

## Are alexithymia and schizoid personality disorder synonymous diagnoses?

Frederick L. Coolidge\*, Alisa J. Estey, Daniel L. Segal, Peter D. Marle

Psychology Department, University of Colorado, Colorado Springs, CO 80918

### Abstract

Relationships among alexithymia, personality disorders, and higher-order psychopathological and interpersonal dimensions were examined in 199 college students and a close relative of each. Alexithymia, the difficulty to express and identify emotions, was measured by the Observer Alexithymia Scale (OAS; [Haviland, M. G., Warren, W. L., & Riggs, M. L. (2000). An observer scale to measure alexithymia. *Psychosomatics*, 41, 385–392]), which was completed by each student's relative. Each student completed three self-report measures: the Coolidge Axis II Inventory (CATI; [Coolidge, F. L. (2000). *Coolidge Axis II Inventory: Manual*. Colorado Springs, CO: Author.]), the Five Dimensional Personality Test (5DPT; [van Kampen, D. (2009). Personality and psychopathology: A theory-based revision of Eysenck's PEN model. *Clinical Practice and Epidemiology in Mental Health*, 5, 9–21]), and the Horney-Coolidge Tridimensional Inventory (HCTI; [Coolidge, F. L. (1998). *Horney-Coolidge Tridimensional Inventory: Manual*. Colorado Springs, CO: Author]). Results indicated that higher levels of alexithymia are associated with personality disorders and their traits, such as schizoid, avoidant, and paranoid. With regard to the issue of the similarity and difference between alexithymia and schizoid personality disorder, there was sufficient evidence across all of the measures to suggest that they are not synonymous entities. Finally, alexithymic traits were associated with concurrent depressive traits even in a non-clinical sample.

© 2013 Elsevier Inc. All rights reserved.

In his work with psychosomatic patients, Sifneos [1] observed that many had great difficulty communicating during their clinical interviews. He also observed that they particularly had trouble finding appropriate words to describe their feelings. He proposed the use of the term “alexithymia,” which he derived from Greek, *a*=lack, *lexis*=word, and *thymos*=mood or emotion. Sifneos found that psychosomatic patients, when compared to a control group, scored over twice as high on an observer questionnaire measuring alexithymic characteristics, such as a tendency to describe minuscule details instead of feelings, an inability to use appropriate words to describe emotions, a lack of a rich fantasy life, and use of actions to express emotions.

Earlier, psychoanalyst Karen Horney [2] may have described a prototype of the alexithymic patient. She postulated that the

paucity of inner experiences in an individual leads to externalized living and anxieties not conscious to the person. This condition, she believed, led to several neurotic disturbances, which she classified into two categories: substitute-functions and reactive anxieties. Her category of substitute-functions fit individuals who relied solely on the outside world for guidance of their behaviors because they lacked the ability to experience their emotions and beliefs. Horney thought emotions that should be attributed to oneself were projected onto others, and one's feelings were not truly owned. Horney also described a shift from *being* to *appearing*; in other words, she thought that a feeling of anxiety might become a concern if that person was aware that his or her hands were perspiring or trembling. Horney believed that ‘externalized living’ was the emphasis of relying on others' expectations and rules instead of one's own.

Horney's [2] second category of neurotic disturbances – reactive anxieties – constituted an unawareness of inner experiences, which resulted in a feeling of emptiness of which the person may not be aware. She thought that this emptiness was the source of reactive anxieties that led to neurotic behaviors. Horney emphasized that if unawareness

Frederick L. Coolidge, Alisa J. Estey, Daniel L. Segal, and Peter D. Marle, Department of Psychology, University of Colorado, Colorado Springs.

The CATI, 5DPT, and HCTI are available free for research purposes from the senior author.

\* Corresponding author.

E-mail address: [fcoolidg@uccs.edu](mailto:fcoolidg@uccs.edu) (F.L. Coolidge).

persists, then the individuals would keep externalizing and intellectualizing their behaviors. Without emotional responses to situations, Horney believed that individuals could not fathom their unrelatedness to self and others.

Since Sifneos' [1] original conception of alexithymia, the condition has been investigated in a plethora of psychopathological conditions outside the domain of psychosomatic illnesses, including depression, neuroticism, posttraumatic stress disorder, Asperger's disorder, traumatic brain injury, alcohol addiction, interpersonal problems, and personality disorders (e.g., [3–9]).

The relationship of alexithymia to personality disorders is particularly intriguing. For example, alexithymia has been empirically demonstrated to be related to the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; [10])* Cluster C personality disorders: avoidant, dependent, and obsessive-compulsive [6,11]. Alexithymia has also been shown to be significantly related to borderline personality disorder [12]. Bach, de Zwaan, Ackard, Nutzinger, and Mitchell [13] found alexithymia to be positively correlated with schizotypal personality disorder traits and negatively correlated with histrionic personality disorder traits. Additionally, patients with antisocial personality disorder showed significantly higher levels of alexithymia compared to a control group free of any psychological disorder [14]. De Rick and Vanheule [4] found alexithymic traits to be positively correlated with schizoid, avoidant, and antisocial personality disorder traits. In contrast to the findings of Bach, deZwaan, Ackard, Nutzinger, and Mitchell [13], they found alexithymia to be negatively correlated with schizotypal personality disorder traits.

In a recent study, Honkalampi et al. [15] found that alexithymia (as measured by the Toronto Alexithymia Scale [3]) was not a significant predictor of personality disorders (as measured by the Structured Clinical Interview for *DSM-III-R* [16]) in a non-clinical sample of 1,347 Finnish adults. Honkalampi et al. did claim a strong and significant association between alexithymia and depression. However, they found alexithymia to be related to concurrent depressive symptomatology and not to major depressive disorder, perhaps, because the latter diagnosis was measured dichotomously, i.e., presence or absence, rather than as a continuous variable. The mediating role of depression in the expression of alexithymia is certainly an important issue and deserves further attention.

Determining whether alexithymia is a distinct or an overlapping construct with the concept of personality disorders, particularly schizoid personality disorder, remains an important issue. According to *DSM-IV-TR*, the essential features of the schizoid personality disorder are both a pattern of detachment in social relationships and a restricted expression of emotions. The *DSM-IV-TR* also notes that individuals with schizoid personality disorder can appear socially inept, superficial, and self-absorbed, coupled with a constricted affect, making these individuals often appear cold and aloof. In this regard, it would appear on its face

validity that Sifneos [1] was describing some of the core deficiencies of schizoid personality disorder when he outlined the features of alexithymia.

Vanheule et al. [9] also considered that an important element in alexithymia is the interpersonal style of relating to others. They argued that patients with alexithymia tended towards social conformity, conflict avoidance, yet approached other people in unempathic, cold, detached ways if forced to interact. Otherwise, Vanheule et al. speculated that they simply tended to avoid close relationships. Again, at face validity, it would appear that Vanheule et al. were describing the other essential feature of schizoid personality disorder (i.e., detachment in social relationships) rather than alexithymia.

Finally, as noted previously [15], there is evidence that alexithymia appears to be significantly associated with symptoms of depression, perhaps more than any other psychopathological condition. Thus, it may be important to investigate alexithymic traits in a non-clinical population (those without a high prevalence of depression) in regard to measures that include higher-order dimensions of psychopathology, interrelationships, and personality disorder traits and features.

Therefore, in the present study, it was hypothesized that alexithymia, as measured by the Observer Alexithymia Scale (OAS) and its five subscales [17] would be significantly and strongly positively correlated with schizoid personality disorder features. In addition, based on the aforementioned literature, alexithymia should also be significantly and positively correlated with avoidant, dependent, obsessive-compulsive, borderline, schizotypal (based on the findings by [13]), antisocial, and depressive personality disorders, and significantly and negatively correlated with histrionic personality disorder traits, as measured by the Coolidge Axis II Inventory (CATI; [18]). These relationships will also be explored by multiple regression analyses. Second, it was hypothesized that alexithymic traits would be significantly correlated with a measure of higher-order psychopathological traits, i.e., the Five-Dimensional Personality Test (5DPT; [19]). These traits and hypothesized relationships with alexithymia are as follows: Neuroticism (positive), Extraversion (negative), Insensitivity (positive), Absorption (positive), and Orderliness (positive), and that the pattern of the relationship between schizoid personality disorder traits and the 5DPT would be the same as for alexithymic traits. These traits will also be explored with a multiple regression analysis. Third, in order to explore Vanheule et al.'s proposal that alexithymia is intimately linked to interpersonal relationship styles, it was hypothesized that alexithymic traits (total OAS score and its five subscales) would be correlated with all three interrelationship dimensions of the Horney-Coolidge Tridimensional Inventory (HCTI; [20]), which is a measure of interpersonal relationship styles based upon Karen Horney's psychodynamic personality theory [21]. It was hypothesized that there would be a negative correlation between alexithymia and the Compliance

dimension, a positive correlation with the Aggression dimension, and a positive correlation with the Detachment dimension, and again, this pattern would be similar for schizoid personality disorder traits. Additionally, there are nine facets of the three HCTI dimensions, and they will also be explored in their relationship to alexithymic and schizoid personality disorder traits. Further, multiple regression analyses will also be used to explore the HCTI dimensions upon the OAS total score. Fourth, it was hypothesized that alexithymic traits would be significantly and positively correlated with the symptoms of major depressive disorder in *DSM-IV-TR*, even in the present, non-clinical sample, and it was also predicted that this pattern would be similar to schizoid personality disorder traits.

## 2. Method

### 2.1. Participants

Participants for this study were 199 undergraduate students, 106 men and 93 women ( $M$  age=27.4 years, age range 18–64 years; marital status, 67% single, 28% married, 5% other; ethnicity, 78% White, 7% Black, 15% other) at a medium size Midwestern university and one of their close relatives. The participants were recruited by advertisements posted on campus, and they received extra credit for their participation. Each student and his or her close relative completed the materials at their discretion within two weeks and were returned to the senior author. The study was approved by the University's institutional review board.

## 3. Materials

There were four questionnaires in the study. Alexithymic traits were measured by the 33-item OAS, which was given to a close relative of each student (identified by the student). Each OAS item is answered on a 4-point Likert-type scale ranging from 0 (*never: not at all like the person*) to 3 (*all of the time: completely like the person*). According to Haviland et al. [17], the median internal scale reliability (Cronbach's alpha) of the OAS is  $\alpha=.88$  and  $\alpha=.89$  (for two large samples). Its five subscales' internal scale reliabilities are: Distant,  $\alpha=.85$  and  $\alpha=.86$ ; Uninsightful,  $\alpha=.78$  and  $\alpha=.75$ ; Somatizing,  $\alpha=.75$  and  $\alpha=.69$ ; Humorless,  $\alpha=.78$  and  $\alpha=.81$ ; and Rigid,  $\alpha=.73$  and  $\alpha=.72$ . The test-retest reliability for the OAS is  $r=.87$  (2-week interval).

Three self-report questionnaires were also administered: the CATI, HCTI, and the 5DPT. The CATI, a 250-item questionnaire, assesses 14 personality disorders according to the *DSM-III-R* [22] and *DSM-IV-TR* criteria and major depressive disorder (among 38 other clinical scales). Items are answered on a 4-point scale ranging from 1 (*strongly false*) to 4 (*strongly true*). According to Coolidge [18], the median internal scale consistency (Cronbach's alpha) for the 14 personality disorder scales is  $\alpha=.76$  (range: Self-

Defeating scale,  $\alpha=.66$  to Dependent scale,  $\alpha=.87$ ). The median test-retest reliability for the personality disorder scales is  $r=.90$  (1-week interval). The Major Depressive Disorder scale has an internal consistency of  $\alpha=.89$ .

The HCTI is a 57-item questionnaire that measures Karen Horney's three interrelationship dimensions of compliance, aggression, and detachment, described in her book, *Our Inner Conflicts* [21]. The response format is a 4-point Likert-type scale ranging from 1 (*hardly ever*) to 4 (*nearly always*). According to the HCTI manual [20], the internal scale reliabilities (Cronbach's alpha) for the three scales are Compliance,  $\alpha=.78$ ; Aggression,  $\alpha=.83$ ; and Detachment,  $\alpha=.82$ . The test-retest reliabilities for the three scales are: Compliance,  $r=.92$ ; Aggression,  $r=.92$ ; and Detachment,  $r=.91$  (1-week interval). Coolidge, Moor, Yamazaki, Stewart, and Segal [23] identified three facets for each of the three HCTI dimensions through principal components analysis. For the Compliance scale, the facets were Altruism (items related to an altruistic nature, desire to help others, sympathy, and unselfishness), Need for Relationships (a strong need to be in a relationship and the desire for others), and Self-Abasement (the subjugation of one's own needs to another). The internal reliabilities were  $\alpha=.70$ ,  $\alpha=.71$ , and  $\alpha=.65$ , respectively. For the Aggression scale, the three facets were Malevolence (a malevolent view of others, their motivations, and the world), Power (desire to be in command and outsmarting others), and Strength (values related to bravery, uninhibited behavior, and toughness). The internal reliabilities were  $\alpha=.78$ ,  $\alpha=.75$ , and  $\alpha=.64$ , respectively. For the Detachment scale, the three facets were the Need for Aloneness (preference for being alone and feeling better when alone), Avoidance (avoidance and resistance of personal interactions), and Self-Sufficiency (enjoyment of living independent of family and friends). The internal reliabilities are  $\alpha=.78$ ,  $\alpha=.56$ , and  $\alpha=.62$ , respectively [24]. The HCTI has been empirically demonstrated to have predictive validity for the Axis II personality disorders and the personality disorder clusters from the *DSM-IV-TR* [23,24].

The 100-item 5DPT questionnaire assesses five higher-order psychopathological personality dimensions: Neuroticism, Extraversion, Insensitivity, Absorption, and Orderliness. Items are answered in a *Yes* or *No* format. For the English version of the 5DPT, Coolidge, Segal, Cahill, and Archuleta [25] reported the internal scale reliabilities as: Neuroticism,  $\alpha=.89$ ; Extraversion,  $\alpha=.86$ ; Insensitivity,  $\alpha=.77$ ; Absorption,  $\alpha=.87$ ; and Orderliness,  $\alpha=.85$ . Coolidge et al. also empirically demonstrated that the 5DPT was related to 14 different personality disorders. The median test-retest reliability for the 5DPT scales is  $r=.92$  (1-week interval).

### 3.1. Procedure

The college students completed the three self-report measures at the university in a single session or on their own. Estimated time of completion for the three measures was 2.5 hours. The college students also identified a close

relative who knew them well and asked him or her to complete and return the OAS to the researcher in a sealed envelope. Estimated OAS completion time was 10 to 15 min. The students returned the completed OAS and the other measures generally within a week of completing the self-report questionnaires.

## 4. Results

### 4.1. Internal scale reliabilities

#### 4.1.1. OAS

In the present sample ( $N=199$ ), the internal scale reliability of the OAS was  $\alpha=.84$ . The internal reliability for the subscales was: Distant,  $\alpha=.80$ ; Uninsightful,  $\alpha=.75$ ; Somatizing,  $\alpha=.75$ ; Humorless,  $\alpha=.71$ ; and Rigid,  $\alpha=.61$ .

#### 4.1.2. CATI

The median internal scale reliability for the 14 personality disorder scales was  $\alpha=.78$  in the present sample. They ranged from  $\alpha=.65$  for the Schizoid scale to  $\alpha=.87$  for the Antisocial scale.

#### 4.1.3. HCTI

The internal scale reliability for the three main dimensions were: Compliance,  $\alpha=.76$ ; Aggression,  $\alpha=.79$ ; and Detachment,  $\alpha=.77$ . The median internal reliability for the nine facets was  $\alpha=.62$ . They ranged from  $\alpha=.48$  for the Avoidance facet to  $\alpha=.72$  for the Malevolence facet.

#### 4.1.4. 5DPT

The internal scale reliabilities for the five main dimensions were: Extraversion,  $\alpha=.86$ ; Neuroticism,  $\alpha=.90$ ; Absorption,  $\alpha=.87$ ; Insensitivity,  $\alpha=.82$ ; and Orderliness,  $\alpha=.81$ .

## 4.2. Statistical analyses

### 4.2.1. Gender

Initially, an exploratory analysis was performed to determine whether alexithymic traits would vary significantly as a function of gender. An independent  $t$  test was conducted between genders on the total OAS score, and there was no significant difference,  $t(197)=-0.84$ ,  $p=.40$  (men's  $M=25.85$ ,  $SD=10.19$ ; women's  $M=27.10$ ,  $SD=10.79$ ), and the correlation of effect size ( $r=.060$ ) failed to reach criterion for even a small effect (e.g.,  $r\geq.100$ ). A point-biserial correlation between gender and total OAS score was also not significant,  $r(197)=.06$ ,  $p=.40$ .

### 4.2.2. Hypotheses

There was a significant and positive correlation, as hypothesized, between alexithymia and schizoid personality disorder traits (see Table 1). However, this correlation was modest ( $r=.30$ ) and the coefficient of determination ( $r^2$ ) was only 9%. Eight of the nine hypothesized CATI personality disorder scales had significant correlations with the total OAS score, and all nine were in the hypothesized direction.

Table 1

Correlations of the OAS alexithymia total score with the 14 CATI personality disorder scales.

CATI Personality Disorder Scales	OAS Total Score ( $N=199$ ) $r$ ( $p$ )
Antisocial	.16 (.021)
Avoidant	<b>.35</b> (.001)
Borderline	.22 (.002)
Dependent	.19 (.006)
Depressive	.28 (.001)
Histrionic	-.12 (.031)
Narcissistic	.13 (.063)
Obsessive-compulsive	.24 (.001)
Paranoid	<b>.30</b> (.000)
Passive-aggressive	.29 (.000)
Sadistic	.17 (.015)
Schizoid	<b>.30</b> (.001)
Schizotypal	.24 (.001)
Self-defeating	.21 (.002)

Note:  $r\geq.30$  appear in bold.

Only the Histrionic personality disorder scale was not significantly correlated with the total OAS score. With regard to the five subscales of the OAS (see Table 2), there were significant but modest correlations with schizoid personality disorder traits with three subscales; Distant ( $r=.36$ ), Humorless ( $r=.25$ ), and Rigid ( $r=.23$ ).

The relationship of the total OAS score to the 14 personality disorder scales was also examined through a forward stepwise multiple regression. There were four significant steps. At the first step, the Avoidant personality disorder scale was found to be the strongest predictor ( $\beta=.35$ ) of the total OAS score,  $F(1, 197)=27.76$ ,  $p<.001$ ,  $R=.35$ ,  $R^2=.12$ , and adjusted  $R^2=.12$ . In the second step, the Avoidant personality disorder scale ( $\beta=.27$ ) and the Schizoid personality disorder scale ( $\beta=.17$ ) were the strongest predictors of the total OAS score,  $F(2, 196)=16.64$ ,  $p<.001$ ,  $R=.38$ ,  $R^2=.15$ , and adjusted  $R^2=.14$ . The three strongest predictors in the third step were the Avoidant personality disorder scale ( $\beta=.18$ ), the Schizoid personality disorder scale ( $\beta=.19$ ), and the Passive-Aggressive personality disorder scale ( $\beta=.17$ ) of the total OAS score,  $F(3, 195)=12.82$ ,  $p<.001$ ,  $R=.41$ ,  $R^2=.17$ , and adjusted  $R^2=.15$ . The final step had significant predictors for the Avoidant personality disorder scale ( $\beta=.14$ ), Schizoid personality disorder scale ( $\beta=.11$ ), Passive-Aggressive personality disorder scale ( $\beta=.28$ ), and Histrionic personality disorder scale ( $\beta=-.18$ ) with the total OAS score,  $F(4, 196)=10.80$ ,  $p<.001$ ,  $R=.43$ ,  $R^2=.18$  and adjusted  $R^2=.17$ .

There was partial support for the second hypothesis, as only three of the five higher-order dimensions of the 5DPT had significant correlations with the total OAS score in the direction hypothesized: Neuroticism,  $r(197)=.23$ ,  $p=.001$ ; Extraversion,  $r(197)=-.39$ ,  $p<.0005$ ; Insensitivity,  $r(197)=.21$ ,  $p=.003$ . Additionally, this pattern was similar to the schizoid personality disorder traits, as the same three dimensions were significant: Neuroticism,  $r(197)=.16$ ,  $p=.026$ ; Extraversion,  $r(197)=-.58$ ,  $p<.0005$ ; Insensitivity,  $r(197)=.24$ ,  $p=.001$ .

Table 2  
Correlations of the OAS alexithymia subscales with the 14 CATI personality disorder scales.

Personality disorder Scales	Alexithymia subscales (N=199)				
	Distant	Uninsightful	Somatizing	Humorless	Rigid
	<i>r</i> ( <i>p</i> )	<i>r</i> ( <i>p</i> )	<i>r</i> ( <i>p</i> )	<i>r</i> ( <i>p</i> )	<i>r</i> ( <i>p</i> )
Antisocial	.15 (.033)	.17 (.018)	.07 (.296)	.05 (.450)	-.00 (.956)
Avoidant	.20 (.005)	.25 (.000)	.19 (.007)	.22 (.002)	<b>.30</b> (.000)
Borderline	-.01 (.876)	<b>.31</b> (.000)	.28 (.000)	.01 (.931)	.07 (.325)
Dependent	-.03 (.676)	.27 (.000)	.20 (.004)	.04 (.622)	.14 (.043)
Depressive	.03 (.659)	.29 (.000)	<b>.31</b> (.000)	.05 (.460)	.21 (.004)
Histrionic	-.33 (.000)	.09 (.191)	.20 (.004)	-.23 (.001)	-.12 (.093)
Narcissistic	-.06 (.404)	.19 (.008)	.25 (.000)	-.04 (.563)	.08 (.267)
Obsessive-Compulsive	.22 (.001)	.08 (.264)	.07 (.318)	.15 (.036)	.26 (.000)
Paranoid	.25 (.000)	.15 (.039)	.18 (.010)	.11 (.113)	.22 (.002)
Passive-Aggressive	.10 (.149)	<b>.30</b> (.000)	.27 (.000)	.08 (.271)	.12 (.094)
Sadistic	.18 (.012)	.17 (.017)	.13 (.067)	.13 (.069)	.11 (.129)
Schizoid	<b>.36</b> (.000)	.09 (.184)	-.01 (.869)	.25 (.000)	.23 (.001)
Schizotypal	.12 (.086)	.18 (.011)	.07 (.311)	.04 (.571)	.08 (.287)
Self-Defeating	.06 (.405)	.19 (.006)	.20 (.005)	.05 (.452)	.18 (.013)

Note:  $r \geq .30$  appear in bold.

The relationship of the total OAS score to the 5DPT was also examined through forward stepwise multiple regression. There were two significant steps. At the first step, the Extraversion dimension was found to be the strongest predictor ( $\beta = -.39$ ) of the total OAS score,  $F(1, 197) = 34.50$ ,  $p < .001$ ,  $R = .39$ ,  $R^2 = .15$ , and adjusted  $R^2 = .15$ . In the second step, the Extraversion ( $\beta = -.37$ ) and the Insensitivity ( $\beta = .17$ ) dimensions were the strongest predictors of the total OAS score,  $F(2, 196) = 21.12$ ,  $p < .001$ ,  $R = .42$ ,  $R^2 = .18$ , and adjusted  $R^2 = .17$ .

The relationship of the Schizoid personality disorder scale to the 5DPT was remarkably similar to the OAS pattern and even stronger. Forward stepwise multiple regression revealed two significant steps. At the first step, the Extraversion dimension was found to be the strongest predictor ( $\beta = -.58$ ) of the total OAS score,  $F(1, 197) = 101.96$ ,  $p < .001$ ,  $R = .58$ ,  $R^2 = .34$ , and adjusted  $R^2 = .34$ . In the second step, the Extraversion ( $\beta = -.56$ ) and the Insensitivity ( $\beta = .17$ ) dimensions were the strongest predictors of the total OAS score,  $F(2, 196) = 57.64$ ,  $p < .001$ ,  $R = .61$ ,  $R^2 = .37$ , and adjusted  $R^2 = .36$ .

The third hypothesis predicted that alexithymia (total OAS score) would be correlated with all three dimensions of the HCTI and that this pattern with the HCTI would be similar for the Schizoid personality disorder scale. This hypothesis received modest support as only two of the dimensions were significantly correlated with the OAS scale; Compliance,  $r(197) = -.17$ ,  $p < .02$ ; Aggression,  $r(197) = .04$ ,  $p = .577$ ; Detachment,  $r(197) = .25$ ,  $p < .0005$ . However, this pattern was stronger for the Schizoid personality disorder scale: Compliance,  $r(104) = -.30$ ,  $p < .001$ ; Aggression,  $r(197) = .20$ ,  $p < .005$ ; Detachment,  $r(104) = .64$ ,  $p < .0005$ .

A forward stepwise regression with the nine HCTI facets upon the OAS scale resulted in three significant predictors. The final step revealed that the Altruism ( $\beta = -.26$ ), the Need for Aloneness ( $\beta = .21$ ), and the Self-Abasement facets ( $\beta =$

.17) all significantly predicted the total OAS score,  $F(3, 195) = 10.81$ ,  $p < .001$ ,  $R = .38$ ,  $R^2 = .14$ , and adjusted  $R^2 = .13$ . Another forward stepwise regression was performed with the nine HCTI facets upon the Schizoid personality disorder scale. The final step revealed six significant predictors: Need for Aloneness, ( $\beta = .49$ ), Avoidance ( $\beta = .20$ ), Need for Relationships ( $\beta = -.19$ ), Malevolence ( $\beta = .23$ ), Strength ( $\beta = -.12$ ), and Self-Sufficiency facets ( $\beta = -.12$ ) for the Schizoid personality disorder scale  $F(6, 192) = 39.07$ ,  $p < .001$ ,  $R = .74$ ,  $R^2 = .55$ , and adjusted  $R^2 = .54$ .

Finally, it was hypothesized that alexithymic traits would be positively correlated with the Major Depressive Disorder scale of the CATI, and that the correlation would be similar for schizoid personality disorder traits. Interestingly, both correlations for alexithymic and schizoid personality disorder traits with the CATI Major Depressive Disorder scale were significant and positive, but stronger for the Schizoid personality disorder scale: total OAS score and the Major Depressive Disorder scale,  $r(197) = .38$ ; Schizoid personality disorder scale and the Major Depressive Disorder scale,  $r(197) = .52$ . Table 3 presents the correlations of total OAS score and subscales with the CATI Major Depressive

Table 3  
Correlations of the total OAS alexithymia score and subscales with the CATI major depressive disorder scale.

OAS alexithymia scores	Major depressive disorder scale (N=199)
	<i>r</i> ( <i>p</i> )
Distant	.14 (.054)
Uninsightful	<b>.37</b> (.000)
Somatizing	.25 (.000)
Humorless	.18 (.010)
Rigid	.24 (.001)
Total OAS Score	<b>.38</b> (.000)

Note:  $r \geq .30$  appear in bold.

Disorder scale. It is important to note that only about 1% ( $N=2$ ) of the present sample were clinically elevated on the CATI Major Depressive Disorder scale (i.e.,  $T$  score  $\geq 70$ ). However, their removal from the analyses did not alter the previous results in any substantial fashion.

## 5. Discussion

The main purpose of the present study was to investigate the relationship of alexithymia and its traits to schizoid personality disorder traits and to examine their parallel relationships to higher-order dimensions of psychopathology and social relationship functioning in a non-clinical sample. The first hypothesis was substantiated: there was a significant and positive relationship between alexithymia and schizoid personality disorder traits. However, the strength of this correlation was modest, as was the coefficient of determination ( $r^2=9\%$ ). Preliminarily, it appears that although the diagnostic concepts share some similar core features, there is stronger evidence that there is unique variance associated with each concept, which makes it unlikely they are simply synonymous diagnoses. Interestingly, the correlation between alexithymia and avoidant personality disorder ( $r=.35$ ) was at least as strong as the correlation between alexithymia and schizoid personality disorder ( $r=.30$ ). Again, this suggests that the concept of alexithymia has overlapping features with personality disorders, particularly schizoid and avoidant personality disorders; however, it appears that alexithymia is not synonymous with either.

Alexithymic and schizoid personality disorder traits were also found to have similar patterns of relationships across three of the five higher-order dimensions of psychopathology (neuroticism, extraversion (negatively), and insensitivity), and similar patterns of relationships across a measure of Karen Horney's social and interpersonal functioning. As noted previously, there is the possibility that the relationship between alexithymia and schizoid traits might be stronger in a clinical sample; however, the present study did manage to find some similarities in a non-clinical sample, and because previous research has shown that there may be an important confounding relationship between alexithymia in the presence of depressive symptomatology [15], the present non-clinical sample had, at the least, the advantage of possibly controlling for this confounding variable.

Additionally, alexithymia was positively and significantly correlated (zero-order) with antisocial, avoidant, borderline, dependent, depressive, obsessive-compulsive, and schizoid personality disorder traits. In addition, there were positive and significant correlations with five other personality disorder traits: paranoid, passive-aggressive, sadistic, schizotypal, and self-defeating. However, it should be noted that although significant, the relationships were generally moderate with only five personality disorder scales, with correlations of  $r \geq .28$ . It was also hypothesized there would

be a negative correlation between alexithymia and histrionic personality disorder traits. The latter relationship was negative and significant, but weak ( $r=-.12$ ).

The relationship of the total OAS score to the 14 personality disorder scales was also investigated through forward stepwise multiple regression. At the first step, the Avoidant personality disorder scale was found to be the strongest predictor of the total OAS score, a finding which was identical to the zero-order correlations of the total OAS score to personality disorders. The final step in the stepwise multiple regression indicated significant contributions in the following order (in terms of strength): avoidant, schizoid, passive-aggressive, and histrionic (a negative relationship) personality disorders.

Contrary to the first hypothesis and based on a previous study, there was a positive correlation between alexithymia and schizotypal traits, although this relationship was not significant in the stepwise multiple regression. On the whole, the findings about the relationship between alexithymic traits and personality disorder traits were supported by much of the previous research [4,6,11-14].

The personality disorder findings, however, are in stark contrast to a recent study by Honkalampi et al. [15], who found that alexithymia was not a significant predictor of personality disorder traits in a non-clinical Finnish sample. One important difference between the two studies was that the present study used a significant-other report for alexithymia, and Honkalampi et al. used self-report. Although the OAS and self-report measures of alexithymia are generally correlated with each other, it may be that significant-other reports of alexithymia may be more valid and/or more sensitive in non-clinical samples. Perhaps, future studies should use both self and other measures of alexithymia in non-clinical samples to tease out this possibility. Gender differences have not been noted in the alexithymia literature, and the present findings appear to support the notion that gender does not play a major role in the expression of the paucity of inner experience in alexithymia.

One unique aspect of the present findings was that these relationships existed, even in a non-clinical sample, which suggests that alexithymic symptoms may not be entirely dependent upon classic, full-blown personality disorders, but that the paucity of inner experience in alexithymia may exist even within the normal spectrum of personality, and the relationship between alexithymic and personality disorder traits appears to be invariant with regard to gender. It is important to note that personality disorder traits or features (i.e., not the full spectrum of a personality disorder's symptoms) are highly prevalent within non-clinical samples, and personality disorders occur in rates up to 10% to 12% of non-clinical samples (e.g., [26]). Thus, while the present sample of convenience was deemed non-clinical, there was sufficient psychopathological variation in the sample in order to explore the relationship of alexithymia to other personality traits.

As noted previously, there was partial support for the second hypothesis that alexithymic traits would be significantly correlated with all five higher order dimensions of the 5DPT and that the pattern would be similar for schizoid personality disorder traits. Although alexithymia was significantly correlated with three of the five dimensions (Neuroticism, Extraversion, and Insensitivity), only one correlation exceeded  $r = \pm .30$  (Extraversion  $r = -.39$ ). The latter finding, however, is consistent with the general notion that alexithymia would have more in common with introverted characteristics rather than extraverted characteristics, although there are certainly introverts who can appropriately describe their emotions and who may have a rich inner fantasy life. Future studies may also wish to investigate the relationship of alexithymia to subtypes of introverts. Interestingly, the pattern of significant correlations for schizoid personality disorder traits and the 5DPT was nearly identical to the pattern for alexithymic traits. Again, this finding reinforces the notion of some core similarities between alexithymia and schizoid traits.

The third hypothesis explored the proposal by Vanhuele et al. [9] that an important element in alexithymia is the interpersonal style of relating to others. The HCTI was chosen as a measure of interpersonal style because it is based upon three common dimensions assessing interpersonal relationships, compliance, aggression, and detachment. It was found that two of the three relationships were substantiated by correlation; alexithymia was positively correlated with the HCTI Detachment dimension and negatively correlated with the HCTI Compliance dimension, as hypothesized. The latter findings appear to substantiate claims in the literature that a critical aspect of alexithymia is the avoidance of close personal relationships. The three facets of each of the HCTI dimensions were also found to be significantly predictive of the alexithymia subscales. It appeared that the Compliance facets of Altruism and Need for Relationships were negatively correlated with the Distant alexithymia subscale and the Detachment facet of Need for Aloneness was positively correlated with the Distant subscale. Again, it appears that even the HCTI facet analysis supports prior studies of the distancing and detached interpersonal styles associated with alexithymia. The correlational results were again similar between alexithymic and schizoid traits on the HCTI dimensions and its facets, but were much stronger for the Schizoid personality disorder scale and the Detachment dimension of the HCTI ( $r = .64$ ). Additionally, the results of the forward stepwise regression for alexithymia and schizoid personality disorder with the nine HCTI facets revealed only a single significant common facet, the Need for Aloneness. Once again, this appears to suggest core similarities between the concepts, but important unique variances for each.

The fourth hypothesis explored the importance of alexithymia and schizoid personality disorder to symptoms of depression, as Honkalampi et al. [15] had claimed a significant association of alexithymia with depressive symptoms, perhaps more than any other psychopathological

condition. There was clear and strong support for the fourth hypothesis that alexithymia (total OAS score) would be positively correlated with depressive symptoms (CATI Major Depressive Disorder) even in a non-clinical sample, and these relationships were moderately strong, significant, and similar for alexithymic and depressive traits ( $r = .38$ ) and schizoid personality disorder and depressive traits ( $r = .52$ ). It is important to note Honkalampi et al. did not find alexithymia to be related to major depressive disorder; however, they did find alexithymia to be related to concurrent depressive symptomatology and concluded that depression may act as an important mediator between alexithymia and psychopathology. The CATI Major Depressive Disorder scale, although it contains all of the *DSM-IV-TR* criteria to diagnose depression categorically, was used dimensionally in the present study, and thus, is a good measure of concurrent depressive symptoms. Nonetheless, the present results call into question depression's role as a mediating variable in alexithymia as the present study demonstrated sufficient common variance between personality disorders and alexithymia, independent of depressive symptoms. It is possible that Honkalampi et al. did not find alexithymia to be related to a major depressive disorder, because exploring the latter's relationship in a dichotomous manner (presence or absence of clinical depression) is less statistically sensitive than exploring the symptoms of depression dimensionally. The mediating role of depression in the expression of alexithymia is certainly an important issue and deserves further attention.

In summary, it appears that alexithymia is clearly related to personality disorders and their traits. As noted previously, there is only one recent study that has not found alexithymia to be related to personality disorders, though that study [15] also included a non-clinical sample. We think the difference in findings, as we also noted earlier, may reside in the fact that the present study used an observer rating of alexithymic traits and that observer ratings may be more sensitive to the subtleties of these traits, particularly in non-clinical samples. However, therein also lies a limitation of the present study: it would have been beneficial to have had self-reports in the present study as well as observer ratings of alexithymia. The present study also employed a sample of convenience, consisting of college students and their relatives. Future studies may wish to include a more ethnically diverse sample and, of course, clinical samples.

As to the issue of the relationship of alexithymia to schizoid personality disorder traits, which appears frequently in the literature, the correlation of alexithymia to schizoid traits was among the strongest of all 14 personality disorder scales. Interestingly, the correlation between the Schizoid scale and the Distant OAS subscale was the single strongest among the 70 intercorrelations, which suggests that the intimate relation of schizoid personality disorder to alexithymia may in part be due to the interpersonal distancing characteristics shared by both psychopathologies. However, there was sufficient evidence across all of the measures to

suggest that they are not synonymous conditions. In fact, correlational analyses coupled with regression analyses appear to suggest that the avoidant personality disorder might have significant overlap with the concept of alexithymia. Future studies may also wish to examine the gender issue further, especially in clinical samples where expressions of personality disorders do differ between genders (e.g., [27]). Importantly, the relationship between depressive symptomatology and alexithymia was demonstrated even within the present non-clinical sample, and it was even found to be stronger for the schizoid and depressive traits. Clearly, Sifneos [1] may have captured an important clinical condition that rests mostly outside the current concepts of individual personality disorders. Nonetheless, alexithymia partially overlaps conceptually with some specific personality disorders, such as schizoid and avoidant [28]. Further research into the nature and possible subtypes of alexithymia is certainly warranted.

## References

- [1] Sifneos PE. The prevalence of alexithymic characteristics in psychosomatic patients. *Psychother Psychosom* 1973;26:270-85.
- [2] Horney K. The paucity of inner experiences. *Am J Psychoanal* 1952; 12:3-9.
- [3] Bagby MR, Taylor JG, Parker JDA. The twenty-item Toronto alexithymia scale: II. Convergent, discriminant, and concurrent validity. *J Psychosom Res* 1994;38:23-32.
- [4] De Rick A, Vanheule S. Alexithymia and DSM-IV personality disorder traits in alcoholic inpatients: a study of the relation between both constructs. *Pers Individual Differences* 2007;43:119-29.
- [5] Fitzgerald M, Bellgrove MA. The overlap between alexithymia and Asperger's syndrome. *J Autism Dev Disord* 2006;36:573-6.
- [6] Honkalampi K, Hintikka J, Antikainen R, Lehtonen J, Viinamäki H. Alexithymia in patients with major depressive disorder and comorbid cluster c personality disorders: a 6-month follow-up study. *J Pers Disord* 2001;15:245-54.
- [7] Saarijärvi S, Salminen JK, Toikka T. Temporal stability of alexithymia over a five-year period in outpatients with major depression. *Psychother Psychosom* 2006;75:107-12.
- [8] Söndergaard PH, Theorell T. Alexithymia, emotions and PTSD; findings from a longitudinal study of refugees. *Nord J Psychiatry* 2004; 58:185-91.
- [9] Vanheule S, Desmet M, Meganck R, Bogaerts S. Alexithymia and interpersonal problems. *J Clin Psychol* 2007;63:109-17.
- [10] American Psychiatric Association. *Diagnostic and statistical manual of mental disorders* 4th ed., text rev. Washington, DC: Author; 2000.
- [11] Sexton M, Sunday SR, Hurt S, Halmi KA. The relationship between alexithymia, depression, and Axis II psychopathology in eating disorder inpatients. *Int J Eat Disord* 1998;23:277-86.
- [12] Zlotnick C, Mattia JI, Zimmerman M. The relationship between posttraumatic stress disorder, childhood trauma and alexithymia in an outpatient sample. *J Trauma Stress* 2001;14:177-88.
- [13] Bach M, de Zwaan M, Ackard D, Nutzinger DO, Mitchell JE. Alexithymia: relationship to personality disorders. *Compr Psychiatry* 1994;35:239-43.
- [14] Sayar K, Ebrinc S, Ak I. Alexithymia in patients with antisocial personality disorder in a military hospital setting. *Isr J Psychiatry Relat Sci* 2001;38:81-7.
- [15] Honkalampi K, Koivumaa-Honkanen H, Lehto SM, Hintikka J, Haatainen K, Rissanen T, Viinamäki H. Is alexithymia a risk factor for major depression, personality disorder, or alcohol use disorders? A prospective population-based study. *J Psychosom Res* 2010;68: 269-73.
- [16] Spitzer RL, Williams JBW, Gibbon M, First MB. *User's guide for the Structured Clinical Interview for DSM-III-R*. Washington, DC: American Psychiatric Association; 1990.
- [17] Haviland MG, Warren WL, Riggs ML. An observer scale to measure alexithymia. *Psychosomatics* 2000;41:385-92.
- [18] Coolidge FL. *Coolidge Axis II Inventory: manual*. Colorado Springs, CO: Author; 2000.
- [19] van Kampen D. Personality and psychopathology: a theory-based revision of Eysenck's PEN model. *Clin Pract Epidemiol Mental Health* 2009;5:9-21.
- [20] Coolidge FL. *Horney-Coolidge Tridimensional Inventory: manual*. Colorado Springs, CO: Author; 1998.
- [21] Horney K. *Our inner conflicts*. New York, NY: W.W. Norton & Company, Inc.; 1945.
- [22] American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 3rd ed. Washington, DC: Author; 1987.
- [23] Coolidge FL, Moor CJ, Yamazaki TG, Stewart SE, Segal DL. On the relationship between Karen Horney's tripartite theory and personality disorder features. *Pers Individual Differences* 2001;30: 1387-400.
- [24] Coolidge FL, Segal DL, Benight CC, Danielian J. The predictive power of Horney's psychoanalytic approach: an empirical study. *Am J Psychoanal* 2004;64:363-74.
- [25] Coolidge FL, Segal DL, Cahill BS, Archuleta JL. A new five factor model of psychopathology: preliminary psychometric characteristics of the five-dimensional personality test (SDPT). *Pers Individual Differences* 2008;44:1326-34.
- [26] Coolidge FL, Segal DL. Evolution of the personality disorder diagnosis in the *Diagnostic and Statistical Manual of Mental Disorders*. *Clin Psychol Rev* 1998;18:585-99.
- [27] Segal DL, Coolidge FL, Rosowsky E. *Personality disorders and older adults: diagnosis, assessment, and treatment*. New York, NY: Wiley; 2006.
- [28] Wood RLL, Williams C, Kalyani T. The impact of alexithymia on somatization after traumatic brain injury. *Brain Inj* 2009;23:649-54.