Article

Psychopathy and Criminogenic Thinking in Adult Male Prisoners

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Abstract

Crime persists in plaguing society, with most crimes committed by repeat offenders. This causes an increase in the incarcerated population and strains correctional systems. Understanding why individuals who have been incarcerated continue to recidivate remains an important focus for investigation. Psychopathic personality traits and criminogenic thinking have both been shown to predict recidivism. However, there is currently little research that focuses on the relationship between these two risk factors, and no prior research has examined this relationship specifically among incarcerated offenders. To address this gap, the present study examined psychopathy and criminogenic thinking among 399 adult males incarcerated in the Mississippi Department of Corrections. Results indicated that after controlling for demographic variables, increased primary and secondary psychopathy significantly predicted increased overall and particular subtypes of criminogenic thinking. Implications for addressing psychopathic personality characteristics and criminogenic thinking conjointly in prison-based treatment programming to reduce recidivism are discussed.

Keywords

psychopathy, criminogenic thinking, recidivism, MOTS-R, offenders

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In their 2002 study of 623,492 inmates in local jails, The Bureau of Justice Statistics found that approximately 62% had previous offenses on record (James, 2002). Recently, The Pew Center on the States (2011) found that approximately 40% of offenders reoffended within 3 years of being released from prison. These statistics demonstrate an alarming rate of recidivism and indicate significant costs to society, both in terms of money spent on caring for and housing inmates as well as the financial, physical, and emotional costs associated with increased victimization.

To combat such high rates of recidivism, more resources have been allocated toward treatment services for offenders during incarceration. Many of these programs attempt to target factors that perpetuate criminal behavior, which are referred to as criminogenic needs. Criminogenic needs include such factors as antisocial attitudes and values, pro-criminal associates, and impulsivity (MacKenzie, 2006). Andrews, Zinger, et al. (1990) concluded from their landmark meta-analysis of juvenile and adult treatment studies that when treated with appropriate services, offenders were less likely to recidivate than if they had received no treatment or an inappropriate treatment. Andrews, Zinger, et al. (1990) found these appropriate interventions were characterized by (a) targeted delivery of services to those who demonstrate a higher risk of reoffending; (b) addressing specific, dynamic criminogenic needs of offenders; and (c) utilizing effective treatment modalities (i.e., intensive, directive, cognitive-behavioral) while matching offenders' need. These three core principles came to be known as risk, need, and responsivity, respectively, thus comprising the *Risk-Need-Responsivity* (RNR) model of offender rehabilitation. This model has been shown to be effective with a variety of offender types (e.g., age, gender, ethnicity, crime type, etc.), behaviors (i.e., violent or nonviolent), and correctional settings (i.e., residential or community; Andrews & Bonta, 2010).

Adhering to the tenets of the RNR model has demonstrated a decrease in recidivism and has been shown to be more effective than other treatment interventions (Andrews & Bonta, 2010). In targeting criminogenic needs, eight central factors that place an individual at risk for recidivism have been identified (Andrews & Bonta, 2006). The most dominant of these eight factors are referred to as the "big four" and include history of antisocial behaviors, antisocial personality pattern, antisocial cognitions, and interaction with antisocial associates (Andrews & Bonta, 2006). Much of the attention given to the "big four" has been focused on the factor of antisocial cognitions. These cognitions, also known as criminogenic thinking, have been described in the literature as patterns of thought that perpetuate criminal behavior (Walters, 2009a). Research has shown that criminogenic thinking is predictive of a spectrum of illegal and otherwise problematic behaviors. Specifically, criminogenic thinking has been shown to be associated with poor institutional adjustment, institutional violence, non-completion of treatment, and recidivism (Walters, 2006, 2009b; Walters & Schlauch, 2008). Criminogenic thinking has been identified as a promising focus in recidivism-reduction interventions because it is a dynamic criminogenic need that may be altered via cognitive-behavioral intervention.

Yochelson and Samenow (1976) were the first to explore criminogenic thinking patterns, and posited that this problematic cognitive style persists throughout a

criminal's career. They described three main categories of criminogenic thinking (i.e., criminogenic thinking patterns, automatic errors of thinking, and a problematic thinking process that spans from idea to execution), and these ideas have been used as the foundation for which future research on this topic has expanded on. Using Yochelson and Samenow's (1976) theory as the basis for his criminal lifestyle theory, Walters (1990) stated that recurrent criminal behavior results from individuals' thought, social interactions, and environmental factors. Walters (1990) used these three main influences to conceptualize eight different but corresponding criminal thinking styles (i.e., mollification, entitlement, superoptimism, discontinuity, cutoff, power orientation, cognitive indolence, and sentimentality), and theorized that the interaction of these thinking styles creates and perpetuates the criminal lifestyle. Toward an even better understanding of criminogenic thinking, Mandracchia, Morgan, Garos, and Garland (2007) compiled the specific thinking patterns described by Yochelson and Samenow as well as Walters, along with more general thinking errors that perpetuate problematic behavior described by Beck (1976) and Ellis (1974). On examining the factor structure of these dysfunctional thinking patterns, Mandracchia et al. (2007) found three factors of criminogenic thinking: one that reflected a need to maintain power over oneself, others, and the environment (Control); one that characterized overly simplistic and ineffective thinking as well as a self-pitying perspective (Cognitive Immaturity); and one that emphasized self-importance and self-focus (Egocentrism).

Although research continues to illustrate the nature of criminogenic thinking and its relationship to a range of other variables, little is known about how these criminogenic thinking patterns are established, influenced, and maintained. One potential avenue to bolster understanding in this area is investigating the relationship between criminogenic thinking and antisocial personality characteristics, particularly given that both constructs are included in the "big four" risk factors and that they both relate, in whole or in part, to cognitive processes. In considering the most extreme form of antisocial personality, examining psychopathic personalities may help explain the consistency of antisocial attitudes, values, and behaviors evidenced in repeat offenders. Because psychopathic characteristics are considered to be a set of personality traits, and personality is known to affect cognitions (Jones, Miller, & Lynam, 2011), it stands to reason that psychopathic characteristics may influence an individual's criminogenic thinking. A better understanding of this relationship is germane to developing and implementing effective recidivism-reducing interventions. Although research has shown independently that psychopathy and criminogenic thinking are each associated with a higher risk of recidivism, a better understanding of their interrelationship will inform whether the presence of psychopathic characteristics is indicative of specific criminogenic cognitions (Gonsalves, Scalora, & Huss, 2009; Morgan, Fisher, Duan, Mandracchia, & Murray, 2010).

Given that psychopathy is not a unidimensional construct, the potential relationship between psychopathy and criminogenic thinking may be complex. Although psychopathy has been conceptualized by three- (Cooke & Michie, 2001) and four-factor (Vitacco, Neumann, & Jackson, 2005) models, psychopathy has most often been conceptualized and assessed using a two-factor model. In the two-factor model, Factor 1 (i.e., Primary Psychopathy) represents various maladaptive behavioral and emotional traits such as a

grandiose sense of self, lack of empathy or remorse, and manipulativeness, and Factor 2 (i.e., Secondary Psychopathy) consists of impulsivity, sensation-seeking, irresponsibility, a criminal history, and a parasitic lifestyle (Widiger & Lynam, 1998).

Some studies have provided basic data on the relationship between psychopathy and criminogenic thinking among incarcerated individuals. In these studies, however, this relationship has not been the central theme, and thus the complexity of the relationship, including examination of relationships between specific factors of the two main constructs, has been overlooked. For example, Walters (2009b) examined the additive ability of criminogenic thinking to predict recidivism above and beyond demographic variables and psychopathic characteristics. He provided correlational data between the Psychopathy Checklist: Screening Version (PCL-SV) and the Psychological Inventory of Criminal Thinking Styles (PICTS), but included only the PICTS General Criminal Thinking scale (i.e., none of the subscales were included). In one study that did examine the correlations between subscales of criminogenic thinking and psychopathy, the sample consisted of jail inmates, which included pretrial participants (i.e., those not convicted of an offense; Tangney et al., 2012).

Only a few studies have focused on the relationship between psychopathy and criminogenic thinking in a more complex manner. Gonsalves et al. (2009) presented correlations between Factor 1 and Factor 2 scales of the Psychopathy Checklist–Revised (PCL-R) and the subscales and higher-order scales of the PICTS. Overall, they found that secondary psychopathy was more strongly related to criminogenic thinking than was primary psychopathy. Their sample, however, consisted of male patients in a state-operated forensic mental health unit. Magyar, Carr, Rosenfeld, and Rotter (2010) utilized the PICTS and the PCL-SV, and found both subtypes of psychopathy to be similarly correlated to criminogenic thinking among adult psychiatric patients.

These findings are informative in that they support the predicted relationship between psychopathic characteristics and the criminogenic thinking styles described by Walters (2009b). In addition, they indicate that generally problematic personality styles (e.g., grandiosity, lack of lack of empathy, etc.) may be a potential driving force behind an individual's criminogenic cognitions (e.g., entitlement, drive for power, etc.). No study to date has provided an in-depth examination of the complex relationships between factors of psychopathy and criminogenic thinking among incarcerated offenders. Thus, the purpose of the present study was to further examine the connection between psychopathic personality characteristics and criminogenic thinking. In particular, the investigators hypothesized that psychopathic personality characteristics (i.e., Factors 1 and 2) would be predictive of overall criminogenic thinking as well as all three subtypes of criminogenic thinking represented on the Measure of Offender Thinking Styles–Revised (MOTS-R) in a sample of incarcerated adult male offenders.

Method

Participants

Data were collected from 399 adult male prisoners who were incarcerated within the Mississippi Department of Corrections. The participants' mean age was 34.94 years

(*SD* = 10.86, range = 19-69). The overwhelming majority of participants identified as Black (*n* = 220, 55.1%) or White (*n* = 144, 36.1%). Regarding highest level of formal education attained, most (*n* = 206, 51.6%) reported obtaining a high school diploma or General Equivalency Diploma (GED), 17% (*n* = 68) reported attending some college but not receiving a degree, 14.8% (*n* = 59) reported completing grade school (i.e., through eighth grade), 7% reported receiving a college degree, 2% (*n* = 8) reported not completing grade school (i.e., stopped attending school before completing the eighth grade), and 1% (*n* = 4) reported obtaining an advanced degree (i.e., beyond a bachelor's degree). Almost half of the participants reported they were single and had never been married (*n* = 177, 44.4%), 22.1% (*n* = 88) reported being married, 16% (*n* = 64) reported being divorced, 6% (*n* = 24) reported being partnered or in a common-law marriage, 5.3% (*n* = 21) reported being separated from their spouse, and 1.5% (*n* = 6) reported being widowered.

Regarding the participants' index offenses (i.e., the primary crime for which each participant was currently incarcerated), 30.6% (*n* = 122) listed a drug offense (e.g., possession, manufacturing, distribution), 27.6% (*n* = 110) listed a property offense (e.g., burglary, forgery, theft), 22.3% (*n* = 89) listed a violent offense (e.g., murder, robbery, assault), 9% (*n* = 36) listed a sex offense (e.g., rape, sexual battery, exploitation of a minor), and 3% (*n* = 12) listed some other offense (e.g., violation of probation, accessory after the fact). Eight percent (*n* = 32) of participants reported they were serving a life sentence, whereas the mean sentence length for those without a life sentence was 9.11 years (*SD* = 9.33, range = 3 months to 60 years). Participants reported having already served a mean of 3.97 years (*SD* = 5.29, range = 0.2 months to 31 years) on their current sentence.

Materials

Demographic form. The self-report demographic form, which was created by the researchers specifically for use in this research study, contained basic demographic status items (e.g., age, race/ethnicity, education) as well as items related to participants' correctional status (e.g., index offense, sentence length, time served).

Measure of Offender Thinking Styles–Revised. The MOTS-R (Mandracchia & Morgan, 2011) is a 65-item self-report measure of dysfunctional thinking patterns associated with criminal and other maladaptive behavior. It was designed for use with adult male offenders. The MOTS-R contains three subscales: Control (i.e., a desire for power and command over self, others, and the environment; for example, "I find myself looking for ways to gain power"), Cognitive Immaturity (i.e., unrefined, unsophisticated, and overly simplistic reasoning and decision making; for example, "I don't think before I act; I usually act according to how I feel at that moment"), and Egocentrism (i.e., an overinflated conceptualization of self-importance, self-worth, and entitlement; for example, "I think of myself as one of a kind"). These subscales, when combined, form a total scale reflecting overall maladaptive, criminogenic thinking.

The MOTS-R scales have shown good internal consistency (i.e., .81-.95) and test–retest reliability (i.e., .55-.67 over a 2-week period), and have established convergent and discriminant validity with measures of related constructs (i.e., the PICTS, the Criminal Sentiments Scale–Modified, and the Measure of Criminal Attitudes and Associates; Mandracchia & Morgan, 2011).

Levenson's Self-Report Psychopathy Scale. Levenson's Self-Report Psychopathy Scales (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995) is a 26-item self-report instrument, which evaluates personality traits related to psychopathy. The LSRP contains two independent scales, which reflect primary and secondary traits, respectively. The Primary Psychopathy Scale consists of items related to selfishness, deception, manipulativeness, and cruelty. The Secondary Psychopathy Scale consists of items related to frustration intolerance, impulsivity, and recklessness. The LSRP scales have demonstrated good internal consistency (i.e., .71-.83) and convergent validity (i.e., compared with the Psychopathic Personality Inventory; Falkenbach, Poythress, Falki, & Manchak, 2007). Although originally developed using a population of non-offenders (Levenson et al., 1995), the LSRP has since been shown to be appropriate for use with an offender population (Poythress et al., 2010).

Procedures

Approval was obtained from the Institutional Review Boards of the appropriate institutions (i.e., academic and correctional) prior to conducting the study. Potential participants were identified by the correctional staff (e.g., officer, warden, assistant warden) at each institution. A convenience sampling approach was used such that inmates were recruited by housing area. Specifically, all inmates present in particular housing areas from the general inmate population at the time of the research study were instructed to go to the data collection site. This sampling approach was necessary to maintain the efficient functioning of the institution. Data collection occurred in a group format, and thus, the data collection sites generally consisted of classrooms, visitation areas, and dining areas. Once all recruited potential participants arrived at the data collection site, the researchers explained the nature and purpose of the study and encouraged the inmates to review the consent form. Those inmates who declined to participate or were unable to participate (e.g., not English literate) were allowed to leave in accordance with institutional policy. Those who chose to participate completed the research materials and then also left in accordance with institutional policy.

Results

In the current investigation, four sequential regression analyses (i.e., hierarchical linear regression [HLR]) were used to examine the relationship between psychopathy and criminogenic thinking. One analysis was conducted for each outcome variable: the three MOTS-R Scale scores (i.e., Control, Cognitive Immaturity, Egocentrism)

Table 1. Means, Standard Deviations, and Correlation Coefficients for Study Measures.

	1	2	3	4	5	6
1. MOTS-R total	1	.915**	.917**	.536**	.577**	.679**
2. MOTS-R control		1	.732**	.394**	.678**	.601**
3. MOTS-R cognitive immaturity			1	.318**	.457**	.722**
4. MOTS-R egocentrism				1	.133*	.141**
5. LSRP primary					1	.518**
6. LSRP secondary						1
M	170.83	61.34	67.99	41.53	32.86	22.43
SD	43.40	19.91	8.23	8.23	8.31	5.79

Note. MOTS-R = Measure of Thinking Styles–Revised; LSRP = Levinson's Self-Report Psychopathy Scale.
*$p < .05$. **$p < .01$.

and the MOTS-R Total score. In addition, means, standard deviations, and correlations were computed for the study measures (i.e., MOTS-R scales and LSRP scales; see Table 1).

Because previous literature has indicated that some demographic variables influence criminogenic thinking (i.e., age, education, race; Mandracchia & Morgan, 2010; Walters, 2003), these variables were entered into the first block of each analyses to control for the variance they contribute to the model. Of these variables, age and years of education were entered as continuous variables. Race was dummy coded such that Black and Other (not Black or White) were each contrasted with White, and relationship status was dummy coded such that being in a relationship (i.e., married or partnered) and having been in a relationship (i.e., divorced, separated, widowered) were each contrasted with being single. The second block entered into each analysis consisted of the psychopathy variables (i.e., LSRP Primary and Secondary scores).

Predicting MOTS-R Control

In predicting the MOTS-R Control Scale scores, the block of demographic variables predicted Control significantly better than chance—that is, $\Delta F(6, 282) = 4.586$, $p < .001$. This block accounted for 8.9% of the variance in Control, with age, $b = -.441$, $t(282) = -3.634$, $p < .001$, and education level, $b = -3.385$, $t(404) = -2.569$, $p = .011$, as significant predictors of Control, such that increases in age and education level are associated with lower levels of criminogenic thinking. Relationship and racial identity variables were not significant predictors of Control. The block of psychopathy variables predicted Control significantly better than chance—that is, $\Delta F(8, 280) = 49.346$, $p < .001$. This block accounted for 58.5% of the variance in Control, with LSRP Primary scores, $b = 1.171$, $t(280) = 10.495$, $p < .001$, and Secondary scores, $b = 1.190$, $t(280) = 7.547$, $p < .001$, as significant predictors of Control. Thus, increases in LSRP Primary and Secondary scores are associated with higher levels of criminogenic thinking. The results indicate that with every one-point increase in LSRP Primary scores,

Table 2. Hierarchical Linear Regression Predicting MOTS-R Control From Demographic Variables and Psychopathy Variables.

Predictor	ΔF (p)	ΔR^2	b	t (p)
Block 1	**4.586 (<.001)**	**.089**		
Age			**−0.441**	**14.392 (<.001)**
Education			**−3.385**	**−2.569 (.011)**
Black vs. White			4.038	1.620 (.106)
Other race vs. White			8.836	1.644 (.101)
Relationship vs. single			−0.292	−.105 (.917)
Ex-relationship vs. single			0.527	.160 (.873)
Block 2	**49.346 (<.001)**	**.496**		
LSRP primary			**1.171**	**10.495 (<.001)**
LSRP secondary			**1.190**	**7.547 (<.001)**

Note. MOTS-R = Measure of Thinking Styles–Revised; LSRP = Levinson's Self-Report Psychopathy Scale.

Control scores increase by 1.17 points. Similarly, as LSRP Secondary scores increase by one point, Control increases by 1.19 points. See Table 2 for the statistical values for this analysis.

Predicting MOTS-R Cognitive Immaturity

For the HLR analysis predicting the MOTS-R Cognitive Immaturity Scale scores, the block of control variables did not predict Cognitive Immaturity better than chance—that is, $\Delta F(6, 282) = 1.841$, $p = .091$. The block of psychopathy variables predicted Cognitive Immaturity better than chance—that is, $\Delta F(8, 280) = 150.941$, $p < .001$. This block accounted for 53.7% of the variance in Cognitive Immaturity, with Secondary scores, $b = 2.58$, $t(280) = 14.002$, $p < .001$, as a significant predictor of Cognitive Immaturity. Increases in LSRP Secondary scores are significantly associated with higher levels of Cognitive Immaturity criminogenic thinking. The results show that as Secondary scores increase by one point, Cognitive Immaturity scores increase by 2.58 points. See Table 3 for the statistical values for this analysis.

Predicting MOTS-R Egocentrism

In the prediction of MOTS-R Egocentrism scale scores, the block of control variables predicted Egocentrism better than chance—that is, $\Delta F(6, 282) = 3.24$, $p = .004$. This block accounted for 6.4% of the variance in Egocentrism, with age, $b = -.131$, $t(282) = -2.70$, $p = .007$, and Other racial identity, $b = 5.623$, $t(282) = 2.614$, $p = .009$, as significant predictors of Egocentrism, such that increases in age are associated with lower levels of Egocentrism, and Other racial identity (compared with White) is associated with higher levels of Egocentrism. The second block (i.e., psychopathy variables), which accounted for 9.6% of the variance in Egocentrism, predicted Egocentrism

Table 3. Hierarchical Linear Regression Predicting MOTS-R Cognitive Immaturity From Demographic Variables and Psychopathy Variables.

Predictor	ΔF (p)	ΔR^2	b	t (p)
Block 1	1.841 (.091)	.038		
Age			**−0.352**	**−2.549 (.011)**
Education			−2.797	−1.868 (.063)
Black vs. White			1.589	0.561 (.575)
Other race vs. White			1.509	0.247 (.805)
Relationship vs. single			4.541	1.430 (.154)
Ex-relationship vs. single			4.670	1.248 (.213)
Block 2	**150.941 (<.001)**	**.499**		
LSRP primary			0.224	1.715 (.087)
LSRP secondary			**2.580**	**14.002 (<.001)**

Note. MOTS-R = Measure of Thinking Styles–Revised; LSRP = Levinson's Self-Report Psychopathy Scale.

Table 4. Hierarchical Linear Regression Predicting MOTS-R Egocentrism From Demographic Variables and Psychopathy Variables.

Predictor	ΔF (p)	ΔR^2	b	t (p)
Block 1	**3.240 (.004)**	**.064**		
Age			**−0.131**	**−2.700 (.007)**
Education			0.873	1.655 (.099)
Black vs. White			0.546	.547 (.585)
Other race vs. White			**5.623**	**2.614 (.009)**
Relationship vs. single			0.490	0.438 (.662)
Ex-relationship vs. single			−.545	−0.413 (.680)
Block 2	**4.819 (.009)**	**.031**		
LSRP primary			0.073	1.129 (.260)
LSRP secondary			0.176	1.913 (.057)

Note. MOTS-R = Measure of Thinking Styles–Revised; LSRP = Levinson's Self-Report Psychopathy Scale.

better than chance—that is, $\Delta F(8, 280) = 4.819$, $p = .009$. LSRP Secondary scores, $b = .176$, $t(280) = 1.913$, $p = .057$, approximated statistical significance in predicting Egocentrism, whereas LSRP Primary scores, $b = .073$, $t(280) = 1.129$, $p = .260$, did not significantly predict Egocentrism. See Table 4 for the statistical values for this analysis.

Predicting MOTS-R Total Scores

For the HLR analysis predicting the MOTS-R Total scores, the block of control variables predicted the Total scores better than chance, that is, $\Delta F(6, 282) = 3.236$, $p = .004$, which accounted for 6.4% of the variance in MOTS-R Total scores. Age,

Table 5. Hierarchical Linear Regression Predicting MOTS-R Total From Demographic Variables, and Psychopathy Variables.

Predictor	ΔF (p)	ΔR^2	b	t (p)
Block 1	**3.236 (.004)**	**.098**		
Age			**−0.924**	**−3.520 (.001)**
Education			−5.286	−1.856 (.064)
Black vs. White			6.12	1.136 (.257)
Other race vs. White			15.956	1.374 (.171)
Relationship vs. single			4.819	0.798 (.426)
Ex-relationship vs. single			4.641	0.652 (.515)
Block 2	**160.099 (<.001)**	**.499**		
LSRP primary			**1.469**	**6.018 (<.001)**
LSRP secondary			**3.943**	**11.432 (<.001)**

Note. MOTS-R = Measure of Thinking Styles–Revised; LSRP = Levinson's Self-Report Psychopathy Scale.

$b = -.924$, $t(282) = -3.520$, $p < .001$, significantly predicted Total scores; education level, $b = -5.286$, $t(280) = -1.856$, $p = .064$, neared statistical significance in predicting Total scores, such that increases in age and education level are associated with lower levels of criminogenic thinking total scores. The block of psychopathy variables were found to predict Total scores better than chance, that is, $\Delta F(6, 282) = 160.099$, $p < .001$, with these variables accounting for 56.4% of variance in Total scores. LSRP Primary scores, $b = 1.469$, $t(280) = 6.018$, $p < .001$, and Secondary scores, $b = 3.943$, $t(280) = 11.432$, $p < .001$, significantly predicted Total scores, meaning that increases in LSRP Primary and Secondary scores are associated with increases in Total criminogenic thinking scores. Specifically, for every one-point increase in LSRP Primary scores, MOTS-R Total scores increase by 1.469 points, and for every one-point increase in LSRP Secondary, the MOTS-R Total scores increase by 3.943 points. See Table 5 for the statistical values for this analysis.

Discussion

Beyond offering the first in-depth investigation into the connection between psychopathic characteristics and criminogenic thinking in an incarcerated male adult offender population, the current findings also provide empirical support for the theoretical connection between psychopathic personality features and criminogenic thinking patterns. Although most research on psychopathy is limited to examining its relationship to behavior, this study offers evidence that those with psychopathic personality traits are likely to experience specific thinking styles that ultimately drive involvement in crime. The analyses reveal that psychopathy is a relatively strong predictor of general criminogenic thinking, with psychopathy scores accounting for more than half of the variance in overall criminogenic thinking scores. Perhaps the more interesting findings from this study, however, relate to the differential associations between psychopathy

subtypes and criminogenic thinking subtypes. Specifically, primary psychopathy (Factor 1) contributed to the prediction of only the Control subscale, whereas secondary psychopathy (Factor 2) contributed to the prediction of the Control, Cognitive Immaturity, and (nearing statistical significance) Egocentrism subscales.

The finding that secondary psychopathy was predictive of more types of criminogenic thinking than was primary psychopathy is consistent with previous findings, including a study that showed that secondary psychopathy is more strongly related than primary psychopathy to similar criminogenic cognitions (i.e., antisocial attitudes) in incarcerated offenders (Simourd & Hoge, 2000), and a study in which secondary psychopathy was correlated with more styles of criminogenic thinking (as measured by the PICTS) than was primary psychopathy in a sample of male forensic inpatients (Gonsalves et al., 2009).

Primary psychopathy represents the characteristics of psychopathic interpersonal style, such as exploitation, egocentricity, and a lack of remorse (Harpur, Hare, & Hakstian, 1989); although it was predictive of both Total and Control criminogenic thinking in the present study, primary psychopathy was more strongly related to Control. Because Control represents, in part, one's desire to impose power over others, this finding seems intuitive given the characteristics of primary psychopathy. It is not, therefore, surprising that those who take advantage of others with a diminished experience of negative emotion (i.e., lack of guilt) demonstrate a higher need for control over oneself and others. In this sense, the drive for control may constitute a core cognitive aspect of primary psychopathy.

Interestingly, primary psychopathy was not significantly predictive of MOTS-R Egocentrism, even though primary psychopathy includes egocentric interpersonal functioning. Also, both Gonsalves et al. (2009) and Magyar et al. (2010) found that primary psychopathy was related to PICTS Entitlement scores, which represents a similar construct as MOTS-R Egocentrism, with Gonsalves et al. (2009) showing an exclusive relationship. This difference may be due to the nuanced differences between these two subscales. Specifically, although both scales reflect an air of uniqueness, PICTS Entitlement emphasizes a theme of privilege that permits offending behavior as well as the misinterpretation of one's desires as necessities (Walters, 1990), whereas MOTS-R Egocentrism emphasizes an overestimation of one's self-importance (Mandracchia et al., 2007). Moreover, this difference may be because MOTS-R Egocentricity contains some generally maladaptive and self-depreciative types of thinking from cognitive theories proposed by Beck and Ellis (Mandracchia et al., 2007) in addition to the strictly antisocial representations of primary psychopathy represented in the PICTS thinking styles.

Compared with primary psychopathy, secondary psychopathy predicted more criminogenic thinking subscales and accounted for more variance in overall criminogenic thinking. Thus, the reckless lifestyle that characterizes secondary psychopathy (e.g., instability, impulsivity, irresponsibility) seems to be more closely related to criminogenic thinking than does the parasitic lifestyle that characterizes primary psychopathy (e.g., callousness, deceitfulness, grandiosity). This finding may be because the thinking patterns reflected in the MOTS-R include a broad range of maladaptive

cognitions derived from criminological theories (i.e., Walters, 1990; Yochelson & Samenow, 1976) and non-criminological cognitive theories (i.e., Beck, 1976; Ellis, 1974). The stronger connection between secondary psychopathy and criminogenic thinking provides potential explanation to the previous finding that secondary psychopathy (compared with primary psychopathy) is more strongly associated with criminal recidivism (Gonsalves et al., 2009).

It is noteworthy that of the three MOTS-R subscales, only the Control subscale was significantly predicted by both primary and secondary psychopathy. As previously mentioned, the Control subscale captures a desire for control over others and the environment, but it also includes content reflecting control over oneself. Self-control has been at the forefront of criminological theory stemming back to Gottfredson and Hirschi's (1990) General Theory of Crime, in which they suggested that a lack of self-control is the primary factor that perpetuates criminal behavior. Over the years, this notion has been refined and subjected to some debate, specifically regarding how self-control should be operationalized, whether it is a unitary or multidimensional construct, and whether it is static versus dynamic (e.g., Hirschi, 2004). However, it is important to note that control over oneself as conceptualized in the MOTS-R is related to cognitions that diminish anxiety about committing a crime and therefore *promote* criminal behavior (Mandracchia et al., 2007). Conversely, Hirschi's (2004) reconceptualization of self-control relates to cognitions about long-term negative consequences and therefore *inhibit* criminal behavior. More research is needed to determine if these two types of self-control are in fact opposite sides of the same coin or function independently. Regardless, the present findings highlight the importance of self-control (in conjunction with other factors) in understanding what promotes crime, and may support Hirschi's (2004) assertion that self-control is generally static given that both primary and secondary psychopathy, as relatively stable personality characteristics, were related to MOTS-R Control in the present study.

In addition to expanding the research literature on the relationship between psychopathy and criminogenic thinking, the current findings are likely to be particularly meaningful for correctional practitioners aiming to reduce criminal recidivism. Practitioners who hope to reduce recidivism are encouraged to target criminogenic thinking styles utilizing cognitive-behavioral therapy strategies, as recommended by Andrews, Zinger, and colleagues' (1990) RNR model. As the current study highlights, there is a strong relationship between criminogenic thinking and psychopathy, and so attention to both of these constructs in tandem may be particularly advantageous during a course of treatment aimed to reduce recidivism. In particular, the current findings indicate that a cognitive behavioral treatment protocol that targets secondary psychopathic characteristics while also identifying and modifying criminogenic thinking patterns (e.g., control, cognitive immaturity, and egocentrism) may minimize future criminal reoffending.

Although cognitive-behavioral therapy has shown to be an appropriate and fruitful approach to treating offenders' criminogenic thinking (Landenberger & Lipsey, 2005), the utilization of psychological treatments for psychopathy has rendered mixed results (Salekin, 2002). Salekin, Worley, and Grimes (2010) offer evidence of low to moderate

gains for treatments originally developed for Antisocial Personality Disorder (i.e., cognitive-behavioral, behavioral, and interpersonal therapies) for patients with psychopathic traits. Salekin et al. (2010) purported that while the field is collectively realizing the potential amenability of psychopathy to treatment, many clinicians lack knowledge of promising treatment interventions. For example, schema therapy has recently been suggested as a promising treatment modality for individuals in forensic settings, including those with antisocial personality disorder and those with particularly high levels of psychopathic personality traits (Bernstein et al., 2012). This highlights a glaring gap in the literature on treatment for psychopathy, such as a lack of randomized control trials (Salekin et al., 2010).

Overall, treatment that addresses criminogenic thinking may additionally ameliorate some aspects of psychopathy, specifically those secondary psychopathy aspects that are more behavioral in nature (i.e., criminal offending and impulsivity), showing the largest potential for treatment gains. Because this study explores these constructs in a correctional population, the findings and treatment implications are directly applicable for in-prison interventions with the ultimate goal of reducing recidivism on release back into society.

Despite these important findings and implications, the present study needs to be considered in light of some limitations. First, the study was conducted solely on adult male inmates. Thus, the findings may have limited generalizability to female inmates and juvenile offenders, the latter of whom may be at a stage in personality development particularly relevant to the formation of psychopathy. Second, recidivism and other rule-breaking behavior were not directly examined in this study, and so implications for behavioral outcomes are based solely on previously established relationships to recidivism. Third, the assessment of psychopathic characteristics was conducted completely based on a self-report measure due to limitations on methodology (i.e., impracticality of conducting individual interviews, lack of access to prison records).

In addressing some of these limitations, future studies could examine if these relationships between psychopathy and criminogenic thinking are consistent across gender and age. Furthermore, examination of these relationships among subtypes of offenders (e.g., "white collar" offenders, violent offenders) may determine if certain criminal behaviors are associated with different aspects of psychopathy and/or criminogenic thinking styles. Future directions also include studying the impact of these variables directly on criminal recidivism utilizing longitudinal methodology. Previous research (Gonsalves et al., 2009) found that the moderating effect of both criminogenic thinking and psychopathy predicted recidivism better than the variables separately among forensic patients. Thus, examining this moderation effect in the inmate population may be fruitful in improving the prediction of recidivism.

Continuing this line of research has the potential to better inform the intrapersonal causes of criminal behavior. Broadly, this study betters our understanding of how maladaptive personality characteristics (in this case, psychopathy) and cognitive patterns (in this case, criminogenic thinking) relate to each other. In the end, though, it may be that there are a few critical facets that are being investigated separately but are actually tapping into some overarching personality traits and cognitive patterns. Consider de

Vries and van Gelder's (2013) findings that although self-control showed to be an important construct in relation to delinquency, conscientiousness was more consistently and strongly related (inversely) to delinquency, and that honesty-humility (as conceptualized in the HEXACO model of personality) was even more consistently associated (inversely) with delinquency. These constructs are similar to some of the criminogenic thinking styles from the MOTS-R. Control over oneself from MOTS-R Control may actually be the inverse of "self-control" as conceptualized in de Vries and van Gelder's study (as previously discussed). Conscientiousness may be the inverse of thinking patterns typified by MOTS-R Cognitive Immaturity (i.e., lazy, short-cut, oversimplistic thinking). Finally, honesty-humility may be the inverse of some thinking patterns from MOTS-R Egocentrism (i.e., uniqueness, entitlement), particularly given that de Vries and van Gelder found the fairness facet of honesty-humility most related to delinquency. By conducting investigations probing into these various aspects of personality and cognitive styles, researchers may determine if these are the same constructs being examined from different perspectives, or are separate but related constructs that interact to form the most pernicious intrapersonal causes of repeat criminal offending.

In conclusion, the link between psychopathy, criminogenic cognitions, and criminal recidivism has been suggested previously (Andrews, Bonta, & Hoge, 1990); however, the present study provides unique empirical evidence from a sample of male prisoners supporting the relationship between these two established predictors of criminal recidivism, which have previously been considered independently of each other. Furthermore, the present findings suggest the novel notion that the relationships between subtypes of psychopathy and criminogenic thinking are more nuanced than previously considered.

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