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# Psychopathy and Alexithymia in Female Offenders

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## Abstract

Although there appear to be several affective and behavioural similarities between psychopathy and alexithymia, there have been few empirical investigations of the co-occurrence of these two constructs. In this study, we determined their comorbidity in a sample of 37 female offenders. We also investigated their association with the use of affective language in response to questions about an emotional event, and with their propensity for violence. Extent of psychopathy and alexithymia were assessed with the Hare Psychopathy Checklist-Revised (PCL-R), and the Toronto Alexithymia Scale (TAS), respectively. Using standard cutoff scores, 30% were identified as psychopaths, and 32% as alexithymics. Three women were both psychopaths and alexithymics. The correlation between PCL-R and TAS total scores was not significant, but the socially deviant, impulsive factor of the PCL-R was significantly correlated with the TAS items that reflect inability to discriminate feelings and bodily sensations. Alexithymia, but not psychopathy, was negatively related to measures of affective speech content. Both psychopathy and alexithymia were associated with a history of violence. In spite of several manifest similarities, psychopathy and alexithymia appear to be different clinical constructs.

## Résumé

Bien qu'il semble exister plusieurs similarités affectives et comportementales entre la psychopathie et l'alexithymie, peu d'analyses empiriques portant sur la cooccurrence des deux concepts. Au cours de la présente étude, nous avons déterminé leur comorbidité chez un échantillon de 37 femmes contrevenantes. Nous avons également étudié leur association dans l'usage du langage affectif en réponse aux questions sur un événement émotionnel, et dans leur propension à la violence. Les degrés de psychopathie et d'alexithymie ont été évalués respectivement à l'aide de la liste de contrôle de la psychopathie révisée de Hare et de l'échelle d'alexithymie de Toronto. En utilisant

un pointage-seuil général, 30 % des femmes ont été reconnues psychopathes et 32 % alexithymiques. Trois de ces femmes étaient à la fois psychopathes et alexithymiques. La corrélation entre la liste de contrôle de la psychopathie révisée de Hare et l'échelle d'alexithymie de Toronto n'était pas significative, mais elle était évidente entre le facteur impulsif, socialement déviant, de la liste de contrôle de la psychopathie révisée de Hare et les éléments de l'échelle d'alexithymie de Toronto qui représentent l'inaptitude à discriminer entre les sentiments et les sensations corporelles. L'alexithymie était négativement reliée aux mesures de contenu du langage affectif, mais pas la psychopathie. Par contre, les deux étaient associées à des antécédents violents. En dépit de plusieurs similarités manifestes, la psychopathie et l'alexithymie semblent être des concepts cliniques différents.

## INTRODUCTION

Psychopathy is a personality disorder marked by a particular pattern of interpersonal, affective, and behavioural symptoms. Similar to antisocial personality disorder (APD) as defined by the Diagnostic and Statistical manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994), psychopathy also consists of a cluster of personality traits and affective symptoms not considered necessary for a diagnosis of APD (Hare, 1996). Psychopaths typically are manipulative, egocentric, grandiose and dominant. They persistently violate social norms and expectations, frequently find themselves in conflict with the law, and are prone to instrumental aggression and violence. They display shallow and labile emotions, possess little capacity for compassion, empathy, or remorse, and form few lasting bonds with others (Hare, 1991).

Most clinical accounts of psychopathy make explicit and implicit reference to the serious difficulties psychopaths have in understanding and appreciating the emotional significance of experiences and events (e.g.,

Cleckley, 1976; Hare, 1993). Although these difficulties are reflected in many aspects of behaviour (e.g., Christianson, Forth, Hare, Strachan, Lidberg, & Thorell, 1996; Patrick, 1994), their influence is particularly evident in the way psychopaths process and use language. Cleckley (1976) for example stated that psychopaths know little more than the dictionary meanings of words. He argued that psychopaths suffer from a deep-seated semantic disorder in which the affective and semantic components of words are dissociated. More recently, Hare (1993) suggested that emotion is like a poorly learned second language to psychopaths.

These clinical impressions are supported by the remarkable convergence of empirical evidence from a variety of laboratory studies (reviewed by Hare, *in press*; also see Williamson, Harpur, & Hare, 1991). In brief, acoustic, behavioural, electrocortical, and brain-imaging studies (e.g., Day & Wong, 1996; Louth, Williamson, Alpert, Pouget, & Hare, 1998; Williamson et al., 1991) indicate that psychopaths have difficulties processing and using effectively the emotional components of language. The bases for these difficulties are unknown, but may involve atypical cerebral lateralization for verbal and emotional processes (Day & Wong, 1996; Raine, O'Brien, Smiley, Scerbo, & Chan, 1990), as well as dysfunctions in brain mechanisms involved in the regulation and integration of affective and other cognitive and behavioural experiences (Damasio, 1994; Lapiere, Braun, & Hodgins, 1995).

Alexithymia is another clinical construct involving fundamental anomalies in language and emotion. The construct was introduced in the early 1970s as a condition linked to inadequacy in experiencing and expressing emotions (Apfel & Sifneos, 1979), and current prevalence has been estimated at 10% of the general population (Linden, Wen, & Paulhus, 1994). Its features include difficulty in describing feelings, emotional awareness deficits, lack of imaginative ability, and an external, operative cognitive style (Taylor, Bagby, & Parker, 1997).

There are several theoretical bases for investigating potential connections between alexithymia and psychopathy. Like psychopathy, alexithymia has been linked to such interpersonally insensitive behaviours as having multiple sexual partners (Thome, 1990), and impaired empathic capacity (Krystal, 1979). Alexithymia has been found to relate to personality disorders such as narcissism (Taylor, 1984), and psychopathy itself (Apfel & Sifneos, 1979) — especially violent psychopathy (Keltikangas-Järvinen, 1982). Krystal (1979) reported that alexithymics are subject to bursts of violent behaviour, and Taylor and Bagby (1988) suggested alexithymics may discharge tension through exacerbated physiological responses to stress, via physical action. Alexithymics

(like psychopaths) are said to be unresponsive to insight-based psychological treatment (Gage & Egan, 1984).

Although there are similarities between psychopathy and alexithymia, there also are differences. For example, alexithymics are said to bore, not charm, their listeners, and they tend to receive high scores on measures of social conformity (Gage & Egan, 1984; Taylor, Ryan, & Bagby, 1985). Moreover, it appears alexithymics have difficulty in identifying and accurately labelling their emotions, whereas psychopaths feign and mimic emotions they likely do not experience. Although the two conditions clearly are not identical, they may share some common diatheses and may tend to be comorbid in some individuals.

The purpose of this study was to investigate, in a sample of female offenders, the prevalence and comorbidity of psychopathy and alexithymia, and the association of these clinical constructs with the use of affective language and with a history of violence. Levels of psychopathy and alexithymia were measured by, respectively, the Hare Psychopathy Checklist-Revised (PCL-R; Hare, 1991), and the Toronto Alexithymia Scale (TAS; Taylor et al., 1985).

To measure affect in language, we asked the offenders to describe their feelings about an emotionally charged event, and recorded their responses onto audiotapes. We determined the number of words spoken by each offender, and the proportion of words that were emotional. In addition, we rated the intensity, appropriateness, and sincerity of the affect expressed in each offender's narrations. The procedure was based on an extensive research literature on the detection and measurement of emotion in speech (Alpert & Anderson, 1977; Alpert, Hekimian, & Frosch, 1966; Scherer, 1979, 1981, 1986; Taylor, Doody, & Newman, 1981). We expected that the insincerity and shallow affect typical of psychopaths would be discernible in their voices. Specifically, we hypothesized that PCL-R scores would be negatively associated with the intensity and appropriateness of emotional expression. We also expected that the difficulty alexithymics have in describing their emotions accurately would be reflected in inverse relationships between TAS scores and number of appropriate emotional words spoken, and between TAS scores and affective vocal quality.

## METHOD

### *Participants*

Participants were inmates of the Burnaby Correctional Centre for Women, a medium-security prison near Vancouver. We sent a recruitment notice to all inmates, excluding those in solitary confinement and those at home on the electronic monitoring system. Thirty-seven of the 80 women contacted volunteered to participate in

the study; each was paid \$10.00. Inclusion criteria were achievement of a minimum reading level, and fluent, relatively accent-free English speech. No volunteer was excluded based on these criteria. Participants' ages ranged from 19 to 50 years ( $M = 31.7$ ;  $S.D. = 8.3$ ). Most (76.5%) were Caucasian, and 13.5% were Canadian Aboriginals.

#### Measures

**Psychopathy.** The PCL-R is a clinical construct rating scale that provides a reliable and valid assessment of psychopathy (see Cooke & Michie, 1997; Hare, 1991). The 20 items in the PCL-R fall into two correlated clusters, or factors (Hare et al., 1990). Factor 1 consists of items that measure the affective/interpersonal features of psychopathy (egocentricity, superficial charm, manipulativeness, pathological lying, callousness, lack of remorse), whereas Factor 2 comprises items describing an impulsive, antisocial, and unstable lifestyle, or social deviance. Each item is scored on a 3-point scale (0, 1, 2) on the basis of a semi-structured interview and a review of collateral (file) information. Total scores can range from 0 to 40, and reflect an estimate of the degree to which an individual matches the prototypical psychopath. Interrater reliability typically is greater than .85.

Although only a few studies have used the PCL-R with female offenders, available evidence indicates that its psychometric properties and correlates are much the same as in male offenders (Neary, 1990; Rutherford, Cacciola, Alterman, & McKay, 1996; Strachan, Hemphill, & Hare, 1997; Tien et al., 1993). In the present study, a graduate student in psychology was trained to administer and score the PCL-R. Each PCL-R interview was videotaped, and ratings were based on the interview and a review of institutional file information. A trained research assistant made a second, independent set of ratings for 23 of the offenders, and interrater reliability ( $r$ ) was calculated for these double-rated files.

**Alexithymia.** The 26 items of the TAS assess four aspects of alexithymia: (a) The ability to identify and distinguish between feelings and bodily sensations; (b) The ability to describe feelings to others; (c) The extent to which daydreaming is experienced; and (d) Externally oriented thinking. For this study, we used the three subscale derivations suggested by Haviland, Shaw, MacMurray, & Cummings (1988): Factor 1, Feelings (this represents a combination of the first two aspects); Factor 2, Daydreaming; and Factor 3, External Thinking.

**Voice Analyses.** Two female psychology undergraduate students, blind as to the identity or characteristics of the participants, volunteered to listen to each entire audiotape. They were trained to rate the tapes on several emotion-related variables. To ensure that the ratings were reliable, the students rated and discussed practice

audiotapes until they attained an inter-rater reliability ( $r$ ) of at least .80 for each variable. The variables, each rated on a 5-point Likert-type scale with three anchors (not at all, moderately, extremely), were as follows:

(1) *Intensity of emotion.* This variable was rated on voice quality, not content. Ratings reflected impressions of whether a participant's voice displayed any feelings. Cadence and tonal variability served to assess signs of affect, versus vocal patterns that seemed flat, expressionless, bored, or disengaged.

(2) *Appropriateness of emotion.* This item was rated on content rather than voice quality. Raters determined if an expressed emotion was appropriately sad, angry, distraught, and so forth, or if it seemed inappropriately excited or happy, or was judged to drastically underestimate the appropriate depth of emotion (e.g., responses such as "the mother was probably glad her son was dead," or "the father was quite sorry his boy was killed," were considered inappropriate).

(3) *Sincerity of emotion.* This item reflected the degree to which the words spoken appeared sincere rather than simulated expressions of an emotion. Ratings were based on both voice quality and the actual words used (i.e., the offender may have used appropriately emotive words, but sounded either too "theatrical," histrionic, or flat, or else used words that were judged to lack sincerity). An example of lack of sincerity would be an offender who expressed appropriate emotions, but embellished her responses with humour.

Inter-rater reliability ( $r$ ) coefficients were calculated for all ratings. A volunteer also transcribed each audiotape, and, using the procedure described by Taylor and Doody (1985), counted the number of different affective words used, where affective words were defined as words that clearly and unambiguously expressed emotional feeling. This procedure resulted in an affective vocabulary score for each participant. Total word counts were also obtained for each participant. All affective vocabulary scores were checked by a second volunteer, and 10 total word counts were randomly selected and checked. No scores were in contention.

**Other measures.** The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) was administered to control for possible effects of mood on emotional/speech characteristics. The Wide Range Achievement Test-Revised (WRAT-R; Jastak & Jastak, 1978) was administered to ensure that a minimum standard of reading ability was met by all participants, and that differences in emotional responses were not due to inability to read the written scenario. The Wechsler Adult Intelligence Scale-Revised (WAIS-R; Wechsler, 1981), scored for Verbal IQ, was administered to ensure that individual differences in verbal behaviour were more than artifacts of verbal intelligence.

TABLE 1  
Correlations between PCL-R and TAS Factors

	TAS Total Scores	TAS Factor 1 Scores (Feelings)	TAS Factor 2 Scores (Dreaming)	TAS Factor 3 Scores (External)
PCL-R Total Scores	.26	.32	-.24	0.19
PCL-R Factor 1 Scores	.01	.11	-.13	-.06
PCL-R Factor 2 Scores	.33*	.38*	-.24	0.22

\* $p < .05$ .

Note. TAS Factor 1 = Ability to distinguish and describe feelings; TAS Factor 2 = Lack of daydreaming; TAS Factor 3 = Externally oriented thinking. Higher scores on all factors relate to higher dysfunction levels.

### Procedure

We tested each offender individually, in two sessions several days (between three and seven) apart. The first session consisted of a semi-structured interview for the PCL-R. In the second session, the TAS, BDI, WRAT-R, WAIS-R, and the experimental task described below were administered. One offender did not complete the TAS and was released on an electronic monitoring system (house arrest) before she could be re-contacted.

The offender's task was to read and answer questions about a typed story of the violent death of a child.<sup>1</sup> She was told that the story was a true account of a recent event, and that her responses would be recorded on tape. The questions concerned the offender's feelings about the story ("How does this story make you feel?"), and the feelings of the people involved in the story ("How do you think the child/the parents/the killers/the killers' parents felt?"). She was also asked to estimate, by selecting a number between 0 and 5, her ability to empathize with the people in the story ("How well do you think you will be able to describe the feelings of the people in this reading?"). The order of questions was randomized for each participant.<sup>2</sup>

## RESULTS

### Descriptive statistics

The mean PCL-R total score was 24.1 ( $SD = 7.7$ ), and the base rate for a diagnosis of psychopathy (a score of 30 or above; Hare, 1991) was 30%. Mean PCL-R factor scores were 8.6 for Factor 1 ( $SD = 2.8$ ) and 11.6 for Factor 2 ( $SD = 4.1$ ). All values (means, standard deviations, and base rate) were much the same as those obtained with two other samples of female offenders from the same institution (Strachan et al., 1997; Tien et al., 1993). Inter-rater reliability ( $r$ ) for the double ratings was .95. The mean TAS total score was 69.7 ( $SD = 13.6$ ). Using the recommended cutoff score of 74 (Taylor et al., 1985) the base

rate for alexithymia was 33%. Thus, using recommended cutoff scores, the sample included 11 psychopaths and 12 alexithymics; three women scored above the cutoffs on both the PCL-R and the TAS. Mean BDI, Verbal IQ, and WRAT-R scores for the sample were, respectively, 15.5 ( $SD = 8.8$ ), 87.6 ( $SD = 11.7$ ), and 98.5 ( $SD = 13.8$ ).

### Correlates of the PCL-R and the TAS

TAS total scores were negatively correlated with Verbal IQ scores ( $r = -.37$ ,  $p < .05$ ), and both TAS and PCL-R total scores were positively correlated with BDI scores (respectively,  $r = .50$ ,  $p < .01$ ;  $r = .33$ ,  $p < .05$ ). PCL-R total scores and age were negatively associated ( $r = -.33$ ,  $p < .05$ ). There was no statistical relationship between reading ability (the WRAT-R) and either alexithymia or psychopathy.

### Relation between PCL-R scores and TAS scores

Significant positive associations emerged between PCL-R Factor 2 (social deviance) and TAS total scores, and between PCL-R Factor 2 and TAS Factor 1 (inability to distinguish and describe feelings). Table 1 contains a correlation matrix of psychopathy and alexithymia scores.

### Voice Analyses<sup>3</sup>

No correlations (Pearson's  $r$ ) between PCL-R scores and vocal analyses of participants' audiotaped responses reached significance. For brevity, these data have not been included. No affective impoverishment or dissimulation could be detected in the voices of offenders diagnosed as psychopaths, either by rating their speech for signs of affect, or by computing the number of emotions spoken. There was no relationship between psychopathy and rater impressions of emotional intensity, appropriateness of emotions expressed, or sincerity. Psychopathy was not associated with size of affective vocabulary, with total word counts, or with self-esti-

1 A copy of this document is available from the first author.

2 The exact text of the questions is available from the first author.

3 Descriptive statistics and intercorrelations of voice measures are available from the first author.

TABLE 2  
Correlations between tas Scores and Vocal Analysis Ratings

	Emotion			Appropriateness			Amount of Sincerity			Total Word Count			Total Affect Count (Affective Vocabulary Scores)		
	(i)	(ii)	(iii)	(i)	(ii)	(iii)	(i)	(ii)	(iii)	(i)	(ii)	(iii)	(i)	(ii)	(iii)
TAS	-.20	-.11	-.13	-.40*	-.37*	-.75***	-.22	-.17	-.19	-.44**	-.35*	-.38*	-.39*	-.30	-.36*
Feelings	-.09	-.02	-.05	-.25	-.22	-.29	-.13	-.09	-.13	-.21	-.11	-.16	-.08	-.04	-.04
Dreaming	-.13	-.15	-.12	-.25	-.26	-.23	-.13	-.13	-.10	-.22	-.27	-.24	-.55***	-.62***	-.59***
External	-.28	-.20	-.20	-.35*	-.32	-.32	-.28	-.23	-.23	-.56***	-.50**	-.50**	-.33*	-.21	-.22

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

(i) Zero order correlation coefficients

(ii) Controlling for BDI scores

(iii) Controlling for BDI scores and PCL-R Factor 2 scores

Note. Interrater reliability was computed for the two independent ratings of Amount of Emotion, Appropriateness of Emotion, and Sincerity, and the results are reported as Pearson's  $r$ : Amount of Emotion:  $r = .80$ ; Appropriateness of Emotion:  $r = .77$ ; Sincerity:  $r = .78$ .

mates of empathy.

When Pearson's correlations were calculated between TAS scores and vocal ratings, all correlation coefficients emerged as negative, seven significantly so. Significant negative associations were found between TAS total scores and appropriateness of emotional content, total word counts, and affective vocabulary scores. TAS Factor 2, inability to daydream, correlated inversely with affective vocabulary scores, and TAS Factor 3, an externally oriented, concrete thinking style, was negatively associated with appropriateness of emotions, total word count, and affective vocabulary score. The general pattern was that the higher participants scored on measures of alexithymia, the lower were their ratings on appropriate affective expression.

To remove shared variance with mood, we controlled for BDI scores by partialling them out of TAS scores and vocal measures. Because of the statistical relationship found between TAS and PCL-R Factor 2 scores, the effect of Factor 2 was also controlled. Table 2 presents the results of all zero order and partial correlations. The size, but not the direction, of the coefficients, was affected by controlling for these variables. Some were no longer significant. The general pattern, however, remained unchanged — the relationship between alexithymia and vocal measures of affect could not be explained by the effects of mood or social deviance.

We considered that, had any of the women been charged with killing a child, this might have affected the content or quality of their responses. Files revealed no such charges for any of the participants. Institutional files were then examined for information about number of children, and we performed correlations between this variable (range = 0 to 4 children) and all vocal analyses. Presence or absence of children, or number of offspring, were unrelated to any of the vocal measures.

#### Relatedness of the PCL-R and the TAS to violence

To investigate the possible association of psychopathy and alexithymia with violence, participants' files were coded as violent if they contained evidence of violent crimes (i.e., charges of murder, manslaughter, assault). Using this criterion, 25 of the 37 subjects (68%) were considered violent and 12 (32%) were non-violent. Levene's test for equality of variance revealed the imbalance between groups to be non-significant and, consequently,  $t$ -tests were performed. The violent group had a higher mean PCL-R score ( $M = 27.2$ ) than did the non-violent group ( $M = 17.6$ ),  $t(35) = 3.84$ ,  $p < .001$ . The mean TAS score was also higher for the violent sample ( $M = 74.4$ ) than for the non-violent group ( $M = 60.5$ ),  $t(34) = 3.43$ ,  $p < .001$ .

PCL-R and TAS total scores were each correlated with violence, (respectively,  $r_{pb} = .60$ ,  $p < .01$ ;  $r_{pb} = .49$ ,  $p < .01$ ) as were both factors of the PCL-R (F1:  $r_{pb} = .44$ ,  $p < .01$ ; F2:  $r_{pb} = .52$ ,  $p < .01$ ). Factors 1 and 3 of the TAS were also correlated with violence (F1:  $r_{pb} = .36$ ,  $p < .05$ ; F3:  $r_{pb} = .48$ ,  $p < .01$ ). To establish whether these two instruments were good discriminators of violence, a logistic regression analysis (using SPSS) was carried out between violence as the dichotomous dependent variable and TAS and PCL-R scores (entered as a block) as the independent variables. The overall correct classification rate was 86.11%, and both independent variables added significantly to the discrimination of violence (TAS: Wald(1) = 4.27,  $p < .05$ ; PCL-R: Wald (1) = 6.06,  $p < .05$ ).

#### DISCUSSION

This study adds to the limited information compiled regarding psychopathy rates among incarcerated female offenders. Prevalence rates previously found were 23% (Tien et al., 1993) and 31% (Strachan, 1993), whereas the rate of psychopathy found in incarcerated males has

generally been lower, ranging from 15-21% (Hare, 1991). Assessment of alexithymia in a prison environment enhances our knowledge about the psychological profiles of female inmates. The descriptive statistics of the TAS were similar to those reported by others. Given that incarceration could be considered a stressful condition for many offenders, the finding that two-thirds of our sample were not alexithymic suggests that the TAS assesses primary, or trait alexithymia, as contrasted with secondary, or reactive alexithymia. The high correlation between TAS and mood echoes a relationship commonly found in alexithymia studies (Taylor et al., 1997). Many researchers report that although the two are correlated, depression is not a significant predictor of alexithymia. Haviland et al., (1988) explored this relationship further, and found that while BDI scores fluctuated, TAS scores were relatively static, a finding they interpreted as supporting the conceptual independence of the two constructs.

We expected to find some connection between alexithymia and the PCL-R factor that measures interpersonal and affective impoverishment (Factor 1). No such relationship emerged. One interpretation of the lack of anticipated findings could be that people exhibiting shallow affect, as assessed by the PCL-R, do not necessarily have poor ability to distinguish and describe feelings, as measured by the TAS. Close examination of individual items on the two instruments suggests another possibility. Items on the TAS "Feelings" scale include: "I often get confused about what emotion I am feeling," and "I find it hard to describe how I feel about people." Factor 1 of the PCL-R includes such characteristics as glibness, grandiosity, pathological lying, and tendency to con and manipulate others. Perhaps psychopaths who are glib and grandiose would be disinclined to admit confusion about their own feelings. Tendencies to lie, and to gloss over personal inadequacies, may have lead them to make non-alexithymic, socially desirable responses to these TAS items.

Though social conformity has been associated with alexithymia, the characteristics of alexithymics in prison may be different from those of non-incarcerated populations. Since alexithymia is also linked to impulsivity and substance abuse (Apfel & Sifneos, 1979; Haviland et al., 1988), in alexithymic inmates these tendencies may overcome the desire to conform. Kroner and Forth (1995), in a sample of 104 male sex offenders, found a significant correlation between PCL-R Factor 2 and a subscale of the TAS they designated as Experiencing and Utilizing Emotion.<sup>4</sup> In this study, TAS total scores and Factor 1 of

the TAS (Feelings) were both modestly but significantly associated with PCL-R Factor 2 — the factor assessing behavioural indices of psychopathy such as impulsiveness, proneness to boredom, poor behavioural controls, and criminality. Despite substantial differences between the Kroner and Forth study and the current one, both found an association between alexithymia and criminality. Krystal (1979) indicated alexithymics are subject to bursts of violent behaviour, and Keltikangas-Järvinen (1982) reported a high rate of alexithymia among incarcerated males convicted of violent crimes. It may be enlightening to investigate the relationship between alexithymia and violence in a non-incarcerated sample. At this point, we can only conclude that, in an inmate population, the characteristic of being unable to describe emotions is associated with violence. This conclusion is intuitively sound, since violence seems more likely if the offender cannot imagine or sense feelings in the victim. The association between psychopathy and violence in male inmates has already been reported (for example, Hare & McPherson, 1984; Serin, 1991); the present study suggests that there is also a PCL-R/violence relationship in female offenders.

This study extends research previously conducted on psychopathy and language, by exploring the effect on listeners when psychopaths discuss emotional topics. We found that PCL-R scores were not related to judges' ratings of expressed emotion, or appropriateness of emotion, or to impressions of sincerity. Although cognizant that some participants were likely psychopathic, raters were unable to detect differences in the audiotaped voices. It is possible that the stimulus we used was too weak to generate emotion. Scherer (1986) has warned that there is a price for ecological validity. He stated that using naturally occurring emotions to obtain speech samples may yield null results because the affect obtained is not "sufficiently emotional" (p.144) to demonstrate between-subject differences. This is an unlikely explanation for our lack of results between vocal ratings and psychopathy, since a different picture emerged in the analysis of alexithymics' speech samples. Consistent with the theoretical construct of alexithymia, high TAS scores were associated with lower total word production and a smaller affective vocabulary score.

Although detailed speech analyses were not conducted in this study, and only affective words were singled out for attention, a finer-grained examination of some speech samples revealed some trends for future study. For example, alexithymics tended to use an excessive number of qualifiers such as "probably, maybe, I imagine," and often simply said "I don't know," or "I don't have a clue." They tended to change their minds, as "When he died, she probably felt guilty, no angry, no... sorry." Their concrete thinking was dramatically demon-

<sup>4</sup> Kroner and Forth (1995) performed a confirmatory factor analysis of the TAS-20, and retained a two-factor solution: Emotional Understanding Deficits, and Experiencing and Utilizing Emotion.

strated at times, as "But the story doesn't say anything about a husband," and "The story didn't say what her feelings were, angry, scared, or what." Psychopaths often produced strange non-sequiturs in their speech, for example: "How would the kid feel? Well, in a store he is curious about what's in the store. Macaroni cheese, whatever," and "Anyway, it's different in third world countries. No respect for life, with the IRS or IRA." This unusual content was apparent only when the transcripts were examined, and did not affect raters' assessments of appropriateness or sincerity. Hare (1993) has remarked upon this tendency for psychopaths to use odd verbalizations.

Psychopaths also showed a preoccupation with legal concepts and with mitigating factors; for instance, the following examples are all excerpted from psychopaths' responses:

"They must have been abused children themselves,"

"The father might have wanted to take legal action,"

"Maybe they had poor backgrounds, no concept of right or wrong,"

"What kinds of homes were they brought up in,"

"It's because of what they watched on TV; at their age they couldn't stick them in jail."

This study suggests that alexithymia, like psychopathy, may be a prevalent personality feature in penal institutions. Here, both had an equally high base rate among female inmates, and there was only a small subgroup of female psychopaths who were also alexithymic. If there is a common link between alexithymia and psychopathy, it may lie in the characteristic of impulsivity, which both groups experience in excess — so much so in alexithymics, that it seems to overcome their natural reluctance to break social conventions.

Research into psychopathy has been aided by the development of the PCL-R; with the ongoing refinement and validation of the TAS, future research combining both constructs is now possible. In psychopaths, affective impairment and antisocial behaviours are woven together to form a potentially dangerous personality. It seems that alexithymia, too, may combine elements of violent behaviour with the more traditional view of the emotionally challenged and interpersonally aloof alexithymic — at least in incarcerated females. Future research should clarify if this relationship also exists in non-criminals.

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