What Is over and above Psychopathy? The Role of Ability Emotional Intelligence in Predicting Criminal Behavior

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This study aims to investigate the role of ability emotional intelligence (EI) in predicting criminal behavior from a life-span perspective, over and above psychopathy. Psychopathic individuals are characterized by a deviant lifestyle and an inability to regulate emotion. A sample of 29 male inmates was administered the Coping Inventory for Stressful Situations (CISS), the Buss–Perry Aggression Questionnaire (BPAQ), the Psychopathy Checklist – Revised (PCL-R), the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT), and five dichotomous items that are converged into the Criminal Behavior Index (CBI). Correlation analysis showed a complex pattern of relationships among the variables. The MSCEIT Experiential area of EI together with CISS Emotion-oriented Coping and PCL-R Social Deviance are found to significantly predict the CBI. The results offer promising findings for the assessment of the relationship between personality traits, emotional abilities and criminal behavior across the life span. Furthermore, the results suggest that EI is an important feature for implementing prevention programs of criminal behavior and recidivism.

Key words: ability emotional intelligence; aggression; coping; criminal behavior; inmates; personality traits; psychopathy.

Introduction

This study investigates the role of ability emotional intelligence (EI) in predicting the continuative adoption of criminal behavior over and above an individual's dispositions and styles (DeLisi & Piquero, 2011; Laub & Sampson, 2003) for a sample of adult inmates convicted for violent crimes. A recent review by DeLisi and Piquero (2011) underlines the importance of considering crime as 'a multifactorial construct representing the product of genetic, psychological and sociological etiological forces working together' (p. 291). Indeed, in this study we conceptualize

criminal behavior from a life-span perspective as a longitudinal patterning of criminal activity (Piquero, Farrington, & Blumstein, 2003, 2007), which includes dimensions such as age of onset, frequency, continuity, career length, co-offending, escalation and seriousness of crime, specialization, versatility, and desistance.

From this starting point, we selected a set of variables that represent a suitable framework for investigating an individual's engagement in serious types of offending behavior, such as homicide, aggression and sex violence. In our opinion, these variables

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are continuity, early age of onset, prior convictions, escalation of crime, and drug abuse. We will describe each of these variables in the following section.

Facets of Criminal Behavior

Continuity is a key factor in evaluating criminal behavior. A correlation between past and future offending is widely acknowledged in the literature. To illustrate, Wang, Hay, Todak, and Bales (2015) showed that a high level of prior criminal record is associated with a higher probability of recidivism, and that this effect does not depend on social context. By contrast, another less deterministic perspective has emphasized the role of a kind of social 'contagion' in predicting future behavior from past criminal activities (see, for instance, Blokland & Nieuwbeerta, 2010). Related to continuity, early age of onset of criminal activity has been considered as a predictor of long-term offending careers, significantly and negatively associated with future offending, high frequency and seriousness of crimes committed (DeLisi, 2006; DeLisi, Neppl, Lohman, Vaughn, & Shook, 2013; Gann, Sullivan, & Ilchi, 2015).

In investigating the role of past criminal activities, an important specification concerns the criminogenic effects of prior convictions and imprisonment (Bales & Piquero, 2012; Drago, Galbiati, & Vertova, 2009). A recent study has shown that offenders tend to recidivate significantly more after having been imprisoned compared to individuals performing community service or some other alternative to imprisonment (Wermink, Blokland, Nieuwbeerta, Nagin, & Tollenaar, 2010).

Escalation has been defined as 'the tendency for offenders to move to more serious offense types as offending continues' (Blumstein, Cohen, Roth, & Visser, 1986, p. 84), and has been assessed in different groups of offenders such as murderers, kidnappers and sexual aggressors. In a recent study on drug traffickers, Adams and Pizarro (2014) found that carrying firearms for protection increases

an individual's likelihood of committing homicide. In relation to sexual aggressors, studies have confirmed the stability of modus operandi strategies from one victim to the next, although offenders committing intrusive sexual aggression have been found to use more violence than necessary, thus aggravating their criminal action (Hewitt & Beauregard, 2014).

Finally, the link between substance use and involvement in crime has been broadly described in criminological literature (DeLisi, Vaughn, Salas-Wright, & Jennings, 2015). To illustrate, Kopak, Vartanian, Hoffmann, and Hunt (2014), and Phillips (2012) found significant associations between drug and alcohol use and involvement in violent crimes. Moreover, Torok, Darke, and Kaye (2012) found that offenders with a history of violence and consequent drug use tended to adopt more severe criminal conduct.

The Role of Psychopathy

A theoretical exploration of criminal behavior has been carried out in studies on psychopathy. According to Vaughn and Howard (2005), psychopathy provides an ideal framework for studying serious, violent, and chronic delinquency.

Adults with psychopathic traits tend to behave in a more violent, aggressive and persistent antisocial and criminal way (Douglas, Vincent, & Edens, 2006; Porter & Woodworth, 2006).

Psychopathic personality features include narcissism, fearlessness, impulsivity, and unemotionality (Vaughn & DeLisi, 2008). In different studies, these dimensions have been found to be associated with different facets of criminal behavior and career (see Porter, Brinke, & Wilson, 2009; Vaughn, Howard, & DeLisi, 2008). Correlational and clinical studies have shown that psychopathy is a disorder associated with an increased risk of undertaking aggressive behavior (R. J. R. Blair, 2005): psychopaths often adopt impulsive conducts by showing a general inability to downregulate

their emotional states and moderate aggressive responses to situational threats.

Psychopathic individuals are characterized by a general deficit in both their empathic capacities and their ability to feel concerned about the emotional states of others. For example, there is evidence that psychopaths lack normal response differentiation to emotional and neutral words, and may have impaired recognition of emotion on faces, especially sadness and fear (e.g., Dolan & Fullam, 2006; Hastings, Tangney, & Stuewig, 2008; Montagne et al., 2005). Additionally, they exhibit a deficit in the experience of moral emotions, such as shame, guilt, and embarrassment (K. S. Blair, Morton, Leonard, & Blair, 2006; Hare, 2003). This key role of the emotional domain in psychopathy aligns well with a broad body of research on what professionals and researchers generally denote as EI.

Psychopathy, Ability EI, and Criminal Behavior

In an attempt to improve the understanding of criminal behavior, this paper examines the construct of ability EI and aims to investigate its role over and above the role played by psychopathy in predicting criminal activity. Several models of EI have been proposed in theoretical and empirical research, leading to different conceptualizations and measurements (Roberts, Zeidner, & Matthews, 2001). At odds with the so-called trait models, which include EI in the domain of personality facets (Petrides, Pita, & Kokkinaki, 2007), ability models conceptualize EI as a form of intelligence applied to the processing of emotional information (Mayer, Salovey, & Caruso, 2000). Ability EI has typically been assessed by maximal-performance measures, similar to the assessment of intelligence quotient.

Several studies on adult samples have assessed trait and ability EI levels on prisoners for different types of crime: sex violence, homicide, robbery, and drug trafficking (Ermer, Kahn, Salovey, & Kiehl, 2012; Hemmati, Mills, & Kroner, 2004; Megreya, 2013,

2015; Puglia, Stough, Carter, & Joseph, 2005). Studies on the topic have indeed provided inconsistent evidence. For example, Hemmati et al. (2004) found that adult male offenders exhibited equal or higher trait EI levels than non-offenders. Puglia et al. (2005) did not report deficits in sex offenders' ability EI, but rather showed higher scores on the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT) Perception branch than non-sex-offenders. Other studies have pointed out that male inmates display significantly lower levels of trait EI than controls (Malterer, Glass, & Newman, 2008). Jointly considered, the results from these studies seem to differ on the basis of the type of EI assessment (trait vs. ability), type of crime and intensity of crime violence.

The available literature also provides inconsistent evidence regarding the relationship between EI and psychopathy. A negative association between psychopathy and the MSCEIT Managing score was found in Ermer et al. (2012), while other studies have observed psychopathy-related deficits in terms of emotional ability, suggesting that highly psychopathic individuals might score poorly on the skill of perceiving emotion (Copestake, Gray, & Snowden, 2013; Vidal, Skeem, & Camp, 2010; Visser, Bay, Cook, & Myburgh, 2010). From this brief review it emerges that the pattern and magnitude of associations across studies differ on the basis of which facets of psychopathy and emotional abilities are measured, along with the control put on an individual's differences. It follows that a comprehensive model of inmates' criminal behavior should carefully assess the role of EI over and above the traditionally investigated predictors.

Aims and Hypotheses

The present study aims to investigate the role of ability EI in predicting an individual's adoption of criminal behavior over and above the predictors traditionally considered in the literature, including psychopathy. To the

authors' knowledge, very few studies have focused on the relationships between criminal behavior and ability EI on samples of adult inmates, and the results from these studies are controversial (Baker, ten Brinke, & Porter, 2013; Ermer et al., 2012). The model in this paper also controls for factors such as coping styles and aggressiveness traits, which are traditionally associated with criminal behavior in the literature (Downey, Johnston, Hansen, Birney, & Stough, 2010; Ermer et al., 2012; Ireland, Brown, & Ballarini, 2006; Suris et al., 2004; Vaughn & Howard, 2005).

Based on the theoretical accounts and empirical findings reported above, the following hypotheses were formed:

H1. Coping styles, aggressiveness, psychopathy, and ability EI are associated with criminal behavior.

H2. Ability EI statistically explains a significant increment of variance in criminal behavior, over and above the other variables included in the model.

Method

Participants

A total of 33 male inmates were recruited from two Italian prisons (Cagliari and Iglesias) based on their own interest, of which 4 were excluded because they were not fluent in Italian or failed to complete the whole battery, resulting in a final sample of 29 Italian male inmates. Participants' ages ranged from 23 to 67 years ($M = 42.38$, $SD = 13.25$). The study was approved by the local prison authority, and all participants provided written informed consent. The crimes committed by the participants were violent robbery ($n = 8$), sex violence ($n = 11$), or murder ($n = 10$).

Measures

Coping Style

Coping strategies were assessed using the Coping Inventory for Stressful Situations

(CISS; Endler & Parker, 1990). This consists of 48 5-point items (ranging from 1 = *not at all* to 5 = *very much*) summed up on three subscales of 16 items: a) Task-oriented Coping (Cronbach's $\alpha = .82$), b) Emotion-oriented Coping (Cronbach's $\alpha = .81$), and c) Avoidance-oriented Coping (Cronbach's $\alpha = .80$).

Aggressiveness

Participants' aggressiveness was assessed using the Buss–Perry Aggression Questionnaire (BPAQ; Buss & Perry, 1992). The scale contains 29 5-point items (ranging from 1 = *extremely uncharacteristic of me* to 5 = *extremely characteristic of me*). The item scores are divided into four subscales: a) Physical Aggression (9 items; Cronbach's $\alpha = .69$), b) Verbal Aggression (5 items; Cronbach's $\alpha = .41$), c) Anger (7 items; Cronbach's $\alpha = .66$), and d) Hostility (8 items; Cronbach's $\alpha = .75$).

Psychopathy

Participants' psychopathy was assessed using the Italian version of the Psychopathy Checklist – Revised (PCL-R; Caretti, Manzi, Schimmenti, & Seragusa, 2014; Hare, 2003), the most widely accepted diagnostic instrument for the assessment of psychopathy. This instrument includes a semi-structured interview that evaluates participants' school, family, work, and criminal history, as well as interpersonal and emotional skills. The PCL-R includes 20 3-point items (0 = *doesn't apply*, 1 = *applies somewhat*, 2 = *definitely applies*). The PCL-R item scores are divided into two factors (Hare, 2003). The Interpersonal/Affective Factor (Cronbach's $\alpha = .79$) refers to manipulative behavior, pathological lying, shallow affect, and lack of empathy, while the Social Deviance Factor (Cronbach's $\alpha = .77$) contains items referring to impulsivity, parasitic lifestyle, and antisocial characteristics, such as poor behavioral controls and a criminal history. The inter-rater reliability

index, computed on all items of 30% of the respondents in this study, was .94.

Ability EI

EI abilities were assessed with the Italian version of the MSCEIT v2.0 (Curci & D'Amico, 2011; D'Amico & Curci, 2011). The MSCEIT has 141 multiple-choice items that measure four EI branches and two areas, as well as providing a total EI score. In the present study, the total EI and the two area scores are considered (Brackett, Mayer, & Warner, 2004): Experiential (i.e., an individual's ability to perceive and use emotions to facilitate thought in him or herself and in others), and Strategic (i.e., an individual's ability to understand and manage emotions in him or herself and in others). Scores were computed through consensus scoring (for a description of this approach, see Mayer, Salovey, & Caruso, 2002), and, for each item they corresponded to the degree of similarity between participants' answers and those given in the Italian normative sample. Split-half reliabilities for the three MSCEIT scales here considered ranged from .65 to .91.

Criminal Behavior Index (CBI)

Five dichotomous items (0 = *no*, 1 = *yes*) assessed the following: a) continuity in criminal activities, b) early criminal onset, i.e., non-official initiation of criminal activities between the ages of 8 and 15 years, c) previous detentions, d) criminal escalation, and e) substance abuse (DeLisi & Piquero, 2011). Item scores were summed up into the Criminal Behavior Index (CBI; Kuder–Richardson reliability = .82).

Procedure

Data were collected in three sessions by experienced interviewers. During the first session, inmates were individually administered a semi-structured interview, lasting 90 to 120 minutes, and demographic data, the CBI and

the PCL-R were obtained. Interviews were audiotaped. In a second session, inmates filled in the BPAQ and the CISS in small groups of 5 to 6 individuals. Finally, each inmate was individually administered the MSCEIT in a third session, lasting 50 minutes on average.

Results

Descriptive Analyses

Table 1 displays the outcomes of the descriptive analyses of all measures (the CISS, BPAQ, PCL-R, MSCEIT, and CBI). Two multiple analyses of variance (MANOVAs) were run on the scores of the different subscales of the CISS and the BPAQ separately. The analyses show that the inmates prevalently used task-oriented coping strategies rather than emotion-oriented or avoidance-oriented strategies, $F(2, 27) = 57.86, p < .001$, and that they exhibit higher levels of hostility and physical aggressiveness than verbal aggressiveness and anger, $F(3, 26) = 8.87, p < .001$. Furthermore, in comparison with the Italian normative samples, the participants in this study showed medium levels of psychopathy (see Caretti et al., 2014) and medium levels of EI (see Curci & D'Amico, 2011).

Correlational Analyses

Given the limited sample size, and to prevent violation of normal distribution assumptions, the non-parametric bootstrapping method was adopted for the analyses described in the present and the subsequent sections. Bootstrapping provides a confidence interval (CI) around the coefficients obtained from the analyses, which are significant if the interval between the upper limit (UL) and lower limit (LL) of a bootstrapped 95% CI does not contain zero, which means that the coefficients are different from zero.

Pearson's zero-order correlations were used to examine associations among all

Table 1. Descriptive statistics for all measures in the study.

Measures	<i>M</i> (<i>SD</i>)	Min–Max ¹	Skewness
CISS-T	60.76 (8.04)	46–74	0.03
CISS-E	40.55 (8.91)	23–58	0.05
CISS-A	40.86 (8.98)	24–62	0.33
BPAQ-PA	18.52 (6.23)	9–30	0.32
BPAQ-VA	15.69 (3.35)	10–22	–0.14
BPAQ-A	14.34 (4.94)	8–27	0.77
BPAQ-H	20.07 (6.73)	8–32	0.01
PCL-R-Tot	16.07 (5.29)	9–28	0.26
PCL-R-IA	8.34 (3.41)	2–15	0.20
PCL-R-SD	6.97 (3.94)	0–15	0.07
MSCEIT-Tot	0.39 (0.07)	0.21–0.50	–0.93
MSCEIT-E	0.44 (0.11)	0.15–0.59	–1.08
MSCEIT-S	0.34 (0.05)	0.24–0.43	–0.15
CBI	2.28 (1.91)	0–5	0.14

Note: ¹Min–Max from the empirical distribution. BPAQ = Buss–Perry Aggression Questionnaire; BPAQ-A = BPAQ Anger; BPAQ-H = BPAQ Hostility; BPAQ-PA = BPAQ Physical Aggression; BPAQ-VA = BPAQ Verbal Aggression; CBI = Criminal Behavior Index; CISS = Coping Inventory for Stressful Situations; CISS-A = CISS Avoidance-oriented Coping; CISS-E = CISS Emotion-oriented Coping; CISS-T = CISS Task-oriented Coping; MSCEIT = Mayer–Salovey–Caruso Emotional Intelligence Test; MSCEIT-E = MSCEIT Experiential; MSCEIT-S = MSCEIT Strategic; MSCEIT-Tot = MSCEIT Total; PCL-R = Psychopathy Checklist – Revised; PCL-R-IA = PCL-R Interpersonal Affective; PCL-R-SD = PCL-R Social Deviance; PCL-R-Tot = PCL-R Total.

measures of the study (the CISS, BPAQ, PCL-R, MSCEIT, and CBI). The results reveal a number of associations (see Table 2). CISS Task-oriented Coping is negatively associated with BPAQ Physical Aggressiveness, while CISS Emotion-oriented Coping is positively associated with BPAQ Hostility and negatively associated with PCL-R Interpersonal/Affective and all MSCEIT EI measures. CISS Avoidance-oriented Coping is negatively associated with the MSCEIT total EI and Experiential scores. Additionally, BPAQ Physical Aggression is negatively associated with PCL-R Interpersonal/Affective and positively associated with the CBI, while BPAQ Anger is negatively associated with the MSCEIT total EI and Strategic scores. Further, BPAQ Hostility is negatively associated with all MSCEIT EI measures, and PCL-R Interpersonal/Affective and Social Deviance are negatively and positively associated with the CBI, respectively.

Only the MSCEIT Experiential score is positively associated with the CBI. Finally, no significant associations were found between the PCL-R and MSCEIT indices.

The Prediction of CBI

To test a) the extent to which coping strategies, aggressiveness, psychopathy, and ability EI predict criminal behavior and b) the role of ability EI in explaining an incremental variance in criminal behavior over and above the other variables included in the model, a hierarchical multiple regression (HMR) model was fitted to the data by adopting the bootstrapping estimation. The CBI is the dependent variable, with the three CISS factors added at Step 1, the four BPAQ factors added at Step 2, the two PCL-R factors added at Step 3, and the two MSCEIT area scores added at Step 4.

At both Steps 1 and 2 the models and the incremental change were not significant:

Table 2: Zero-order correlations among all measures of the study (1000 bootstrap samples).

Measures	CISS-T	CISS-E	CISS-A	BPAQ-PA	BPAQ-VA	BPAQ-A	BPAQ-H	PCL-R Tot	PCL-R IA	PCL-R SD	MSCEIT-Tot	MSCEIT-E	MSCEIT-S
CISS-E	-.02 (-.40 to .39)												
CISS-A	-.15 (-.48 to .21)	.44* (.07 to .68)											
BPAQ-PA	-.41* (-.71 to -.03)	.16 (-.26 to .54)	.08 (-.38 to .44)										
BPAQ-VA	.29 (-.03 to .55)	.14 (-.15 to .44)	-.03 (-.34 to .24)	-.04 (-.38 to .29)									
BPAQ-A	-.21 (-.61 to .15)	.26 (.02 to .49)	-.02 (-.39 to .37)	.56** (.23 to .81)	.32 (-.01 to .62)								
BPAQ-H	.03 (-.35 to .41)	.42* (.11 to .68)	.14 (-.24 -.47)	.04 (-.36 to .47)	.29 (-.02 to .58)	.48** (.16 to .73)							
PCL-R Tot	.23 (-.18 to .56)	-.30 (-.55 to .02)	-.03 (-.39 to .39)	-.05 (-.36 to .27)	.09 (-.28 to .46)	-.08 (-.44 to .29)	.02 (-.29 to .31)						
PCL-R IA	.29 (-.11 to .62)	-.38* (-.68 to -.02)	-.06 (-.37 to .31)	-.52** (-.77 to -.24)	-.04 (-.46 to .38)	-.24 (-.55 to .09)	-.12 (-.41 to .23)	.57** (.28 to .76)					
PCL-R SD	.01 (-.34 to .34)	-.02 (-.40 to .37)	.01 (-.38 to .37)	.36 (.03 to .62)	.13 (-.19 to .40)	.09 (-.24 to .42)	.05 (-.35 to .41)	.72** (.56 to .84)	-.15 (-.46 to .20)				
MSCEIT-Tot	.15 (-.16 to .42)	-.57** (-.82 to -.24)	-.38* (-.67 to -.01)	-.24 (-.60 to .10)	-.01 (-.34 to .33)	-.42* (-.67 to -.14)	-.56** (-.78 to -.31)	.23 (-.14 to .54)	.22 (-.12 to -.51)	.11 (-.31 to .48)			
MSCEIT-E	.21 (-.12 -.50)	-.54** (-.78 to -.20)	-.39* (-.70 to .00)	-.13 (-.51 to .25)	.05 (-.29 to .36)	-.34 (-.60 to -.04)	-.52** (-.75 to -.23)	.26 (-.09 to .55)	.12 (-.20 to .43)	.21 (-.16 to .52)	.97** (.92 to .98)		
MSCEIT-S	-.04 (-.36 to .28)	-.50** (-.74 to -.19)	-.26 (-.57 to .09)	-.43* (-.69 to -.12)	-.13 (-.43 to .19)	-.49** (-.74 to -.18)	-.50** (-.72 to -.25)	.11 (-.29 to .47)	.37 (.04 to .67)	-.14 (-.56 to .30)	.81** (.66 to .91)	.62** (.36 to .81)	
CBI	-.21 (-.54 to .16)	.13 (-.28 to .56)	-.11 (-.51 to .26)	.47** (.17 to .72)	.00 (-.34 to .34)	.21 (-.09 to .50)	-.10 (-.46 to .24)	.30 (-.04 to .58)	-.40* (-.68 to -.10)	.73** (.51 to .86)	.26 (-.16 to .58)	.36* (.00 to .66)	-.08 (-.47 to .31)

Table 3. Hierarchical multiple regression of CBI (1000 bootstrap samples).

Measures	Step 1		Step 2		Step 3		Step 4	
	β	95% CI	β	95% CI	β	95% CI	β	95% CI
CISS-T	-.24	(-.13 to .04)	-.08	(-.12 to .09)	-.14	(-.12 to .04)	-.27	(-.16 to .02)
CISS-E	.24	(-.03 to .13)	.24	(-.04 to .14)	.26	(-.04 to .14)	.42**	(.02 to .20)
CISS-A	-.25	(-.16 to .05)	-.24	(-.17 to .06)	-.21	(-.13 to .04)	-.13	(-.10 to .04)
Step 2								
BPAQ-PA			.48	(-.02 to .34)	-.12	(-.22 to .11)	-.13	(-.17 to .10)
BPAQ-VA			.08	(-.22 to .28)	-.09	(-.24 to .11)	-.17	(-.28 to .06)
BPAQ-A			-.08	(-.28 to .22)	.24	(-.10 to .30)	.27	(-.08 to .24)
BPAQ-H			-.17	(-.20 to .13)	-.33*	(-.19 to .01)	-.15	(-.12 to .06)
Step 3								
PCL-R-IA					-.21	(-.31 to .16)	-.12	(-.26 to .19)
PCL-R-SD					.76**	(.21 to .52)	.62**	(.16 to .45)
Step 4								
MSCEIT-E							.61**	(3.48 to 20.86)
MSCEIT-S							-.18	(-23.66 to 10.75)

Note: * $p < .05$; ** $p < .01$. BPAQ = Buss–Perry Aggression Questionnaire; BPAQ-A = BPAQ Anger; BPAQ-H = BPAQ Hostility; BPAQ-PA = BPAQ Physical Aggression; BPAQ-VA = BPAQ Verbal Aggression; CBI = Criminal Behavior Index; CISS = Coping Inventory for Stressful Situations; CISS-A = CISS Avoidance-oriented Coping; CISS-E = CISS Emotion-oriented Coping; CISS-T = Task-oriented Coping; MSCEIT = Mayer–Salovey–Caruso Emotional Intelligence Test; MSCEIT-E = MSCEIT Experiential; MSCEIT-S = MSCEIT Strategic; PCL-R = Psychopathy Checklist – Revised; PCL-R-IA = PCL-R Interpersonal Affective; PCL-R-SD = PCL-R Social Deviance.

Step 1, $R^2 = .11$, $F(3, 25) = 1.01$, $p = .40$; Step 2, $R^2 = .30$, $F(7, 21) = 1.28$, $p = .31$; R^2 change = .19, $p = .26$. At Step 3, when the two PCL-R factors were introduced, the model and the incremental change became significant, $R^2 = .75$, $F(9, 19) = 6.27$, $p < .001$, R^2 change = .45, $p = .001$, with Social Deviance found to be a significant predictor (see Table 3). At Step 4, when the two EI area scores were introduced, the model and the incremental change were significant: $R^2 = .88$, $F(11, 17) = 10.88$, $p < .001$, R^2 change = .13, $p < .01$, with CISS Emotion-oriented Coping, PCL-R Social Deviance, and the MSCEIT Experiential area found to be significant predictors. Introducing the EI total score at the Step 4 instead of the two area scores led to similar results, $R^2 = .84$, $F(10, 18) = 9.23$, $p < .001$, with EI being a significant predictor of CBI, $\beta = .45$, $p < .01$, 95% CI = 2.90–24.55, together with CISS Emotion-oriented Coping and PCL-R Social Deviance.

Discussion

The present study aimed to propose a model of prediction of criminal behavior which incorporates ability EI as a further predictor over and above the traditional factors which refer to the individual's coping style and traits. Criminal behavior is conceptualized in terms of a life-span perspective as a longitudinal pattern of criminal activity encompassing several facets assessed by observed indicators of continuity, early age onset, prior convictions, escalation of crime, and drug abuse (Piquero et al., 2003, 2007).

The findings demonstrate that coping style, aggressiveness, psychopathy, and ability EI scores have a complex pattern of inter-relationship. Furthermore, psychopathy and ability EI appear to have independent associations with CBI but are not related to each other. A hierarchical regression model was run on these findings in order to evaluate the

predictive role of ability EI over and above the other variables included in the assessment. The results from the regression model show that the MSCEIT Experiential area of EI is a significant predictor of inmates' criminal behavior, together with CISS Emotion-oriented Coping and PCL-R Social Deviance.

The fact that CISS Emotion-oriented Coping has an independent effect on the CBI could be explained by the fact that the participants were all convicted for violent crimes and had a significant history of criminal activity in which an emotion dysfunctional processing and an excessive focusing on personal reactions might have played a role (Marshall, Serran, & Cortoni, 2000; Pagé, Tourigny, & Renaud, 2010). Furthermore, PCL-R Social Deviance corresponds to an indicator of a peculiar lifestyle encompassing impulsivity, poor behavioral control and a criminal history (Hare, 2003). As such, social deviance appeared to be a significant predictor of the participants' continuative adoption of criminal behavior. Finally, in the present sample, only the MSCEIT Experiential area of EI seems to play a key role in predicting criminal behavior, which includes scores referring to the individual's ability to perceive and use emotions to facilitate thought. It follows that these findings contradict previous evidence supporting a general deficit in the emotion-recognition ability in violent offenders (Hoaken, Allaby, & Earle, 2007), although a meta-analysis of 20 studies revealed that deficits are emotion-specific rather than general (Marsh & Blair, 2008). In line with the present findings, other studies have not reported deficits in emotion recognition (Book, Quinsey, & Langford, 2007; Glass & Newman, 2006) or showed an even greater accuracy in offenders' ability to recognize angry faces (Kosson, Suchy, Mayer, & Libby, 2002). Following these studies, it is thus concluded that an individual's ability to read emotions in him or herself and others might be a crucial ability for deceit, manipulation, and criminal conduct.

It should however be noted that the CBI was found to be negatively correlated with the interpersonal-affective factor of psychopathy, although this association vanished when a hierarchical model of prediction was fitted to the data. This pattern of associations was probably due to the types of crimes for which the inmates in the present study were imprisoned (murder, sex violence, and robbery). These crimes do not necessarily imply an ability to manipulate interpersonal and affective relations, so the independent role of other predictors prevailed in the regression model. Additionally, the low sample size and the low levels of psychopathy displayed by participants might explain the lack of significant associations found between the dimensions of the PCL-R and the MSCEIT. A similar explanation might also apply to the lack of significant predictive effects of the MSCEIT Strategic area of EI.

Previous studies on the relationship between psychopathy and ability EI have reported controversial results, with low if not significant associations between the two constructs (Copestake et al., 2013; Ermer et al., 2012). In this study, however, the relationships of those constructs with a behavioral index of offending were assessed, and a model of prediction which takes into account the incremental role of EI over and above the traditional predictors of the individual's history of criminal activities was estimated. Enlarging the sample size in future studies would allow an increase in the magnitude of associations, thus facilitating the further evaluation of the complex model of interrelationships among variables.

Another important merit of this study is the adoption of an ability model to assess EI, as compared with studies about psychopathy and trait EI (Ali, Amorim, & Chamorro-Premuzic, 2009; Malterer et al., 2008; Porter, Brinke, Baker, & Wallace, 2011). Indeed, the ability model of EI has the advantage of evaluating individuals' abilities with reference to a standard criterion rather than relying upon self-evaluations and meta-knowledge. It

follows that using the MSCEIT to assess EI is particularly recommended for samples of less-educated or deviant people, as in the present sample of inmates (Ermer et al., 2012). In addition, conceptualizing EI as a form of intelligence or ability – and not as a personality disposition – has the advantage of implementing training programs on the emotional correlates of mental health which aim to improve individuals' well-being, especially when the focus of the assessment and treatment is on disadvantaged individuals (Castillo, Salguero, Fernández-Berrocal, & Balluerka, 2013; Lopes, Coté, & Salovey, 2006). However, given the limited sample size in this study, a more fine-grained assessment of EI could not be adopted by modeling the effects of the four branch scores of MSCEIT (Perceiving Emotions, Using Emotions, Understanding Emotions, and Managing Emotions) on the PCL-R scores. It follows that future studies are needed to fill in this gap.

This study represents a contribution to the investigation of the complex relationships between coping style, aggressiveness, psychopathy, and EI in applied settings, such as a sample of inmates for violent crimes. Indeed, many recent studies on the subject have been concerned with samples of undergraduate students (Ali et al., 2009; Porter et al., 2011), for which the coping strategies and personality features are completely different and not related to criminal outcomes. It is not surprising then that the controversial results reported in the literature might be an effect of the heterogeneity of the samples on which the studies were run. Future studies are also needed to evaluate the stability of associations with larger sample sizes, and in relation to different types of crimes, criminal careers, and different levels of psychopathy. Another key point is the assessment of gender differences, although the lower percentages of women in the prison population as compared to men might represent a problem with regard to the generalization of the results.

Finally, these results, although not exhaustive, might serve as a useful starting point for setting up programs of prevention of recidivism based upon the improvement of coping strategies and emotional abilities. The role played by ability EI over and above coping and personality dispositions might open the way to an optimistic approach to the treatment of deviant and criminal conducts.

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