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BRIEF REPORT

The Relationship Between Emotion Regulation Difficulties and Psychopathic Personality Characteristics

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The factors of psychopathy assessment tools diverge in their relationships with numerous problematic behaviors and psychological disorders. Emotion dysregulation is a pathological process argued to cut across diagnoses, and may be important in better understanding these divergent associations. This study sought to clarify psychopathy's association with emotion regulation difficulties. It was predicted that the Fearless Dominance and Self-Centered Impulsivity factors of the Psychopathic Personality Inventory–Revised would demonstrate differential relationships with a multidimensional conceptualization of emotion regulation difficulties. Ninety-one male undergraduate students and 28 male court-mandated anger management participants completed self-report questionnaires measuring emotion regulation difficulties and psychopathic personality characteristics. Hierarchical regression analyses indicated that emotion regulation difficulties were negatively associated with Fearless Dominance psychopathic traits, but positively associated with Self-Centered Impulsivity and global psychopathic traits. In addition, emotion regulation difficulties explained incremental variance in psychopathic traits over and above negative affect alone. These findings may have clinical implications for the etiology and treatment of psychopathic personality disorder.

Keywords: psychopathy, emotion regulation, self-centered impulsivity, fearless dominance

The psychopathic personality style reflects a constellation of traits, including remorselessness, callousness, deceitfulness, egocentricity, a lack of interpersonal bonds, superficial charm, externalization of blame, and a lack of fear and anxiety (Cleckley, 1941). This personality profile arises early in life and continues across the life span (Hare, 1996). Although often viewed as a homogeneous construct, a growing body of evidence indicates that psychopathy is heterogeneous in nature (Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003).

Factor analyses of common psychopathy assessment tools illustrate the heterogeneity of psychopathic personality characteristics. The Psychopathy Checklist–Revised (PCL-R; Hare, 1991), a 20-item checklist based on both interview and collateral information, is comprised of two moderately correlated factors. Factor 1 includes affective/interpersonal personality traits such as selfishness, callousness, and remorseless exploitation of others, whereas Factor 2 measures a chronically unstable lifestyle and social deviance (Harpur, Hare, & Hakstian, 1989). The Psychopathic Personality Inventory–Revised (PPI-R; Lilienfeld & Widows, 2005) is a 154-item self-report measure assessing core psychopathic personality characteristics, with the majority of items loading on two factors. Factor 1 reflects the emotional and interpersonal characteristics of psychopathy (Fearless Dominance; FD), and Factor 2 reflects the social deviance characteristics (Self-Centered Impulsivity; SCI), although it is notable that the PPI-R has no items explicitly assessing antisocial behavior (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003). In addition, unlike the PCL-R, the PPI-R factors are generally orthogonal (Benning et al., 2003).

Research examining total scores on psychopathy assessment tools has often resulted in obscured findings in their relationship to external correlates (Patrick, Edens, Poythress, Lilienfeld, & Benning, 2006). For example, although a deficit in anxiety has long been viewed as part and parcel of psychopathy (Cleckley, 1941), correlational analyses using PCL total scores did not find direct associations between psychopathy and trait anxiety or neuroticism. However, reanalysis of factor scores showed that Factor 1 correlated negatively with various self-report measures of anxiety, and,

conversely, several correlations between Factor 2 and anxiety were positive (Harpur et al., 1989). With regard to risk assessment, divergent relationships with antisocial conduct among PCL (Harpur et al., 1989; Hemphill, Hare, & Wong, 1998) and PPI (Edens, Poythress, Lilienfeld, Patrick, & Test, 2008) factors have been found as well, with SCI demonstrating a preferential association with aggressive and nonaggressive misconduct.

One possible explanation for the heterogeneity of this disorder is that psychopathy may stem from multiple etiological origins. The dual process model of psychopathy (Fowles & Dindo, 2006) proposes two separate etiological pathways: a fearless temperament (i.e., PPI-R FD) and deficits in frontal lobe functions that underlie cognitive processing (i.e., PPI-R SCI). These deficits are hypothesized to be risk factors that interact with environmental influences and are associated with negative outcomes. The developmental consequences from either process can be phenotypically similar, and elevations on both factors are related to diagnoses of psychopathy (Fowles & Dindo, 2006). For example, both fearlessness and cognitive processing deficits can interfere with interpretation of threat, potentially resulting in an increased propensity toward antisocial behavior. Consistent with this, behavioral genetics research on the PPI factors has found that FD and SCI traits do arise from distinct etiological processes with about half of the total variance explained by genetic contributions for each factor (Blonigen, Hicks, Krueger, Patrick, & Iacono, 2005). The genetic influences related to FD exhibit a negative correlation with a composite of internalizing psychopathology and the genetic influences related to SCI are positively correlated with externalizing psychopathology (Blonigen et al., 2005). These findings suggest SCI features may be characterized by a genetic vulnerability to externalizing disorders, whereas the genetic influences on FD may represent a protective factor in the development of internalizing psychopathology.

Understanding etiology is crucial to the development of effective treatment approaches. Although psychopathy has historically been viewed as untreatable, this assumption is likely premature (see Skeem et al., 2003). If the development and maintenance of a disorder guides treatment selection, then it stands to reason that divergent PPI-R or PCL-R factor profiles may necessitate distinctive psychological interventions. This point has been cogently articulated by Skeem et al. (2003), but the empirical evidence is limited. As such, research examining whether key treatment-relevant processes exhibit divergent relationships among psychopathic factors is critical to the refinement of treatment targets for individuals with these features.

Emotion Regulation

Emotion regulation may provide insight into the treatment-relevant processes of psychopathy. Emotion regulation is the automatic or controlled manipulation of the presence and/or intensity of the components of an emotional response—including subjective experience, physiological activity, or behavior (Gross & Thompson, 2007). This can include antecedent-focused emotion regulation, strategies that occur prior to the emotion generative response (e.g., actively avoiding talking to a friend that is angry with you in an effort to avoid feeling guilt), or response-focused emotion regulation, strategies that occur following emotional activation and involve direct modulation of one or more of the behavioral, phys-

iological, or subjective response components (e.g., practicing relaxation techniques while anxious to decrease the intensity of physical sensations; Gross & Levenson, 1993; Gross & Muñoz, 1995). Maladaptive emotion regulation occurs when the emotional response is not changed in the desired way, the long-term costs of the emotional response outweigh the short-term influences on emotion, strategies are applied in a rigid manner inconsistent with long-term goals, or attempts at emotion suppression or resistance result in maladaptive secondary emotional responses (Werner & Gross, 2010).

Emotion regulation is integral in the development and maintenance of mental health (Gross & Muñoz, 1995). Emotional disturbance is present in nearly all diagnostic categories of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM–IV–TR*; American Psychiatric Association, 2000). Criticisms of the current diagnostic system, however (see Watson & Clark, 2006), have resulted in calls for alternative conceptual schemas, including a transdiagnostic approach in which disorders are classified according to underlying mechanisms (Sloan & Kring, 2010). In line with this, some have theorized that problematic emotion regulation underlies many features of psychopathology (Campbell-Sills & Barlow, 2007). It is therefore possible that emotion regulatory processes function as dimensional schema in which to base diagnostic classifications. Consistent with this supposition, regulatory difficulties have been related to heightened negative affect (Silk, Steinberg, & Morris, 2003), borderline personality disorder (Linehan, 1993), anxiety disorders (Mennin, Heimberg, Turk, & Fresco, 2005), substance abuse (Cooper, Frone, Russell, & Mudar, 1995), aggression (Bushman, Baumeister, & Phillips, 2001), and suicidality (Baumeister, 1990).

Psychopathy Within an Emotion Regulation Framework

Individual differences in emotion and its regulation have been implicated in the development of personality (Eisenberg, Fabes, Guthrie, & Reiser, 2000). Substantial research demonstrates divergent associations between the psychopathy factors and external correlates related to emotion dysregulation. Specifically, PPI FD and PCL-R Factor 1 exhibit negative associations with neuroticism or negative affect (e.g., Benning et al., 2003), anxiety, and alcohol use (Patrick et al., 2006), as well as negligible or nonsignificant associations with borderline personality features (Patrick et al., 2006; Skeem et al., 2003), substance use (Patrick et al., 2006), and suicidality (Verona, Patrick, & Joiner, 2001). Conversely, PPI SCI and PCL-R Factor 2 exhibit positive associations with negative affect, anxiety, alcohol/substance use (Benning et al., 2003; Patrick et al., 2006), borderline personality features (Skeem et al., 2003), and suicidality (Verona et al., 2001).

Recent research identified direct relationships between emotion regulation difficulties and psychopathic traits. PCL-R Factor 2 was negatively associated with the Mood Repair subscale of the Trait-Meta Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995; Malterer, Glass, & Newman, 2008), which reflects the tendency to attempt to repair negative mood states or maintain positive moods. In another study, PPI-R SCI was negatively correlated with emotional intelligence abilities (Vidal, Skeem, & Camp, 2010). Finally, Miller et al. (2010) recently found both

psychopathy factors to be positively associated with emotion regulation difficulties, with a stronger effect for Factor 2.

The Present Study

A review of the literature suggests that psychopathic trait dimensions exhibit divergent relationships with numerous variables indicative of emotion dysregulation. However, limited research has directly examined the relationship between emotion regulation and psychopathy, and we are aware of no studies that have accounted for the shared variance with negative affect. The present study therefore examined differences in the associations between PPI-R factors and emotion regulation difficulties, utilizing a well-validated measure of emotion regulation difficulties and controlling for the influence of negative affect. It was hypothesized that difficulties with emotion regulation would positively predict the overall presence of psychopathic personality traits. As research has demonstrated that ways of responding to negative emotions explains variance in psychological symptoms over and above the tendency to have those experiences (Sauer & Baer, 2009), it was hypothesized that when controlling for negative affect, difficulties with emotion regulation would explain incremental variance in the SCI factor. Conversely, although previously demonstrated correlates of FD suggest it may be related to more adaptive emotion regulation, this factor has also exhibited minimal and nonsignificant associations with problems indicative of emotion dysregulation (e.g., Patrick et al., 2006). As such, it was hypothesized that difficulties with emotion regulation would not be associated with scores on the FD factor. Overall, as prior research indicates divergent associations between PPI-R factors and negative emotionality (Benning et al., 2003), a differential relationship was expected between emotion regulation difficulties and the two PPI-R factors, with SCI demonstrating the stronger relationship with this variable. The PPI-R Coldheartedness scale was not subjected to investigation, as the majority of prior PPI-R research has focused on the FD and SCI factors, and there is little evidence to guide a hypothesis regarding this scale's relationship with emotion regulation.

Method

Participants

A total of 119 adult males were recruited for participation in this study. Ninety-one participants were male undergraduate students at a private liberal arts university in a large city in the northeast United States, and 28 participants were offenders court-referred to outpatient anger management programs in the same city. Data were combined for the two groups in an effort to broaden the range of sample characteristics and increase the generalizability of results (see Ross, Benning, Patrick, Thompson, & Thurston, 2009). Participants were required to be male, at least 18 years old, and able to read and understand English. Participant ages ranged from 18 to 75 years ($M = 25.05$, $SD = 10.23$, $Mdn = 21.00$). Participants from the undergraduate sample ranged from 18 to 67 years old ($M = 21.84$, $SD = 7.29$), and participants from the offender sample ranged from 19 to 75 ($M = 35.00$, $SD = 12.35$). Various racial and ethnic backgrounds were represented, with 59.7% ($n = 71$) Caucasian, 21% ($n = 25$) African American, 5.9% ($n = 7$)

Hispanic, 5.9% ($n = 7$) Asian, 1.7% ($n = 2$) Native American or Pacific Islander, and 5.9% ($n = 7$) from other racial backgrounds.

Materials

Demographics questionnaire. Participants completed a demographics questionnaire designed for this study to assess age, race/ethnicity, and household income.

The Barratt Simplified Measure of Social Status (BMSS). The BSMSS (Barratt, 2006) is a proxy for socioeconomic status (SES) measured through an index comprised of education and occupation of self, mother, father, and spouse.

Difficulties in Emotion Regulation Scale (DERS). The DERS (Gratz & Roemer, 2004) is a self-report questionnaire designed to assess emotion regulatory difficulties, including the understanding and awareness of emotions, access to appropriate regulatory strategies, and the ability to engage in adaptive behavior while experiencing negative emotion. Thirty-six items comprise six factor-analytically derived subscales representing areas in which emotion dysregulation may occur. Subscales assess Awareness (lack of awareness of emotions), Clarity (lack of clarity of emotions), Nonacceptance (nonacceptance of emotions), Strategies (limited perceived access to effective emotion regulatory strategies), Impulse (difficulties inhibiting impulses while distressed), and Goals (difficulties engaging in goal-directed behavior while distressed). Respondents rate how often a statement applies to them utilizing a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*), with higher scores indicative of increased difficulties with emotion regulation. DERS total and subscale scores exhibited convergent and discriminant validity in the validation sample (Gratz & Roemer, 2004). Over a period of 4 to 8 weeks, test–retest reliability was .88 for the total score, with a range of .57 to .89 among the subscales (Gratz & Roemer, 2004). In the current study, internal consistency was good, with a Cronbach's alpha of .94 for the DERS total score.

Psychopathic Personality Inventory–Revised (PPI-R). The PPI-R (Lilienfeld & Widows, 2005) is a 154-item self-report measure designed to assess the spectrum of personality traits relevant to the psychopathy construct. Respondents rate the items on a scale 4-point Likert scale ranging from 1 (*false*) to 4 (*true*). There is a total psychopathy index and eight factor-analytically derived subscales that assess Fearlessness (risk taking, lack of anticipatory anxiety), *Machiavellian Egocentricity* (selfishness, exploitative), Social Influence (charm, ability to influence others), Coldheartedness (callousness, lack of sentimentality), Carefree Nonplanfulness (lack of responsibility or future orientation), Blame Externalization (perceives others as cause of problems), Rebellious Nonconformity (recklessness, lack of adherence to social norms), and Stress Immunity (limited response to anxiety-provoking events). Seven of the subscales load onto two higher order factors, Fearless Dominance and Self-Centered Impulsivity, with the Coldheartedness subscale loading onto its own third factor (Lilienfeld & Widows, 2005). Research has shown the PPI-R exhibits convergent and discriminant validity with the PCL-R (Poythress et al., 2010) and it may possess better construct validity than other self-report measures of psychopathy (Falkenbach, Poythress, Falki, & Manchak, 2007; Patrick, 2010). Over a mean test–retest period of 19.94 days, test–retest reliability was .93 for the total score, with a range of .82 to .95 among the subscales

(Lilienfeld & Widows, 2005). In the current study, internal consistency (Cronbach's alpha) of the PPI-R total ($\alpha = .88$), FD ($\alpha = .87$), and SCI ($\alpha = .91$) scales was adequate.

Positive and Negative Affect Schedule (PANAS). The PANAS (Watson, Clark, & Tellegen, 1988) is a 20-item self-report questionnaire designed to assess two dominant dimensions of emotional experience. Participants are presented with mood descriptors, asked to consider a specific time format (e.g., last few days, generally), then rate these mood descriptors on a 5-point Likert scale ranging from 1 (*very slightly*) to 5 (*extremely*). PANAS items load onto two factors reflecting negative affect (NA), the extent to which a person experiences subjective distress and negative mood states, and positive affect (PA), the extent to which a person experiences enthusiasm, pleasurable engagement, and high energy. Participants were asked to rate their experience based on how they feel generally, and NA was the subject of analysis. Extensive review of PANAS psychometric properties can be found in the *Manual for the Positive and Negative Affect Schedule–Expanded Form* (Watson & Clark, 1994). In the present study, internal consistency of PANAS-NA was acceptable ($\alpha = .86$).

Procedure

Undergraduate participants were recruited from classes and compensated by extra credit as well as entry into a gift card raffle to a local supermarket. Study sessions were run in small groups. The offender sample was recruited from three anger management programs in a large northeastern city. Participants were compensated either with one free treatment session or a gift card to a local supermarket. Study sessions were run individually or in small groups.

Results

Preliminary Analyses

Data screening resulted in three cases with unacceptably high levels of missing items (15 DERS items [all of page 2 of the measure]) that were excluded from analyses. Next, a small subset of cases included some missing data (one to three unanswered items) that appeared missing at random. Unweighted means estimation was utilized to address these data, due to the relatively high

internal consistency of the various scales included in this study (Schafer & Graham, 2002). Examination of the Inconsistent Responding-15 (IR-15) subscale of the PPI-R was conducted to assess response validity. Five cases were excluded from analyses due to highly atypical responding (IR-15 subscale >16). Exclusion of all invalid cases resulted in 111 cases subjected to analyses (84 undergraduates and 27 offenders). Six cases from the offender sample did not include BSMSS data (five cases in which the questionnaire was inadvertently not included in the questionnaire packet, and one case due to missing data). As such, all analyses incorporating this measure are based on 105 valid cases. Graphical inspection of distributions revealed no violations of normality for scales under primary analyses.

Descriptive statistics are displayed by sample grouping and race in Table 1. To test if groups significantly differed, one-way ANOVAs were conducted to analyze differences in PPI-R and DERS scores between racial/ethnic groups and sample groupings (offender and student). No significant differences were found as a function of sample grouping or race/ethnicity grouping.

Means and standard deviations for PPI-R (total, factor, and subscales), DERS, PANAS-NA, BSMSS, and age are provided in Table 2. Student and offender PPI-R means were comparable (within 1 *SD*) to normative data for community/college and offender samples in the PPI-R manual (Lilienfeld & Widows, 2005). Similarly, mean DERS scores were comparable to the nonclinical male validation sample (Gratz & Roemer, 2004). Bivariate correlation coefficients were computed between the PPI-R scales and the DERS. The results are shown in Table 2. There was a large positive correlation between SCI and the DERS ($r = .63$, $p < .01$). Conversely, there was a moderate negative correlation between FD and the DERS ($r = -.29$, $p < .01$). Overall, there was a moderate positive correlation between the PPI-R-total and the DERS ($r = .30$, $p < .01$). Results suggest that increased difficulties with emotion regulation are associated with higher levels of global psychopathic traits and SCI traits, and with lower levels of FD psychopathic traits.

Primary Analyses

Three hierarchical multiple regression analyses were conducted to test the hypothesis that the DERS explained variance in PPI-R total and factor scores, over and above the influence of PANAS-

Table 1

Descriptive Statistics for PPI-R and DERS Separated by Group Membership

Groups (n)	PPI-R M (SD)	FD M (SD)	SCI M (SD)	DERS M (SD)
Sample				
Offender (27)	286.93 (32.28)	114.36 (15.12)	139.23 (25.13)	72.60 (22.69)
Student (84)	296.63 (33.26)	120.51 (18.01)	143.93 (24.09)	77.74 (22.44)
Race				
Caucasian (69)	295.18 (35.93)	119.49 (19.38)	143.55 (25.33)	77.74 (24.68)
African-American (23)	289.69 (29.37)	116.85 (14.11)	139.31 (23.43)	71.10 (17.70)
Hispanic (5)	280.48 (30.35)	116.60 (11.19)	133.08 (35.05)	73.20 (28.06)
Asian (5)	304.09 (36.24)	127.20 (20.64)	143.09 (20.90)	74.20 (12.40)
Native Am./Pac. Islander (2)	297.71 (4.66)	111.71 (2.41)	150.50 (13.44)	100.00 (7.07)
Other (7)	302.22 (21.05)	119.36 (12.52)	151.14 (13.52)	79.14 (16.05)

Note. DERS = Difficulties in Emotion Regulation Scale; FD = Fearless Dominance; Native Am. = Native American; Pac. Islander = Pacific Islander; PPI-R = Global Psychopathy; SCI = Self-Centered Impulsivity.

Table 2

Summary of Intercorrelations, Means, and Standard Deviations for Scores on the PPI-R (Total, Factor, and Subscales), DERS, PANAS-Negative Affect, and BSMSS

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. DERS	(.94)														
2. PANAS-NA	.71**	(.86)													
3. PPI-R	.30**	.23*	(.88)												
4. FD	−.29**	−.15	.66**	(.87)											
5. SCI	.63**	.50**	.82**	.15	(.91)										
6. PPI-ME	.55**	.44**	.67**	.11	.81**	(.82)									
7. PPI-RN	.38**	.38**	.74**	.36**	.77**	.48**	(.84)								
8. PPI-BE	.49**	.39**	.44**	−.09	.69**	.44**	.40**	(.89)							
9. PPI-CN	.33**	.17	.46**	.06	.54**	.29**	.33**	.03	(.80)						
10. PPI-SOI	−.32**	−.11	.47**	.82**	.04	.08	.23*	−.14	−.08	(.87)					
11. PPI-F	.28**	.30**	.69**	.65**	.49**	.35**	.57**	.16	.32**	.27**	(.85)				
12. PPI-STI	−.69**	−.61**	.15	−.59**	−.29**	−.29**	−.13	−.24*	−.14	.37**	.01	(.81)			
13. PPI-C	−.14	−.31**	.30**	.15	.04	.14	−.07	−.11	.17	.07	.00	.30**	(.74)		
14. BSMSS	−.08	−.07	.11	.24*	−.04	.09	.01	−.22*	−.01	.15	.16	.19	.10	—	
15. Age	−.16	−.20*	−.20*	−.17	−.15	−.23*	−.25**	−.04	.12	−.12	−.27**	.07	−.01	−.27**	—
M	76.49	20.91	293.13	118.71	142.10	41.75	33.01	33.09	34.26	48.78	34.53	35.40	32.32	42.22	25.05
SD	22.5	6.89	33.46	17.52	24.40	9.71	8.21	9.08	7.33	9.57	8.8	6.76	6.39	13.64	10.23

Note. Cronbach's α in parentheses. BSMSS = Barratt Simplified Measure of Social Status; DERS = Difficulties in Emotion Regulation Scale; PANAS-NA = Positive and Negative Affect Schedule - Negative Affect Scale; PPI = Psychopathic Personality Inventory; PPI-BE = Blame Externalization; PPI-C = Coldheartedness; PPI-CN = Carefree, Nonplanfulness; PPI-F = Fearlessness; FD = Fearless Dominance; PPI-ME = Machiavellian Egocentricity; PPI-R = Psychopathic Personality Inventory-Revised Total; PPI-RN = Rebellious Nonconformity; SCI = Self-Centered Impulsivity; PPI-SOI = Social Influence; PPI-STI = Stress Immunity.
* $p \leq .05$. ** $p \leq .01$.

NA. Results are shown in Table 3. In each regression, age and social status were entered as control variables in the first block, as both of these demographic variables have been previously associated with psychopathic traits (Benning et al., 2003; Harpur & Hare, 1994). PANAS-NA was entered into the second block, and the DERS was entered in the third block.

As hypothesized, DERS scores accounted for a significant and moderate portion of incremental variance in SCI traits after controlling for PANAS-NA, age, and social status, R^2 change = .15, $F(4, 100) = 17.97$, $p < .001$. These results suggest that emotion regulation difficulties are important in understanding SCI traits (β = .55, $p < .001$) over and above the influence of negative affect. Conversely, and contrary to initial hypothesis, higher levels of FD traits were associated with lower DERS scores (β = −.37, $p < .01$). The results indicate that lack of emotion regulation difficulties accounted for a significant but relatively smaller portion of the variance in FD traits after controlling for the influence of negative affect, age, and social status, R^2 change = .07, $F(4, 100) = 5.12$, $p = .001$.

Overall, the relationship between PPI-R-Total and the DERS was nonsignificant (β = .25, $p = .061$) after controlling for PANAS-NA, age, and social status, with a magnitude lower than the associations between the DERS and the PPI-R factors. Additionally, DERS scores did not account for a statistically significant portion of the variance of global psychopathy scores over and above these control variables, R^2 change = .03, $F(4, 100) = 3.77$, $p = .061$.[1]

Competing hierarchical regression analyses were conducted to test the hypothesis that SCI exerts a stronger unique association with the DERS compared with FD. Results indicated that SCI accounted for more unique variance (R^2 change = .46, $F[2, 108] = 64.36, p < .001$) in the DERS over and above the effects of FD, compared with when

the ordering of the variables was reversed (R^2 change = .15, $F[2, 108] = 64.36, p < .001$). These results supported the hypothesis that SCI psychopathic traits demonstrate a stronger relationship with overall emotion regulation difficulties compared with FD traits.[2]

Discussion

Substantial evidence supports the notion that PPI-R factors diverge in their relationships with various forms of psychopathology (Benning et al., 2003), potential etiological factors (Blonigen et al., 2005), and functional impairment (Patrick et al., 2006). To better elucidate treatment targets for psychopathy, it is important to identify mechanisms that underlie these differences. The results of the present study suggest emotion dysregulation is one such mechanism that warrants continued inquiry. Specifically, whereas PPI-R FD exhibits a moderate negative association with emotion regulation difficulties (β = −.37), PPI-R SCI demonstrates a large positive association with these difficulties (β = .55). After taking

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[1] To test whether there was an interaction effect between group membership (student or offender) and DERS in the prediction of psychopathic traits, moderated multiple regression analyses were conducted predicting each of the three dependent variables. Results indicate there was no interaction between group membership and the DERS in the explanation of psychopathic traits. Although no interaction effect was found, and student and offender groups did not significantly differ on independent and dependent variables, running separate analyses by group indicated a trend toward emotion regulation difficulties explaining a larger portion of variance in SCI and a smaller portion of FD variance among offenders, compared with the student sample.

[2] Exploratory analyses were conducted to examine the relationship between DERS subscales and the PPI-R factors. All DERS subscales demonstrated positive associations with PPI-R total and SCI, and consistent negative associations with FD. Correlations are displayed in Table 4.

Table 3

Hierarchical Multiple Regression Analyses Examining Whether the DERS Predicts PPI-R Total Scores, Fearless Dominance, and Self-Centered Impulsivity

	Psychopathic personality characteristics					
	PPI-R		FD		SCI	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	.05		.08*		.04	
Control variables[a]						
Step 2	.05*		.02		.24***	
PANAS-NA		.05		.11		.12
Step 3	.03		.07**		.15***	
DERS		.25		−.37**		.55***
Total R^2	.10**		.17***		.40***	

Note. DERS = Difficulties in Emotion Regulation Scale; FD = Fearless Dominance; PANAS-NA = Positive and Negative Affect Schedule; PPI-R = Global Psychopathy; SCI = Self-Centered Impulsivity.
[a] Control variables include age and social status (as measured by the Barratt Measure of Social Status).
* $p \leq .05$.   ** $p \leq .01$.   *** $p \leq .001$.

into account the influence of negative affect, emotion regulation difficulties explain incremental variance in SCI traits. Similarly, although decreased negative affect appears to be an essential component of FD traits, increased adaptive emotion regulation abilities are also relevant in understanding these characteristics. The association between difficulties in emotion regulation and global psychopathic traits is nonsignificant in this study (β = .25), suggesting this relationship is clouded by the opposing correlations found between emotion regulation and the two major factors of the PPI-R. The present results are consistent with previous findings showing that emotion regulation deficits are associated with psychopathic personality traits, but add to the literature by demonstrating that these relationships are not simply attributable to shared variance with negative affect. Adding emotion dysregulation to the model predicting SCI resulted in negative affect's influence decreasing to a nonsignificant level, supporting the idea that severity in SCI traits is more dependent on the manner in which one relates and responds to emotion, rather than simply the presence of negative emotionality itself.

Utilizing a multidimensional conceptualization of emotion regulation (Gratz & Roemer, 2004), this study demonstrates how the emotion regulatory process diverges in its relationship with psychopathic features. SCI traits are characterized by pervasive deficits in emotion regulation. Bivariate associations with DERS subscales (see Table 4) suggest that, experientially, these traits are associated with difficulties in the awareness and clarity of emo-

Table 4

Intercorrelations Between PPI-R Factors and DERS Subscales

	PPI-R	FD	SCI
Nonacceptance	.23*	−.18	.48***
Goals	.06	−.28**	.34***
Impulse	.35***	−.10	.58***
Awareness	.13	−.29**	.32***
Strategies	.20*	−.29**	.33***
Clarity	.26**	−.21*	.52***

Note. FD = Fearless Dominance; PPI-R = Global Psychopathy; SCI = Self-Centered Impulsivity.
* $p \leq .05$.   ** $p \leq .01$.   *** $p \leq .001$.

tional responses. Behaviorally, expected responses to distress include emotional nonacceptance, problems inhibiting impulsive behaviors and engaging in goal-directed behavior, and limited perceived access to emotion regulation strategies. Conversely, FD features are characterized in this study by a higher self-reported likelihood of continuing to engage in goal-directed behavior while distressed, an increased clarity and awareness of emotional responses, and increased perceived access to emotion regulation strategies.

The divergent relationships between emotion regulation difficulties and psychopathic personality features are consistent with previous research on PPI-R correlates. Prior studies demonstrating SCI's positive associations with anxiety, substance use, and borderline personality features (Benning et al., 2003; Patrick et al., 2006) are suggestive of deficits in emotion regulation abilities. In contrast, the negative or null relationships between these variables and FD have been suggested by some authors to be reflective of emotional resilience (Benning et al., 2003), a construct indicative of adaptive emotion regulation abilities. Furthermore, these findings are consistent with the dual process model of psychopathy (Fowles & Dindo, 2006), which hypothesizes separate etiological processes of a low-fear temperament (i.e., FD), and cognitive processing deficits that result in emotional and behavioral dysregulation (i.e., SCI). Finally, results also coalesce with the broader emotion regulation literature. The field of emotion regulation has been argued to cut across diagnostic boundaries; however, the majority of empirical investigations into emotion dysregulation have been conducted in relation to mood and anxiety disorders (Sloan & Kring, 2010). The present study provides additional support for the notion that emotion dysregulation is transdiagnostic in nature, as it expands the construct's field of inquiry into the realm of antisocial and psychopathic personality disorders.

One curious and unexpected finding was the positive associations between FD traits and emotional clarity and emotional awareness. The affective/interpersonal features characteristic of the "Cleckleyian psychopath" and reflected in the PPI-R FD factor include low fear, egocentricity, and deficient affect. Decades of empirical research and clinical lore certainly have not described individuals high in these traits as attentive to their emotional

experience or particularly adept at making sense of their feelings. So what do we make of these findings? One possibility is the "semantic aphasia" analogy first suggested by Cleckley (1941). If an individual's typical emotional response is minimal, it is problematic to ask this individual to report on how clear or aware they are about their emotions. It is therefore possible the self-reporting of emotion regulatory abilities is inaccurate, although not the product of willful deception (Lilienfeld & Fowler, 2006). A second hypothesis is these associations are accurate and are simply reflective of the emotional resilience characteristics of FD (see Benning et al., 2003). Additional research seeking to disentangle this question may benefit from examining the interactive properties of psychopathic factors. Consistent with the view of psychopathy as a "compound trait" (Lilienfeld & Fowler, 2006), subjecting psychopathy factors to moderational analyses (Marcus, Fulton, & Edens, 2013) may further elucidate FD's association with emotional clarity and awareness under conditions of high, medium, and low SCI.

This study's limitations include its largely undergraduate sample, and the absence of a clinical comparison group, which may limit the generalizability of the results. Although there may be range restriction with regard to psychopathic characteristics, one benefit of using an undergraduate sample in the study of personality includes decreasing the likelihood of state-trait artifacts (as these samples are often free of serious psychopathology that may distort reports on long-standing personality traits). Furthermore, when investigating possible etiological mechanisms such as emotion regulation, it is important to examine these mechanisms at every level of the construct. In an effort to add variance, approximately one quarter of the sample was comprised of court-mandated offenders enrolled in treatment for anger difficulties. This study was also limited in its racial and ethnic diversity. Although a range of racial backgrounds were represented, the majority of the sample was Caucasian and the study was underpowered in its ability to detect potential differences across racial groups. Consequently, generalization of findings across races should be made with caution.

Another limitation is the study's reliance on self-report measurement. The exclusive use of self-report measures can result in inflated correlations (i.e., method bias). Further limitations included its cross-sectional nature and the use of one measure for each of the variables of interest. Future research would benefit from utilizing a longitudinal design, multiple modes of assessment of psychopathic features, as well as behavioral or laboratory measures of emotion regulation abilities.

Among the strengths of this study is its use of well-validated measures of both psychopathic personality traits and emotion regulation, and its statistical control for the influence of negative affect. The emotion regulation construct itself has been criticized, with some arguing that the distinctiveness of a latent variable of emotion regulation apart from emotional activation is unclear (Zinbarg & Mineka, 2007). The current study sought to parse out the unique contribution of emotion regulation difficulties to psychopathic personality characteristics, independent of the influence of negative affect.

In summary, the present study adds to the existing literature by demonstrating the association between emotion regulation and psychopathic personality characteristics. Perhaps the most important finding is the substantial influence of emotion regu-

lation difficulties in explaining SCI traits, over and above the shared variance of negative affect. Empirical data showing SCI's preferential relationship with aggression (Edens et al., 2008) and broadband indicators of violence risk (Edens & McDermott, 2010) highlight the need for effective treatments for individuals with elevations in these traits. Efficacious treatments are guided by theory and target empirically identified mechanisms relevant to both etiology and behavioral change. Emotion regulation difficulties appear to be one such mechanism, particularly in the case of those with elevated SCI features of the psychopathic personality.

Future Directions

Future investigations with larger offender samples and females are important in the generalization of these results. Research should also examine the role of emotion regulation difficulties in psychopathic personality disorder using multiple assessment methods and experimental designs. Furthermore, as mentioned previously, studies examining how the interaction of psychopathy factors relate to emotion regulation deficits may identify, with better precision, how these difficulties are likely to manifest in highly psychopathic individuals. Regarding the etiological significance of emotion dysregulation, there is a need for longitudinal research examining whether regulatory deficits mediate the relationship between trait negative affect and psychopathy, particularly SCI traits. It is also critical to examine the role of emotion regulation deficits in explaining the behavioral sequelae of psychopathy, including aggression and other antisocial behaviors. In terms of treatment, empirically supported therapies that target emotion dysregulation, such as dialectical behavior therapy (Linehan, 1993), should be investigated with individuals high in SCI features. On the other hand, individuals characterized by preferential elevations in FD traits likely warrant a different approach, and research investigating the mechanisms of action underlying FD is crucial. Through an increased understanding of the processes underlying psychopathic traits, the development and dissemination of interventions for this pathological personality style may soon follow.

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