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Reliability, Validity, and Predictive Utility of the 25-Item Criminogenic Cognitions Scale (CCS)

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Abstract

Theory, research, and clinical reports suggest that moral cognitions play a role in initiating and sustaining criminal behavior. The 25 item Criminogenic Cognitions Scale (CCS) was designed to tap 5 dimensions: Notions of entitlement; Failure to Accept Responsibility; Short-Term Orientation; Insensitivity to Impact of Crime; and Negative Attitudes Toward Authority. Results from 552 jail inmates support the reliability, validity, and predictive utility of the measure. The CCS was linked to criminal justice system involvement, self-report measures of aggression, impulsivity, and lack of empathy. Additionally, the CCS was associated with violent criminal history, antisocial personality, and clinicians' ratings of risk for future violence and psychopathy (PCL:SV). Furthermore, criminogenic thinking upon incarceration predicted subsequent official reports of inmate misconduct during incarceration. CCS scores varied somewhat by gender and race. Research and applied uses of CCS are discussed.

Keywords

criminogenic cognitions; jail inmates; inmate misconduct; psychopathy

Theory and research from social psychology (Bandura, 1990) and criminology (Andrews & Bonta, 1994, 2010a; Maruna & Copes, 2005; Sykes & Matza, 1957; Walters, 1995, 1996; Yochelson & Samenow, 1976) converge to underscore the importance of certain cognitive processes in fostering and maintaining behavior at odds with one's moral standards. Although the field of psychology has long focused on moral reasoning, other aspects of moral cognition – such as the propensity to engage in cognitive distortions, rationalizations, and "neutralization" techniques -- may be more powerful predictors of moral vs. immoral behavior.

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Clinicians working with serious criminal offenders, too, note that criminals who persist in a life of crime often hold a distinct set of beliefs – (im)moral cognitions -- that serve to rationalize and perpetuate criminal activity (Tangney, Mashek, & Stuewig, 2007). For example, it is not unusual for inmates to make external attributions for their current legal problems (externalization of blame). More than a few offenders genuinely perceive that the primary reason they are in jail – the heart of responsibility – is an overzealous cop, an associate's betrayal, or society's failure to provide adequate employment opportunities. Another common cognitive distortion among offenders centers on offenders' perceptions of the experiences of a victim. Many offenders view a broad range of crimes as "victimless." They may believe that a victim (e.g., of burglary, fraud, even rape) is not really harmed unless there is concrete physical injury, in effect downplaying the validity of psychological pain.

Distinct from moral standards (judgments of "right" and "wrong"), criminogenic cognitions represent patterns of thought apt to attenuate the relationship between one's standards and one's behavior (Tangney, Stuewig, & Mashek, 2007). For example, criminologists Sykes and Matza (1957) described "techniques of neutralization" – e.g., minimizing harmful consequences, dehumanizing the victim – the function of which is to reduce dissonance between moral standards and moral behavior. In fact, most major theories of criminal behavior, including subcultural, anomie, differential association, control, labeling theories, and recent revisions of the General Theory of Crime (Gottfredson & Hirschi, 1990; Gottfredson, 2011; Hirschi, 2004) assign a primary role to criminal attitudes as contributors to the onset and maintenance of criminal behavior (Andrews & Bonta, 1994, 2010a; Bandura, 1990; Glueck & Glueck, 1930, 1934; Marcus, 2004; Maruna & Copes, 2005; Sutherland, 1947; Sykes & Matza, 1957; Yochelson & Samenow, 1976). The common theme is that criminals commit crime in part because their cognition distortions serve to rationalize deviant behavior and minimize its negative consequences.

Extant Measures of Criminogenic Thinking

Given this theoretical emphasis on criminal patterns of thought, there have been surprisingly few attempts to systematically measure such criminogenic attitudes and distortions. Most notable in terms of quantity and quality of supporting research are the Psychological Inventory of Criminal Thinking (PICTS; Walters, 1990, 2002) and the Criminal Sentiments Scale-Modified (CSS-M; Shields & Simourd, 1991).

The current version of the Psychological Inventory of Criminal Thinking (PICTS; Walters, 2002) is an 80-item measure comprising 8 criminal thinking scales (Mollification, Cutoff, Entitlement, Power Orientation, Sentimentality, Superoptimism, Cognitive Indolence, and Discontinuity) two validity scales (Confusion and Defensiveness), and Reactive and Proactive composite scales (Walters, 2006). One drawback to this measure is the extraordinarily high correlations of criminal thinking scales with the Confusion and Defensiveness validity scales. For example, Walters, Trgovac, Rychlec, DiFazio, and Olson (2002) reported that the Confusion validity scale was concurrently correlated, $r = .64$, with a summary index of current criminal thinking. The measure of criminal thinking was also substantially confounded with the Defensiveness validity scale, $r = -.59$. Nonetheless, the PICTS has demonstrated reliability across diverse segments of the offender population, and accounts for the large majority of extant published research on criminogenic thinking. Research employing the PICTS shows a link between criminal thinking and criminal history, although the magnitude of the relationship is uncertain. For example, Walters (1995) reported correlations between .07 to .23, whereas Palmer and Hollin (2004) reported non-significant results in a large sample of young adult offenders in England. Walters (1996) reported that the PICTS is modestly predictive of disciplinary problems while incarcerated

(R^2 = .06). Walters and Elliott (1999) subsequently demonstrated that the PICTS accounted for a larger percent of the variance in disciplinary infractions among their sample of female felons (R^2 =.22–.37). Regarding prospective relations to post-release behavior, the PICTS has successfully predicted recidivism (Walters, 1997, 2009; Walters & Elliott, 1999). In a recent meta-analysis of 6 studies, Walters (2012) reported a pooled mean effect size (*r*) of . 20 for the reconstructed General Criminal Thinking score. The PICTS was also significantly correlated with both Factor 1 and Factor 2 PCL:SV (Hart, Cox, & Hare, 1995) psychopathy scoress in a sample of hospitalized psychiatric patients (Magyar, Carr, Rosenfeld, & Rotter, 2010).

Less widely used, but through to be comparably reliable is the Criminal Sentiments Scale-Modified (CSS-M; Shields & Simourd, 1991). The CSS-M, drawn from earlier work by Gendreau, Grant, Leipeiger, and Collins (1979), comprises 41 items assessing Attitudes Toward the Law (with subscales pertaining to Law, Court, and Police), Tolerance for Law Violations, and Identification with Criminal Others. Studies employing the CSS-M have yielded mixed results in terms of correlates with criminal history, with one study showing modest positive correlations (Mills, Kroner, & Forth, 2002) and another showing negligible relationships (Simourd, 1997). In addition, the CSS-M has been modestly related to prior institutional misconduct during incarceration (Simourd, 1997).

Recently, three additional measures have appeared in the literature -- The Measure of Offender Thinking Styles (MOTS; Mandracchia, Morgan, Garos, & Garland, 2007), the Criminogenic Thinking Profile (CTP; Mitchell & Tafrate, 2011), and the Texas Christian University Criminal Thinking Scales (TCU-CTS; Knight, Garner, Simpson, Morey, & Flynn, 2006).

Mandracchia and colleagues (2007) factor analyzed 77 thinking patterns derived from the work of Yochelson and Samenow (1976), Walters (1990), Beck (1976), and Ellis (2001), but no data are available regarding its relation to criminal history, institutional misconduct, or subsequent offense. In a follow up report (Mandracchia & Morgan, 2010), canonical correlations indicated that the three factors of the MOTS (Control, Cognitive Immaturity, and Egocentrism) were negatively related to receipt of mental health services, and positively associated with longer sentences, more time served, and (surprisingly) greater education.

The Criminogenic Thinking Profile (CTP; Mitchell & Tafrate, 2011) is a 62 item measure designed primarily to assess patterns of thinking common among psychopaths. Exploratory factor analyses and subsequent confirmatory factor analyses supported an 8 factor solution. The total score and its subscales (Disregard for Others, Demand for Excitement, Poor Judgment, Emotionally Disengaged, Parasitic/Exploitive, Grandiosity, Inability to Cope, and Justifying) were negatively related to self-reported healthy personality traits, and positively correlated with self-reported psychopathy and other aggressive personality disorders (with the exception of Grandiosity, which only correlated with self-reported Factor 1 psychopathy). No data are available regarding the relation of the CPT to criminal history, institutional misconduct, or subsequent offense, nor to non-self-report measures of functioning.

The TCU Criminal Thinking Scales (TCU-CTS), developed in conjunction with a multi-site study of drug treatment programs, is a 37 item measure composed of six subscales. Three of the subscales were adapted from the PICTS: Entitlement, Justification (mollification), and Power Orientation (need for power and control). In addition, the TCU-CTS includes Personal Irresponsibility (blaming others), Cold Heartedness, and Criminal Rationalization (negative attitudes toward authority) subscales. In their initial report, Knight and colleagues (2006) presented strong reliability and descriptive data from a large sample of adult

offenders in drug treatment, but no validity data. Subsequent studies have offered mixed support for the validity of the TCU-CTS. For example, in a study of incarcerated adolescents utilizing 5 of the 6 TCU-CTS subscales, Dembo, Turner, and Jainchill (2007) found that TCU-CTS scores were substantially correlated with self reports of family conflict, moderately correlated with diagnoses of conduct disorder and oppositional defiant disorder, and modestly related to self-reported criminal history. In a small study of young adult offenders in substance abuse treatment, Packer, Best, Day, and Wood (2009) found that some TCU-CTS subscale scores were positively correlated with some indices of substance use and dependence, and TCU-CTS scores were associated with low self control, but TCU-CTS scores were largely unrelated to total time incarcerated, number of previous convictions, and recent offenses. Most recently, drawing on a study of 250 drug-using probationers, Taxman, Rhodes, and Dumenci (2011) reported limited support for the validity and utility of the TCU-CTS. No significant differences were observed on any of the subscales comparing probationers with a non-criminal justice community sample. TCU-CTS scores showed little relationship with known predictors of recidivism nor did they prospectively predict 6 month follow-up measures of criminal activity. Total TCU-CTS scores were significantly related to scores on self- and treatment-relevant attitudes, including low treatment readiness, hostility, risk-taking, low self-efficacy, and low social consciousness.

In short, evidence supporting the reliability, validity, and predictive utility of extant measures of criminogenic thinking has been mixed. Although most major theories of criminal behavior identify criminogenic patterns of thought as playing a key role in the onset and maintenance of criminal behavior, empirical research employing existing measures has been somewhat disappointing.

Development of the Criminogenic Cognitions Scale (CCS)

In this paper, we present data on the reliability and validity of the Criminogenic Cognitions Scale (CCS). The CCS is a 25 item measure developed in conjunction with research on “general population” jail inmates aimed at examining the link between moral emotions and criminal recidivism (Tangney, Stuewig, et al., 2007). In developing the CCS, we drew on restorative justice theory and substantial input from clinicians working with serious offenders. Our project was enriched early on by collaboration with clinicians who have extensive experience working with offenders at the local Adult Detention Center. In focus group sessions, clinicians identified key beliefs and cognitive distortions that they aim to address in treatment with repeat offenders. Based on the insights of clinical caseworkers at the frontlines of rehabilitation,[1] we developed the CCS to tap 5 dimensions: (a) Notions of Entitlement (“When I want something, I expect people to deliver”); (b) Failure to Accept Responsibility (“Bad childhood experiences are partly to blame for my current situation”); (c) Short-Term Orientation (“The future is unpredictable and there is no point planning for it”); (d) Insensitivity to the Impact of Crime (“A theft is all right as long as the victim is not physically injured”); and (e) Negative Attitudes toward Authority (“People in positions of authority generally take advantage of others”). Several dimensions identified by the clinicians appear in previous efforts to conceptualize cognitions associated with criminal activity (Barriga et al., 2000; Gendreau et al., 1979; Shields & Simourd, 1991; Walters, 1995; Yochelson & Samenow, 1976). The CCS, however, is unique in its incorporation of restorative justice theory, most clearly exemplified by the Insensitivity to the Impact of Crime and the Failure to Accept Responsibility dimensions.

[1]These invaluable insights were provided by the clinical staff at Opportunities, Alternatives, and Resources (OAR), the non-profit organization which provides counseling and social services to Fairfax County Adult Detention Center inmates and their families. We wish to thank, especially, David Manning, Derwin Overton, Carla Taylor, Lois Mitchell, and Jill Clark.

The Current Study

Drawing on data from a longitudinal study of 552 felony offenders, we examine the reliability and validity of the Criminogenic Cognitions Scale (CCS) and its dimensions. We evaluate the validity of the CCS in terms of its relationship to past criminal behavior, concurrent self-reports of conceptually relevant dimensions, and clinicians' ratings of psychopathy and violence risk. We also examine predictive validity in terms of its relationship to subsequent indices of jail misconduct. Last, to facilitate work with diverse populations, we evaluate the degree to which findings generalize across gender and race.

Method

Participants

Participants were 552 pre- and post-trial inmates (380 male and 172 female) held on felony charges in a 1100 bed metropolitan area county jail. These data were gathered as part of a larger on-going longitudinal study of moral emotions and criminal recidivism. Because a key interest of the larger project was the effectiveness of short-term interventions with relatively serious offenders, selection criteria were developed to identify incoming inmates likely to serve at least 4 months (i.e., long enough to complete the 5 session baseline assessment and to have the opportunity to request and engage in at least some jail programs and services). Thus, selection criteria were (1) either (a) sentenced to a term of 4 months or more, or (b) arrested and held on at least one felony charge other than probation violation, with no bond or greater than $7,000 bond,[2] (2) assigned to the jail's medium and maximum security "general population" (e.g., not in solitary confinement owing to safety and security issues, not in a separate forensics unit for actively psychotic inmates), and (3) sufficient language proficiency to complete study protocols in English or Spanish.

Of the inmates who met criteria and who were invited to participate in this multi-wave longitudinal study (granting access to criminal, jail, medical and forensic records, as well as access to credit and other official records for several years post-release), 74% agreed (N=628). Regarding validity, 26 individuals were dropped based on several criteria. First, two validity scales from the Personality Assessment Inventory (PAI) – Inconsistency and Infrequency – were examined. Participants were dropped if one of the scales was above the recommended cut-offs (T scores of 72 and 74, respectively, Morey, 1991) and the other was considered elevated (above 69). Second, interviewers routinely reported if there were validity concerns during data collection. In cases where interviewer concerns were raised, data were further examined for response bias, response sets, elevation of other validity scales, and documentation of problems from other sessions. Of the 602 remaining participants, (92%) remained at the jail long enough to complete portions of the 4–6-session initial assessment (1–3 weeks) relevant to this report, with most lost due to bond out or transfer to another facility.

Participants were on average 32 years old (SD = 10, range 18 to 69), and diverse in terms of racial/ethnic composition: 44% African American, 36% Caucasian, 9% Latino, 3% Asian, 4% "Mixed," and 4% "Other."

[2]One aim of the larger study from which these data were drawn was to learn more about treatment usage and treatment outcome. Thus we worked with the jail's Classification staff to develop criteria to identify inmates likely to be incarcerated at least 4 months – long enough to participate in the multi-session baseline assessment and to request and participate in jail programs. This is a key criterion suggested by experienced jail staff.

Measures and Procedures

Several days into incarceration, after assignment to the jail's general population, as part of informed consent procedures, eligible inmates were presented with a description of the study and assured of the voluntary and confidential nature of the project. In particular, it was emphasized that the decision to participate or not would have no bearing on their status at the jail nor their release date. Regarding confidentiality, interviews were conducted in the privacy of professional visiting rooms, used by attorneys, or secure classrooms; data are protected by a Certificate of Confidentiality from DHHS. Inmates who agreed to participate, and who completed the 4–6 session baseline assessment, received a $15–18 honorarium.

Participants with sufficient English verbal comprehension skills (over 95% of the sample) completed questionnaires using "touch-screen" computers not requiring computer literacy (e.g., no keyboard, no mouse). In addition to presenting questionnaire items visually, the computer read each item aloud to participants via headphones, accommodating participants with limited reading proficiency. For participants requiring Spanish versions of the measures, questionnaire responses were gathered via individual interview. Both interviewers and participants had paper copies of the translated measures. Participant followed along as interviewers read items aloud.

Measures: Self Report

Demographics—Participants' self-reported gender, age, race, years of education, and pre-incarceration income.

Criminogenic Cognitions—The Criminogenic Cognitions Scale (CCS; Tangney, Meyer, Furukawa, & Cosby, 2002) is a 25 item self-report measure designed to tap 5 dimensions: (a) Notions of Entitlement; (b) Failure to Accept Responsibility; (c) Short-Term Orientation; (d) Insensitivity to the Impact of Crime; and (e) Negative Attitudes toward Authority. Items were rated on a 4 point scale with 1='strongly disagree' 2='disagree' 3='agree' and 4='strongly agree.' Items were averaged to create each of the 5 dimensions as well as a total criminogenic cognitions score.

Validity, Aggression, Antisocial Personality, and Violence Potential were assessed with the Personality Assessment Inventory (PAI; Morey, 1991), a widely used, well-validated, self-report measure of psychopathology and personality traits. The PAI provides four validity scales -- Inconsistency, Infrequency, Negative Impression Management (NIM), and Positive Impression Management (PIM). We also considered the Aggression scale, the Antisocial Personality scale, and Violence Potential Index (VPI). All were converted to T-scores based on the census standardization sample. Alphas estimates of reliability for PAI scales were good, ranging from .67 to .90, consistent with those observed in the standardization samples (Morey, 1991) and in correctional samples (Edens & Ruiz, 2005).

Shame-proneness, guilt-proneness, and externalization of blame were assessed with the Test of Self Conscious Affect –Socially Deviant Version (TOSCA-SD; Hanson & Tangney, 1996), developed for use with incarcerated respondents, as well as other "socially deviant" populations. As with the family of TOSCA measures developed for children, adolescents, and adults living in the community, the TOSCA-SD utilizes a scenario-based approach where respondents are asked to imagine themselves in a series of 13 situations (e.g., "You are driving down the road and hit a small animal."). Each scenario is followed by responses that describe shame, guilt and externalization of blame experiences with respect to the specific context (e.g., for shame, "You would think: "I'm terrible;" for guilt, "You would probably think it over several times wondering if you could have avoided it;" and for externalization of blame, "You would think the animal shouldn't have been on the road").

The measures are not forced-choice in nature. Respondents rate, on a 5-point scale ("not at all likely" to "very likely") their likelihood of responding in each manner indicated, allowing for the possibility that feelings of shame and guilt may co-occur in connection with a given situation.

In preliminary work with undergraduates, the TOSCA-SD has been reliable and correlated highly with the original TOSCA. It has demonstrated reliability and validity in two preliminary studies of incarcerated sex offenders (Hanson, 1996; Cripps, 1997) and in a large study of jail inmates (Tangney, Stuewig, Mashek, & Hastings, 2011). For the current sample, reliabilities for shame (.71), guilt (.80), and externalization of blame (.82) were good.

Empathy was assessed with the Interpersonal Reactivity Index (IRI; Davis, 1983). The IRI assesses cognitive and affective components of empathy. The Empathic Concern Scale (Alpha=.69) assesses the extent to which respondents experience "other-oriented" feelings of compassion and concern (e.g., "I often have tender, concerned feelings for people less fortunate than me"). The Perspective Taking Scale (Alpha=.70) assesses the ability to "step outside of the self" and take another's perspective (e.g., "Before criticizing somebody, I try to imagine how I would feel if I were in their place"). Responses were collected on a 4-point scale where 1='strongly disagree' to 4 'strongly agree.'

Intimate Partner Violence—The Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) was used to assess inmates' perpetration of physical and psychological violence in their primary relationship during the year prior to incarceration as well as their use of negotiation. The three scales used here were physical assault (12 items, Alpha= .90), psychological abuse (8 items, Alpha= .80), and negotiation (6 items, Alpha= . 86).

Self-control—The Brief Self-Control Scale (BSC; Tangney, Baumeister, & Boone, 2004) is a 13 item measure shown to be valid and reliable in college samples (Holtfreter, Reisig, Leeper Piquero, & Piquero, 2010; Tangney et al., 2004) with good reliability in the current incarcerated sample (α = .85).

Connectedness to the Criminal Community and Connectedness to the Community At Large was assessed using the Inclusion of the Community in Self (ICS; Mashek, Cannaday, & Tangney, 2007) scale. The ICS scale is a multi-item pictorial measure of closeness that was developed within the framework offered by Aron and Aron's (cf. 1986) self-expansion model. The ICS contains six pairs of overlapping circles. Each pair of circles overlaps slightly more than the preceding pair. The first pair of circles barely touch, whereas the final pair of circles overlap almost completely. Connectedness to the community at large was assessed by asking participants to "circle the picture that best describes your relationship with the community at large." Connectedness to the criminal community was assessed by asking participants to "circle the picture that best describes your relationship with the criminal community." If participants asked something akin to "What do you mean by community at large," we said that the community at large refers to all the people in your town, city or county; people in general; people who live on the outside and who do not commit crimes. We defined the criminal community as people who commit crimes whether they are in jail, prison, or living on the outside. Mashek et al. (2007) presents evidence supporting the validity of the ICS.

Self-esteem was assessed with the Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965), a widely used measure of global self-esteem. Ten items are answered on a 5 point scale ranging from "Always False" to "Always True" (α = .87).

Drug and alcohol problems were assessed using Simpson and Knight's (1998) Texas Christian University Correctional: Residential Treatment Form, Initial Assessment (TCU-CRTF). Specifically, participants reported the frequency of alcohol, marijuana, opiates, and cocaine use during the year prior to incarceration (0 = "never" to 8 = "more than once a day"). In addition, four substance dependence scales were created to assess dependency on alcohol (17 items, α = .93), marijuana (8 items, α = .92), opiates (18 items, α = .99), and cocaine (14 items, α = .98) in the year prior to incarceration. Item responses ranged from 0 = "never" to 4 = "7 or more times." Each scale was composed of items that assess the DSM-IV (American Psychiatric Association, 1994) substance dependence domains (e.g., for the domain of tolerance participants answered the question "How often did you find that your usual number of drinks had much less effect on you or that you had to drink more in order to get the effect you wanted?"). For domains with multiple items, responses were averaged within domain and a total score was computed by taking the mean across the seven domains (six in the case of marijuana because withdrawal is not considered part of the criteria). An additional index was created to assess polydrug use, defined as the number of different illegal substances used in the year prior to incarceration from a list of 9 substances. Alcohol and drug problems also were assessed by the Alcohol Problems (12 items, α= .92) and Drug Problems (12 items, α = .91) scales from the PAI (Morey, 1991).

Measures: Clinical Assessments

Psychopathy—The Psychopathy Checklist: Screening Version (PCL:SV; Hart et al., 1995) was used to assess psychopathy. An in-depth psychosocial history interview and review of criminal and jail records were used by trained clinicians to complete this 12 item checklist. Prior to coding the PCL:SV, interviewers completed an advanced graduate course on theory, research, and assessment of psychopathy, including intensive supervised training in the administration and scoring of the PCL-R and PCL:SV. Those who successfully met interrater reliability criteria for both forms were cleared for coding study protocols. A randomly selected set of 54 cases were double-coded by a referent clinician who brought to the project 15 years of professional experience conducting forensic psychological evaluations, as well as advanced training and experience in the administration and scoring of the PCL-R and PCL:SV. Single measure intraclass correlations, using a one-way random effects model, were .85, .79, and .85 for Part 1, Part 2, and Total PCL:SV scores, respectively, showing high interrater reliability.

Future Risk of Violence—The Violence Risk Appraisal Guide (VRAG; Harris, Rice, & Quinsey, 1993; Quinsey, Harris, Rice, & Cormier, 1998) is a 12 item actuarial risk instrument tool that has been validated for use in a wide variety of offender populations. Similar to the PCL:SV, we assessed interrater reliability with a single measure intraclass correlation using a one-way random effects model. The randomly selected 52 cases showed high reliability (ICC = .89).

IQ was estimated using the Wonderlic (1999) Personnel Test & Scholastic Level Exam, a widely used, well-validated brief measure of intelligence.

Measures: Official Records

Criminal history was coded using information from the National Crime Information Center (NCIC) reports. Two variables were created for this report. *Criminal history total* was the total number of charges that showed up in their records (range from 1 to 176). *Criminal history violent* was the total number violent charges (includes crimes such as physical and sexual assault, carjacking, kidnapping) (range from 0 to 24). Due to high levels of skewness, both variables were also log transformed and analyses were run using transformed and non-transformed variables.

Custody Risk Classification and other information about criminal history were obtained from official jail records. At booking, deputies completed an actuarial-derived initial custody assessment classifying: 1) *severity of current charge* and (2) *serious offense history* as "none or low" =0 (e.g., trespassing, misdemeanors), "moderate"=1 (e.g., breaking and entering, drug possession), "high"=2 (e.g. robbery, murder), and "highest"=3 (e.g., multiple serious charges); whether or not the inmate had (3) *prior jail experience* coded as "none"=0, "time as juvenile/weekender/less than 6 months"=1, "local time 6–12 months"=2, "13–20 months state or local time"=3, "20 or more months"=4; and (4) *prior felony convictions* where "none"=0, "one"=1, and "two or more"=2. Two total custody risk classification variables were collected using the jail's initial custody assessment form; both used the above variables (weighted according to the jail's actuarial instrument) along with other risk factors including escape history, disciplinary history, substance abuse, detainers, and other demographic variable. The first was *custody level* classified as "minimum"=1, "medium"=2, and "maximum"=3. The second, *comprehensive custody score* ranged from −1 to 25 out of a possible range of −2 to 37.

Jail Misconduct was coded using jail records obtained between time of enrollment in the study and release date. Three indices of institutional misconduct were calculated: 1) *Number of Incidents* recorded in the inmate's file regardless of whether they led to a formal institutional charge or finding; 2) *Number of Formal Charges* levied against the inmate for violation of institutional rules; and 3) *Number of Formal Physical Charges* for physical violence (e.g., fighting, assault on a correctional officer, etc.) levied against the inmate. For ROC analyses variables were dichotomized to reflect any incident or charge. In the current sample, 184 (39%) inmates had at least one incident, 144 (31%) inmates had formal charges against them, and 35 (7%) inmates had physical charges against them. On average participants were incarcerated for 147 days (*SD*=109, range 3 to 536).

Results

Descriptive statistics and intercorrelations among the Criminogenic Cognitions dimensions are presented in Table 1. The CCS Total Score was reliable with a Cronbach alpha of .81. Internal consistencies for the dimensions were lower, but reasonably reliable given the number of items (5) in each scale. The intercorrelations among the dimensions were small to moderate, indicating that they tap distinct constructs. As expected, CCS scores were modestly negatively correlated with age, consistent with the "age-crime curve." Also as expected, CCS scores were moderately negatively correlated with Positive Impression Management (PIM) and positively correlated with Negative Impression Management (NIM), reflecting the deviant nature of these cognitions. CCS scores showed moderate negative correlations with IQ, income, and education.

The relations of jail inmates' criminogenic cognitions to previous criminal behavior, current custody level, antisocial personality disorder (ASPD) symptoms, and psychopathy are presented in Table 2. Total CCS scores were positively correlated with each of these predictors of recidivism, with the sole exception of severity of current charges, which was positive but non-significant. Especially notable were the magnitude of the correlations between total CCS scores and the clinician rated total psychopathy (r = .34), Factor 1 (r = . 25) and Factor 2 (r = .33) scores from the PCL:SV. Each of the five dimensions of criminogenic cognitions were positively and significantly related to the PCL:SV total Psychopathy, Factor 1, and Factor 2 scores, as well. Symptoms of ASPD were similarly positively correlated with total CCS scores and each of the dimensions of criminogenic cognitions, with the sole exception of the positive, but non-significant correlation between Antisocial Behaviors and Insensitivity to the Impact of Crime. Regarding criminal history variables and current custody level and custody scores, correlations were most consistent

when considering the Failure to Accept Responsibility and Negative Attitudes towards Authority CCS dimensions. Entitlement, Short-Term Orientation, and Insensitivity to the Impact of Crime were less clearly linked to criminal history and custody level variables.

The correlations between criminogenic cognitions and indices of aggression, violence risk, violence potential, domestic violence perpetrated during the year prior to incarceration, and externalization of blame are presented in Table 3. Total CCS scores and each of the criminogenic cognition dimensions were positively and significantly related to the PAI Total Aggression Scale and each of its subscales, the clinician-rated Violence Risk Appraisal Guide (VRAG), the PAI Violence Potential Index (VPI), and externalization of blame. Total CCS scores were significantly positively correlated with the Conflict Tactics Scale (CTS) Physical Assault and Psychological Abuse scales and significantly negatively correlated with the CTS Negotiation scale. Correlations involving the dimensions of criminogenic cognition and CTS scales were more sporadically significant, but consistently in the direction observed for the CTS total scale.

We examined the relation of jail inmates' criminogenic cognitions to substance use and dependence during the year prior to incarceration, as well as concurrent reports of drug and alcohol problems from the PAI (see Table 4). The CCS total score and the dimensions of criminogenic cognitions were less consistently related to substance use and dependence, relative to the correlates involving criminal justice variables and aggression, with the exception of Failure to Accept Responsibility. The Failure to Accept Responsibility dimension was significantly positively related to all indices of substance use, problems, and dependence. CCS total scores were significantly related to PAI alcohol and drug problems, TCU-CRTF frequency of use and dependence on alcohol and on marijuana, and polydrug use. CCS total scores were unrelated to frequency of use and dependence on cocaine and opiates.

Next, we examined the relation of criminogenic cognitions to moral emotions, self esteem, self control, and community connectedness (see Table 5). As hypothesized, proneness to guilt and the propensity to experience "shame-free" guilt (guilt residuals) were consistently negatively correlated with the CCS total score and its individual dimensions. In contrast, proneness to shame and the propensity to experience "guilt-free" shame (shame residuals) were consistently positively correlated with the CCS total score and its individual dimensions, with the exception of negative attitudes towards authority. Both components of empathy – empathic concern and perspective taking -- were consistently negatively correlated with the CCS total score and its individual dimensions, with the exception of perspective taking and insensitivity to the impact of crime. Self esteem was negatively correlated with the CCS total score and with failure to accept responsibility and a short-term orientation. Self control was negatively correlated with the CCS total score and its individual dimensions, with the exception of insensitivity to the impact of crime. Finally, regarding community connectedness, connectedness to the community at large was modestly negatively correlated with the CCS total score and with negative attitudes towards authority, whereas connectedness to the criminal community was positively correlated to the CCS total score and to failure to accept responsibility, a short-term orientation, and negative attitudes towards authority.

We then examined the degree to which inmates' criminogenic cognitions, assessed at the outset of incarceration, predicted subsequent jail misconduct (see Table 6). The CCS total scale, failure to accept responsibility, and negative attitudes toward authority were positively related to all indicators of jail infractions. Notions of entitlement also showed a significant relationship to number of incidents and number of formal charges. Short term orientation and insensitivity to impact of crime generally exhibited somewhat weaker relationships to

jail misconduct but some were significant and all were in the expected direction. As an alternative way to test predictive validity, Receiver Operating Characteristics (ROC) curve analyses, also revealed moderate predictive accuracy for the CCS Total score with each of the three indices of institutional misconduct: Any Incident (Area Under Curve=.63, 95% CI=.58–.69), Any Formal Charge (AUC=.63, 95% CI=.57–.69), and Any Formal Physical Charge (AUC=.66, 95% CI=.57–.75).

Gender and Race Differences in Criminogenic Cognitions: Analysis of Means

Gender differences in criminogenic cognitions are presented in Table 7. Men scored significantly higher than women on all of the criminogenic cognition scales, with one exception. There was no significant difference on failure to accept responsibility. As shown in Table 8, African Americans scored higher than whites on the total CCS scale as well as the dimensions of entitlement, insensitivity to the impact of crime, and negative attitudes toward authority. There were no differences for failure to accept responsibility or short-term orientation. The observed mean race differences generalized across gender, and vice versa. The sex by race interaction was non-significant for all criminogenic cognition scales.

Gender and Race Differences in Criminogenic Cognitions: Analysis of Correlations

We also examined whether, mean differences aside, there might be gender and race differences in the *correlates* of criminogenic cognitions. For example, might criminogenic cognitions have a different *meaning* among African American, as opposed to white, jail inmates, resulting in differential relations to key constructs such as criminal history or psychopathy? To assess this question about demographic differences in correlations, we computed correlations for gender and race separately for the relationship of the different criminogenic cognitions presented in Tables 1–6, conducted r-to-z transformations, and performed t-tests for the difference between independent correlations. To control for the number of comparisons we used a Bonferroni correction. Out of 210 tests only 17 were significant at the .05 level and 3 at the .01 level, and none were significant with the Bonferroni correction.[3]

Discussion

Data from a large sample of jail inmates held on felony charges provides considerable evidence for the reliability and validity of the 25 item Criminogenic Cognitions Scale (CCS). Criminogenic cognitions, measured by the CCS, were related to a range of theoretically relevant variables. CCS scores were postdictively related to key aspects of prior involvement in the criminal justice system and assigned custody level, as well as to a history of perpetrating domestic violence. CCS scores were concurrently related to self-reported aggression, violence potential and symptoms of antisocial personality disorder, as well as to clinician-rated psychopathy and violence risk. Moreover, CCS scores, assessed at the outset of incarceration, predicted subsequent jail misconduct.

Substantially shorter than other extant measures of criminogenic thinking, the CCS can be completed in about 5 minutes, and requires no special training to administer, score, and interpret. In short, the CCS is a reliable, valid, and practical measure of criminogenic cognitions that can be utilized in a variety of criminal justice settings.

[3]Correlation tables split by gender and race are available from the first author.

Implications for Treatment

The CCS can be useful to practitioners and researchers in a number of important respects. First, the CCS can be a powerful tool in optimizing efforts at offender rehabilitation, following Andrews and colleagues' (1990; Andrews & Bonta, 2010b) principles of risk, need and responsivity. The principle of risk posits that treatment is most likely to be effective to the extent that it targets high (as opposed to low) risk individuals. Based on their meta-analysis, Andrews and colleagues (1990) identified antisocial thinking as a key risk factor for recidivism. Results from the current study indicate that deviant behavior and criminogenic thinking, as assessed by the CCS, go hand-in-hand. CCS scores were linked to a history of criminal activity and criminal justice involvement; to concurrent measures of aggression, antisocial personality, low empathy, low guilt, and low self control; to clinicians' ratings of psychopathy and risk for violence; and to subsequent official records of inmate misconduct over the course of incarceration. According to the risk principle, inmates scoring high on the CCS should be given high priority for treatment.

The principle of need posits that rehabilitation efforts should be focused on dynamic, malleable risk factors that perpetuate criminal behavior. Criminogenic cognitions, as assessed by the CCS, are *dynamic*, as opposed to static factors. It is noteworthy that the majority of documented predictors of recidivism represent background factors rooted in past history (unstable family life, early separation from a parent, elementary school adjustment, age of first arrest etc.) or enduring aspects of the person (e.g., psychopathy). These factors may suggest avenues of broad and difficult social change that may benefit generations far into the future. But, as Zamble and Quinsey (1997) observed, such static or "tombstone" factors do not provide points of intervention for the 2.4 million inmates currently in US prisons and jails, nor for the many millions of Americans who will be newly incarcerated in the next ten years. Their history is already written. The early developmental deeds are done. In contrast, offenders' patterns of thinking are not written in stone. Criminogenic thinking is a *dynamic* factor that is amenable to cognitive-behavioral interventions. According to the need principle, inmates scoring high on the CCS should be given high priority for treatment addressing criminogenic patterns of thinking.

There are two components to the responsivity principle. The general responsivity principle emphasizes the relative strengths of cognitive-behavioral approaches, relative to other approaches, to treating offenders in general. The offender-specific responsivity principle emphasizes the advantages of identifying person-specific factors that may influence the outcome of treatment. In this regard, the five dimensions of criminogenic cognitions (entitlement, failure to accept responsibility, short-term orientation, insensitivity to the impact of crime, and negative attitudes towards authority) may be especially useful to cognitive-behaviorally-oriented treatment providers. Offenders come to treatment with their own unique profile of criminogenic cognitions, which can have direct implications for individually-tailored intervention. For example, offenders scoring especially high on insensitivity to the impact of crime may differentially benefit from restorative-justice inspired victim impact interventions (Armour, Windsor, Aguilar, & Taub, 2008; Malouf, Youman, Harty, Schaefer, & Tangney, in press; Monahan, Monahan, Gaboury, & Niesyn, 2004). Offenders scoring especially high on failure to accept responsibility may differentially benefit from cognitive-behavioral interventions focused on faulty attributions for negative events. In addition, given the link between the propensity to experience shame and externalization of blame (Tangney, Stuewig, et al., 2007), offenders scoring high on failure to accept responsibility may benefit from shame-reducing interventions (Tangney & Dearing, 2011). In short, the CCS can be used to prioritize offenders at high risk for intensive treatment, and the measure can be used to tailor treatment to specific criminogenic needs based on offenders' profile of criminogenic thinking.

Second, the CCS can be used to evaluate changes owing to treatment. Post-treatment scores on the CCS can be compared to baseline (pre-treatment) scores to assess inmates' progress as a result of cognitive-behavioral interventions targeting criminogenic cognitions.

Third, researchers and practitioners alike can utilize CCS scores to better understand the mechanisms by which various forms of treatment lead to reduced levels of recidivism. By including baseline and post-treatment administrations of the CCS in program evaluations and treatment outcome research, it will be possible to ascertain the degree to which criminogenic cognitions function as "mechanisms of action," explaining how and why extant treatments reduce recidivism. Specifically, researchers and program evaluators can test mediation models, with CCS change scores as the mediator between treatment and more distal outcomes such as jail adjustment and post-release desistence.

Gender and Race Differences in Criminogenic Cognitions

Practitioners utilizing the CCS in applied settings need to be cognizant of the race and gender differences observed in this sample. Men scored somewhat higher than women across all dimensions of criminogenic cognitions, with the one exception of failure to accept responsibility. Regarding race, African Americans scored higher than whites on the total CCS scale as well as the dimensions of entitlement, insensitivity to the impact of crime, and negative attitudes toward authority. In making treatment recommendation, practitioners should take these demographic differences into account. Often of greater interest than means when thinking about mechanisms of action or processes of rehabilitation, the correlations between the total CCS scale and other important constructs did not differ by gender or race. In other words, focusing on reducing criminogenic cognitions may have benefits regardless of gender and race. This recommendation, however, should be considered tentative until these results have been replicated in other samples with a greater number and variety of racial groups.

The Tenuous Link Between Criminogenic Cognitions and Substance Abuse

The relation of criminogenic cognitions to substance use and dependence was notably less pronounced compared to other domains of psychological and behavioral maladjustment. This suggests that there may be a subset of inmates whose primary problem is one of addiction, not "thinking like a thief." For inmates who have a history of substance dependence, the most useful treatment approach is apt to focus directly on their substance use problems, rather than on efforts to change criminogenic patterns of thinking. Intensive addictions programs and readily available access to 12-step programs are especially important for breaking the cycle of incarceration and re-incarceration among inmates held on drug and alcohol-related crimes. More generally, from a public policy perspective, it may be useful to rethink the criminalization of minor drug and alcohol offenses. Substance abuse and criminogenic thinking do not go hand-in-hand. Criminogenic thinking (with the possible exception of a failure to accept responsibility) does not appear to be the root of use and dependence on substances – legal or illegal.

Limitations and Future Directions

The current study sampled felony offenders from a single county jail. Follow-up research is needed to confirm that these results generalize to inmates housed in other correctional facilities, including state and federal prisons, and to individuals from the broader community. Participants were limited to those likely to be incarcerated for at least four months (e.g., charged with at least one felony). Although this subset of inmates is most relevant to those interested in treatment, it is unknown whether these findings would generalize to less serious offenders and those incarcerated for very brief periods of time. Furthermore, we do not know the percentage of the sample that was held pre-trial, nor the

percentage of pre-trial inmates who ultimately pled guilty or were convicted by judge or jury. Thus some relatively small, but unknown percentage of the pre-trial inmate group were judged and/or were in fact "not guilty." This essentially represents misclassifications in the group comparison, adding error to our statistical tests. Even with this error, reliable group differences were observed, but future research would benefit from more detailed information regarding criminal justice status.

Ultimately, the practical value of a measure of criminogenic thinking hinges on its ability to predict future behavior. In the current sample of jail inmates, CCS scores predicted subsequent misconduct during the period of incarceration, as indexed by official records. What is needed next is an examination of the degree to which CCS scores predict post-release re-offense and re-incarceration.

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Table 1

Criminogenic Cognitions Scale: Descriptives, Intercorrelations and Discriminant Validity

	CCS Total	Notions of Entitlement	Failure to Accept Responsibility	Short-Term Orientation	Insensitivity to Impact Of Crime	Negative Attitudes To Authority
Notions of Entitlement	.64**	--	--	--	--	--
Failure to Accept Responsibility	.67**	.30**	--	--	--	--
Short-Term Orientation	.70**	.38**	.36**	--	--	--
Insensitivity to Impact of Crime	.71**	.36**	.27**	.44**	--	--
Negative Attitudes to Authority	.63**	.21**	.28**	.25**	.32**	--
PIM	−.32**	−.17**	−.34**	−.27**	−.09*	−.20**
NIM	.45**	.27**	.47**	.34**	.24**	.20**
IQ	−.27**	−.19**	−.19**	−.12**	−.20**	−.21**
Age	−.21**	−.05	−.10*	−.12**	−.20**	−.21**
Income	−.20**	−.06	−.18**	−.15**	−.14**	−.13**
Education	−.24**	−.08	−.23**	−.21**	−.14**	−.14**
Mean	2.24	2.33	2.16	2.06	2.12	2.55
SD	.35	.47	.55	.47	.55	.57
Possible Range	1.0–4.0	1.0–4.0	1.0–4.0	1.0–4.0	1.0–4.0	1.0–4.0
Actual Range	1.2–3.3	1.0–3.8	1.0–4.0	1.0–3.8	1.0–4.0	1.0–4.0
Skewedness	−.10	.05	.20	.26	.11	.05
Kurtosis	.11	.11	−.27	.38	−.21	−.20
# of Items	25	5	5	5	5	5
Alpha	.81	.61	.56	.51	.62	.75
N	552	552	552	551	543	551

Note: PIM=Positive Impression Management, NIM=Negative Impression Management. For PIM N=509, NIM N=510, IQ N=485, age N=552, income N=501, and education N=549

Table 2

Relation of Criminogenic Cognitions to Criminal Justice Variables, Antisocial Personality Disorder Symptoms, and Psychopathy

Measure	Mean (SD)	CCS Total	Notions of Entitlement	Failure to Accept Responsibility	Short-Term Orientation	Insensitivity to Impact Of Crime	Negative Attitudes To Authority
Criminal History Total[a]	17.43 (18.15)	.06	.03	.11*	−.01	.01	.05
Log Transformed[a]	1.04 (.44)	.11*	.05	.14**	.01	.05	.11
Criminal History Violent[a]	1.88 (2.67)	.12**	.08	.06	−.01	.06	.19**
Log Transformed[a]	.33 (.32)	.15**	.07	.10*	.01	.08	.22**
Severity Current Charges	1.36 (.67)	.07	.03	.03	.05	.05	.06
Serious Offense History[a]	.98 (.84)	.09*	.02	.10*	.05	−.02	.14**
Prior Jail Experience[a]	2.12 (1.58)	.17**	.08	.16**	.13**	.06	.15**
Prior Felony Convictions[a]	.87 (.89)	.12**	.05	.15**	.05	.02	.10*
Custody Level[a]	1.88 (.85)	.15**	.10*	.13**	.09*	.02	.16**
Comp. Custody Score[a]	8.84 (5.48)	.17**	.07	.15**	.11*	.06	.17**
PAI ASPD Total	64.33 (12.03)	.49**	.30**	.43**	.43**	.23**	.26**
Antisocial Behaviors	68.30 (10.41)	.29**	.11*	.36**	.21**	.07	.22**
Egocentricity	55.90 (12.67)	.51**	.41**	.32**	.47**	.33**	.21**
Stimulus Seeking	58.81 (13.08)	.43**	.25**	.37**	.40**	.20**	.22**
Psychopathy Total	12.18 (4.88)	.34**	.17**	.28**	.19**	.17**	.35**
Psychopathy Part 1	5.81 (2.91)	.25**	.15**	.15**	.13**	.17**	.27**
Psychopathy Part 2	6.37 (2.81)	.33**	.15**	.32**	.19**	.13**	.33**

Note. N for correlations =476–528; PAI ASPD= Personality Assessment Inventory, Antisocial Personality Disorder Symptoms.

[a]To take into account age these variables were residualized on age prior to conducting correlations; means and SD are from non-residualized scores

*$p < .05$,

**$p < .01$.

Table 3

Relation of Criminogenic Cognitions to Aggression, Violence Risk, Violence Potential, and Domestic Violence

Measure	Mean (SD)	CCS Total	Notions of Entitlement	Failure to Accept Responsibility	Short-Term Orientation	Insensitivity to Impact Of Crime	Negative Attitudes To Authority
PAI Aggression Total	55.81 (13.20)	.42**	.28**	.34**	.26**	.18**	.34**
Aggressive Attitudes	54.76 (12.94)	.36**	.25**	.34**	.20**	.11*	.30**
Verbal Aggression	52.26 (10.56)	.35**	.25**	.23**	.22**	.19**	.29**
Physical Aggression	58.10 (14.38)	.39**	.25**	.32**	.26**	.18**	.31**
Externalization of Blame	2.01 (.67)	.53**	.41**	.32**	.41**	.39**	.27**
VRAG	7.09 (7.81)	.35**	.16**	.32**	.18**	.19**	.33**
VPI	5.56 (3.95)	.48**	.32**	.45**	.38**	.20**	.28**
CTS Physical Assault	.45 (1.69)	.14**	.07	.12**	.05	.13**	.10*
CTS Psychological Abuse	2.59 (3.38)	.14**	.05	.19**	.02	.02	.18**
CTS Negotiation	10.03 (6.82)	−.13**	−.12**	−.04	−.19**	−.17**	.05

Note. N for correlations =481–548; PAI = Personality Assessment Inventory; VRAG=Violence Risk Appraisal Guide; VPI=Violence Potential Index; CTS=Conflict Tactics Scale

* $p < .05$,

** $p < .01$.

Table 4

Relation of Criminogenic Cognitions to Substance Use and Dependence

Measure	Mean (SD)	CCS Total	Notions of Entitlement	Failure to Accept Responsibility	Short-Term Orientation	Insensitivity to Impact Of Crime	Negative Attitudes To Authority
Alcohol							
PAI Alcohol Problems	59.84 (17.23)	.15**	.09*	.23**	.11**	.07	.00
TCU-CRTF-Freq of Use	3.20 (2.35)	.13**	.09*	.12**	.07	.05	.10*
TCU-CRTF-Dependence	0.72 (1.01)	.11**	.05	.21**	.07	.02	.00
Drug							
PAI Drug Problems	71.42 (20.48)	.14**	.08	.27**	.17**	−.02	−.03
TCU-CRTF- Freq of Use							
Marijuana	2.12 (2.73)	.21**	.07	.15**	.10*	.07	.28**
Cocaine	1.91 (2.73)	.06	.08	.15**	.10*	−.05	−.06
Opiates	1.18 (2.49)	−.02	−.05	.08*	.06	−.04	−.11**
Polydrug	1.92 (1.99)	.16**	.04	.23**	.14**	.04	.08*
TCU-CRTF- Dependence							
Marijuana	0.53 (.97)	.23**	.14**	.22**	.13**	.06	.23**
Cocaine	0.99 (1.47)	.04	.05	.16**	.07	−.09*	−.05
Opiates	0.50 (1.21)	−.01	−.08	.09*	.06	−.02	−.10*

Note. N for correlations =500–548; PAI = Personality Assessment Inventory; TCU-CRTF = Texas Christian University Correctional: Residential Treatment Form, Initial Assessment.

* $p < .05$,

** $p < .01$.

Table 5

Relation of Criminogenic Cognitions to Moral Emotions, Self Esteem, Self Control, and Community Connectedness

Measure	Mean (SD)	CCS Total	Notions of Entitlement	Failure to Accept Responsibility	Short-Term Orientation	Insensitivity to Impact Of Crime	Negative Attitudes To Authority
Moral Emotions							
Guilt-proneness	4.28 (.54)	−.39**	−.20**	−.23**	−.36**	−.31**	−.21**
Guilt Residual	0.02 (.54)	−.37**	−.19**	−.21**	−.34**	−.29**	−.21**
Shame-proneness	2.10 (.58)	.23**	.15**	.25**	.23**	.17**	−.01
Shame Residual	−0.02 (.57)	.19**	.13**	.23**	.19**	.14**	−.03
Empathic Concern	3.13 (.40)	−.37**	−.24**	−.18**	−.36**	−.29**	−.19**
Perspective Taking	3.05 (.41)	−.16**	−.09*	−.09*	−.15**	−.06	−.13**
Self-esteem	3.84 (.69)	−.25**	−.01	−.44**	−.24**	−.06	−.07
Self-Control	2.99 (.69)	−.31**	−.12**	−.43**	−.30**	−.04	−.13**
Connectedness to Community at Large	2.59 (1.54)	−.10*	−.01	−.09	−.05	−.03	−.14**
Connectedness to Criminal Community	2.90 (1.77)	.19**	.04	.20**	.12**	.02	.22**

Note. N for correlations =539–550 except for connectedness to community at large and criminal community (N=447–454).

* $p < .05$,

** $p < .01$.

Table 6

Criminogenic Cognitions Upon Incarceration Predicting Subsequent Jail Behavior

Measure	Mean (SD)	CCS Total	Notions of Entitlement	Failure to Accept Responsibility	Short-Term Orientation	Insensitivity to Impact Of Crime	Negative Attitudes To Authority
Number of Incidents[a]	1.33 (2.69)	.19**	.13**	.14**	.11*	.10*	.16**
Log Transformed[a]	0.22 (.31)	.20**	.15**	.14**	.13**	.10*	.16**
Number of Formal Charges[a]	1.07 (2.43)	.17**	.12**	.12**	.09	.08	.16**
Log Transformed[a]	0.17 (.30)	.18**	.14**	.12*	.11*	.09	.16**
Number of Formal Physical Charges[a]	0.11 (.42)	.11*	.03	.12**	.06	.04	.12*
Log Transformed[a]	0.03 (.10)	.12*	.03	.12*	.08	.06	.12*

Note. N for correlations =465–471.

* $p < .05$,

** $p < .01$.

[a]To take into account time incarcerated these variables were residualized on days incarcerated prior to conducting correlations; means and SD are from non-residualized scores

Table 7

Gender Differences in Criminogenic Cognitions

	Male	Female	F Test	P	Partial ETA Squared
CCS Total	2.29 (.34)	2.14 (.36)	23.16	.000	.04
Notions of Entitlement	2.37 (.46)	2.23 (.50)	11.15	.001	.02
Failure to Accept Responsibility	2.18 (.56)	2.11 (.54)	2.30	.131	.004
Short-Term Orientation	2.11 (.46)	1.94 (.48)	15.69	.000	.03
Insensitivity to Impact of Crime	2.18 (.52)	1.98 (.58)	16.19	.000	.03
Negative Attitudes to Authority	2.61 (.57)	2.43 (.55)	11.50	.001	.02
N	373–380	170–172			

Note: Means and (SD) are presented.

Table 8

Racial/Ethnic Differences in Criminogenic Cognitions

	White	African-American	F Test	P	Partial ETA Squared
CCS Total	2.15 (.35)	2.27 (.34)	13.12	.000	.03
Notions of Entitlement	2.18 (.41)	2.39 (.49)	23.10	.000	.05
Failure to Accept Responsibility	2.17 (.54)	2.10 (.54)	1.68	.196	.004
Short-Term Orientation	2.02 (.46)	2.04 (.44)	.23	.630	.001
Insensitivity to Impact of Crime	2.01 (.49)	2.15 (.57)	7.05	.008	.02
Negative Attitudes to Authority	2.39 (.57)	2.68 (.54)	30.54	.000	.065
N	195–198	240–243			

Note: Means and (SD) are presented.