathy, shallow emotionality and lack of remorse. The CU-SCT has been administered to a sample of 500 adolescents age 12-15, and responses are being clustered, coded and compared against CU scores using the Inventory of Callous Unemotional Traits, in order to produce a standardized scoring manual and norms. IRT analysis of each item will also take place in order to calibrate the sensitivity and specificity of the instrument. Internal reliability of the overall scale, as well as convergent validity (questionnaire-based measures of CU traits), predictive validity (Conduct Disorder symptoms) and discriminant validity (Executive Dysfunction, Depression symptoms) will be reported at the conference.

22. **Andrew Gill**, University of Vermont. *Gender Differences in Psychopathy Variants and Emotional Disturbance Among Adjudicated Youth.*

Efforts to extend the distinction between primary and secondary variants of psychopathy to children and adolescents with callous unemotional traits have illustrated higher rates of emotional disturbance in secondary groups as shown in adult samples (Kimonis et al., 2012; Vaughn et al., 2009). These findings, however, apply almost entirely to males. Model-based cluster analysis in a sample of 148 incarcerated youths (61% male) distinguished primary and secondary psychopathy as well as a non-psychopathic group. Consistent with previous research, youth in the secondary group displayed significantly greater total anxiety and depression scores than the primary group, regardless of gender. Among several novel findings were those that showed that females in both primary and secondary groups reported significantly more positive and significantly less negative affect on the Positive Affect Negative Affect Scale than their male counterparts. Furthermore, although scores were similar across gender in the secondary group, females in the primary group reported being significantly more emotionally distressed by social provocations than primary males. Overall findings suggest not only that adjudicated youths characterized by secondary psychopathy show expected elevations in negative emotionality, but that significant emotional disturbance is also evident in incarcerated females across psychopathic variant groups.

23. **Nicholas J. Wagner, W. Roger Mills-Koonce, Michael T. Willoughby, Martha Cox**, University of North Carolina at Chapel Hill. *Negative Parenting, Representations of Family Functioning, and Early Conduct Problems and Callous - Unemotional Traits: A Partial Mediation Model.*

Callous-unemotional (CU) traits are characterized by a lack of guilt, empathy, and a callous use of others and are associated with a greater risk of adult psychopathy. Both predictive and moderating relationships have been shown to exist between conduct problems (CP)/CU and aberrant parenting practices in childhood. However, there is a paucity of research investigating early processes through which negative parenting contributes to the development of CP and CU. The formation of dysfunctional family attachment representations is one developmental process that has been linked with these outcomes. Utilizing data from the Family Life Project, a multi-site longitudinal study (n=1,292), these analyses use a structural modeling framework to investigate the relationship between observed negative parenting behaviors in the first five years of life, coding of dysfunctional family relationships assessed using children's family drawings at first grade, and maternal report of CP and CU at first grade. The final model demonstrated good fit and included a latent factor of negative parenting over time that significantly predicted both CP and CU in first grade. More interestingly, significant indirect effects were observed whereby negative parenting predicted dysfunctional family representation which, in turn, predicted both CP and CU. These analyses are among the first to suggest that representations of family dysfunction are important for understanding the etiology of CP and CU.

24. **Courtney Humeny Ian Broom, Nalini Elisa Ramlakhan, John Logan, Robert West**, Carleton University. *The Role of Disgusting and Scary Somatic Markers on Decisions of Psychopathic Undergraduate Students.*

Arguments for an amygdala dysfunction in psychopaths have been challenged by findings suggesting a specific deficit for disgust (e.g., Pham & Philippot, 2010; Kosson et al., 2002; Tybur, Lieberman, & Griskevicius, 2009). The behavioural implication of this deficit has received limited attention. Disgust has been theorized to relate to the ability to empathize, maintain social cohesion, and to avoid norm violations and risk taking behaviours (Wierzbicka, 1986). Research using the Iowa Gambling Task (IGT) has tied theory to social functioning. Performance on the task can be hindered by fear and disgust reactions in healthy participants (Heilman et al., 2010). The current study compared performance on the IGT with modified versions of the IGT containing images of fear, sadness, disgust, and neutral control images. University students were assessed using the Self-Report Psychopathy Scale (Paulhus, Hemphill, & Hare, in press) and were split into high and low psychopathy groups. Anxiety and disgust sensitivity also were assessed. Results (N= 100) indicated an effect of emotion type on task performance but no differences between high and low psychopathy groups. The lack of difference between the psychopathy groups for IGT performance may be because individuals with high levels of psychopathic characteristics from non-offender samples have reduced levels of psychopathy compared to individuals from offender samples.

25. **Susanne Wolf & Luna C. Centifanti**, University of Durham. *Psychopathic Traits and Attention to Distress Cues in Dynamic Faces and Body Poses: Tracking Eye Movements in Young Adults During Emotion Recognition.*

Individuals with psychopathic traits display a reduced sensitivity to distress in others' faces and body poses. It was suggested that insensitivity to signs of distress in others' faces may be due to an attentional neglect to the most important facial features of distress such as the eyes. Research so far has focused on insensitivity to facial but not body cues, using static emotion expressions. The present study aimed to replicate previous findings for dynamic facial expressions as well as explore gaze for emotion recognition from dynamic body poses. For that purpose, fifty undergraduate university students between 18-29 years

of age were presented with video clips of emotional faces (Simon et al., 2007), and body poses (Atkinson et al., 2004), separately. Eye movements during the presentation of the emotional stimuli were recorded with the EyeLink2 system capable of a 500Hz sampling-rate. Further, participants have completed the Youth Psychopathic Traits Inventory (YPI; Andershed et al., 2002) as a self-report measure of these traits. Preliminary results confirmed that individuals with high psychopathic traits looked less at others' eyes in line with prior research. Further, individuals in general fixated more on the torso, and for distress emotions, more on arms and legs. Individuals high on psychopathic traits however tended to look more at others' heads and less at torso, arms and legs. Also, emotion recognition accuracy will be discussed in relation to eye movement.

26. **Patricia Lockwood**, University College London, **Catherine Sebastian**, Royal Holloway & University of London, **Eamon McCrory**, University College London, **Zoe Hyde**, University College London, **Xiaosi Gu**, University College London, **Stephane De Brito**, University of Birmingham, **Essi Viding**, University College London. *Callous Traits Are Associated With Reduced Neural Responses to Others' Pain in Children with Conduct Problems.*

Children with conduct problems (CP) persistently violate others' rights and represent a considerable societal cost. These children also display atypical empathic responses to others' distress, which may partly account for their violent and antisocial behaviour. Callous traits index lack of empathy in these children and confer risk for adult psychopathy. Investigating neural responses to others' pain is an ecologically valid method to probe empathic processing, but such studies in children with CP have been inconclusive. Using functional magnetic resonance imaging, we measured neural responses to pictures of others' in pain (vs. no pain) in a large sample of children with CP and matched typically developing controls. Relative to controls, children with CP showed reduced blood-oxygen-level dependent responses to others' pain in bilateral anterior insula (AI), anterior cingulate cortex (ACC) and inferior frontal gyrus: regions associated with empathy for pain in previous studies. In the CP group, callous traits were negatively associated with responses to others' pain in AI and ACC. We conclude that children with CP have atypical neural responses to others' pain. The negative association between callous traits and AI/ACC response could reflect an early neurobiological marker indexing risk for empathic deficits seen in adult psychopathy.

27. **Sarah Francis Smith**, **Ashley L. Watts**, **Scott O. Lilienfeld**, Emory University. *Implications of Psychopathic Traits for the Workplace: Menace, Miracle, or Both?*

The implications of psychopathy for the workplace remain poorly understood (Babiak & Hare, 2006; Smith & Lilienfeld, 2013). Although most investigators have focused on maladaptive correlates (e.g., Boddy, 2011), scattered research suggests that psychopathy is associated with some adaptive leadership behaviors in business settings (Babiak, Neumann, & Hare, 2010). We examine the adaptive and maladaptive implications of psychopathy and its subcomponents, including Fearless Dominance (FD) and Self-Centered Impulsivity (SCI), for workplace behavior. Community participants (N = 312) completed the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005), Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995), a self-report measure of counterproductive workplace behavior (CWB; Bennett & Robinson, 2000), the Multifactor Leadership Questionnaire, Form 6-S (MLQ-6S; Avolio & Bass, 1992), and a measure of leadership activities. FD was positively associated with engagement in leadership activities and adaptive leadership styles and uncorrelated with CWB and passive leadership styles. In contrast, SCI and LSRP-1 (reflecting primary psychopathy) were unassociated with leadership activities but negatively associated with adaptive leadership styles. SCI, LSRP-1, and LSRP-2 (reflecting secondary psychopathy) were positively associated with CWB. SCI and LSRP-2 were positively associated with passive leadership styles. These findings indicate differential patterns of workplace correlates for psychopathy's components.

28. **Kendra A. McGuffin Nespoli & Adelle Forth**, Carleton University. *Psychopathic Traits, Compliance and Likelihood of Falsely Confessing.*

False confessions present a unique problem for the justice system as they are difficult to prove false and can lead to devastating consequences. Research in the area of police-induced false confessions has identified two types of risk factors: personal (i.e., suspect's age, sex, and personality) and situational (i.e., police interrogation techniques) that contribute to an individual's risk of falsely confessing (Kassin & Gudjonsson, 2004). The present study investigated three personality variables: (1) compliance, (2) psychopathy, and (3) anxiety, and their relationship with participants' self-reported likelihood of falsely confessing during police interrogation. Of the 329 students surveyed, 17% ($n = 55$) reported past experiences with police interrogation and less than 1% ($n = 2$) reported having made a false confession to police. As expected, likelihood of falsely confessing was positively correlated with compliance ($r = .38, p < .001$) and anxiety ($r = .18, p < .01$). Both measures of psychopathic traits were negatively correlated with compliance (SRP-SF: $r = -.16, p < .01$; PPI-R: $r = -.24, p < .001$). Exploratory analyses found that psychopathic traits were not correlated with likelihood of falsely confessing. The relationships between variables are discussed along with potential implications for policing and legal procedures.

29. **Joana B. Vieira**, University of Porto & Georgetown University, **Pedro R. Almeida**, University of Porto, **Fernando Ferreira-**

Santos, University of Porto, **Fernando Barbosa**, University of Porto, **João Marques-Teixeira**, University of Porto, **Abigail Marsh**, Georgetown University. *Distinct Patterns of Neural Activation Underlie Economic Decisions in Individuals Scoring High and Low in Psychopathic Traits.*

Psychopathy is characterized by reduced empathy, impulsivity and increased risk for both instrumental and reactive aggression. These traits may affect social functioning by compromising the ability to make adaptive decisions in social interactions. We used fMRI to investigate the neural mechanisms recruited by individuals with varying levels of psychopathy to make decisions in the Ultimatum Game. Thirty-five adult participants recruited from the community performed the Ultimatum Game in the scanner and, afterwards, made judgments about the fairness of each offer. Results showed that high psychopathy scorers rejected unfair offers in the same proportion as low scorers, but perceived them as less unfair. Furthermore, in low scorers, the perceived fairness of offers predicted acceptance rates, whereas in high scorers no association was found. Imaging results revealed that responses in each group were associated with distinct patterns of brain activation, with acceptance of unfair offers being associated with dorsolateral prefrontal cortex activity in low scorers and ventromedial prefrontal cortex activity in high scorers. Overall, our findings point to distinct motivations for rejecting unfair offers in individuals who vary in psychopathic traits, with rejections in high psychopathy scorers being probably induced by frustration. These results may help to disambiguate conflicting findings regarding social decision-making in psychopathy.

30. **Joyce H. L. Lui, Christopher T. Barry, Marion Wallace, Amanda K. Stary**, University of Southern Mississippi. *The Dark Triad and Adolescent Use of Prosocial and Coercive Interpersonal Strategies.*

This study examined whether psychopathy, narcissism, and Machiavellianism (i.e., the dark triad, Paulhus & Williams, 2002) are differentially associated with social strategies in youths. Ninety-one adolescents aged 16-19 (62 males, 28 females, 1 missing) participated. The Antisocial Process Screening Device (Frick & Hare, 2001), the Narcissistic Personality Inventory for Children (Barry et al., 2003), and the Kiddie Mach Scale (Nachamie, 1970) assessed levels of psychopathy, narcissism, and Machiavellianism respectively. The Resource Control Strategy Inventory (Hawley et al., 2003) assessed use of prosocial (e.g., I influence others by doing something nice for someone) and coercive (e.g., I influence others by bullying) interpersonal strategies. Psychopathy, narcissism, and Machiavellianism were positively correlated with each other, $r_s > .27$. In multiple regression models, psychopathy, narcissism and Machiavellianism each uniquely predicted coercive strategies, whereas psychopathy positively predicted prosocial strategies, and Machiavellianism negatively predicted prosocial strategies. Results indicate that in addition to a connection to coercive behavior, aspects of psychopathy (e.g., superficial charm) may also relate to attempts to manipulate others through prosocial strategies.

31. **Rebecca Waller**, University of Oxford, **Frances Gardner**, University of Oxford, **Luke Hyde**, University of Michigan. *What are the Associations Between Parenting, Callous-Unemotional Traits, and Antisocial Behavior in Youth? A Systematic Review of Evidence.*

A growing body of research has examined Callous-Unemotional (CU) traits among samples of antisocial youth. Debate surrounds the malleability of CU traits and their responsiveness to parenting and parent-focused interventions. This review examines evidence from 29 studies that investigated various associations between parenting, CU traits, and antisocial behavior (AB). Studies were identified using a systematic search. Retained studies were categorized according to five distinct research questions each addressing associations among parenting, CU traits, and AB in a different way. The results suggest that dimensions of parenting are prospectively related to changes in CU traits. Subgroups of youth with both high levels of CU traits and AB also appear to have experienced negative parenting practices. However, negative parenting is not consistently related to AB in cross-sectional studies for youth with high levels of CU traits. At the same time, parenting-focused interventions appear effective in reducing the level of AB and CU traits in youth. The findings and implications for future studies are critically discussed as they pose challenges for current etiological theories of AB.

32. **Iolanda Batalla**, Hospital de Santa Maria, **Javier Bosque**, Ponent Prison, **Monica Nieves**, Miquel Martí i Pol Day Hospital, **Laura Bosa**, Hospital de Santa Maria, **Vanessa Pera**, Sant Joan de Deu, **Josep Pifarré**, University of Lleida, **Ramon Batalla**, Hospital of Figueres, **Rafael Torrubia**, Universitat Autònoma de Barcelona. *Co-occurrence of PCL-R Psychopathy and Personality Disorders in Male Offenders Without Major Mental Disorders.*

The objective of this study was to analyze the association between psychopathy and personality disorders (PDs) in a sample of prison inmates without Axis I psychiatric pathology (except for substance-related disorders). A sample of 103 male prisoners, who did not meet the exclusion criteria (Axis I diagnosis, neurodegenerative diseases, and $IQ < 70$), was used. The results indicate that the Psychopathy presents a greater association with PDs of Cluster B, followed by Cluster A, and it has no association with those of Cluster C. Except with the antisocial PD, comorbidity with Axis II disorders tends to be lower than that observed in the studies that include samples with Axis I pathology. Lastly, a low association between the affective facet and PDs was observed. These results could be taken into account in the new *DSM-V* if the authors intend to include the

psychopathic personality traits in the new definition of the antisocial PD.

33. **Catherine Shaffer, Evan McCuish, Kevin Douglas, Jodi Viljoen, Raymond Corrado**, Simon Fraser University. *The Relationship between Psychopathy and Prison Perceptions in a Sample of Violent Young Offenders.*

Research on young offenders' perceptions and experiences of imprisonment rarely focuses on serious and violent populations. The present study examined the relationship between factor scores on the PCL: YV and perceptions and experiences of imprisonment in a subsample (n = 159) from the Vancouver Longitudinal Study of Incarcerated Young Offenders. Perceptions and experiences of imprisonment were measured using four subscales: Aggressive Tendencies, Exposure to Violence, Perceptions of Fear and Safety and Perceptions of Environment. Factor scores were calculated according to Hare's 4-factor model that includes Interpersonal (F1), Affective (F2), Lifestyle (F3) and Antisocial (F4) features. Total PCL: YV and F4 scores were significantly related to Aggressive Tendencies and Exposure to Violence. No relationship was found between factor scores or total scores and Perceptions of Fear and Safety or Perceptions of the Environment. Forensic implications and risk management strategies are discussed.

34. **Melanie Chinchilla**, Rosalind Franklin University of Medicine and Science **David Kosson**, Rosalind Franklin University of Medicine and Science, **Steve Miller**, Argosy University, **Meghan Lowe**, Rosalind Franklin University of Medicine and Science. *Psychopathy is Associated with Prominent Public Health Problems in a Community-Based Sample.*

Alcohol abuse, substance abuse and violence perpetration are inter-related and preventable health-risk behaviors that contribute to morbidity and mortality among adolescents and adults in the United States. Although psychopathy has been widely examined within criminal justice populations, there are few studies that examine psychopathy within the general population. Psychopathy has been correlated with high levels of substance abuse, violent and non-violent criminal offenses, and also appears to be one of the best predictors of violent criminal recidivism. The goal of this study was to examine associations between psychopathy and established public health problems within a general population sample in the United States. The current analyses utilized data from the fourth wave of the National Longitudinal Study of Adolescent Health. Initially, the association between violence and alcohol consumption was found to be significant. When the influence of psychopathy on both constructs was controlled for, this association was significantly reduced. In a second, substantially smaller community sample, a similar though marginally significant pattern was found. These findings suggest that psychopathy not only accounts for variance observed in health-risk behaviors, but also explains some of the variance between the health-risk behaviors. Although the current analyses are cross-sectional, findings suggest that psychopathy warrants further investigation as a possible contributor to shared variance between these well-established public health problems. Such findings bolster the assertion that psychopathy should be considered a relevant public health problem.

35. **Julie Blais & Adelle Forth**, Carleton University. *Risky Decisions: The Role of Psychopathy Information in Decisions Regarding Dangerous and Long-Term Supervision Offenders.*

The goal of this study is to gain a better understanding of how psychopathy, risk, and treatment information is communicated by experts and how this same information is interpreted by decision makers. Court ordered forensic assessments presented during dangerous offender hearings were identified and matched with the judges' written and oral statements obtained from a publicly available database. This procedure resulted in a total of 120 cases. Preliminary results found that 86% of risk assessment reports specifically assessed psychopathy. Of particular importance is the fact that 33% of the assessments examining psychopathy contained some form of incorrect information (e.g., equating psychopathy with antisocial personality disorder, etc.). A logistic regression analysis indicated that the treatment and risk information derived from the psychopathy assessment was not predictive of the final judgment. In fact, total psychopathy scores did not differ between dangerous and long-term offenders. This study provides useful information on the methods employed by experts and the way in which risk and treatment information is communicated to decision makers. Given that psychopathy evidence is sometimes used erroneously, it is important to continue to critically examine how and when it is used especially in the context of risk and treatment recommendations.

36. **Christopher Gillen**, Carleton University, **Emily MacDougall**, University of Alabama, **Randall Salekin**, University of Alabama, **Adelle Forth**, Carleton University, **Abby Clark**, University of Alabama, **Heather Merriman**, University of Alabama. *Psychopathy, Substance Use, and Motivation to Change: Evidence for a Holistic Approach to Assessment and Treatment.*

While psychopathy and substance abuse (SA) are risk factors for juvenile recidivism, little research has investigated their relationship. This study is the first to investigate if SA age of onset and severity are related to psychopathy across levels of risk and to investigate how SA, psychopathy, and motivation to change interact to predict risk. Risk and motivation to change were measured with the RSTI Self-Report (RSTI-SR), while SA severity and age of onset were assessed with the CRAFFT.

Psychopathy was measured with the APSD and YPI: Short Form. Analyses from 52 adolescent offenders found that SA severity correlated with APSD total and impulsive scores ($r_s=.37$ to $.41$), while age of onset was negatively related to APSD total, callous, and impulsive scores ($r_s= -.55$ to $-.44$). Findings were only significant for the half of participants who scored highest on risk. A hierarchical regression was conducted to investigate the interaction between motivation, APSD, and CRAFFT scores on risk. The two-way interaction was significant above main effects (F change (3, 34) = 4.06, $p=.014$). Simple slopes revealed that risk decreased when motivation increased at low APSD scores and that SA was related to risk at high APSD scores. Results provide evidence for a holistic approach to investigating SA and psychopathy. They indicated that SA is related to behavioral psychopathic traits in high risk offenders and that these traits also moderate the relationships between risk and SA and motivation.

POSTER SESSION B

FRIDAY, JUNE 7: 5:30P – 7:00P (SOLARIUM)

1. **Michael Wilson**, University of Illinois at Chicago, **Kiril Bosgunov**, Bulgarian Addictions Institute, **Jasmin Vassileva**, University of Illinois at Chicago. *Opposite Relationships Between Psychopathy and Risk Behaviors in Abstinent Drug Users and Controls.*

Psychopathy has been associated with risk behaviors within substance-dependent individuals (SDI). We examined relationships of psychopathic traits with risky sexual and drug use behaviors and pathological gambling (PG) within a Bulgarian sample of heroin-dependent, amphetamine-dependent, and polysubstance-dependent individuals who were currently in protracted abstinence. Two hundred ninety subjects (103 non-SDI, 61 heroin-, 53 amphetamine-, 64 polysubstance-dependent) were assessed with the Psychopathy Checklist: Screening Version and measures of risky sexual and drug use behaviors and PG. Relationships of psychopathy, drug user type, and their interactions with risk behaviors were examined via multiple linear regressions. Psychopathy was positively associated with PG and sexual risk behaviors in the full sample. Exploring these associations separately in SDI and controls revealed counter-intuitive negative associations between psychopathy, PG and sexual risk behaviors among SDI, in contrast to positive associations among these constructs in controls. Both heroin- and polysubstance-dependence were associated with risky drug use and polysubstance-dependence was additionally associated with sexual risk. Our findings suggest that other personality or psychopathology risk factors may be more predictive of sexual risk behaviors and PG in abstinent SDI, whereas in healthy controls with no history of addiction, psychopathy is a viable risk factor for these maladaptive behaviors.

2. **Kathleen Mary Montry**, **Kristen Michelle Klipfel**, **Stephanie Smith**, **David S. Kosson**, Rosalind Franklin University of Medicine and Science. *Investigating the Relationship Between Psychopathy and Traumatic Brain Injury: An Unexpected Finding.*

It is commonly assumed that traumatic brain injury (TBI) is positively correlated with psychopathy. Few research studies, however, have explicitly investigated this relationship. Data collected from 143 incarcerated adult male inmates at a county jail in the Midwest were analyzed to further examine the relationship between psychopathy scores, measured by the Psychopathy Checklist-Revised (PCL-R), and the presence of TBI, as well as the number of symptoms and loss of consciousness (LOC) associated with the brain injury. Analyses revealed there was no correlation between the presence of TBI and psychopathy total scores, nor did the presence of brain injury correlate with scores on any of the individual facets of psychopathy. There was also no relationship between the number of symptoms inmates reported as related to their injury and overall psychopathy scores, nor was there a relationship between number of symptoms and scores on any of the four facets. Finally, there was no relationship between loss of consciousness and psychopathy total scores. Interestingly, however, there was a significant negative correlation between both the interpersonal and affective facet scores and LOC but no correlation found between the lifestyle and antisocial facets and LOC, $r = -.172$, $p = .04$; $r = -.246$, $p = .003$ for the interpersonal and affective facets, respectively. To further explain this relationship, additional analyses investigating several possible moderating variables are discussed.

3. **Sarah M. Guarraci**, **Jaelyn L. Fishalow**, **Casey M. Strickland**, **Laura E. Drislane**, **Christopher J. Patrick**, Florida State University. *Validation of a Recruitment Strategy Using Transdiagnostic Dimensions.*

In order to study clinical phenomena from non-treatment seeking samples, research participants were recruited based on their levels of endorsement on individual differences measures related to constructs of interest. The present study examined the utility of the Triarchic Psychopathy Measure (TriPM; Patrick, 2010) for the purpose of selecting individuals meeting criteria for Cluster B and other personality disorders (PDs). Participants ($n=139$) were recruited from a large undergraduate sample and from the community based on their scores on TriPM Disinhibition and Boldness such that participants with extreme scores on either Boldness or Disinhibition were overrepresented in the sample. Participants with high Disinhibition scores endorsed higher rates of Antisocial PD (11.7%) than did participants with low Disinhibition scores (1.4%; $\chi^2=11.22$, $p<.01$). Narcissistic PD was displayed more frequently by participants with high Boldness Scores (5.3%) than by participants with low Boldness scores (0.0%). Avoidant PD was more prevalent among participants low on Boldness (23.8%) than participants with high Boldness scores (2.1%; $\chi^2=24.04$, $p<.001$). Therefore, this strategy allows for recruitment of individuals with clinically significant levels of psychopathology based off of transdiagnostic dimensions.

4. **Elise Cardinale & Abigail Marsh**, Georgetown University. *Amygdala Activation During Adolescents' Moral Judgments as a Function of Callous-Unemotional Traits.*

Psychopathy has long been associated with deficits in responding to fear-related stimuli. We recently found that this deficit extends to making moral judgments about causing others fear and is linked to reduced amygdala activity. This study replicated

these findings in a sample of adolescents, ages 10-17, with varying degrees of externalizing conduct problems and callous-unemotional (CU) traits as assessed by the Inventory of Callous and Unemotional Traits (ICU). Each participant completed an fMRI scan during which they evaluated the moral acceptability of making statements designed to elicit one of five basic emotions (fear, anger, disgust, happiness, sadness or neutral) to another person. Higher levels of CU traits were associated with amygdala hypoactivity during moral judgments about causing fear, which also predicted heightened severity of externalizing behavior. We also found that the Callous subscale was strongly predictive of amygdala activity, while neither the Unemotional nor Uncaring subscales were. These findings indicate that in an adolescent sample with serious conduct problems, core affective traits associated with psychopathy are associated with reduced amygdala activity when judging the moral acceptability of causing fear and that this reduced activity is predictive of externalizing behavioral problems. Additionally, our findings suggest that the callous subscale of the ICU is most closely linked to amygdala dysfunction during moral judgments.

5. **Sonja Krstic & Raymond A. Knight**, Brandeis University. *The Role of Allostatic Load and Developmental Timing of Abuse in the Etiology of Psychopathy.*

Although the development of psychopathy seems to be the result of the intricate interplay of genetic, neurobiological, and environmental influences, and extensive research has attempted to address the unraveling of its etiology and life-course, many aspects of its developmental unfolding remain unknown. Evidence supports both the significance of certain genetic (Kim-Cohen et al., 2006; Viding, Blair, Moffitt, & Plomin, 2005) and psychoneurological correlates (Kiehl et al., 2001; Raine & Yang, 2006). Additionally, adversarial experiential influences, such as childhood maltreatment in the form of physical and sexual abuse, have been found to predict psychopathy and its facets (Graham, Kimonis, Wasserman, & Kline, 2012; Krstic & Knight, 2012). The present study seeks to extend previous research on the developmental antecedents of psychopathy by examining the temporal patterning of emotional, physical, and sexual abuse, by exploring the differential effects of early childhood and later adolescent abuse, and by examining the impact of cumulative abuse as well as specific abuse types. Outcome measures include the interpersonal, affective, lifestyle, and antisocial facets of psychopathy from the Psychopathy Checklist-Revised (Hare, 2003). Developmental experiences have been gathered from a detailed contingency-based computerized inventory of 529 sex offenders. Data have been analyzed by structural equation modeling and regression analyses.

6. **Monika Dargis, Alex Mattern, Allison Brown, Michelle Tsonis, Joseph Newman**, University of Wisconsin-Madison. *Psychopathy and Sexual Offending: The Relationship Between Psychopathic Traits and High PCL-R Scores of Mixed Sex Offenders.*

Past research has revealed a relationship between psychopathy and sexual offending. Notably, offenders who sexually assault a minor as well as an adult (mixed offenders) earn higher total and Factor 2 (i.e., impulsive-antisocial traits) scores on the Psychopathy Checklist-Revised (PCL-R; Hare, 2003) than child sex offenders, rapists, and non-sex offenders (Porter et al., 2000; Olver & Wong, 2006). In addition, the Factor 1 scores (i.e., interpersonal-affective traits) of mixed offenders are higher than child sex offenders (Porter, Brinke, & Wilson, 2009). The implications of these associations remain unclear, though this pattern may reflect mixed offenders' greater criminal versatility, greater impulsivity, or problems with sexual deviance. Using data from 2,242 male prisoners, we attempted to replicate and clarify these findings. Consistent with Porter et al. (2009), mixed offenders earned higher Factor 2 scores than rapists, child sex offenders, and non-sex offenders. However in our sample, mixed offenders and rapists earned higher PCL-R total scores and Factor 1 scores than both child sex offenders and non-sex offenders. Contrary to speculation, these relationships were not mediated by criminal versatility or sexual deviance (i.e., sexual promiscuity) as measured in this study. However, impulsivity, as measured by Facet 3 of the PCL-R, did mediate the differences between mixed sex offenders and the other offender groups.

7. **Chelsea L. Brieman, Sarah VanMoffaert, Cody V. Schraft, David S. Kosson**, Rosalind Franklin University of Medicine and Science. *Experiencing Parental Rejection: The Association between Parental Rejection and Psychopathic Traits among Adult Male Offenders.*

Negative parental attitudes, such as hostility and rejection are typically associated with poor psychological, emotional, and behavioral development (McCord & McCord). More specifically, individuals who experience perceived rejection by primary caregivers tend to exhibit emotional instability and are at heightened risk for displaying hostility and aggression (Roehner, 2007). Schraft and colleagues (2011) reported that scores on a new measure of parental antipathy/rejection, (Knight et al., 1994) were positively associated with Psychopathy Checklist: Youth Version (PCL:YV) ratings among a sample of adolescent offenders. However, more research is needed to assess the robustness of relationships between antipathy and psychopathy. The current cross-sectional study investigated the association between parental antipathy and psychopathic traits as assessed by the Psychopathy Checklist-Revised (PCL-R) in a sample of adult offenders. Participants were 241 male inmates at a county jail in Illinois who ranged in age from 18 to 44. As hypothesized, parental antipathy scores were associated with PCL-R total scores, as well as with scores on the lifestyle and antisocial facets. In addition, after controlling for the number of ASPD symptoms

(and for demographic variables), perceived parental antipathy added to the prediction of PCL-R total scores, lifestyle scores, and was marginally predictive of antisocial facet scores after controlling for ASPD symptoms. These findings suggest that parental antipathy is uniquely related to psychopathic features, and indicate that several potential confounding factors do not explain the relationship between parental antipathy and psychopathy scores.

8. **Liane J. Leedom**, University of Bridgeport, **Linda Hartoonian Almas**, Aftermath: Surviving Psychopathy Foundation, **Emily Geslein**, University of Bridgeport, **Brandon Lleras**, University of Bridgeport. *The Impact of Psychopathy on the Family: A Mixed Methods Inquiry*.

The impact of psychopathic individuals on their family members has received little scientific attention since the Mask of Sanity (Cleckley, 1964) where Cleckley relied on family members' descriptions and accounts when evaluating psychopathic patients. This IRB approved, mixed method study has two primary aims: 1) To document family members' descriptions of the social behavior of psychopathic individuals and 2) to assess the impact of psychopathic individuals on their spouses and children. In Phase 1, memoirs written by spouses (N=10) and adult sons and daughters (N=8) of psychopathic individuals were located using Google and Amazon, obtained and subjected to qualitative thematic analysis using MAXQDA. Also used in this analysis, were author feedback, news interviews, and published reports/interviews of the psychopathic individual. Results of this analysis enabled the development of a model of the relationship between PCL-R Facets and experiences of family members and a model depicting perceptions of the psychopathic parent by developing children. The findings of Phase 1 are being triangulated with those from Phase 2 subjects (current N=30, spouses, adult sons and daughters of psychopathic individuals). Subjects complete an extensive battery of questionnaires including: history, PSCAN, SCL-90, and Follingstad Psychological Abuse Inventory. They also participate in an interview regarding their experiences with the psychopathic family member and PCL-R psychopathy symptoms.

9. **Joanna Lamkin**, University of Georgia, **Allan Clifton**, Vassar College, **Joshua D. Miller**, University of Georgia. *Application of Social Network Analysis to Determine Perceiver Effects Related to Psychopathy*.

Social network analysis (SNA) is a way to mathematically represent the structural dynamics of a group of people (i.e., a network). SNA can reveal patterns that may help to explain interpersonal dysfunction. Few studies have used this method to investigate psychopathy, despite its social consequences (e.g., antisocial behaviors). In this study, we used SNA to obtain a better understanding of the social worlds of individuals with psychopathic traits. We predicted that psychopathic individuals would describe their social group negatively (i.e., demonstrate a negative perceiver bias), regardless of structural position (e.g., someone's connectedness in the network). After self-rating their own personality, a sample of undergraduates (n = 148) listed thirty close acquaintances. Participants rated each acquaintance's personality, closeness of their relationship, and relationship of the acquaintance to the other 29 individuals listed. The findings suggest that psychopathic individuals demonstrate negative perceiver effects toward even their close friends. Furthermore, the negative effect applied even to central (i.e., well-connected and influential) acquaintances in their networks. This negative perceiver effect may explain some aspects of the interpersonal dysfunction associated with psychopathy, as it influences expectations about the behavior of others. It may also help to inform clinical treatment strategies, which are considerably needed for this population.

10. **Stephane De Brito**, University of Birmingham, **Renate Reniers**, University of Birmingham, **Gregory L Wallace**, National Institute of Mental Health, **Catherine Sebastian**, Royal Holloway, University of London, **Eamon McCrory**, University College London, **Essi Viding**, University College London. *Brain Cortical Thickness and Folding in Boys with Psychopathic Tendencies*.

Several voxel-based morphometry studies in adults with psychopathy and children with psychopathic tendencies have reported grey matter volume abnormalities in these populations in comparison to healthy controls. In voxel-based morphometry analyses, however, grey matter volume represents a mixture of cortical thickness and surface area differences (where surface area is proportional to the degree of cortical folding) and as such can be difficult to interpret with respect to measurable biological properties of brain tissue. Furthermore, since these two indices of brain structure are highly heritable, yet may be unrelated genetically, they could potentially represent important, separable candidate endophenotypes for shedding light on the pathway from genetic risk to psychopathic tendencies. To date, however, no study has examined cortical thickness and folding in children with psychopathic tendencies. Using a previously published dataset (De Brito et al., 2009), we will conduct surface-based morphometry analyses as implemented in FreeSurfer to compare whole brain cortical thickness and folding in 23 boys with psychopathic tendencies (mean age = 11 years 8 months) and 25 typically developing boys (mean age = 11 years 6 months). Volumes of subcortical structures will also be gathered and analyses will control for group differences on cognitive abilities and hyperactivity-inattention symptoms

11. **Nathalie M. G. Fontaine**, Indiana University, **Mark T. Berg**, Indiana University, **Ken B. Hanscombe**, King's College London, **Eamon J. P. McCrory**, University College London, **Essi Viding**, University College London. *Associations Between*

Trajectories of Callous-Unemotional Traits, Different Types of Peer Victimization and Psychopathology.

Callous-unemotional (CU) traits differentiate a group of children at particularly high risk for engaging in aggressive behavior, notably bullying. While studies have examined the contribution of CU traits to bullying, little attention has been paid to the associations between CU traits and peer victimization. Using data from the Twins Early Development Study (TEDS), our study examined the associations between trajectories of CU traits in children (between 7 and 12 years old), peer victimization in adolescence (14 years old), and psychopathology (16 years old). The trajectories of CU traits (stable high, increasing, decreasing and stable low) were identified through general growth mixture modeling. Four different types of peer victimization were considered: physical victimization, verbal victimization, social manipulation and attacks on property. The analyses were controlled for several onset indicators assessed at 7 years old, including sex, conduct problems, hyperactivity and socioeconomic status. Our findings suggest that stable high levels and increasing levels of CU traits in childhood, above and beyond the effects of onset indicators, are associated with higher levels of peer victimization in adolescence. Clinical implications are discussed, notably with respect to psychopathology in adolescence.

12. **Sarah E. Mikulich**, University of Nevada, Las Vegas, **Emily A. Dowgillo**, Pennsylvania State University, **Karen F. Miller**, Vanderbilt University Medical Center, **Alan B. Storrow**, Vanderbilt University Medical Center, **Stephen D. Benning**, University of Nevada, Las Vegas. *Psychopathy in the Emergency Room: Reasons for Admission, Demographics, Medication, and Comparisons with Incarcerated Samples.*

Previous research of psychopathy in community and incarcerated samples using the PCL family of instruments has found higher levels of psychopathy in incarcerated samples than in community samples. Similar research with dispositional trait measures of psychopathy is less prevalent. This study examined levels of MPQ-estimated fearless dominance (FD) and impulsive antisociality (IA) among incarcerated samples and that of a sample from a department of emergency medicine (ER) with a comparable level of SES. It also examined the relationships between FD, IA, and reasons for presenting in the ER, medication use, psychological problems, demographic information, and family structure. In a sample of 1023 ER participants, FD and IA scores were higher compared to those in the MPQ normative sample and were comparable to scores from federal and state inmates. FD was positively correlated with education level and current employment, whereas IA was negatively correlated with these variables. IA was negatively correlated with being raised by a biological mother, currently being married, and number of marriages; but positively with live-in relationships. FD was negatively correlated with self-reported psychiatric diagnosis and taking psychotropic and beta-blocker medications. IA was not correlated with medication use despite being correlated with self-reported psychiatric diagnosis. IA was selectively correlated with presenting in the ER for psychological problems and physical injury.

13. **Laura C. Thornton**, University of New Orleans, **James V. Ray**, University of New Orleans, **Paul J. Frick**, University of New Orleans, **Rachel E. Kahn**, University of New Orleans, **Elizabeth Cauffman**, University of California – Irvine, **Laurence Steinberg**, Temple University. *The Role of Callous-Unemotional Traits in Processing Decision for First-Time Offenders.*

Callous-unemotional traits have been associated with a particularly severe pattern of antisocial behavior (Frick, Stickle, Dandreaux, Farrell, & Kimonis, 2005). Moreover, research suggests that youth with CU traits are more likely to come into contact with the juvenile justice system (JJS; Sampson & Laub, 1993). Although a considerable amount of research has identified a number of legal (e.g., number of previous offenses, history of violence) and extra-legal factors (e.g., age, ethnicity, family factors) important in how youth are processed (i.e., formal vs. informal) through the JJS, studies have yet to examine if CU traits are influential as well. The current study addresses this gap in the research by examining if CU traits explain variance in whether youth are formally or informally processed beyond the effects of other legal and extra-legal factors. Analyses were conducted on data from an on-going multi-site, longitudinal study of 984 first-time justice-involved youth. After accounting for clustering within site, results from logistic regression suggest that CU traits, offense type (violent vs. non-violent), neighborhood characteristics, age, ethnicity, and IQ were associated with processing decision. Specifically, higher CU traits increase the likelihood of being processed formally beyond these other factors.

14. **Roberta Clanton**, National Institute of Mental Health, **Stuart White**, National Institute of Mental Health, **Sarah J. Brislin**, Florida State University, **Harma Meffert**, National Institute of Mental Health, **Soonjo Hwang**, National Institute of Mental Health, **Stephen Sinclair**, National Institute of Mental Health, **James R. Blair**, National Institute of Mental Health. *Temporal Discounting and Conduct Disorder in Adolescents.*

Temporal discounting (TD; the decrease in subjective reward value as a function of increasing delay) impulsivity is associated with ADHD and substance abuse, but not as clearly with antisocial behavior. The current study examined TD in youth with conduct disorder (CD) and the extent to which this was modulated by level of psychopathic traits. Forty-six youth participated in this study (21 with CD and 25 healthy youth). In a computer-based temporal discounting task, participants were asked to

choose between an immediate reward and a delayed reward of greater value. The level of immediate reward necessary for selection over the larger, delayed reward is the measure of temporal discounting. Youth with CD choose significantly smaller amounts of immediate reward over the larger future rewards [$F(5,38)=7.589, p=.009$]. This was the case even in those youth with CD without comorbid ADHD [$F(5,33)=6.4221, p=.016$]. However, level of psychopathic traits did not modulate temporal discounting in this sample [$F(5,38)=1.419, p=.240$]. These results suggest that temporal discounting impulsivity may be related to CD, but not specifically to psychopathic traits. The current findings suggest possible overlap in neuropathology between CD, ADHD and substance abuse.

15. **Nathaniel E. Anderson, Kent A. Kiehl, Keith A. Harenski**, University of New Mexico. *Attention to Emotion: Functional Activation Differences Associated with Psychopathy.*

Many neurobiological models of psychopathy agree that processing of emotionally salient information is abnormal in psychopaths. It has also been suggested that differences in mechanisms of attention may underlie some of these apparent emotional processing abnormalities. Healthy individuals tend to process emotionally salient information automatically and preferentially; however, recent ERP research has suggested that psychopathic traits are associated with differences in event-related brain activity suggesting impaired implicit processing of emotional content, with relative increases in emotion-related activity when explicitly focused on these features. The present study extended these methods examining event-related fMRI BOLD activity in a sample of incarcerated participants scored on the PCL-R. Participants completed a task that manipulates attention to emotional content in a target-detection task. Brain activity uniquely associated with PCL-R scores in emotion-processing areas differentiated between conditions in which emotional content was an irrelevant feature of the task and conditions in which participants explicitly attended to emotional content. These unique associations add support to notions of abnormal implicit processing of emotional content by psychopaths, and distinct mechanisms for attending to and processing emotional features when explicit attention is required.

16. **W. Roger Mills-Koonce & Nicholas Wagner**, The University of North Carolina at Chapel Hill. *Unique Patterns of Infant Autonomic and HPA Functioning among Children with Conduct Problems and Callous-Unemotional Traits in 1st Grade.*

Research suggests that older children exhibiting elevated conduct problems (CP) and callous unemotional (CU) traits (CP+CU) are at greatest risk for persistent antisocial behaviors and are characterized by a fearless temperamental profile, including low baseline levels of psychophysiological stress response. Whether these patterns represent stable, biologically-mediated differences or developmental adaptations to early atypical environments is unknown. This study examined early baseline levels of autonomic functioning (heart period [HP]) and hypothalamic-pituitary-adrenocortical functioning (cortisol) at 6 and 15 months for children with and without later CP and CU. Data were collected by the Family Life Project, a longitudinal study using a stratified population sampling of 1,292 families. Children were classified as no-CP, CP-only, or CP+CU based on 90% cut-offs for CP and CU measured at 1st grade. No group differences were observed at 6 months. At 15 months children with CP+CU had significantly higher baseline cortisol and lower HP (indicating higher heart rate) than children with CP-only and no-CP. These analyses find that the patterns of low baseline autonomic and cortisol functioning observed in children with CP+CU in adolescence are not evidenced in very early childhood. This suggests that, among individuals with clinical levels of CP+CU, there may be a developmental change in stress psychophysiology that is genetically, environmentally, or epigenetically mediated.

17. **Alice Jones, Holly Judge, Dexter Kunaka**, Goldsmiths, University of London. *Difficulties in Emotional Understanding of Self and Others Associated With Elevated Levels of Sub-Clinical Psychopathy.*

While a wealth of studies have demonstrated poor affective empathy in individuals with elevated levels of psychopathy, very few studies have examined symptoms of alexithymia, and no work has attempted to explore cognitive and affective alexithymia associations with psychopathy. This study aimed to replicate previous work demonstrating poorer affective empathy functioning in individuals with elevated (but non-clinical) psychopathy, but also to explore cognitive and affective facets of alexithymia. Data is reported on 100 adults who completed self-report measures of the Psychopathic Personality Inventory-Revised (PPI-R), Basic Empathy Scale and the Bermond-Vorst Alexithymia Quotient (BVAQ). The sample was split using the median total t-score on the PPI-R. Statistically significant group differences were found for affective empathy and cognitive empathy and for the affective subscale of the BVAQ, where the high psychopathy group scored less well. Lower scores on the affective subscale of the BVAQ indicate less intense emotional experiences, rather than a difficulty in accurately labeling own emotions. Previous work by our group has demonstrated that the affective subscale of the BVAQ predicts affective empathy, while the cognitive subscale does not. We suggest that individuals with elevated levels of psychopathy have less intense emotional experiences, which are likely to lead to them being less empathic towards the emotional experiences of others.

18. **Vaughn R. Steele, Brandi C. Fink, Kent A. Kiehl**, University of New Mexico. *Predicting Substance Abuse Treatment*

Outcomes with Psychopathy and Event-Related Potentials in a Go/NoGo Task.

Individuals with high Psychopathy Checklist-Revised (PCL-R) scores commonly use and abuse substances, are impulsive, and have difficulty completing long-term goals. Therefore, PCL-R scores could be predictive of who will or will not complete substance abuse treatment. We test the hypothesis that the PCL-R and neural measures of cognitive control and error processing would predict which individuals would or would not complete a 12-week cognitive behavioral substance abuse treatment program. Adult incarcerated participants (N=89) who volunteered for treatment performed a response inhibition (Go/NoGo) task while event-related potentials were recorded. The error-related negativity (ERN) and the error positivity (Pe) elicited during false alarms were compared between those who completed (N=68) and discontinued (N=21) treatment. As predicted, both the ERN and Pe, measured with classic windowed time-domain and principal component analysis, differed between groups. The Pe predicted treatment completion above and beyond other measures (i.e., ERN, age, IQ, PCL-R, and self-reported depression, anxiety, and motivation for change). We conclude individuals who discontinue treatment are deficient in both error-monitoring, as indexed by the ERN, and adjusting response strategy post-error, as indexed by the Pe but only the latter is predictive of treatment outcomes. Though commonly related to impulsivity and poor long-term planning, PCL-R did not specifically predict drug treatment outcomes.

19. **Leah M. Efferson**, Hiram College, **Andrea L. Glenn**, University of Alabama, **Ravi Iyer**, University of Southern California. *Me Versus Them: Psychopaths' Views of Their Own and Others Behaviors in Moral Dilemmas.*

Previous research has shown primary psychopathy to be associated with greater endorsement of utilitarian solutions in both personal (direct physical harm) and impersonal (indirect harm) moral dilemmas (Koenigs et al., 2011). In these scenarios, participants rate the appropriateness of their *own* behavior in the situation, but it is unknown how they would judge *someone else's* behavior in the situation. We hypothesized that those scoring higher in psychopathy would say it is more appropriate for themselves to perform the harmful action than it is for others. Participants (N=1161) from yourmorals.org took the Levenson Self Report Psychopathy Scale (Levenson, Kiehl, & Fitzpatrick, 1995) and were divided into two conditions (self/other) in which they either responded to ten moral dilemmas (Green et al., 2001, 2004) presented in second person (“you”) or third person (“John”). We found a significant interaction between psychopathy and self/other condition, such that people scoring higher in primary psychopathy were more likely to endorse utilitarian solutions when others were performing the action, whereas people lower in psychopathy were more likely to endorse utilitarian solutions when they were performing the action themselves ($\beta=.335$, $p=.011$). These findings indicate that psychopaths' judgments vary depending on whether they are judging their own or other people's behaviors and this pattern is different from those scoring low in psychopathy.

20. **Joanna M. Berg**, Emory University, **Lisa Hecht**, Georgia State University, **Robert D. Litzman**, Georgia State University, **Scott O. Lilienfeld**, Emory University. *Guiltlessness and Lovelessness: Clarifying the Meaning of the Coldheartedness Factor of the Psychopathic Personality Inventory-Revised.*

Classic conceptualizations of psychopathy often refer to a lack of deep-seated social emotion as one of the disorder's key components. However, with notable exceptions (e.g., the Affective facet of the PCL-R four-factor model; Hare, 2003), contemporary psychopathy assessment instruments often neglect this trait, focusing instead on the interpersonal and behavioral facets of psychopathy. The Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005) includes a subscale named Coldheartedness, which bears a strong resemblance to the affective deficits discussed in the classic psychopathy literature. As it is not one of the PPI-R's traditional higher-order factors, though, it is often omitted from analyses. In a sample of 1169 (73% female) college undergraduates, we examined Coldheartedness within a network of relevant etiological, behavioral, and personality correlates. Coldheartedness demonstrated expected negative correlations with measures of self-report cognitive disinhibition and each of the Big Five personality traits, but contrary to prediction, correlated positively with some aspects of trait impulsivity (especially Positive Urgency) and with self-reported childhood trauma. These correlations suggest that there may be more underlying the construct than affective deficits alone. Studies using the PPI-R should continue to explore Coldheartedness's correlates, including the role of impulsivity and the potential for a trauma-based etiological pathway.

21. **Pablo Ribes**, **Rosario Poy**, **Pilar Segarra**, **Àngels Esteller**, **Raúl López**, **Alicia Fonfría**, **Carlos Ventura** & **Javier Moltó**, Universitat Jaume I. *Boldness and Deficient Startle Potentiation During Threat Pictures.*

In order to examine the differential association between components of the triarchic model of psychopathy and emotional reactivity, we explored in 34 undergraduate females the role of boldness, meanness and disinhibition — assessed by the Triarchic Psychopathy Measure (TriPM; Patrick, 2010) — in predicting diminished startle potentiation to noise probes during a passive picture viewing task (intermixed presentation of 12 erotica, 12 neutral, 6 mutilation and 6 threat scenes, 6 s presented). A repeated measures general linear model including TriPM factor scores as continuous between-subjects factors revealed that only Boldness scores moderated the typical startle modulation across picture contents ($p < .02$), being these

scores specifically related to a deficient startle potentiation for threat vs. neutral pictures. A subsequent hierarchical regression analysis confirmed that this reduced aversive startle potentiation was uniquely predicted by Boldness scores, after controlling for Meanness and Disinhibition scores (11.6% of variance; $p = .05$). This result seems consistent with dual-process models of psychopathy, in that boldness rather than meanness reflects a weakness in defensive (fear) reactivity, even though both phenotypes share the same underlying dispositional temperament of low fear. Further, our findings support the validity of the triarchic model of psychopathy in disentangling etiological underpinnings of distinctive phenotypic components of this personality disorder.

22. **Alicia Fonfría, Àngels Esteller, Rosario Poy, Pilar Segarra, Raúl López, Carlos Ventura, Pablo Ribes, & Javier Moltó**, Universitat Jaume I. *Fearlessness and Cardiac Defense Response: Gender Differences.*

This study examines gender-specific associations between psychopathy traits and the second accelerative component (A2) of Cardiac Defense Response (CDR)—proposed as an index of defensive motivational activation (Ramírez et al., 2005). For this purpose, 164 undergraduates (99 women) assessed by the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005) participated in a non-cued defense paradigm (Vila et al., 2007). A general linear model (GLM) with gender and PPI-R total scores as between-subjects factors evidenced relevant gender differences in psychopathy-related deficits in A2 (4.5% of variance, $p < .01$). Additional GLMs performed separately for each gender showed differential patterns of A2 associated with PPI-R total for women (5%, $p < .03$), but not for men. Follow-up analyses for women, including PPI-R factors and scales scores, revealed a reduced A2 of CDR related to Fearless Dominance (PPI-R-I factor; 4.3%, $p < .05$), specifically to its Fearlessness scale (8%, $p < .01$). This result suggests that, at least in women, Fearlessness seems to be related to a diminished cardiac defensive reactivity, adding empirical evidence to the association between the low fear tendencies of psychopathy and the deficient activation of the defensive motivational system. Future studies should clarify the relation between CDR and psychopathy in men. This study further supports the use of the second accelerative component of the CDR as an index of defensive motivation.

23. **Yu Gao**, Brooklyn College and the Graduate Center of the City University of New York, **Lihui Xiao**, Hunan Normal University, **Simone Tang**, Duke University. *Utilitarian Moral Judgment and Psychopathic Personality in US and Chinese Students.*

One characteristic of psychopathy is amoral behavior. Recent studies have indicated that psychopaths, particularly those with low anxiety, make more utilitarian moral judgments. However, there is a dearth of research on the link in nonincarcerated populations, and no study has yet examined these associations in non-Western populations. Participants were college students in New York City ($N = 22$) and in Hunan, China ($N = 174$). Participants completed a moral judgment test involving personal and impersonal moral dilemmas. Psychopathic personality was assessed using the Psychopathic Personality Inventory-Short Form (PPI-SF) and anxiety was assessed using the State and Trait Anxiety Inventory-Trait version. Proactive and reactive aggression was also assessed using the Reactive-Proactive Aggression Questionnaire (RPQ). In both samples, after controlling for the effect of sex, the number of utilitarian responses to moral dilemmas was positively associated with PPI-SF total score, and in particular the second factor of PPI-SF (PPI-II). PPI-II was also associated with utilitarian response to impersonal moral dilemmas, and it was mediated by aggression. Anxiety did not moderate the associations. Findings provide further evidence that utilitarian moral judgments are associated with psychopathic personality in nonincarcerated populations, and for the first time suggest that this link can be generalized to a non-Western culture.

24. **Elizabeth Krusemark & Joseph Newman**, University of Wisconsin-Madison. *Identifying Selective Attention Processes among Narcissism Dimensions: An examination of the Evaluative Distortion Hypothesis.*

Narcissistic personality disorder (NPD) is associated with distinguishing traits including arrogance, and an excessive need for admiration. Clinical perspectives suggest narcissism is a heterogeneous construct, consisting primarily of a grandiose, dominant dimension as well as a vulnerable dimension characterized by hypersensitivity and negative affect. Theoretical accounts suggest self-enhancing and defensive behaviors are the result of a motivated self-regulatory strategy; however, an alternative theory posits evaluative distortions stem from an attention bias. The present study was designed to evaluate whether narcissism and its dimensions are associated with distinct attentional responses to evaluative information. Using a traditional dot probe task consisting of valenced and neutral words, we found NPD symptoms were associated with faster orienting toward negative information, while positive stimuli enhanced task performance. Reflecting unique attentional profiles, grandiose narcissism was associated with performance benefits from positive stimuli, while vulnerable narcissism showed greater performance costs in response to negative words. These results indicate grandiose narcissism may be adaptive, as it relates to gains from positive information, while vulnerable narcissism represents a malignant dimension marked by reactivity. Together, these findings underscore evaluative attentional biases in narcissism, suggesting narcissistic pathology is associated with individual differences in attention allocation that may facilitate goal-relevant behavior.

25. **Panayiotis Stavrinides**, University of Cyprus. *Psychopathic Traits and Adolescent Aggression*.

In this paper we discuss the results of two empirical studies that aimed at investigating adolescent psychopathy and aggression. In the first study we aimed at investigating the relationship between psychopathic traits and bullying. In the second study we examined whether adolescent psychopathy is correlated with other severe forms of problem behaviour such as reactive and proactive aggression. The participants of the first study were 1205 adolescents (mean age 14.3 years, SD = 2.07 years) that completed a Greek version of the Youth Psychopathic Inventory (YPI) and the Revised-Bullying and Victimization Questionnaire (BVQ-R). The participants of the second study were 605 adolescents with a mean age of 14.2 years and standard deviation 2.16 years that completed the YPI and The Reactive-Proactive Aggression Questionnaire. Results from both studies show that psychopathic traits can significantly predict bullying, proactive aggression, and reactive aggression. More specifically, Grandiose Manipulation and Impulsive Irresponsibility are the most significant predictors of aggressive behaviour. Furthermore, moderation analysis revealed that the link between psychopathy and aggression is moderated by child's gender. That is, girls with psychopathic traits are more likely than boys to engage in aggressive behaviour. The results of these two studies are discussed regarding clinical and theoretical implications of the potential psychopathology involved in adolescent aggression.

26. **Kasia Uzieblo**, Thomas More University College, **Sarah Gordts**, Vrije Universiteit Brussel, **Craig Neumann**, University of North Texas, **Eva Van den Bussche**, Vrije Universiteit Brussel, **Gina Rossi**, Vrije Universiteit Brussel. *Evaluating the Factor Structure and External Validity of the Self-Report Psychopathy Scale in a Large Community Sample*.

The Hare Self-Report Psychopathy Scale is a promising self-report inventory primarily designed for the assessment of psychopathic traits in non-forensic populations. Since its development, the instrument has undergone several substantial modifications. Factor analytical and validity studies on the two most recent versions, i.e. the 64- (Self-Report Psychopathy Scale III; Paulhus, Neumann, & Hare, in press) and the 28-item version (Self-Report Psychopathy Scale 4 Short Form; Paulhus, Neumann, & Hare, in press), is still limited. The current study aimed to evaluate the factor structure and to elaborate the external validity of both versions in a large community sample (N=1505). Results supported the factor structure of both SRP-versions consisting of the four factors Interpersonal Manipulation, Callous Affect, Erratic Lifestyle, and Criminal Tendencies. Furthermore, both SRP-versions exhibited good external validity in relation to a wide range of theoretically relevant correlates (e.g. avoidant attachment style, bullying behavior, aggression, and extremist, antisocial attitudes). Notwithstanding, differences between the two SRP-versions with regard to their relations with external correlates were found.

27. **Allan Heritage**, Vanderbilt University, **Loran Kelly**, Vanderbilt University, **Stephen Benning**, University of Nevada, Las Vegas. *Preferential Relationships Among Fearless Dominance, Impulsive Antisociality, and Risky Behavior*.

Within the psychopathic personality, the factors of fearless dominance (FD) and impulsive antisociality (IA) show some distinct and some overlapping relationships with other personality and behavioral correlates. For example, both factors are related to increased risky behavior, though not necessarily in the same way. Additionally, differences may exist between risk taking and risk perception. The present study investigated the relationships between fearless dominance, impulsive antisociality, and risky behavior in a comprehensive way. Specifically, we used multiple self-report measures of risky behavior, risk taking and perception, and impulsivity, as well as two behavioral tasks designed to measure different aspects of risky behavior. IA showed preferential relationships with substance use and antisocial behavior as well as general impulsivity. IA was also preferentially related to differences in risk taking and perception for ethical and health risks whereas FD was preferentially related to differences in recreational and social risks. Both factors were associated with sensation seeking, but FD was associated with thrill and adventure seeking, and IA was associated with boredom susceptibility and experience seeking. Despite these expected relationships, neither FD nor IA was related to performance on the Balloon Analog Risk Task or Assessment of Physical Risk Taking task. Theoretical implications and task differences are discussed.

28. **Laura E. Drislane & Christopher J. Patrick**, Florida State University. *Assessing the Latent Structure of the Triarchic Model of Psychopathy in Men and Women*.

Existing psychopathy inventories can be understood in terms of their comparative representation of boldness, meanness, and disinhibition (Drislane et al., 2013). Recent work has shown that scale measures of the Triarchic psychopathy model constructs can be formed using items from inventories that provide effective coverage of each (Hall et al., 2013). Results from a large (N = 567) study are described in which CFA was used to quantify boldness, meanness, and disinhibition as latent variables using indicators consisting of subscales of the Triarchic Psychopathy Measure and item-based scales derived from the Psychopathic Personality Inventory, Youth Psychopathic Traits Inventory, and Multidimensional Personality Questionnaire. A 3-factor Triarchic model fit the data more effectively (RMSEA=.07, CFI=.97) than alternative 2- and 1-factor models ($\Delta\chi^2 = 302.0; 1031.4$). While mean differences in factor scores were found across gender (male>female), the structure of the model did not vary by gender, as evidenced by maintenance of fit when factor loadings and intercepts were constrained to be equal

($\Delta\chi^2=11.8$, $p>.05$). A CFA in which scores on the Agreeableness factor of the NEO-PI-R were included as an additional indicator of the Meanness factor revealed the content of NEO-A to be largely consistent, but not identical, with the content of the latent Meanness factor ($\Delta\chi^2=22.4$, $p<.05$; RMSEA=.07, CFI=.97). Implications for conceptualization and assessment of psychopathy will be discussed.

29. **Casey M. Strickland**, Florida State University, **Laura E. Drislane**, Florida State University, **Robert F. Krueger**, University of Minnesota & **Christopher J. Patrick**, Florida State University. *Characterizing Psychopathy Using DSM-5 Personality Traits*.

Despite its importance historically and contemporarily, psychopathy is not currently included in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR). Its closest counterpart, antisocial personality disorder (ASPD), includes strong representation of behavioral deviance symptoms but weak representation of affective-interpersonal features considered central to psychopathy. The current study evaluated the extent to which psychopathy and its distinctive facets, indexed by the Triarchic Psychopathy Measure, can be assessed effectively using traits from a the Personality Inventory for DSM-5 (PID-5; Krueger et al., 2012), a dimensional model of personality pathology which will be included in Section III of the DSM-5 as an emerging model for use in clinical research. A sample of 188 undergraduate and community adults completed the PID-5 and TriPM. Results indicate that impulsive-externalization features and callous-aggressive features of psychopathy are well-represented by traits from the PID-5 considered relevant to ASPD (Multiple Rs = .77, .78, respectively) Furthermore, the boldness facet of psychopathy can be effectively captured using additional PID-5 traits (Multiple R=.73). These findings provide evidence that the dimensional model of personality pathology embodied in the PID-5 provides effective trait-based coverage of psychopathy and its facets.

30. **Nathan J. Kolla**, Centre for Addiction and Mental Health & University of Toronto, **Sarah Gregory**, University College London, **Stephen Attard**, St Andrew's Heathcare, **Nigel Blackwood**, King's College London, **Sheilagh Hodgins**, King's College London & Université de Montréal. *Could Childhood Physical Abuse Have Led to Alterations in Brain Structures Observed among Violent Offenders with Psychopathy? A Voxel-based Morphometric Study*.

Males with antisocial personality disorder and psychopathy (ASPD+P) commit more violent offenses and exhibit emotion-processing deficits not observed in ASPD without psychopathy (ASPD-P). Childhood physical abuse (CPA) is a precursor of both violent offending and grey matter (GM) brain changes in children and adults. We used structural MRI to determine whether GM differences between ASPD+P and ASPD-P violent offenders could be related to CPA. Thirty-seven males participated in this study: nine violent offenders with ASPD+P, 15 violent offenders with ASPD-P, and 13 healthy participants. ASPD+P offenders had PCL-R scores of 25 or greater, while those with ASPD-P had PCL-R scores less than 25. Participants underwent structural MRI scanning and completed a comprehensive interview with a forensic psychiatrist focusing on childhood maltreatment. Violent offenders were matched on age, IQ, and substance misuse histories. ASPD+P offenders reported more CPA than ASPD-P offenders and healthy participants. Compared with ASPD-P offenders, ASPD+P offenders presented smaller right temporal pole volumes after controlling for CPA. ASPD+P violent offenders reported more CPA than ASPD-P offenders. Reduced right temporal pole volumes in ASPD+P offenders tentatively suggest that alteration of this structure may play a role in the profound social impairment characteristic of psychopathy.

31. **Roberto C. Guerra**, **Bradley A. White**, & **Kelsey A. Shaffer**. Virginia Polytechnic Institute and State University. *Validation of the Inventory of Callous-Unemotional Traits in a Mixed Gender College Sample*.

Callous-Unemotional (CU) traits (e.g., lack of empathy or guilt, emotional detachment) are core features of psychopathy, and a key risk factor for antisocial behavior in youth and adults (Cooke & Michie, 1997). The Inventory of Callous-Unemotional Traits (Frick, 2004) is a 24-item self-report questionnaire designed to comprehensively assess CU traits in youth. The current study used confirmatory factor analysis (CFA) to evaluate the factor structure of the ICU in a mixed-gender undergraduate student sample ($N = 1896$; 73% female, ages 18-24). We estimated and compared three models, based on prior studies of ICU factor structure in adolescent forensic and community (Essau et al., 2006; Kimonis et al., 2008) and adult male community (Byrd et al., 2012) samples. Model fit was assessed using global fit indices including CFI (Bentler, 1990), TLI (Tucker & Lewis, 1973), and RMSEA (Steiger, 1990). The three-factor bifactor model exhibited best fit ($df = 219$, $\chi^2 = 1288.06$, $p < .001$, $\chi^2/df = 5.88$, CFI = .925, TLI = .906, RMSEA = .051), consistent with prior research. Results from both maximum likelihood and tests robust to ordinal and non-normal data are considered, and a specification search was conducted to determine model fit improvement. We also report on internal consistency of ICU factors and their incremental predictive validity for antisocial behavior. These findings add to the growing literature on the ICU, and support its use as a self-report measure of CU traits in adults.

32. **Alesia Allen**, **Emily MacDougall**, **Jackie Tippey** & **Randy Salekin**. University of Alabama. *Treatment of Conduct Problem Youth with Interpersonal Callous Traits Using Mental Models: Measurement of Risk and Change*.

Youth with conduct problems (CP) and interpersonal callous (IC) traits pose a significant problem to society. The costs associated with CP youth include damage to property, theft within the community and aggressive and sometimes violent acts. Youth with this condition also engage in behavior that puts them at risk for early substance use and at a disadvantage for academic and vocational success, and a host of other negative outcomes. As such, researchers have attempted to reduce these problems by developing prevention and intervention programs for the condition. This study tested a positive psychology intervention's ability to reduce symptoms of IC/CP. It was hypothesized that the intervention would increase positive emotion, decrease psychopathic traits (APSD scores) and increase treatment amenability (awareness of problems, motivation for treatment, and consideration/tolerance). Participants were 30 males (age = 14.67) housed at a secure facility. Findings indicated a reduction in APSD scores across treatment (T1 – T2) and the effect was maintained from T2 to T3. The facets of the APSD also evidenced a reduction in symptom scores. Positive emotion (CDS) and amenability improved across the intervention. Post-treatment interviews and progress notes showed that participants enjoyed and benefitted from treatment. The authors discuss the implications of the findings.

33. **Sarah J. Brislin, Laura E. Drislane, Christopher J. Patrick.** Florida State University. *Clarifying the Nomological Network of the Meanness Facet of Psychopathy.*

This study sought to clarify the nomological network of the meanness facet of psychopathy in large college sample (N=810; 31.7% male). Based on CFA work delineating constructs of the Triarchic psychopathy model as latent factors (Drislane & Patrick, this meeting), Meanness factor scores were computed by combining 3 scale indicators: TriPM Meanness, PPI-Tri Meanness, & NEO Agreeableness-rev. Scores on this factor showed stronger rs than individual scale indicators with criteria including IPIP Cooperation (-.59), Nurturance (-.60), Sympathy (-.62), and Warmth scales (-.64), and ICU and MACH-IV scores (.74, .68). When included in a regression model along with TriPM Boldness and Disinhibition scores, Meanness factor scores uniquely predicted IPIP Nurturance, Sympathy, and Interpersonal Pleasantness scores (rs = -.62, -.58, -.59), along with ICU, MACH-IV, and MPQ Aggression scores (rs = .67, .65, .63). Scores on Meanness also showed a strong positive r (.72) with EPQ Psychoticism (P) scores. Results confirm expected positive relations between scores on a factor reflecting the Meanness construct of the Triarchic model and measures of callous-unemotionality (ICU) and interpersonal exploitativeness (MACH-IV), and expected negative relations with measures of sympathy and empathic concern. Our also results extend knowledge of the network around the Meanness construct by demonstrating positive rs with competitiveness and Eysenck's P factor, and negative rs with nurturance and warmth.

POSTER SESSION C

SATURDAY, JUNE 8: 12:00P – 1:30P (SOLARIUM)

1. **Rosario Poy, Pilar Segarra, Raúl López, Àngels Esteller, Carlos Ventura, Pablo Ribes, Alicia Fonfría & Javier Moltó,** Universitat Jaume I. *FFM Description of the Triarchic Model of Psychopathy in Men and Women.*

The role of gender in the relationships between constructs of the triarchic model of psychopathy (Patrick et al., 2009) and the Five Factor Model (FFM) dimensions of normal personality was examined in 349 undergraduates (96 men) assessed by the TriPM and the NEO-PI-R. For Boldness, both men and women's scores were positively related to Extraversion (E) and Openness (O), and negatively related to Neuroticism (N) and the Straightforwardness and Modesty facets of Agreeableness (A). For Meanness, both men and women's scores were negatively related to A and Conscientiousness (C). For Disinhibition, both men and women's scores were negatively related to C and A and positively related to N. Though relations between Meanness and A were stronger for men than women, with the opposite being true for relations between Disinhibition and C, patterns of correlations for psychopathy constructs did not differ significantly across gender. Our findings are largely consistent with the conceptualization of psychopathy in terms of FFM constructs, irrespective of gender, and provide discriminant evidence in support of the three distinctive phenotypic constructs of the triarchic model of psychopathy. Thus, meanness is marked by low A and some degree of low C, whereas disinhibition is characterized both by low C and low A (along with high N). Notably, the constellation of low N, high E and high O, with aspects of low A, supports the idea that boldness is a benign expression of genotypic fearlessness.

2. **Àngels Esteller, Rosario Poy, Pilar Segarra, Raúl López, Alicia Fonfría, Pablo Ribes, Carlos Ventura, & Javier Moltó.** Universitat Jaume I. *The Triarchic Model of Psychopathy and Electrodermal Reactivity to Affective Pictures.*

The triarchic model of psychopathy (Patrick et al., 2009) encompasses three distinct phenotypic constructs: disinhibition, meanness, and boldness. Here we examine the contribution of these 3 constructs in electrodermal reactivity to affective pictures. Participants were 102 undergraduate females assessed by the Triarchic Psychopathy Measure (TriPM; Patrick, 2010). Electrodermal changes were obtained during a passive viewing task (pleasant, neutral and unpleasant IAPS pictures, 6 s presented). A repeated measures general linear model including TriPM scale scores as continuous between-subjects factors revealed that only Boldness scores modulated the electrodermal reactivity across picture categories ($p < .02$). After controlling for Meanness and Disinhibition scores, hierarchical regression analyses showed that only Boldness scores predicted significantly a reduced electrodermal difference between unpleasant and neutral pictures (7.6% of variance, $\beta = -.28$, $p < .01$), but not between pleasant and neutral ones. These data seem consistent with a conceptualization of boldness (e.g., low anxiousness and emotional resiliency) as a phenotypic expression of dispositional low fear. Moreover, these data add to the increasing evidence about the differential association between psychopathy components and affective deficits, giving empirical support to the validity of the triarchic model of psychopathy in disentangling the etiology of this personality disorder.

3. **Jens Foell, Noah C. Venables, James R. Yancey, Christopher J. Patrick,** Florida State University. *Validity of the TriPM Disinhibition Scale: Predictive Relations with Externalizing Disorder Symptoms and P300 Brain Response Amplitude.*

The Triarchic model of psychopathy (Patrick et al., 2009) defines the condition in terms of 3 distinct but related phenotypic facets: disinhibition, boldness, and meanness. The current study focuses on trait disinhibition--a strongly heritable tendency toward a range of impulse control (externalizing) problems. Reduced P300 amplitude is the best known biomarker for externalizing disorders, and is expected to relate to valid measures of trait disinhibition. We sought to extend existing work by pre-selecting participants for scores on the 20-item Disinhibition scale of the Triarchic Psychopathy Measure (TriPM), and evaluating the validity of scores on this scale for predicting externalizing disorder symptoms and reduced P300 amplitude. Consistent with prediction, higher TriPM Disinhibition scores were associated strongly and positively with symptoms of externalizing disorders (including child/adult ASPD and substance use disorders), and to a lesser but significant negative degree with amplitude of P300 brain potential response in an oddball task procedure. These results indicate that the Disinhibition subscale of the TriPM provides an efficient means for assessing clinically relevant disinhibitory tendencies and affiliated brain reactivity differences. Results will be discussed in terms of future directions for better elucidating the specific cognitive mechanisms underlying P300 amplitude reductions in highly disinhibited individuals, and clarifying their role in psychopathy.

4. **Kathryn Rich,** George Mason University, **Elizabeth Malouf,** George Mason University, **Leah Adams,** George Mason University, **Edward Witt,** Michigan State University, **Jeffrey Stuewig,** George Mason University, **June Tangney,** George Mason University. *Exploring the Relationship Between Psychopathy and Behavioral Measures of Cognitive, Executive, and Emotional Functioning.*

Inconsistencies in the theoretical and empirical literatures on psychopathy's relationship with cognitive, executive, and emotional functioning may be due to the different conceptualizations of the structure of psychopathy. Using the four factor model of psychopathy (Hare & Neumann, 2006), the current study examines psychopathy's (PCL:SV, Hart et al., 1995) relationship with intellectual ability (KBIT-2; Kaufman & Kaufman, 2004), as well as multiple behavioral measures of executive and emotional dysfunction, including: inattention and impulsivity (Immediate Memory Task/Delayed Memory Task, Dougherty et al., 1998), risk taking (Balloon Analog Risk Task, Lejuez et al., 2002) and distress intolerance (Mirror Tracing Task, Strong et al., 2003). A sample of 234 male jail inmates completed the KBIT-2 and PCL: SV; a subset of 109 completed behavioral measures of dysfunction. No relationships were found between psychopathy and intelligence, risk-taking, or distress. Inattention, however, had a marginally significant positive relationship with Factor 4 Antisocial Behavior ($r=.19$, $p=.06$) and impulsivity had a significant positive relationship with Factor 3 Impulsive Behavior ($r=.27$, $p=.01$). These results suggest that psychopathy's relationship with intelligence and executive functioning depends on both the factor of psychopathy and the domain of higher level functioning. Results clarify the deficits associated with different dimensions of psychopathy.

5. **Franklyn J. Graham & Raymond A. Knight**, Brandeis University. *The Role of Psychopathy and Intelligence in Mediating the Relation between Early Abuse and Subsequent Violence in Adolescence.*

The relation between child abuse and later violent behavior has been well established (Maxfield & Widom, 1996). Although both psychopathy and IQ have also been found important in predicting violence, their meditational role between abuse and violence has rarely been examined. The components of psychopathy, especially the Impulsivity/Antisocial factor, have consistently been tied to violent behavior (Porter & Woodworth, 2006). Also, verbal IQ has been found to correlate negatively with violent behavior (Nagin & Tremblay, 2001) and may play a meditational role between abuse and violent behavior. The relation of psychopathy to IQ appears to be complex, with psychopathy's four facets differentially covarying with IQ (Vitacco, Neumann, & Wodushak, 2008). The present study examined the role of both the four facets of psychopathy and verbal IQ in mediating the relation between early abuse and violent behavior. The archival records of juveniles convicted of sexual misconduct ($n = 215$) were assessed to rate the Interpersonal, Affective, Lifestyle, and Antisocial facets of psychopathy on the Psychopathy Checklist: Youth Version (Forth, Kosson, & Hare, 2003). IQ scores were also obtained from these records. Physical, sexual, and emotional abuse and measures of sexual and non-sexual violence were gathered using a contingency-based, computerized inventory. Meditational hypotheses were tested using structural equation modeling and multiple regression analysis.

6. **Katherine A. Gottlieb**, University of New Orleans, **Farrah N. Golmaryami**, University of New Orleans, **Rachel E. Kahn**, University of New Orleans, **James V. Ray**, University of New Orleans, **Kristina Childs**, University of Central Florida, **Paul J. Frick**, University of New Orleans. *Risk Assessment in Juvenile Offenders: Using Latent Class Analysis to Profile High-Risk Youth.*

Research supports the utility of grouping adolescents who show serious antisocial behavior based on distinct profiles of individual characteristics which could suggest different etiological factors and distinct targets for treatment. This study tested whether different profiles could be identified in a delinquent sample and whether youth across these profiles differed on offense severity and historical risk and protective factors. Latent Class Analysis was used in a sample of adjudicated youth using the following items from the clinician-rated Structured Assessment of Violence Risk in Youth (SAVRY): Risk Taking/Impulsivity, Anger Management Problems, Low Empathy/Remorse (CU traits), and ADHD. Three distinct profiles emerged: 1) low on all risk factors (Low Risk), 2) moderate on all risk factors except CU traits (Angry/Impulsive), and 3) moderate to high on all risk factors including CU traits (CU group). There was a trend for the CU group to have more charges, but the groups did not differ on their history of violent offenses. However, the CU group scored higher on several historical risk factors, including history of violence, early initiation of violence, and poor school achievement. Additionally, CU youth were less likely than other participants to have protective factors including prosocial involvement, strong attachments/bonds, and commitment to school.

7. **Angel Mackenzie & John Logan**, Carleton University. *Perception of Emotional Words in Individuals Varying in Subclinical Psychopathy.*

Psychopaths have an impaired ability to perceive visually-presented emotional stimuli such as words, images, and faces. They also have an impaired ability to perceive emotion in spoken language. The goal of the present investigation was 1) to identify whether psychopathy-related differences in perception of emotional spoken words could be found in a sample of nonpsychopathic undergraduates varying in subclinical psychopathic characteristics and 2), whether attentional mechanisms might be implicated in any effects observed. An auditory emotional Stroop task was used to present spoken words with varying prosodic and semantic emotional content. Predictions were made based on the response modulation hypothesis of attention. Findings were somewhat consistent with this theory: individuals scoring higher on psychopathy were less affected by congruency in semantic/prosodic emotion in word stimuli.

8. **Mehmet Kibris Mahmut**, Macquarie University. *On the Relationship Between Psychopathy, Empathy and Olfactory Abilities.*

The neural substrates are associated with dysfunction in psychopaths, such as the orbitofrontal cortex (OFC) and amygdale, are the same neural substrates involved in many olfactory abilities, including odour identification and odour discrimination. The results from two studies investigating the relationship between psychopathy and olfactory abilities have shown that higher levels of psychopathy are associated with poorer odour identification and/or discrimination. Preliminary data from our studies comparing empathy levels in experts that heavily use their olfactory abilities (such as perfumers and wine tasters) and those that do not, will also be presented. Finally, we will also present preliminary findings from our studies investigating whether increasing one's olfactory abilities will result in subsequent increases in empathy. It is hoped that the results of our studies on the relationship between psychopathy, olfactory abilities and empathy may provide insights into novel ways of treating persons with poverty of emotion deficits, including psychopaths.

9. **Vanessa Pera Guardiola**, Sant Joan de Déu, **Iolanda Batalla Llordes**, Hospital Santa Maria, **Carles Soriano Mas**, Bellvitge University Hospital, **Javier Bosque Gracia**, Medical Department of Ponent Prison, **Rosa Hernandez Ribas**, Bellvitge University Hospital, **Jose Manuel Menchón**, Bellvitge University Hospital, **Joep Pifarré Paredero**, Medicine Department, IRB Lleida, **Narcis Cardone**, Bellvitge University Hospital. *Exploring Executive Functions in Spanish Psychopaths.*

Frontal lobe impairment and executive dysfunction have been long related to impulsivity and antisocial behavior. Despite methodological differences between studies, it has been suggested that psychopathy may be associated with impaired executive functions. This study aimed to investigate the relationship between psychopathy and performance in the WSCT (Wisconsin Card Sorting Test) in a group of male offenders with ASPD (Antisocial personality disorder) compared to healthy controls. It was hypothesized that antisocial subjects would have different results in WSCT performance depending on the presence of varying degrees of psychopathy. A total of 91 adult male offenders were recruited from the high security department of the Prison of Lleida (Spain). The sample was made up of 31 psychopaths, 47 mixed and 13 nonpsychopaths (PCL-R, Hare, 2003) and 24 healthy controls. WSCT, Structured Clinical Interview for DSM Axis-II disorders (SCID-II) Vocabulary subscale of WAIS-R. After controlling for age, estimated IQ, educational level, substance abuse, viral disease and medication, we obtained: The nonpsychopaths made significantly more total and perseverative errors than control group. Psychopaths demonstrated significantly better executive function than nonpsychopaths. Correlation analysis, suggested a negative correlation between total PCL-R, factor and facet 1 and perseverative errors and responses.

10. **Cynthia Mathieu**, Université du Québec a Trois-Rivières, **Robert D. Hare**, University of British Columbia, **Paul Babiak**, Anubis-Research, **Craig S. Neumann**, University of North Texas. *Corporate Psychopathy and Turnover Intentions: The Mediating Role of Job Satisfaction.*

As with corporate narcissism, the first interest of scholars studying corporate psychopathy is examination of its relationship with leadership behaviour (Babiak et al., 2010; Westerlaken & Woods, 2012). However, while some psychopathic leaders may do damage, there are other ways they can have a negative impact on their organization with less immediately visible manifestations. Dissatisfied employees are less productive (Judge et al., 2001) but also more likely to leave their jobs (Hellman, 1997), than are other employees. Turnover is harmful to organizational performance (Glebbeck & Bax, 2004) and replacement costs are often very high (Hinkin & Tracey, 2000). This study tests the relationships among corporate psychopathy, job satisfaction and turnover intentions. We hypothesized that the relationship between corporate psychopathy and turnover is mediated by job satisfaction. 609 employees from different types of organizations completed self-report measures of job satisfaction (MSQ; Weiss et al., 1967), turnover intentions and corporate psychopathy (B-Scan Self, Babiak & Hare, 2013). B-Scan Self ratings were negatively related to job satisfaction and positively related to turnover intentions. Furthermore, job satisfaction fully mediated the relationship between B-Scan Self ratings and turnover intentions. These results indicate the need to further explore the relationship between corporate psychopathy and employee attitudes and behaviors.

11. **Patrick J. Kennealy**, **Eva R. Kimonis**, **Jason R. Hall**, University of South Florida. *Generalizability of the Response Modulation Hypothesis to Adolescent Offenders.*

The response modulation (RM) hypothesis posits that psychopaths encounter difficulty processing peripheral cues when engaged in goal-directed behavior (Patterson & Newman, 1993). In support of this theory, Newman and colleagues (1997) found that low anxious psychopathic adults demonstrate less interference in their performance on the Picture-Word task than nonpsychopathic offenders, suggesting reduced attention to peripheral information. To date, however, RM has been relatively unexplored in adolescents. We addressed this by investigating the generalizability of the RM hypothesis in a sample of 238 male juvenile offenders. Specifically, we examined whether two potential precursors to adult psychopathy "callous-unemotional (CU) traits and proactive aggression" predict reduced attention to peripheral information during the Picture-Word

task, as measured by reaction time interference scores. Based on the work of Newman and colleagues, we hypothesized that CU traits and proactive aggression would be negatively associated with task interference indices. Consistent with hypotheses, we found evidence of reduced word interference for those higher in CU traits and proactive aggression. This offers tentative support for the generalizability of the RM hypothesis to adolescent male offenders. Findings were not moderated by age or ethnicity. The role of anxiety in the relation between CU traits and task interference will also be investigated.

12. **Grace West, Jane Mackey, Alice Jones**, Goldsmiths, University of London. *Callous-Unemotional Traits and Narcissism Differentially Predict Direct and Indirect Bullying Behaviours in Middle-Childhood.*

Bullying behaviour is a common experience for a significant minority of children and adolescents. Although much has been published on the association between conduct problems and bullying, less attention has been paid to potential co-occurring traits. Viding, Simmons, Petrides, & Frederickson (2009) investigated peer-reports of bullying in relation to callous-unemotional traits and reported an association between these traits and direct (or physical) bullying in boys and girls aged between 11-13 years old. However, to date, no work has examined the relative contributions of callous-unemotional traits, narcissism and impulsivity to bullying behaviours. This study aimed to examine whether self-reported scores on subscales of the Antisocial Process Screening Device (Frick & Hare, 2003) would differentially predict peer-nominations of bullying behaviours in children aged 10-12 years of age. Data collection is on-going, but preliminary analyses on 192 children suggests that while peer nominations of direct bullying behaviours are predicted by narcissism scores; peer nominations of indirect bullying are predicted by callous-unemotional traits. Gender and self-reported levels of conduct problems are also statistically significant predictors for both types of bullying behaviours. We argue that considering differential antecedents of bullying behaviours is important for recognizing risk, and developing efficient interventions.

13. **Michael T. Willoughby & W. Roger Mills-Koonce**, University of North Carolina at Chapel Hill. *The Structure and Stability of Parent-Reported Callous-Unemotional, Oppositional Defiant/Conduct, and Attention Deficit/Hyperactivity Behaviors From age 4 to 1st Grade.*

Many antisocial adults had problems that emerged early in life. A key challenge is to distinguish children whose early disruptive behaviors are transient versus stable. The early assessment of callous unemotional (CU) behaviors may assist with this effort. This study made use of data from the Family Life Project (a representative cohort of N = 1292 children residing in rural counties in NC and PA) to evaluate the factor structure and stability of disruptive and CU behaviors from age 4 years (Strengths and Difficulties Questionnaire, CU items from the Antisocial Process Screening Device) to 1st grade (Disruptive Behavior Disorders Questionnaire, Inventory of Callous Unemotional Traits). Parents distinguished CU from ODD/CD and ADHD behaviors at age 4 and 1st grade. Although CU was stable across time ($r_s = .31 - .48$, $p_s < .001$, depending on the specific items that were used to index CU), it was less so than ODD/CD and ADHD ($r_s = .59$ and $.61$, respectively). Clinically elevated levels of CP or CU at age 4 years predicted increased risk for clinically elevated levels of CP, CU, and CP+CU in 1st grade. CU should be included in assessments of disruptive behavior in early childhood.

14. **James R. Yancey, Noah C. Venables, Jason R. Hall, Christopher J. Patrick**. Florida State University. *Antisocial & Interpersonal Facets of Psychopathy: Dissociable Neural Responses in a Simulated Gambling Task.*

Psychopathy is characterized by distinct interpersonal-affective and impulsive-antisocial features, as reflected by Factor 1 and Factor 2, respectively, of Hare's (2003) Psychopathy Checklist-Revised (PCL-R). To further elaborate on the neurobiological processes underlying these distinctive features, we examined associations amongst brain ERP responses elicited during a simulated gambling-feedback task and PCL-R factors (and their constituent facets) in a sample of adult male offenders (N=316). Time-frequency decomposition was used to parse out distinct delta (< 3Hz) and theta (4-7 Hz) components of the ERP response to feedback cues. Consistent with previous findings for non-incarcerated (community) participants, impulsive-antisocial tendencies predicted reduced delta activity to both gain and loss feedback at frontal sites. Follow-up tests identified the Antisocial rather than the Impulsive-Behavioral facet as the main source of reduced anterior delta deficits in response to feedback. Further, PCL-R Factor 1, and in particular the Interpersonal facet, uniquely predicted reduced frontal theta activity in response to loss feedback. These findings provide further evidence that distinct neurobiological processes underlie the separable affective-interpersonal and impulsive-antisocial features of psychopathy. Implications for considering psychopathy as a heterogeneous construct will be discussed.

15. **Charlotte A. M. Cecil**, University College London, **Eamon McCrory**, University College London, **Edward Barker**, Birkbeck College, University of London, **Essi Viding**, University College London. *An Examination of Primary and Secondary Psychopathy in High-Risk Youth: Associations With Trauma History and Markers of Individual Functioning.*

Primary and secondary variants of psychopathy have been associated with separate etiological pathways and distinct profiles of individual functioning. At present, it is unclear whether these findings extend to youths with high callous-unemotional (CU)

traits, the core affective-interpersonal features that characterise psychopathy, and whether the differentiation of primary vs. secondary variants may be of clinical importance. The aim of the present study was to investigate whether individuals with high levels of CU traits with/without anxiety (CU/Anx vs. CU) differ in their profiles of childhood maltreatment and individual functioning. Participants from a high-risk community sample of youths aged 16-24 years (n = 155) were classified as 'Low CU/Anx', 'CU', 'Anx', or 'CU/Anx' and compared on measures of childhood maltreatment and individual functioning making use of generalized linear models. CU/Anx vs. CU differed in history of maltreatment, levels of psychopathology, attachment style, affective dysregulation and behavioural risk-taking, but not in externalizing difficulties. Findings point to trauma history as a key factor in the discrimination of CU/Anx vs. CU that should be addressed when treating youth with CU/Anx. Attachment-based interventions may also be more appropriate for CU/Anx youth. Finally, higher levels of psychopathology and increased suicide risk seen in individuals with CU/Anx should alert clinicians to the combination of CU/Anx, as it indexes a particularly vulnerable group of youth.

16. **Lindsey B. Shelton, Sarah Guarraci, James R. Yancey, Noah C. Venables, Christopher J. Patrick**, Florida State University. *Trait Disinhibition and Heart Rate Reactivity During Affective Picture-Viewing*.

The Triarchic Model of Psychopathy (Patrick et al., 2009) conceptualizes psychopathic personality as entailing three distinct yet related phenotypic traits: Boldness, Meanness, & Disinhibition. Disinhibition reflects a general propensity towards problems of impulse control and is strongly associated with various externalizing problems (e.g. substance use disorders, child and adult antisocial deviance). Previous research points to underarousal as an important dispositional factor related to disinhibitory traits and behaviors, including delinquent and aggressive behavior (Raine, 1996). The current study examined associations between trait disinhibition and phasic heart rate reactivity in an affective picture-viewing paradigm in a community sample of adult twins (N = 458). Disinhibition was operationalized as scores on the general factor of the Externalizing Spectrum Inventory (ESI). High disinhibition was associated with reduced heart rate deceleration for pictures of all valence types, and unrelated to subsequent acceleration. Implications for understanding the role of underarousal in the impulsive-aggressive behavior of high disinhibited individuals will be discussed.

17. **Carrie A. Robertson & Raymond A. Knight**, Brandeis University. *The Similar Sequelae of Psychopathy and Sexual Sadism: From Developmental Perturbations to Disorders*.

Psychopathy and sadism, although related, are not co-extensive and capture both shared and unique aspects of aggression (Robertson & Knight, 2012). Satisfactory, comprehensive etiological theories for these two disorders have not been developed and the developmental antecedents of both disorders remain largely unexplored. Although no specific experiential antecedents have been consistently linked with psychopathy, childhood maltreatment, in particular physical/sexual abuse, has been found to predict its development. There is evidence for the stability of psychopathic traits and antisocial behaviors from childhood and adolescence into adulthood, but its early course is just beginning to be explored. Even less is understood about the development of sadism, although adolescent behavioral indicators for sadism have been identified (e.g., chronic lying, destroying property, stealing, cruelty, and assault), and various formative experiences in childhood have been linked to sadism among adults (e.g., parental infidelity/divorce; vicarious violence; and physical, emotional, and sexual abuse). Using a computerized, contingency-based developmental inventory and archival ratings of 397 sex offenders, the current study has empirically evaluated the pathways from childhood experiences to adolescent deviance and adult pathology, both psychopathic and sadistic. Using correlation, regression, and structural equation modeling, we identified unique and shared developmental pathways to each.

18. **Lucy Foulkes**, University College London, **Ana Seara-Cardoso**, University College London, **Craig S. Neumann**, University of North Texas, **John S. C. Rogers**, University College London, **Essi Viding**, University College London. *Looking After Number One: Associations Between Psychopathic Traits and Measures of Social Reward and Functioning in a Community Sample of Males*.

Individuals with high levels of psychopathic traits do not typically form enduring bonds with others. However, few studies have documented the associations between psychopathic traits and social functioning. Using a community sample of males, this study systematically explored associations between psychopathic traits (SRP-4-SF; Paulhus, Neumann, & Hare, in press) and measures characterising social/material goals, friendship, social comparison and the need for belonging, providing a comprehensive assessment of aspects of social motivation associated with psychopathic personality traits. Additionally, a novel experimental vignettes task assessed the extent to which participants identified dominance in themselves and admired this trait in others. Partial correlations between each variable and each dimension of psychopathy were analysed. Males with high levels of affective/interpersonal psychopathic traits appeared not to be motivated by affiliative relationships, instead reporting goals relating to their own image and financial success. Additionally, these individuals admired dominance in others, but did not clearly identify this trait in themselves. Thus, this study is one of the first to document the relationship between multiple areas of social motivation and functioning and psychopathic traits. The findings provide empirical evidence that

individuals with high levels of psychopathic traits seem motivated to look after themselves, but not others.

19. **Joseph H. R. Maes & Inti A. Brazil**, Radboud University. *Is the Interpersonal-Affective Dimension of Psychopathy Positively Associated With Executive Functioning? A Literature Search for Available Data.*

Common psychopathy rating instruments distinguish between an interpersonal-affective and an antisocial dimension. The suggestion that the interpersonal-affective dimension is positively associated with executive functioning is occasionally made in the literature, without reporting objective empirical data. Here we searched for empirical studies reporting data on the relationship between the interpersonal-affective dimension and four aspects of executive functioning: inhibition, attentional shifting, working memory, and planning. Eleven published articles were identified, reporting data of 721 individuals from incarcerated and non-incarcerated, male and female, and adult and non-adult samples. Using a heterogeneous set of tests and dependent measures across studies, the inhibition and attentional shifting components were assessed in eight and five studies, respectively; the working memory and planning components each in two studies. A small majority of the studies found a positive association between the interpersonal-affective dimension and the different executive functions, although the associations were mostly non-significant. Given the scarcity of studies and the use of heterogeneous populations, tests and statistical analyses, no robust conclusions can be drawn at this stage. We conclude that caution is needed when claiming executive functioning superiority in psychopathy and that more research is needed to further validate and specify the suggested positive association.

20. **Johanna Glimmerveen**, Radboud University, **Inti A. Brazil**, Radboud University, **Ellen de Bruijn**, Leiden University, **Erik Bulten**, Pompestichting. *Interpersonal Distance in Antisocial and Psychopathic Forensic Offenders.*

Interpersonal distance, which is the distance kept between two persons during social encounters, can be considered a measure of sensitivity for social norms. The amygdala plays a key role in the regulation of personal space and this structure has been shown to function abnormally in antisocial populations. More specifically, antisociality has been related to hyperactivity of the amygdala, which could be reflected by a larger preferred interpersonal distance. On the other hand, psychopathy (PP) has been linked to reduced activity in the amygdala, suggesting a tendency to prefer shorter distances. However, the relationship between preferred distance during interactions, personality traits and clinical characteristics in offender samples has never been examined. Therefore, we conducted an explorative study to assess preferences for interpersonal distance and their relationship with personality traits in forensic patients with and without PP. Preliminary analyses in the group with PP have revealed that Factor 1 scores of the PCL-R and scores on empathic perspective taking are positively related to different measures of interpersonal distance. This suggests that psychopathic individuals use higher-order social cognition to infer others' preferences in maintaining personal space rather than following their own preferences. Importantly, these experimental approaches may offer new avenues for understanding social functioning in individuals showing aberrant social behavior.

21. **Travis D. Flower**, Saint Elizabeths Hospital. Washington. *Establishing Local Normative Data for the Psychopathy Checklist, Revised in a Male Forensic Inpatient Population.*

The Psychopathy Checklist Revised (PCL-R) is a commonly used instrument at Saint Elizabeths Hospital (SEH), a public psychiatric hospital located in Washington, D.C. The PCL-R is typically used in the context of violence risk assessments of forensic inpatients, which are used to inform decisions about conditional release of patients and other risk management questions. Clinical observations have suggested that average PCL-R scores among this population might be somewhat lower than expected, given the PCL-R norms for male forensic patients published in the PCL-R manual. The goal of the present study is to review archival PCL-R data in SEH patient files and construct local norms. Differences between the norms of the SEH population, which is an urban, primarily African-American, United States population, and the published PCL-R norms, will be examined. Potential threats to the validity of the local norms, such as variations in the level of training of the examiners, will be considered. In addition, the potential for demographic and clinical factors to influence results will be examined. The authors will address the utility of using a set of local norms to inform risk management planning in psychiatric settings, including making comparative statements about an individual's level of psychopathic traits relative to other individuals currently being treated at those facilities. Finally, potential directions for future research will be discussed.

22. **Ashley M. Hosker-Field**, Brock University, **Amber Knuff**, Queen's University, **Angela S. Book**, Brock University. *Psychopathy and Impulsivity: An Examination of the Relationship between Two Multifaceted Constructs.*

Poythress and Hall (2011) challenged the idea that psychopaths are impulsive, suggesting that the relationship is quite complex. Psychopathy can be viewed as a 2-factor construct consisting of emotional/interpersonal traits (F1) and social deviance characteristics (F2). Whiteside and Lynam (2001) demonstrated that impulsivity has four domains including urgency, (lack of) premeditation, (lack of) perseverance, and sensation seeking. Research shows that impulsivity is primarily associated with F2 (Morgan, Gray & Snowden, 2011) but there have been conflicting results concerning the relationship between

impulsivity and F1. This study sought to clarify the association between psychopathy and impulsivity in a sample of 137 male undergraduates. Participants completed the Self-Report Psychopathy Scale III (SRP) and the UPPS Impulsive Behavior Scale (Whiteside & Lynam, 2001). We found that after accounting for F2, F1 was negatively correlated with premeditation (higher scores indicated lower premeditation) and unrelated to the other three impulsivity domains. Conversely, after accounting for F1, F2 was positively correlated with premeditation, urgency, and sensation seeking. These relationships held even after removing impulsivity items from the SRP. It seems that individuals who exhibit F2 traits are indeed impulsive, while those who display F1 traits are not only unlikely to be impulsive, but seem more inclined to consider the potential consequences of their behavior.

23. **Boris Schiffer**, University Hospital Bochum, **Christina Pawliczek**, University Hospital RWTH Aachen, **Sheilagh Hodgins**, Kings College London. *Neural Mechanisms Underlying Mentalizing Ability in Subjects With Antisocial Personality Disorder.*

Psychopathy has been associated with a lack of emotional responsiveness and deficient affective empathy. Interestingly, cognitive empathy or mentalizing ability seems relatively intact in the majority of criminals, especially those with psychopathic traits. By using a modified version of the Reading the mind in the eyes test in combination with fMRI, we aimed at determining differences in the neural mechanisms underlying mentalizing ability between non-offenders and (violent) offenders with antisocial personality disorder (ASPD) exhibiting various levels of psychopathic traits. Though offenders and non-offenders were similar with respect to overall mentalizing performance, there was a significant group-by-stimulus type interaction, suggesting that offenders relative to non-offenders had greater problems recognizing emotions from male than female eyes. Administration of eyes stimuli, particularly those of men, led to reduced activation of the amygdala in offenders as compared to non-offenders. Both neural and behavioral differences could be partly explained by personality features of psychopathy. This study confirmed previous work suggesting that mentalizing ability among people suffering from antisociality, are relatively intact. However, we found evidence for subtle deficiencies in the ability to recognize emotions from men, which are associated with deficient activation of the limbic system that may result in a propensity for aggressive behavior.

24. **Lauren R. Few**, **Jessica L. Maples**, **Joshua D. Miller**, University of Georgia. *Psychopathy and the Proposed DSM-5 Pathological Trait Model.*

The current study sought to examine the relations between psychopathy, as measured by the Self-Reported Psychopathy scale-III (SRP-III) and the DSM-5 Personality and Personality Disorder (PD) Work Group's recently proposed dimensional model of pathological personality traits. This model includes 5 broad domains and 25 more specific traits identified by the Work Group as relevant to personality pathology. An outpatient clinical sample (N=106) provided self-reported data from the SRP-III and the Personality Inventory for DSM-5 (PID-5), which assesses the 25 facet level pathological personality traits. In addition, clinicians provided single-item ratings for each of the 25 personality traits following a semi-structured PD interview. Correlations were computed between the SRP-III subscales and both clinician-rated (CR) and self-reported DSM-5 traits. In addition, hierarchical regression analyses were conducted to examine the amount of variance in psychopathy subscales accounted for by the five pathological trait domains. As expected, traits from the Antagonism and Disinhibition domains were most consistently related to psychopathy subscales. Additionally, both CR and self-reported PID-5 traits accounted for substantial variance in the subscales of the SRP-III (CR: 26% - 46%; PID-5: 46% - 69%). Results provide preliminary support for the use of the proposed pathological trait model in the assessment of psychopathy.

25. **Elgiz Bal**, Children's National Medical Center, **Benjamin E. Yerys**, Children's National Medical Center, **Caroline Luong-Tran**, Children's National Medical Center, **Ian Eisenberg**, National Institute of Mental Health, **Lauren Kenworthy**, Children's National Medical Center, **Gregory L. Wallace**, National Institute of Mental Health. *Do ADHD Symptoms and Callous-Unemotional Traits Predict Internalizing and Externalizing Symptoms in Youth with Autism Spectrum Disorders?*

This study assesses how well ADHD symptomatology and callous-unemotional (C-U) traits predict co-occurring internalizing (anxiety, depression) and externalizing (Oppositional Defiant Disorder [ODD], Conduct Disorder [CD]) symptoms in youth with Autism Spectrum Disorders (ASD). Ninety-four individuals with ASD (7-28 years old) participated in the study. ADHD, internalizing, and externalizing symptomatology were assessed using the Child and Adolescent Symptom Inventory-4R or the Adult Inventory-4. C-U trait ratings were assessed using the Inventory of Callous-Unemotional traits. Hierarchical linear regression analyses showed that C-U traits uniquely predicted CD symptoms, explaining 23% of the variance ($p < .01$). Both C-U traits and ADHD predicted ODD symptoms; C-U traits explained 15% of the variance, and ADHD explained 11% of the variance ($ps < .01$). ADHD symptoms and age predicted GAD and dysthymia symptoms. ADHD explained 26% of the variance in GAD and 8% of the variance in dysthymia ($ps < .01$). Age explained 2% of the variance in GAD and 11% of the variance in dysthymia ($ps < .01$). The results indicate that ADHD symptoms and C-U traits in ASD impact the severity of internalizing and externalizing symptoms. These findings highlight the importance of assessing comorbid psychopathology in ASD to identify potential risk factors and to develop more effective treatment plans.

26. **Melanie Chinchilla**, Rosalind Franklin University of Medicine and Science, **David Kosson**, Rosalind Franklin University of Medicine and Science, **Robert Hare**, University of British Columbia, **Craig Neumann**, University of North Texas, **Peter Johansson**, Örebro University. *Psychopathy Accounts for the Variance Shared Between Prominent Public Health Problems.*

Substance abuse and violence are two inter-related and widely recognized public health problems. Although research suggests that substance abuse is a significant risk factor for violence, the nature of the relationship between substance abuse and violence is not well understood. Psychopathy is correlated with substance abuse and predictive of violent criminal recidivism within criminal justice populations, yet, to our knowledge, prior studies have not examined whether psychopathy impacts the relationship between substance abuse and violence. The purpose of this study was to examine psychopathy, as assessed using the Revised Psychopathy Checklist, as a potential statistical mediator of the relationship between substance abuse and non-sexual violent crime. The current analysis utilized information obtained from a large sample of male violent offenders within the Swedish prison system. Utilizing an established framework for testing mediation, regression results demonstrated that psychopathy partially mediated the relationship between substance abuse and violent offenses. Although these analyses were cross-sectional, when considered in concert with previous findings, current findings suggest that psychopathy warrants further investigation as a possible contributor to these two well-established public health problems. Such findings bolster the assertion that psychopathy should be considered a public health problem.

27. **Christopher Gillen**, Carleton University, **Emily MacDougall**, University of Alabama, **Randall Salekin**, University of Alabama, **Adelle Forth**, Carleton University, **Heather Merriman**, University of Alabama, **Marissa Abrams**, University of Alabama. *The Reliability and Validity of the RSTI-Abbreviated.*

Research has found that the Risk-Sophistication-Treatment Inventory (RSTI; Salekin, 2004) is a valid and reliable measure of the risk for offending, maturity, and treatment amenability of juvenile offenders. However, the length of the interview restricts the number of offenders who can be assessed. The RSTI-Abbreviated (RSTI-A) was developed to address this. This study is the first to investigate its inter-rater reliability and convergent validity, with particular interest investigating if psychopathy can be accurately rated with limited interview information. The RSTI-A, RSTI Self-Report (RSTI-SR) and APSD were administered to 70 juvenile offenders. A comparable inter-rater reliability was obtained for the risk, maturity, and treatment scales (ICCs = .82-.90). Preliminary results were based on 24 RSTI-A interviews. The RSTI-SR correlated with the RSTI-A violence ($r=.45$, $p=.026$) and criminality ($r=.59$, $p=.002$) clusters, while the psychopathy cluster correlated with the APSD ($r=.40$, $p=.05$). The autonomy cluster of the maturity scale was related to the RSTI-SR ($r=.49$, $p=.015$). These results suggest that the RSTI-A is a reliable and valid measure and it allows for the assessment of psychological constructs important to understanding juvenile psychopathy. While these results are promising, additional research is needed to determine the measures validity. The authors are in the process of coding 70 interviews to provide a complete assessment of the efficacy of the RSTI-A.

28. **Emily MacDougall**, **Randall T. Salekin**, **Abby Clark**, **Gabrielle Woodard**, University of Alabama. *The Impact of Psychopathy: A Survey of Victims and Their Experiences.*

Although research typically focuses on the etiology of the individual with psychopathy, there is a lack of knowledge about the victims of psychopathic behavior in the community. This study intends to explore the experiences of these individuals, in order to generate greater understanding and recognition of the impact of psychopathy. Respondents are young adults recruited from the Psychology participant pool at the University of Alabama ($n = 300$). Data collection is ongoing and 600 respondents are expected by June, 2013. Of those identified as psychopathic individuals who had committed violence ($n = 131$; 52.3%), 13% ($n = 39$) committed the offense against the respondent. Only 16% of psychopathic individuals reportedly received treatment ($n = 48$). Using direct logistic regression, Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003) total scores were a statistically significant predictor of whether the respondent sought treatment for the individual, recording an odds ratio of 1.091 ($p = .007$). The full model containing all predictors was statistically significant, $X^2(4, N = 289) = 14.64$, $p = .006$. Although results indicate that treatment is being sought out for those with high psychopathic traits, the low treatment rate is concerning, particularly since many respondents report experiencing violent victimization. With greater understanding provided by these results comes the opportunity to develop and improve upon resources for victims of psychopathy.

29. **Henriette Bergström & Adelle Forth**, Carleton University. *Once a Psychopath, Always a Psychopath? A Meta-Analysis of the Stability of Psychopathic Traits Across Childhood and Adolescence.*

Change can and does occur throughout human development, but the largest change in physical, behavioural, emotional, and cognitive occurs during childhood and adolescence. Over the past two decades there has been increasing interest in childhood and adolescent psychopathy but concerns have been raised about the stability of psychopathic traits across these developmental periods. Based on personality psychology theory and research it is expected that adolescence will be the period

of greatest instability due to rapid maturity and environmental changes. While individual studies do provide support that psychopathic traits exhibits higher levels of stability in childhood than adolescence, this study examined this using a meta-analytic approach analyzing 7 childhood (n= 3326) and 7 adolescence (n=3052) studies. The preliminary analyses of effect sizes indicate that psychopathic traits display high stability across childhood and adolescence ($r = .54$, 95 % CI: .47 -.61). When separating the developmental periods of childhood and adolescence, stability was found to be strong in childhood ($r = .72$, 95% CI: .69-.74) and only moderate in adolescence ($r = .30$, 95 % CI: .22 - .38). Implications regarding the utility of psychopathy youth measures for enhancing intervention provisions in youth are discussed.

30. **Donna Andersen**, Lovefraud Education and Recovery. *In Love With an Exploiter: Sexual Deception Correlates with Increased Harm to Romantic Partners.*

Romantic partners of putative antisocial individuals completed an anonymous online survey. Respondents rated partners according to the criteria proposed in the first draft of the DSM-5 and answered questions about their experience, including harm suffered. Of all survey respondents, 81.5% said the individual was truthful about sexual orientation, and 18.5% reported that they lied. Analyzing these two groups separately—data about putative sociopathic individuals who told the truth about their sexual orientation vs. those who lied—showed that sexual deception correlated with increased harm suffered by the romantic partner. On almost every measure, individuals who were sexually deceptive displayed more antisocial traits, more antisocial behavior, and caused more harm to their romantic partners, than those who were not sexually deceptive. The results were particularly striking when comparing sexually deceptive vs. not sexually deceptive in regards to physical violence and sexual demands: Victims reported more physical abuse or injury (46% vs. 33%). They reported having their lives threatened more often (49% vs. 30%). They reported more pets injured or killed (23% vs. 12%). They reported more cheating (87% vs. 72%). And they reported uncomfortable sexual demands (53% vs. 37%).

31. **Donna Andersen**, Lovefraud Education and Recovery. *In Love With an Exploiter: How Age Affects the Harm Experienced by Romantic Partners.*

Romantic partners of putative antisocial individuals completed an anonymous online survey. Respondents rated partners according to the criteria proposed in the first draft of the DSM-5 and answered questions about their experience, including harm suffered. In another analysis of the survey data, respondents were divided into two groups—those who were involved in youthful relationships, where both parties were between the ages of 14 and 30, and those relationships were both parties were age 31 or older. Respondents of both age groups reported two of the top characteristics, manipulateness and callousness, at similar rates. However, all other traits—deceitfulness, narcissism, irresponsibility, impulsivity, aggression, hostility and recklessness—were reported at higher rates among the younger individuals. Comparing the youthful vs. mature involvements: Victims reported more physical abuse or injury (54% vs. 29%). They reported having their lives threatened more often (42% vs. 28%). There were more reports of the putative antisocial individual threatening suicide (31% vs. 17%). And the victims themselves more often considered suicide (46% vs. 34%). In regards to financial harm, the youthful victims more often lost their homes (36% vs. 23%), lost their jobs (31% vs. 24%) and incurred debt (69% vs. 56%).