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INMATE THINKING PATTERNS

An Empirical Investigation

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This study investigated patterns of maladaptive thinking in 435 offenders and sought to develop and preliminarily validate a measure of criminal thinking patterns. An exploratory factor analysis of 77 thinking errors derived from four theories of cognitive distortions that influence behavior yielded a three-factor model of dysfunctional thinking among offenders. Interpretations of these three factors were provided (i.e., Control, Cognitive Immaturity, and Egocentrism). Implications for treatment and future research with offenders, using the conceptualization of erroneous thinking posited by the three-factor model, are discussed.

Keywords: criminal thinking; inmate thinking; criminal attitudes; PICTS; dysfunctional thinking; cognitive distortions

Research indicates that criminals, as a group, demonstrate patterns of thinking that are different from those of noncriminals (Walters, 1990; Yochelson & Samenow, 1976, 1977). Yochelson and Samenow (1976) posited the first prominent conceptualization of criminal thinking, noting that the differential thinking processes of criminals are pervasive throughout every aspect of their lives. These criminal thinking patterns were deemed as "errors" because of the obvious neglect of responsibility, although the individual is unaware of the erroneous nature of his or her thinking. Yochelson and Samenow's main objective was to create a conceptual framework for understanding criminals' thought processes. This framework was phenomenologically derived from information gathered during in-depth interviews with incarcerated offenders. Based on these interviews, Yochelson and Samenow identified 52 separate thinking errors that underlie the maladaptive behavior of offenders and often result in an antisocial lifestyle.

Although Yochelson and Samenow (1976) delineated 52 distinct thinking errors, each is more easily conceptualized in relation to others. Therefore, the 52 thinking errors were grouped into three broad areas: criminal thinking patterns, automatic errors of thinking, and

the process of thinking errors from idea through execution. Even though these types of dysfunctional thought processes are present in the criminal mind (Walters, 1990; Yochelson & Samenow, 1976, 1977), many of these thoughts never directly result in problematic action. However, the aggregate of dysfunctional thoughts that have not been acted on often eventually result in increased adverse (i.e., criminal) behavior. Therefore, Yochelson and Samenow (1976) concluded that to initiate changes in criminal behavior, it is first necessary to alter an individual's maladaptive thinking patterns.

Yochelson & Samenow (1976) labeled 16 of the 52 identified criminal thinking errors as "automatic errors of thinking" (p. 359) because of their associated emotion. For example, criminals justify their problematic behavior by deferring to their feelings and often phrase their thoughts in terms of feelings (e.g., "I feel that I need to do this behavior," "I felt that I had no choice in the matter"). As emotions are more reactive in nature, criminals use emotions as excuses for their maladaptive actions.

Yochelson and Samenow (1976) also identified cognitive processes that operate before, during, and after the actual commission of criminal behaviors and termed this sequence "the criminal thought process from idea through execution" (p. 407). Yochelson and Samenow (1976) suggested, for example, that prior to committing a crime, the individual undergoes a mental process labeled by them as "corrosion" (p. 413), which serves as a nonrational technique to slowly eliminate deterrents to crime. During the commission of a crime, the individual uses a "cutoff" (p. 413) mechanism to instantaneously eliminate fear as well as boost self-confidence and composure, which allows the continuation of the criminal activity. Even after the commission of a crime, celebratory cognitions such as a "power thrust" (i.e., increased perception of value or importance of oneself; p. 276) occur and are reinforcing of the criminal behavior (Yochelson & Samenow, 1976).

Subsequent to the work of Yochelson and Samenow, Walters (1990, 1995, 2002, 2003) developed what has become the most noted model of criminal thinking. Walters (1990) maintained that criminal behavior is derived from cognitive patterns. Thus, Walters would maintain that crime is a lifestyle with a corresponding system of beliefs that supply justifications, support, and rationalizations for antisocial behavior. Walters criticized Yochelson and Samenow's conceptualization of criminal thinking errors, identifying insufficient operationalization, difficulty of empirical evaluation, lack of generalizability and applicability, and lack of recognition of environmental influences on erroneous thinking as specific weaknesses of their theory. In spite of these criticisms, Walters (1990) based his conceptualization of criminal thinking on what he deemed as Yochelson and Samenow's major contributions to a cohesive theory of the criminal lifestyle. These contributions included the ideas that (a) criminals' antisocial behaviors were based on free choice, (b) continued criminal thinking is the primary expression of free choice, and (c) developing a sense of responsibility for one's own behavior was necessary to enable change.

Walters (1996) developed eight cognitive patterns to describe the criminal thinking process. The eight thinking styles include: (a) mollification: rationalizing behavior by placing blame on external factors, (b) cutoff: quickly disregarding thoughts that deter from crime, (c) entitlement: permitting criminal behavior by a special privileged self-attribution, (d) power orientation: the need for utmost control over the environment and others, (e) sentimentality: doing something good to offset one's negative feelings about one's behavior, (f) "superoptimism": confidence in one's ability to evade the typical negative outcome of crime, (g) cognitive indolence: using mental "short cuts" instead of using more developed and

thoughtful mental strategies, and (h) discontinuity: lack of perseverance and reliability in both behavior and thinking (Walters, 2001). Mollification, entitlement, and cognitive indolence were formed on the basis of Walters' clinical experience (Walters, 1990, 2001). The remaining five criminal thinking styles were derived from Yochelson and Samenow's theory: Sentimentality and superoptimism were adopted directly from Yochelson and Samenow's theory; power orientation consisted of a combination of Yochelson and Samenow's conceptualization of the thinking patterns "zero state" and "power thrust"; whereas cutoff and discontinuity were generalized versions of Yochelson and Samenow's descriptions of the thinking patterns "cutoff" and "fragmentation thinking errors," respectively (Walters, 1990, 2001). Walters asserted that these eight thinking patterns, though interrelated, are sufficiently distinct cognitive aspects of the criminal lifestyle. These patterns represent the notion that criminal thought enables decisions that are self-indulgent, rash, interpersonally invasive, and contrary to societal standards. As such, these thinking patterns are irrationally based, unorganized, and subjective and serve the desires for immediate gratification.

To investigate these cognitive patterns empirically, Walters (2001) developed the Psychological Inventory of Criminal Thinking Styles (PICTS). In the first published study of the PICTS, sufficient reliability and early validity was demonstrated to support continued investigation and development of the instrument (Walters, 1995). A factor analysis of the PICTS yielded a four-factor model, providing partial construct validity for the measure (Walters, 1995). Walters did not label these factors, although descriptions of each were provided in terms of the eight PICTS scales (i.e., one for each thinking style). The first factor described problem avoidance techniques, including cutoff, cognitive indolence, and discontinuity. The second factor, although not clearly associated with any particular scale, reflected hostility and arrogance. The third factor represented qualities of distorted perception of oneself and one's actions, including entitlement, superoptimism, and mollification. The fourth factor, although also not clearly associated with any particular PICTS scale, described a tendency to negate the detrimental outcomes of criminal activity by minimization, denial, or simply ignoring consequences.

The PICTS has also been shown to significantly predict punitive infractions beyond traditional predictive means (i.e., age and education; Walters, 1996). Convergent and discriminant validity was established for the PICTS by demonstrating higher correlations between the PICTS scales and the Personality Assessment Inventory (PAI) Antisocial Features scales than other PAI scales thought to be unrelated (i.e., Depression, Somatic Complaints, Schizophrenia; Walters & Geyer, 2005). The reliability of the PICTS was examined in a meta-analysis of previous studies using the PICTS, in which moderate to moderately high test-retest reliability and internal consistency was established (Walters, 2002). In this meta-analysis, the PICTS scales were significantly correlated with past criminality and predicted offender discharge outcomes and future adjustment. The initial factor structure found by Walters (1995) was replicated in a confirmatory factor analysis, which yielded two minor and two major factors. This finding was challenged, however, through a principal components analysis that yielded only two factors (Egan, McMurran, Richardson, & Blair, 2000). Egan et al. (2000) reasoned that although the face validity of the PICTS may be appealing, there was not strong support for an eight-factor model of criminal thinking styles, as suggested by Walters. Walters' conceptualization of criminal thinking, however, has maintained that eight distinct patterns operate in criminal thinking despite the factor structure of the PICTS yielded by both Egan et al. and Walters' (1995, 2002) own investigations.

Walters (2005) later performed a series of confirmatory factor analyses on the criminal thinking–style items of the PICTS with data from two novel samples (i.e., male and female prisoners). These analyses examined the goodness of fit of a one-factor model representing overall criminal thinking, a two-factor model representing "lack of thoughtfulness" and "other willful criminality," the four-factor model from the previous factor analysis (Walters, 1995), and an eight-factor model representing Walters' original conceptualization of eight distinct criminal thinking styles. Results from this study demonstrated superior fit for the eight-factor model in the male sample and superior fit of the four- and eight-factor models over the one- and two-factor models in the female sample (although no significant difference of fit between the four- and eight-factor models). Overall, these results suggest that although the overall conceptualization of the PICTS's eight distinct criminal thinking styles was supported, the conceptualization of a criminal thinking model with fewer factors may be appropriate (Walters, 2005).

Although the work of Walters and others striving to develop a general understanding of criminal thinking styles has been fruitful, no empirical studies to date have investigated the inclusion of maladaptive nonoffender-thinking styles derived from cognitive theory and cognitive therapy, such as Beck's notion of automatic thoughts. Beck (1976, 1999; Beck, Freeman, Davis, & Associates, 2004) posited that a patient's thinking has a significant influence on his or her subsequent actions and emotions. Beck derived his theory through focusing on patients' unreported streams of thought during free association tasks in the course of cognitive therapy. He found that patients were frequently unaware of these thoughts until they were encouraged to focus on them. These thoughts were unlike typically reported ideations in that they surfaced automatically and occurred prior to an emotional reaction. Beck described these automatic thoughts as self-communicative in nature in that the stream of thoughts were marked by negative evaluations or perceptions related to the self. Although these thoughts influenced patients' affective experience and behavior, patients were often not explicitly aware of their presence (Beck, 1976). As such, automatic thoughts are generally only detectable in patients with severe psychopathology. According to Beck, these automatic thoughts are distinct, precise, and succinct in nature and do not result from reflective thought. Such thoughts are reflexive; that is, people do not intentionally initiate them and often find them difficult to terminate. Although an individual may view these thoughts as reasonable or rational, others may notice their erroneous nature, particularly when thoughts are severely maladaptive or self-defeating (Beck, 1976).

Another cognitive theory of maladaptive thinking is Ellis's (1973, 1977, 1992) conceptualization of "irrational beliefs." Irrational beliefs result in catastrophic feelings and represent absolutes, known as "musturbatory" thinking. Ellis contends that this type of thinking involves "shoulds," "musts," and "oughts," which dictate beliefs about how others should behave and how the world operates (Ellis, 1973). These demanding beliefs or understandings result in catastrophizing thoughts and emotions when unfulfilled. As people strictly and emotionally subject themselves to these irrational beliefs, they begin to experience subsequent dysfunctional thinking (e.g., obsessions), emotions (e.g., anxiety, depression), and behaviors (e.g., phobias and compulsions; Ellis, 1992). Ellis and Grieger (1977) posited that irrational beliefs take at least one of four forms: (a) something or someone *should*, *ought*, or *must* be different than the way he, she, or it is; (b) one finds some situation to be *atrocious* the way it is; (c) one believes it is *intolerable* that the person or thing is not as it should be; and (d) one attributes negative situations to errors made by an unworthy person, therefore damning the source of the

problem. Ellis and Grieger (1977) provided the example of a son being wrongfully accused of lying by his mother to illustrate the four forms of irrational beliefs. In the first form, the son would believe that he *must* not be labeled a liar. In the second form, he would view the wrongful accusation of his assertions as *atrocious.* In the third form, he would believe that the injustice of being wrongfully accused as a liar is *intolerable*. In the fourth form, he would attribute this utterly negative situation to the exclusive fault of his mother, for which she should be scorned (Ellis & Grieger, 1977).

Cognitive-behavioral therapy attempts to discover and understand the nature of dysfunctional thoughts in order for them to be modified. As such, Beck and Ellis have developed specific types of problematic automatic thoughts and irrational beliefs, respectively. It is the negative, automatic, and irrational quality of these thoughts that comprise and sustain maladaptive and occasionally criminal behaviors. An automatic thought that might relate to criminal behavior is "If I'm not a total success, I'm a complete failure" (Beck, 1976). Individuals with these thoughts, for example, may impulsively cheat, steal, or rob to maintain a successful lifestyle. An irrational belief that might relate to criminal behavior is "Because I find order desirable, I need certainty" (Ellis & Grieger, 1977). For example, a person who feels threatened by uncertainty and disorder in their life may use violence to maintain control over their children or spouse. Theories developed by Yochelson and Samenow, as well as Walters, are derived from the work of Beck and Ellis (Walters, 1990; Yochelson & Samenow, 1976, 1977); however, these theories have yet to be investigated simultaneously to determine the ability of each to identify offender thinking patterns.

The purpose of this study is to empirically test common theories of maladaptive thinking (i.e., Beck's automatic thoughts, Ellis's irrational beliefs, Yochelson and Samenow's thinking errors, and Walters' thinking patterns) as they apply to criminals' dysfunctional cognitions. More specifically, this study sought to develop and preliminarily validate a more comprehensive measure of criminal thinking patterns than those that currently exist. Furthermore, this study will examine the factor structure of criminal thinking and draw comparisons to the eight cognitive patterns proposed by Walters (1990, 2001), which, although empirically not supported, remains the preeminent model used in the investigation, understanding, and communication about criminal thinking.

METHOD

PARTICIPANTS

Of the 859 incarcerated adult male offenders from six different facilities within the Texas Department of Criminal Justice (TDCJ) asked to participate in this study, 435 offenders volunteered their participation, yielding a participation rate of approximately 50%. The mean age of participants was 36.6 years ($SD = 11.5$), ranging from 18 to 76 years. The overwhelming majority of inmates identified as Black/African American ($n = 139$, 32.1%), Hispanic/Latino(a) ($n = 139$, 32.1%), or White/Caucasian ($n = 119$, 27.5%). Remaining participants identified as Asian/Asian American ($n = 3$, 0.7%), American Indian/Native American ($n = 14$, 3.2%), or "other" ($n = 19$, 4.4%). With regard to participants' relationship status, 205 (47.1%) identified as single, 108 (24.8%) as married/partnered, 77 (17.7%) as divorced, and 36 (8.3%) as separated. The mean years of formal education of the participants

was 10.9 (SD = 2.3). Most of the participants were currently being housed in minimum-security (n = 222, 51%), medium-security (n = 81, 18.6%), and maximum-security units (n = 82, 18.9%), although some were housed in reception and diagnostic units (n = 8, 1.8%) or "other" settings (n = 31, 7.1%; e.g., safekeeping, psychiatric unit, transfer unit).

Participants reported a variety of crimes leading to their current incarceration: 94 (21.6%) for robbery, theft, or burglary; 76 (17.5%) for a drug-related crime; 41 (9.4%) for aggravated assault or aggravated battery; 38 (8.7%) for a sex-related crime (e.g., rape, molestation, indecency with a child); 37 (8.5%) for multiple nonviolent crimes (e.g., drug possession and robbery, burglary and driving while intoxicated). Also, 31 (7.1%) reported incarceration for murder or manslaughter, 18 (4.1%) for both violent and nonviolent crimes, 16 (3.7%) for assault or battery, 7 (1.6%) for multiple violent crimes (e.g., rape and murder, kidnapping and murder), and 30 (6.9%) for "other" crimes (e.g., organized crime, parole violation, harassment). The total time to be served for each participant for his current sentence ranged from 6 months to 100 years, with 22 reported life sentences (M = 20.2 years, SD = 24.5 years; life sentences were estimated as 100 years). The mean length of time already served by participants for their current sentence was 5.5 years (SD = 5.3 years). The majority of participants (362; 83.2%) reported that they had not received mental health services.

Several of the above demographics and status variables of the participants in this study were grossly consistent with that of all offenders incarcerated in TDCJ prison facilities in 2005 (TDCJ, 2006), including mean age, ethnic or racial identity, year of completed education, and sentence length (see Table 1). The categorization options for housing security level and index offense as presented on the demographic form prohibited comparison of these variables to the population of offenders in TDCJ prisons. Information about current marital status, time served, and reception of mental health services was not available for the TDCJ prisoner population.

MATERIALS

The consent form informed inmates of the purpose of the study, their rights as human subjects, that all information remained strictly confidential, that there were no perceived risks as a result of their participation, and whom they should contact if they had questions regarding any aspects of this research. Demographic information was collected and included variables such as age, race or ethnicity, religion, years of formal education, legal status (including the index offense), current sentence length, time served toward current sentence, security level of housing, and whether they were currently receiving mental health services.

The Measure of Offender Thinking Styles (MOTS) was developed to empirically investigate how Yochelson and Samenow's (1976), Walters's (1990), Beck's (1976), and Ellis's (1992) theories of maladaptive thinking patterns collectively pertain to incarcerated offenders. These theorists have identified a total of 77 distinct thinking patterns, and each thinking pattern was included in the MOTS. Of these 77 thinking patterns, 38 were derived from Yochelson and Samenow's theory, 8 from Walters's, 12 from Beck's, and 20 from Ellis's. One identical thinking pattern (i.e., superoptimism) was identified in both Yochelson and Samenow's and Walter's theories and was therefore represented only once in the MOTS.

To create items to evaluate the presence of the 77 thinking patterns, the authors developed a short list of potential items (i.e., approximately 7 to 8) phrased as statements that they

TABLE 1:   Race, Age, Years of Education, and Length of Sentence in the Current Sample and Population of TDCJ Prisoners

	Current Sample	TDCJ Prisoner Population
Race (%)		
Black/African American	32.1	38.3
Hispanic/Latino	27.5	31.2
White/Caucasian	32.1	30.0
Other	8.3	0.5
Age (in years)	36.6	37.0
Years of education	10.9	9.7
Sentence length (months)	242.4	235.2

Note. TDCJ = Texas Department of Criminal Justice.

believed adequately characterized the nature of each thinking pattern. Response options for these items were presented in a 4-point, Likert-type response format (i.e., 1 = *strongly agree* and 4 = *strongly disagree*). To identify the best items from the 7 or 8 created for each thinking pattern, three graduate research assistants familiar with the thinking patterns served as raters of the items. The raters were presented with a list of the potential items as well as definitions of each of the thinking patterns. They were asked to rate each potential item on the list based on the following ranking system: (a) The question *accurately* assesses the thinking pattern, (b) the question *adequately* assesses the thinking pattern, and (c) the question is poor and does *not* accurately reflect the thinking pattern. The raters were also instructed to develop any additional items that they thought accurately addressed a thinking pattern.

The investigators eliminated any potential item on the list with a ranking of 3 by any of the raters. Newly developed items (i.e., those created by the raters) were added to the list of remaining items. The raters were then presented with the new list of potential items; the new list consisted of the remaining items rated with a 1 or 2 from the original list and the newly developed items. For each of the 77 thinking patterns, the raters were instructed to rank order the potential items intended to represent that thinking pattern (i.e., approximately 6 items per thinking pattern). That is, the researchers rank ordered the items based on their perception of how well each item assessed the corresponding thinking pattern relative to the other items. For example, the raters reviewed the items intended to represent mollification (i.e., 6 items) and rank ordered these items according to their ability to assess the thinking pattern mollification based on the definition provided. The three highest-ranked items for each thinking pattern comprised the total 231 items used in the MOTS.

PROCEDURE

An official (e.g., assistant warden, lieutenant, educational coordinator) identified potential participants at each facility at his or her discretion. These officials were informed that a diverse group approximating a random sampling was ideal for research purposes. The officials stated that, for reasons of convenience and security issues, however, obtaining a random sampling of offenders was unrealistic. As such, participants consisted solely of offenders classified as general population (i.e., offenders in seclusion and protective custody

were not allowed to be present for the data collection session). As noted previously, however, many status variables of participants approximated that of offenders incarcerated in TDCJ prison facilities (TDCJ, 2006). Participants completed the questionnaire(s) in groups away from the living unit. Participants were told that their participation was voluntary and were encouraged to notify the researchers with any questions or concerns about the study. Those offenders choosing not to participate were allowed to leave. Inmates consenting to participate were instructed to begin completing the items and to notify the researchers if they had any questions or concerns at any time while completing the forms. After completing the items, participants were thanked for their participation.

RESULTS

The initial version of the MOTS consisted of 3 items for each of the 77 thinking patterns (i.e., 231 items total). For data analytic purposes, the mean of the 3 items were collapsed into one score so that there were 77 total scores (i.e., one score for each of the 77 thinking patterns). Reliability analyses demonstrated generally significant inter-item reliability for the majority of the 3-item groupings for each of the thinking patterns (see Table 2 for Cronbach's alphas).

An exploratory factor analysis using a maximum-likelihood extraction method and a direct oblimin (i.e., oblique) rotation was conducted on the 77 thinking pattern scores. An examination of the scree plot of the eigenvalues of the initial factor analysis demonstrated an optimal extraction of three factors. Subsequent factor analyses, again using a maximum-likelihood extraction and direct oblimin rotation, were performed constraining the number of factors to six, five, four, three, and two factors, respectively, to determine the optimal number of factors to extract. The two-factor model was discarded as it was overly simplistic and the resulting factors were not interpretable. The four- and five-factor models were discarded because of the low increase in variance accounted for by the individual addition of each factor (i.e., less than 3% for each additional factor). Although the six-factor model accounted for substantial additional variance as compared to the three-factor model (46.4% versus 38.61% of the total variance accounted for, respectively), an examination of the thinking patterns that loaded onto each of the six factors lacked a rational theoretical model. Because of the initial results of the scree plot and superior interpretability of the three-factor model, this model was retained.

A minimum factor loading of 0.30 on the pattern matrix was used in this study for inclusion of a thinking pattern onto a factor. This factor-loading cutoff (i.e., 0.30) was used because it has been acknowledged as the minimum loading for indicating a meaningful contribution of a variable to a factor (Aron, Aron, & Coups, 2005). Thinking patterns that loaded onto more than one factor (i.e., >.30 factor loading on two or more factors) were removed from the model completely to increase parsimony of interpretations, which resulted in retaining 58 thinking patterns.

An exploratory factor analysis was conducted on the 58 thinking patterns, again using maximum-likelihood extraction and direct oblimin rotation. An examination of the scree plot and eigenvalues of this factor analysis again demonstrated support for the three-factor model of these 58 thinking patterns. The three-factor model for the 58 thinking patterns accounted for 37.25% of the total variance. Again, using the minimum factor loading of 0.30 for inclusion of a thinking pattern onto a factor produced only two thinking patterns that loaded onto

TABLE 2:   Cronbach's Alpha Coefficients for the 3 Items Representing Each of the 77 Thinking Patterns

Thinking Pattern	Cronbach's Alpha
All-or-nothing thinking	.460
"Allness"/unrealistic overgeneralization (Ellis)	.536
Anger	.712
Appearance	.008
Approval	.515
Approval and love	.227
"Awfulization" (Ellis)	.526
"Can't stand-it-itis" (Ellis)	.608
Catastrophizing	.461
Childhood learning	.394
Closed channel	.586
Cognitive indolence	.421
Competent and successful	.645
Controlling others' emotions	.396
Cutoff	.424
Discontinuity	.518
Disqualify/discontinue the positive	−.005
Emotional motivation	.211
Emotional reasoning	.341
Energy	.567
Entitlement	.281
Expect nice and fair	.479
Extensiveness of criminal thinking	.780
Failure to assume obligation	.254
Fail to assume responsible initiatives	.312
Failure to consider injury to others	.356
Fail to make effort/endure adversity	.473
Fail to put self in others' position	.208
Fair world	.425
Fear death and injury	.484
Fear of fear	.429
Fear putdown	.541
Happiness	.536
Hobbies and interests	.517
Human desires	.615
Human worth	.059
Harmful things improve life	.632
I can't	.544
Labeling	.573
Lack interest in responsible performance	.215
Lack of time perspective	.478
Lack of trust	.578
Life comfort and satisfaction	.374
Magnification and minimization	.465
Mental filter	.608
Mind reading	.440
Mollification	.438
No. 1 everywhere	.506
Opinion of self = good	.501
Order and certainty	.180
Overgeneralization	.364
Ownership	.525

(continued)

TABLE 2   (continued)

Thinking Pattern	Cronbach's Alpha
Past and present	.587
Perfectionism	.516
Personalization	.434
Poor decision making for responsible living	.703
Power orientation	.600
Power thrust	.590
Pretentiousness	.438
Pride	.446
Refuse to be dependent	.194
Rejection of legit power	.537
Sentimentality A (Yochelson and Samenow)	.498
Sentimentality B (Walters)	.213
Sex	.540
Should and must statements/imperatives	.472
Speech	.658
Suggestibility	.530
Superoptimism	.602
The loner	.444
Tunnel vision	.617
Uniqueness	.635
Victim stance	.408
Wicked people	.698
Work	.600
Worthlessness	.380
Zero state	−.074

two of the three factors; these thinking patterns (i.e., personalization and all-or-nothing thinking) were included for interpretation on both factors (see Table 3 for the pattern matrix).

Factor 1 was labeled Control and was comprised of 15 thinking patterns that had a minimum factor loading of 0.30. Factor 1 produced an eigenvalue of 15.7 and accounted for 27.1% of the total variance. The thinking patterns that loaded onto this factor demonstrated both a history of and a current need for power and control over oneself, other people, and the environment. In addition, several thinking patterns related to decreasing or avoiding the experience of fear, which further increase the perception of control over one's situation or outcome.

Factor 2, labeled Cognitive Immaturity, was comprised of 21 thinking patterns that had a minimum factor loading of 0.30. Factor 2 produced an eigenvalue of 3.35 and accounted for 5.8% of the total variance. The thinking patterns that loaded onto this factor included the overuse of cognitive short cuts, such as extreme judging, labeling, and generalizing. In addition, several thinking patterns on this factor demonstrated self-pitying thoughts (i.e., "it sucks to be me" attitude).

Factor 3 (Egocentrism) was comprised of 13 thinking patterns that had a minimum factor loading of 0.30 and produced an eigenvalue of 2.56, with 4.4% of the total variance accounted for. The thinking patterns that loaded onto this factor demonstrated an extreme focus on oneself. This focus on oneself applies to interpreting the actions of others, constructing a view of importance of oneself in relation to the environment, and having expectations for occurrences and living situations.

TABLE 3:   Pattern Matrix of the Factor Loadings for the Three Factors of Criminal Thinking Patterns

	Factor		
Items	1	2	3
Rejection of legit power	0.864	−0.028	−0.203
Power thrust	0.718	−0.096	−0.030
Power orientation	0.707	0.040	0.184
Superoptimism	0.641	−0.054	0.003
Sex	0.557	−0.164	0.058
Controlling others' emotions	0.551	−0.084	−0.257
Hobbies and interests	0.530	0.126	0.159
Cutoff	0.513	−0.019	0.159
Mollification	0.506	−0.116	0.055
Failure to assume obligation	0.447	0.058	0.098
Zero state	0.408	0.016	0.264
Pride	0.372	−0.074	0.294
All-or-nothing thinking	0.336	−0.318	0.247
Cognitive indolence	0.326	−0.256	0.129
Fear of fear	0.318	−0.001	0.242
Magnification and minimization	0.026	−0.734	−0.148
Past and present	−0.051	−0.699	−0.045
Worthlessness	−0.181	−0.690	−0.194
Poor decision making for responsible living	−0.071	−0.690	0.175
Discontinuity	−0.018	−0.677	−0.001
Mental filter	0.110	−0.671	0.024
Tunnel vision	0.292	−0.564	−0.102
Overgeneralization	0.258	−0.525	−0.011
Anger	0.196	−0.496	0.044
Catastrophizing	0.133	−0.477	0.202
Emotional reasoning	0.046	−0.474	0.133
Lack of time perspective	0.166	−0.471	0.055
Emotional motivation	0.129	−0.458	0.097
Fail to make effort/endure adversity	0.272	−0.382	0.262
Mind reading	0.113	−0.362	0.260
Lack interest in responsible performance	0.047	−0.351	0.227
Disqualify/discontinue the positive	0.287	−0.318	0.108
Labeling	0.268	−0.312	0.131
Personalization	0.187	−0.308	0.342
Approval and love	0.218	−0.300	0.055
Pretentiousness	0.119	0.288	0.644
Perfectionism	0.124	0.107	0.626
Opinion of self = good	−0.097	0.118	0.604
Uniqueness	0.052	−0.107	0.574
Sentimentality B (Walters)	−0.044	−0.024	0.518
Energy	0.177	−0.099	0.507
Fear death and injury	0.019	−0.100	0.493
Childhood learning	−0.090	−0.083	0.429
Expect nice and fair	0.176	−0.099	0.415
I can't	0.191	−0.166	0.366
Life comfort and satisfaction	0.223	−0.134	0.365
Closed channel	0.116	−0.276	0.336

Note. Significant loadings (i.e., .300 or higher) are italicized. Factor 1 = Control; Factor 2 = Cognitive Immaturity; Factor 3 = Egocentrism.

DISCUSSION

The purpose of the current study was to investigate the structure of maladaptive thinking patterns prevalent in offenders, which, theoretically, perpetuate criminal actions. The thinking patterns investigated in this study included criminal thinking patterns posited by Yochelson and Samenow (1976) and Walters (1990) as well as noncriminal, maladaptive thinking patterns proposed by Beck (1976) and Ellis (1973). In addition to merely exploring the structure of the thinking patterns, the investigators also sought to compare the resulting number of factors to Walters's (1990) proposed eight distinct cognitive patterns on which he based his measure of criminal thinking styles (i.e., the PICTS; Walters, 2001) and the four-factor model supported in subsequent investigations (i.e., Walters, 1995, 2002, 2005). It was not the aim of this study to replace the PICTS, which has demonstrated sound psychometric properties (Walters, 1995, 1996, 2002). Instead, the investigators attempted to identify the fewest number of factors that are theoretically relevant. The long-term goal of this study is to better understand the cognitive factors that contribute to criminal behavior; a lower number of factors may evidence superior treatment outcomes, as a more concise conceptualization of criminal thinking may provide superior methods for preventing future criminal behavior.

Investigation of the structure of the thinking patterns (i.e., criminal and noncriminal together), by means of an exploratory factor analysis, yielded three factors: Control, Cognitive Immaturity, and Egocentrism. Control was comprised of thinking patterns that reflected a desire for power in all aspects of life. Some aspects of obtaining a sense of power include controlling others' emotions, rejecting established societal power, creating a distortedly high self-perception, and controlling others through use of sex and fear. This also includes strategies that decrease fear for the offender (e.g., minimizing negative behaviors, dismissing anxiety-producing thoughts, making rash decisions without worrying about the consequences, avoiding being reduced to an insignificant individual, absolute lack of recognizing fear in making decisions for action), which perpetuates a feeling of control.

Cognitive Immaturity included thinking patterns that suggested the reliance on immature cognitive tactics and a self-pitying outlook. Immature cognitive tactics include focusing solely on one aspect or detail of situations without regard for the whole scenario, using generalizations and labels for others and the environment, believing that one knows what another is thinking, rejecting responsibility, having a lack of perseverance on initial intentions, and relying on emotions for judgment even when contrary evidence exists. The self-pitying outlook component of this factor is similar, in that rash judgments are made that have a negative focus on oneself. These thoughts include seeking approval and love from others as an indication of self-worth, attributing positive events to external causes and negative events to internal causes, feeling worthless with any failure, attributing others' negative moods to oneself, blaming the past on negative present conditions, and a having a general self-pitying attitude.

Finally, Egocentrism consisted of thinking patterns that focused intently on the self across different situations and interactions. This includes attributing others' actions to oneself, avoiding acting responsibly because of a belief of one's own incompetence, a self-conceptualization of uniqueness and pretentiousness, expecting fair treatment from others regardless of the situation, setting high personal standards for living, and being self-righteous, closed-minded, and secretive. One may focus on one's childhood experiences for establishing moral principles and guidelines. In addition, performing positive acts may easily compensate for negative perception of one's criminal behaviors.

These three factors have face validity for conceptualizing maladaptive thinking that leads to criminal behavior. A need for control and a reduction of fear is adaptive for committing activity that is potentially dangerous, such as a crime, as it threatens both physical health (e.g., being attacked by another while committing a crime) and freedom (e.g., being incarcerated for committing a crime). Cognitive immaturity may contribute to criminal thought and behavior because this type of thinking may preclude less risky but more demanding options for obtaining desired outcomes. Furthermore, the self-pitying thought may serve as a rationalization for negative behavior, because feeling maltreated may lead to a rationalization for obtaining compensation by any means necessary. Egocentrism, similarly, may lead to the belief that one is justified in behaving in a criminal manner because rules and regulations for the masses do not apply to oneself.

The presence of a three-factor model that underlies offender thinking patterns has several important implications. It is important to note that the inclusion of dysfunctional cognitions that are not specifically attributed to criminals is a novel approach to understanding the general maladaptive thinking patterns of criminals. Each of the factors (i.e., Control, Cognitive Immaturity, and Egocentrism) contained several noncriminal maladaptive thinking patterns proposed by Beck (1976) and Ellis (1992) in addition to criminal thinking patterns, suggesting that a full gamut of cognitive errors may add to the negative thought processes of criminals. Even noncriminal maladaptive thinking patterns, therefore, may contribute to cognitive processes that influence criminal behavior.

Compared to Walters's (1990) proposed eight criminal thinking styles, the three-factor model provides a more succinct conceptualization of dysfunctional thinking of criminals. In addition, each of the criminal thinking styles described by Walters demonstrates similar aspects to at least one of the three factors described in the present investigation. Power orientation and superoptimism suggest a pervasive belief or yearning for exertion of power and control over situations and outcome of behavior, so they are closely aligned with the Control factor in the current investigation. Mollification, cutoff, cognitive indolence, and discontinuity all reflect styles of irresponsible and self-serving thinking, and so are in accordance with the Cognitive Immaturity factor in the current investigation. Finally, entitlement and sentimentality overemphasize the importance of oneself and one's actions in relation to external circumstances and other individuals, so they are associated with the Egocentrism factor in the current investigation.

Although the three-factor model yielded in this investigation appears to reflect a simple conceptualization that incorporates the essence of the eight criminal thinking styles as described by Walters (2001), comparison to the four-factor model of the PICTS (Walters, 2002) is not quite as clear. The first factor, labeled Problem Avoidance, describes similar irresponsible thinking as is noted in the Cognitive Immaturity factor in the present investigation. The third factor, Self-Assertion/Deception, contains elements of perceived necessity for domination over the environment also evident in the Control factor in the present investigation. Whereas Problem Avoidance and Self-Assertion/Deception demonstrate partial similarity to Cognitive Immaturity and Control, respectively, the remaining two factors (i.e., Interpersonal Hostility and Denial of Harm) from Walters's four-factor model do not demonstrate any obvious allegiance to any of the three factors from the current investigation and may, in fact, be represented somewhat equally throughout the three factors.

The parsimony of the three-factor model, however, has important implications for treatment. Simply stated, psychotherapeutic intervention with offenders becomes an easier task

for correctional mental-health professionals if the thinking patterns that contribute to criminal behavior are reduced to the smallest denominator instead of attempting to cover a wider range of individual thinking patterns. Furthermore, given inmates' propensity for below-average intellectual functioning (Herrnstein & Murray, 1994), a more concise three-factor model may be easier for inmates to learn and apply to their lives than Walters's eight criminal thinking styles. In addition, the identification of fewer maladaptive offender-thinking styles (i.e., Control, Cognitive Immaturity, and Egocentrism) suggests a plan for treatment that may minimize treatment time and preserve strained correctional mental-health resources.

Perhaps the most influential way to consider the implications of this three-factor model is contemplating the possible preventive measures that can be derived from understanding maladaptive thinking of offenders in this model. Identifying the nature of these specific thinking patterns in a deviant population may provide an opportunity at interventions after a minor or first offense. Such interventions, aimed at combating identified maladaptive-thinking patterns, may prove useful in deterring future criminal activity. Focusing on the dysfunctional thinking suggested by the three-factor model, recidivism may be lessened for offenders in general, especially when implemented throughout probation and parole requirements involving interventions at either the group or individual level.

Although this study provides an alternate and empirically based conceptualization of maladaptive offender-thinking patterns, this study is not without limitations. Although the sample size (i.e., 435 inmates) was adequate for the exploratory factor analysis in this study, future studies should procure almost double the number of participants, which would provide for optimal statistical support for the findings. Another limitation is that this study was conducted with adult male inmates only. With any study constricted to a specific target population, this study would benefit from exploration into other demographic populations (e.g., female offenders, juvenile offenders). Finally, the 50% participation rate, a lower rate than typically received by these investigators, allows for the possibility of participation bias (i.e., that inmates who elected to participate are not representative of other inmates). Future studies will need to be conducted to determine the generalizability of these results.

Because of the nature of this study, no confirmatory factor analysis was performed to verify the findings of the exploratory factor analysis performed. Therefore, a confirmatory factor analysis of the maladaptive thinking patterns needs to be completed in future research to validate the presence of the three factors revealed in this study (i.e., Control, Cognitive Immaturity, Egocentrism). Such future research supporting the results from this study may correspond with other evidence for fewer underlying factors of maladaptive offender thinking than previously suggested by either Yochelson and Samenow (1976) or Walters (1990). Although this study is unique in that both criminal and noncriminal thinking patterns were explored, a factor analysis of Walters's (2001) PICTS items revealed similar results for criminals' maladaptive thinking (i.e., between two and four factors; Egan et al., 2000; Walters, 1995), as opposed to supporting the eight independent thinking styles.

In addition to confirming the factor structure identified in this study, future investigation in this area should apply the understanding of criminal thinking with practical measures of maladaptive behavior; it is imperative to explore the relationship between the general maladaptive thinking patterns identified in this study (i.e., Control, Cognitive Immaturity, Egocentrism) and problematic outcomes. More specifically, the utility of the conceptualization of this three-factor model can be explored by investigating the relationship between scores on these factors and offender variables, such as the criminal history and offense of conviction, disciplinary reports in prison, and history and current use of mental health services.

In summary, this study investigated the overall structure of a combination of both criminal and noncriminal maladaptive thinking patterns. An exploratory factor analysis identified three factors (i.e., Control, Cognitive Immaturity, Egocentrism), which differs from Walters's (1990) proposed eight independent criminal thinking styles. The three-factor model has significant implications for prevention, assessment, and treatment with an offender population as well as for future research into the maladaptive thinking of criminals. This future research needs to further investigate factor structure identified in this study and relate these factors to criminal behavior and problematic outcomes. It is hoped that this line of research will enhance and simplify current treatment efforts at modifying cognitive patterns that contribute to crime.

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