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PERSONALITY AND
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Psychopathy and trait emotional intelligence

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Abstract

Psychopathic individuals are infamous for their chronic and diverse failures of social adjustment despite their adequate intellectual abilities. Non-cognitive factors, in particular *trait emotional intelligence (EI)*, offer one possible explanation for their lack of success. This study explored the association between psychopathy and EI, as measured by the Psychopathy Checklist-Revised (PCL-R; Hare, 2003) and Trait Meta-Mood Scale (TMMS, Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). Consistent with the Response Modulation (RM) model of psychopathy (Newman & Lorenz, 2003), low-anxious psychopathic individuals had significantly lower scores on TMMS Repair and Attention compared to controls. Consistent with proposals by Patrick and Lang (1999) regarding PCL-R factors, these EI deficits related to different aspects of the psychopathy construct. Correlations revealed significant inverse associations between PCL-R factor 1 and Attention and PCL-R factor 2 and Repair. We propose that the multi-dimensional EI framework affords a complementary perspective on laboratory-based explanations of psychopathy.

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1. Introduction

Despite adequate intelligence, psychopathic individuals are infamous for their profound failure of social adjustment. Highlighting this paradox, Cleckley (1976) observed: “In complex matters of

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judgment. . . (the psychopath) shows no evidence of a defect. So long as the test is verbal or otherwise abstract, so long as he is not a direct participant, he shows that he knows his way about. . . - When the test of action comes to him we soon find ample evidence of his deficiency” (p. 346). Through case studies, Cleckley illustrated how good, or even exceptional, cognitive abilities were not sufficient to ensure satisfactory decision-making and social adjustment.

Limitations of using cognitive intelligence alone to predict life success have been long-recognized. In 1940 David Wechsler referred to “non-intellective” elements, including personal, affective, and social factors when describing “the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment” (Wechsler, 1940; p. 103). Shortly thereafter, he proposed that “non-intellective” abilities are essential for predicting one’s ability to succeed in life.

Research on non-cognitive factors underlying life success provides the cornerstone for the field of *emotional intelligence (EI)*. Generally, EI entails the abilities to recognize and regulate emotions in ourselves and in others. According to Salovey and Mayer (1990), the construct of EI refers to individual differences in the ability to process and use emotional information to promote effective functioning in everyday life. Higher EI predicts enhanced psychosocial functioning (e.g., Salovey & Grewal, 2005; Schutte et al., 2001), including interpersonal factors (i.e., better social relationships) and intrapersonal factors (i.e., greater optimism). Thus, EI is a potentially important non-cognitive variable that may clarify why, despite adequate intelligence, some individuals have difficulty across multiple life domains (Van Rooy & Viswesvaran, 2004).

Research on psychopathy provides substantial empirical support for Cleckley’s claim that psychopathy entails a peculiar incapacity to function successfully despite good intelligence. Although Hare’s (2003) PCL-R is not correlated with intelligence, psychopathic individuals identified with the instrument display a wide range of maladaptive antisocial behaviors that result in high incarceration rates and other negative consequences (Moriarty, Stough, Tidmarsh, Eger, & Dennison, 2001). In lieu of intellectual deficits, investigators frequently attribute this maladaptive behavior to deficient emotion processing. Indeed, laboratory research has documented psychopathy-related failures to attend to and make use of emotion stimuli (Newman & Lorenz, 2003), alter a dominant response set for reward in the face of growing punishments (Newman, Patterson, & Kosson, 1987), and discriminate among the affective aspects of words and faces (Blair et al., 2004).

Despite the growing research literatures on psychopathy and EI, there appear to be no published articles documenting their association. In light of the intuitive connection between psychopathy and EI, the lack of research, and the potential utility of the EI framework for clarifying psychopathic behavior, this study investigates the association between psychopathy and EI. According to Salovey and Mayer (1990), EI consists of multiple dimensions, including, the inclination to allocate *attention* to one’s feelings, the ability to *repair* one’s mood, and *clarity* in discriminating affective states. Thus, in the interest of specifying the association between psychopathy and EI, we examine the association between the PCL-R and these three dimensions.

Although the association between psychopathy and EI has not, to our knowledge, been previously studied, research on psychopathy provides a basis for postulating *a priori* hypotheses. The Response Modulation (RM) model (Patterson & Newman, 1993) holds that psychopathic individuals are deficient in allocating attention to process information, including emotional cues that are outside of their current attentional focus (Newman & Lorenz, 2003). Moreover, consistent with

the RM model, there is substantial evidence that once they perceive a situation in a particular way, psychopathic individuals are deficient in processing information that is incongruent with or contraindicates their current attentional set (MacCoon, Wallace, & Newman, 2004). Thus, the RM model predicts that psychopathic individuals will allocate less attention to emotion cues but, paradoxically, experience more difficulty altering an emotion response once it is established. These predictions correspond to the attention and repair dimensions of EI described by Salovey and Mayer (1990).

Assuming they allocate attention to the affective information, the RM model holds that psychopathic individuals can discriminate affective cues and states as well as non-psychopathic individuals. Thus, the model predicts no differences on the EI clarity dimension. However, other investigators have reported that psychopathic individuals are deficient in recognizing and discriminating between different affective stimuli (e.g., Blair et al., 2004). Consequently, we also examine the association between psychopathy and EI clarity.

When evaluating hypotheses generated by the RM model, investigators routinely distinguish between primary and secondary psychopathic subtypes using a combination of PCL-R and Welsh (1956) anxiety scores. Classic descriptions of psychopathy (Cleckley, 1976) hold that primary or true psychopathy is incompatible with high levels of neurotic anxiety, yet many individuals with high PCL-R scores report high levels of neurotic anxiety (Schmitt & Newman, 1999). Thus, Newman and colleagues test hypotheses about primary psychopathy by comparing low-anxious psychopathic individuals to non-psychopathic individuals with correspondingly low levels of anxiety (Brinkley, Newman, Widiger, & Lynam, 2004). Consequently, hypotheses generated by the RM model will be tested by comparing low-anxious psychopathic individuals to low-anxious non-psychopathic controls.

Another framework for generating hypotheses about EI and psychopathy relates to the two-factor model of psychopathy (e.g., Hare, Harpur, & Hakstian, 1990). According to this model, psychopathy is comprised of an interpersonal-affective dimension (Factor 1) involving deceitful, callous traits and an impulsive-antisocial dimension (Factor 2), characterized by irresponsibility and social deviance. Although psychopathy has long been linked to unusual affective processing, laboratory investigations suggest that psychopathy is associated with diverse affective processing deficits that are differentially associated with the PCL-R factors.

For example, Patrick, Bradley, and Lang (1993) examined the extent to which unpleasant pictures increase startle reactivity in psychopathic and non-psychopathic offenders and found that deficits in startle-potentiation by unpleasant pictures were relatively specific to Factor 1. These data have fueled speculation that psychopathy, especially the affective-interpersonal features of the disorder, are associated with abnormal amygdala functioning (e.g., Blair et al., 2004) with the implication that emotion stimuli may elicit inadequate activation and, thus, inadequate attention (e.g., Whalen, 1998) in psychopathic individuals. Conversely, Patrick, Cuthbert, and Lang (1994) found that the poor fear conditioning of psychopathic individuals was associated with the impulsive-antisocial (Factor 2) dimension and suggested that such deficits reflect a problem with the maintenance of neural representations, undermining the ability to associate fear with specific environmental events. Noting the association between Factor 2 and antisociality, substance abuse, suicidal behaviors, and heightened negative affect, Patrick, Hicks, Krueger, and Lang (2005) have linked this construct to a “general inhibitory diathesis” (p. 352) that seems to include difficulty inhibiting pre-potent affective states.

Table 1
Inter-correlations among scales and scale reliabilities

	1	2	3	4	5	6	7	8
PCL-R F1	.78							
PCL-R F2	.56**	.72						
PCL-R Total	.86**	.89**	.83					
WAS	.06	.20**	.14**	.90				
SILS	-.04	-.12*	-.10*	-.07	.92^a			
TMMS-attention	-.10*	-.06	-.10*	-.02	.03	.82		
TMMS-repair	-.08	-.16**	-.14**	-.37**	.06	.34**	.67	
TMMS-clarity	.036	-.08	-.02	-.47**	.05	.30**	.50**	.86

Note. Values in the **diagonal** represent the internal consistency (Cronbach's alpha) of each scale. PCL-R = Psychopathy Checklist-Revised; WAS = Welsh Anxiety Scale; SILS = Shipley Institute of Living Scale; TMMS = Trait-Meta Mood Scale.

^a Reliability from SILS manual (Zachary, 1986).

* $p < .05$.

** $p < .01$.

In light of these proposals regarding the two-factor model of psychopathy, there is reason to believe that the PCL-R factors will relate to different components of EI. Specifically, we predict that (1) the affective-interpersonal dimension of psychopathy (Factor 1) will be associated with weaker attention to affective information and (2) the impulsive-antisocial dimension (Factor 2) of psychopathy will be associated with difficulty repairing (i.e., inhibiting) pre-potent affective states.¹

2. Method

2.1. Participants

The sample consisted of 439 adult Caucasian male inmates (M age = 30.28 years, $SD = 7.46$) incarcerated in Wisconsin state prisons. Researchers randomly selected potential participants and excluded anyone older than 45 years, with a psychotic disorder, or currently taking psychotropic medication. Participants received consent procedures in both written and oral form. See Table 2 for participant characteristics.

2.2. Psychopathy measures

The Psychopathy Checklist-Revised (PCL-R; Hare, 2003). The PCL-R consists of 20 items that index psychopathic traits as originally discussed by Cleckley (1976). Each item is scored on a 3-point scale (0 = clearly not present; 1 = may be present; 2 = clearly present) and scores are summed to yield a total score (range 0–40). Scores are based on information derived from a

¹ As yet, there is no theoretical rationale for distinguishing between primary and secondary psychopathy when evaluating hypotheses regarding PCL-R factors.

Table 2
Participant characteristics

Measures	Control			Psychopathic		
	Low anxious <i>n</i> = 121	High anxious <i>n</i> = 86	Total <i>n</i> = 207	Low anxious <i>n</i> = 36	High anxious <i>n</i> = 52	Total <i>n</i> = 88
	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)
SILS	100.50 (11.09)	98.86 (10.65)	99.81 (10.91)	98.46 (12.89)	97.60 (10.21)	97.94 (11.36)
WAS	5.55 (3.29)	18.99 (5.54)	11.14 (7.94)	5.58 (3.18)	19.04 (5.32)	13.53 (8.10)
PCL-R	14.59 (4.64)	14.91 (4.04)	14.72 (4.39)	32.05 (2.27)	32.49 (2.26)	32.31 (2.26)

Note. SILS = Shipley Institute of Living Scale; WAS = Welsh Anxiety Scale; PCL-R = Psychopathy Checklist-Revised.

semi-structured interview and reviewing prison files. The reliability and validity of the PCL-R is well established (Hare et al., 1990). Early work with the PCL-R revealed a replicable two-factor structure (Hare et al.) with Factor 1 tapping interpersonal-affective characteristics (e.g., glib, callous) and Factor 2 tapping impulsive-antisocial behavior (e.g., irresponsible, criminality).

The problematic behaviors associated with primary psychopathy are not due to social disadvantage, neurotic anxiety, low intelligence, or psychotic thinking (Cleckley, 1976). Because the PCL-R does not assess these factors, we supplemented PCL-R scores with measures of neuroticism, intelligence, and psychosis to assess primary psychopathy (cf. Brinkley et al., 2004).

Welsh Anxiety Scale (WAS; Welsh, 1956). The WAS is a 39-item self-report true–false instrument that assesses neurotic anxiety, but also relates to measures of depression and negative affect (see Gray, 1991). The total score is used in this study.

Shipley Institute of Living Scale (SILS; Zachary, 1986). The SILS is a two-part measure of general intellectual functioning (40 vocabulary items, 20 abstract reasoning items). Scoring procedures allow for computation of a reliable estimate of Wechsler Adult Intelligence Scale-Revised scores.

2.3. EI assessment

Trait-Meta Mood Scale (TMMS; Salovey et al., 1995). The TMMS is a 30-item self-report measure that assesses an individual's ability to monitor, evaluate, and regulate feelings and emotions. It is comprised of three subscales. Attention to Feeling scale (13 items) assesses the degree to which individuals think about or notice their feelings (e.g., “I pay a lot of attention to how I feel”). Clarity in Discrimination of Feeling scale (11 items) measures the extent to which individuals are able to identify, understand, and discriminate among their feelings (e.g., “I am usually very clear about my feelings”). The Mood Repair scale (6 items) assesses how well individuals regulate their moods and repair negative emotional experiences (e.g., “When I become upset, I remind myself of all the pleasures in life”). Participants rate their responses using a 5-point Likert type scale, with 1 = “strongly disagree” to 5 = “strongly agree”. Research provides

support for the reliability and validity of the TMMS as an index of EI (Warwick & Nettelbeck, 2004), albeit a partial index of “trait” EI (Pérez, Petrides, & Furnham, 2005).

2.4. Procedure

Trained researchers completed 60–90-min interviews and reviewed prison files to make PCL-R ratings on each inmate. Following the interview, participants completed a battery of questionnaires, including the WAS, SILS, and TMMS (See Table 1 for intercorrelations among scales). Consistent with standard practices (Hare, 2003), scores of 30 or above on the PCL-R were used to identify “psychopathic” individuals and 20 or below to identify “non-psychopathic controls”. We used a median split on the WAS to divide participants into high- and low-anxious groups. When evaluating hypotheses related to the RM model, we compared the primary (low-anxious) psychopathy group with the low-anxious control group. Both low- and high-anxious participants were included when evaluating predictions from the PCL-R two-factor model. We excluded inmates with borderline intelligence (estimated $IQ < 70$).

To evaluate inter-rater reliability, a second rater was present in the room and provided an independent PCL-R rating for 47 inmates. The intra-class correlation coefficient was .95.

3. Results

3.1. Overall group analyses

To examine group differences in EI, we conducted a mixed-model analysis of variance (ANOVA) with group (psychopathic, non-psychopathic) and anxiety (low, high) as between-participant variables and TMMS scale scores (Attention, Repair, Clarity) as the repeated measure. Because the TMMS scales contain different numbers of items, we *z*-scored each scale.

The overall analysis revealed a significant main effect for anxiety, $F(1, 293) = 13.816$, $p < .001$, with high-anxious participants ($M = -.182$, $SD = 1.120$) demonstrating lower levels of EI across TMMS scales² than low-anxious participants ($M = .174$, $SD = 1.206$). This main effect was qualified by a significant Anxiety \times TMMS scale interaction, $F(2, 293) = 15.285$, $p < .001$. Whereas the low-anxious group obtained higher scores on both the Repair ($M = .28$, $SD = .96$) and Clarity ($M = .39$, $SD = .88$) scales than the high-anxious group ($M = -.23$, $SD = 1.03$; $M = -.32$, $SD = .98$, respectively), they scored similarly on the Attention scale ($M = .02$, $SD = 1.04$ for low-anxious participants; $M = -.01$, $SD = 1.00$, for high-anxious participants).

The analysis also revealed a significant Psychopathy \times TMMS scale interaction, $F(2, 293) = 6.30$, $p < .05$. Whereas the Repair ($M = -.18$, $SD = .95$) and Attention ($M = -.15$, $SD = 1.19$) scores of psychopathic participants were lower than those of controls ($M = .14$, $SD = 1.04$; for Repair; $M = .07$, $SD = .94$ for Attention), the Clarity scores of psychopathic participants ($M = .12$, $SD = 1.06$) were higher than those of controls ($M = .04$, $SD = .96$). No other main effects or interactions approached statistical significance.

² The TMMS has no global score.

3.2. Testing RM model's hypothesis

Planned comparisons were evaluated using separate one-way ANOVAs comparing EI scores of the low-anxious (i.e., primary) psychopathic and control groups. Consistent with predictions, the planned comparison for the Attention scale revealed a significant group effect, $F(1, 158) = 4.406$, $p < .05$, with the primary psychopathy group obtaining significantly lower scores ($M = -.297$, $SD = .171$) than controls ($M = .11$, $SD = .96$). A similar comparison involving the Repair scale yielded a statistical trend and, thus, qualified support for our hypothesis. As predicted, the primary psychopathy group obtained lower Repair scores ($M = .03$, $SD = .92$) than controls ($M = .35$, $SD = .97$), but the difference did not reach the two-tailed criterion for statistical significance $F(1, 158) = 3.256$, $p = .073$. Although no predictions were made regarding Clarity, we conducted a similar analysis for the sake of completeness. The groups obtained comparable Clarity scores ($F(1, 158) = .427$, $p = .515$; $M = .48$, $SD = .97$ for low-anxious psychopaths; $M = .37$, $SD = .85$ for controls).

3.3. Supplementary analysis: RM model

Although results for the TMMS Repair scale did not attain the .05 level of significance, there was a statistical trend. Thus, we examined the Repair scale items more closely to ensure that they all involved altering an established attentional set. In fact, only three of the six items directly assessed the ability to adopt a different perspective (e.g., “When I become upset I remind myself of all the pleasures in life”). When only these items were used to assess modulation of mood state ($\alpha = .690$), the primary psychopathy group obtained significantly lower scores ($M = 24.58$, $SD = 4.19$) than controls ($M = 26.29$, $SD = 4.16$) on this revised scale, $F(1, 158) = 4.648$, $p < .05$.

3.4. Two-factor model of psychopathy and EI

Given the differential pattern of associations between the PCL-R factors and their demonstrated relevance for emotion processing, we investigated their independent associations with the TMMS components. For sake of completeness, we reported the full set of correlations between the PCL-R factors and TMMS in Table 1.

Consistent with prediction, PCL-R Factor 1 was negatively associated with the Attention scale ($r(439) = -.103$, $p = .03$). Individuals with high scores on the interpersonal-affective component of psychopathy reported less inclination to pay attention to their emotions. Also as predicted, PCL-R Factor 2 was negatively associated with Repair ($r(439) = -.156$, $p < .01$). Individuals possessing more impulsive, antisocial psychopathic traits reported less capacity to regulate and repair emotions.

3.5. Supplementary analysis: partialling the factors

Because the PCL-R factors are significantly intercorrelated rather than independent, investigators (e.g., Patrick et al., 1993, 1994) have commonly used multiple regression analysis to examine specific associations while controlling for the potentially confounding effects of the other PCL-R dimension. Thus, we conducted supplementary regression analyses to determine how well one

factor uniquely predicted the TMMS scale scores, controlling for the other factor. Though concerns have been raised regarding the reliability and interpretation of such partial correlations (Lynam, Hoyle, & Newman, 2006), we used partial correlations here primarily to disambiguate the zero-order associations reported above.

When PCL-R factor scores were entered in the regression analysis simultaneously, Factor 2 explained a significant amount of unique variance in Repair ($B = -.150$, $SEB = .054$, $p = .006$) whereas Factor 1 did not ($p > .90$). In addition, the unique variance in Attention explained by Factor 1 approached significance ($B = -.099$, $SEB = .057$, $p = .083$), whereas that explained by Factor 2 did not ($p > .90$).

Although none of the zero-order correlations between Clarity and PCL-R scores achieved statistical significance, a significant association between Clarity and both PCL-R factors emerged when controlling for the other factor ($B = .117$, $SEB = .058$, $p = .044$ for Factor 1 and $B = -.135$, $SEB = .054$, $p = .014$ for Factor 2). Whereas higher Factor 1 residual scores predicted greater emotion clarity, higher Factor 2 residual scores predicted less clarity.

4. Discussion

In light of their profound failure of adjustment despite normal intelligence and their anomalous performance on laboratory measures of affective processing, we hypothesized that psychopathic individuals would display lower levels of EI than controls. To our knowledge, the present study represents the first test of this hypothesis. Consistent with this view, deficits in EI were associated (albeit modestly) with PCL-R total scores, the primary psychopathy subtype, and with the affective-interpersonal and impulsive-antisocial dimensions that comprise the two-factor model of psychopathy.

Specifically, based on the RM model, we predicted that primary psychopathic individuals would earn lower scores than controls on the TMMS Attention and Repair scales though not on the TMMS Clarity scale. The results were in line with these predictions although group differences on the Repair scale fell slightly short of statistical significance. To our knowledge, this is the first time that the RM hypothesis has been evaluated using a self-report rather than performance measure of attention.

Our hypothesis that primary psychopathic individuals would be less adept than controls at shifting their focus of attention to repair negative emotions was only partially supported. However, this shortcoming was clarified by supplementary analyses. Including only those items of the Repair scale that directly assessed RM, the significant group difference provided good support for the hypothesis. Psychopathic individuals have difficulty switching attention to adopt an alternative perspective on their behavior once an attentional set (e.g., negative affective state) has been established (MacCoon et al., 2004). Although more detailed studies are needed to verify the claim, we suggest that this dysfunction may underlie the lower revised Repair scores obtained by psychopathic individuals. Overall, this study of EI suggests that individuals with primary psychopathy are both less likely to attend to emotion cues and less able to revise their mood states once emotions are experienced.

Given the multidimensional nature of the PCL-R, we also investigated the association between EI and the factors of the psychopathy construct. These analyses served to specify the association between psychopathy and EI. As predicted, individuals with high scores on Factor 1 were less in-

clined to attend to their emotions. This finding provides partial support for Patrick and Lang's (1999) proposal that Factor 1 is associated with a core emotional deficit that underlies the insensitivity to and lack of concern with emotional information that characterizes psychopathic individuals. This finding is also consistent with research reports and theoretical proposals stemming from the RM model which suggest that the emotion deficits associated with psychopathy reflect a failure to allocate attention to emotion cues. Now that an inverse relationship between PCL-R Factor 1 and attention to emotions has been established using the TMMS, further work is needed to clarify which of these models provides a better explanation for the association.

Also consistent with predictions, we found a negative association between PCL-R Factor 2 and TMMS Repair. According to Patrick et al. (2005), individuals with high Factor 2 scores are deficient in the inhibitory processes that facilitate behavioral and emotional regulation. In light of these results, further research is needed to evaluate the extent to which poor mood repair associated with psychopathy is more accurately understood as deficient RM (proposed by Newman and colleagues), deficient inhibitory processes (postulated by Patrick and colleagues) or, alternatively, whether these two explanations are essentially equivalent.

4.1. Limitations

In considering these findings, it is important to note that the TMMS is a self-report measure. As such, we can not conclude that it necessarily informs us about the ability of participants to engage in different aspects of processing (e.g., shifting their attention). It can only reveal whether they perceive themselves as “paying attention to how they feel” (see Petrides, Furnham, & Mavroveli, 2007a). Related, there is growing support (see Petrides & Furnham, 2003) for distinguishing Trait (“trait emotional self-efficacy”) and Ability (“cognitive-emotional ability”) EI as separate constructs. Future research should investigate whether the same pattern of findings exist between psychopathy and Ability EI.

In addition, Petrides et al., 2007a have proposed that the TMMS is a limited index of trait EI, only measuring “intrapersonal” dimensions, whereas other measures (i.e., Trait Emotional Intelligence Questionnaire, TEIQue; Petrides & Furnham, 2003), include “intra” and “inter”-personal emotional perception scales. Future research with such measures would allow for examination of broader questions.

An additional limitation pertains to our all-male Caucasian sample. To establish the generalizability of our findings, future research should address whether gender and/or race differences exist in the pattern of associations between psychopathy and EI.

To our knowledge, these findings provide the first self-report evidence that primary psychopathy is associated with a potentially problematic failure to attend to and repair their emotional states. Our findings are in line with previous studies about EI and psychopathology (e.g., Leible & Snell, 2004; Petrides, Pérez-González, & Furnham, 2007b). In both studies, trait EI was significantly and negatively associated with “antisocial” personality disorder (ASPD). Although psychopathy is distinct from the DSM-IV ASPD diagnosis, there is substantial overlap (Miller, Lynam, Widiger, & Leukefeld, 2001).

Finally, individuals with high scores on the interpersonal-affective dimension of psychopathy appear to be particularly deficient in allocating attention to their emotions. On the other hand, individuals with high scores on the impulsive-antisocial dimension appear to have particular

difficulty regulating existing emotional states. In light of the divergent associations between the factors and other laboratory-based measures of emotion processing, it is compelling to replicate these results using a self-report measure of EI. Such findings offer promise that self-report, as an index of emotional functioning, could be merged with laboratory approaches to provide a complementary understanding of emotion processing deficits. Furthermore, establishing which components of EI are associated with the underlying facets of psychopathy potentially sets the stage for future research examining the divergent psychobiological processes that mediate the association between psychopathy and EI.

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