



## Personality factors and psychopathy, alexithymia and stress

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### ARTICLE INFO

#### Article history:

Received 15 August 2009

Received in revised form 26 May 2010

Accepted 18 January 2011

#### Keywords:

Personality  
Psychopathy  
Alexithymia  
Stress

### ABSTRACT

The present study investigated the relations between the Five-Factor Model of personality, psychopathy, alexithymia and stress in 205 technology students. Students completed four tests: the NEO Personality Inventory Revised, the Levinson Self-report Psychopathy Scale, the Toronto Alexithymia Scale and the Recognize Sign of Stress. Multiple regression analyses revealed that Agreeableness and Conscientiousness were significant predictors of total scores of psychopathy, and Openness was a significant predictor of alexithymia. Path analyses indicated that apart from Openness, all personality traits were significant to the model, and stress acted as a mediator between Neuroticism and alexithymia.

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### 1. Introduction

Psychopathy is a personality disorder that has been characterized by deficits in emotional functioning (e.g., callousness), interpersonal relations (e.g., pathological lying), and lifestyle choices (e.g., impulsive and irresponsible), as well as antisocial tendencies (Hare and Neumann, 2005, 2006). Earlier work described psychopathy in terms of a two factor model (Blackburn, 1975; Harpur et al., 1989; Karpman, 1941). Factor I includes affective and interpersonal traits that contribute to the pursuit of personal gain without remorse through the callous, calculated, deceitful, and manipulative misuse of others. Factor II includes a neurotic disorder trait that contributes to impulsivity and delinquency.

More recently, Factor 1 was separated into two factors and a three factor model of psychopathy was proposed: (1) Deceitful Interpersonal Style (e.g., superficial charm, grandiosity, and manipulativeness), (2) Deficient Affective Experience (e.g., lack of remorse, empathy, and a sense of personal responsibility), and (3) Irresponsible Behavioral Style (e.g., inclination to boredom, impulsivity, a parasitic lifestyle, and irresponsibility) (Cooke and Michie, 2001). This model has been challenged by a four factor model that conceptualizes psychopathy as comprising four deficits in four realms: (1) interpersonal relations, (2) affective experience, (3) accepting societal norms, and (4) obeying societal laws (Hare and Neumann, 2005, 2006; Neumann et al., 2007; Williams et al., 2007).

In general, each of the different models assumes that psychopathy is a diverse disorder consisting of multiple factors. Based on this characterization, personality models, particularly the Five Factor Model (FFM), have been used in an attempt to partition psychopathy into specific personality facets. The FFM hierarchically classifies personality into five overarching domains: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness (McCrae and John, 1992). Though developed to describe personality in normal populations, advocates of the FFM claim that it is valuable in describing personality disorders as well (Costa and Widiger, 1994). In support of this claim, research reports that psychopathy can be described in terms of the FFM. For example, when 15 experts in psychopathy assessed a prototypical psychopath in terms of the FFM, there was strong agreement that psychopaths are low in all facets of Agreeableness, and many facets of Conscientiousness (Miller et al., 2001; Ross et al., 2009). When personality and psychopathy were assessed in known crack cocaine abusers, researchers reported that psychopathy could be understood as a constellation of those personality traits described by the FFM (Derefinko and Lynman, 2007). The FFM has been used to describe psychopathic dispositions in university students as well (Ross et al., 2004). Primary psychopathy (callous, calculating, and conning) was associated with low Agreeableness and secondary psychopathy (impulsivity and social deviance) was marked by high Neuroticism, low Agreeableness, and low Conscientiousness.

Psychopathy shares some similar manifestations with alexithymia (Louth et al., 1998), as both are associated with emotional deficits, interpersonal difficulties, and deficits in understanding self and others. Empathy, insight, and introspection are lacking in

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people with psychopathy and alexithymia (Haviland et al., 2004). However, the personality trait of alexithymia differs from the personality disorder of psychopathy. Individuals with alexithymia tend to be anxious, over controlled, submissive, boring, ethically consistent, and socially conforming whereas individuals with psychopathy tend to be the opposite (e.g., anxiety-free, dominant, and nonconforming) (Haviland et al., 2004).

Similar to psychopathy, alexithymia has been described in terms of the FFM. For example, Wise et al. (1992) investigated the relationship between alexithymia and the FFM in psychiatric outpatients and normal volunteers. When controlling for depression, Neuroticism, Introversion, and low Openness predicted alexithymia. These three dimensions accounted for 57.1% of the explained variance in the outpatients and 38.1% in the volunteers. Introversion was the most significant predictor of alexithymia in the volunteer group.

Both psychopathy and alexithymia have been associated with stress. For example, psychopathic personality traits have been associated with blunted stress reactivity (Loney et al., 2006; O'Leary et al., 2007). Additionally, the most distinctive characteristic of a subgroup of psychopaths (i.e., emotionally stable) sampled from a prison population was their immunity to negative events (i.e., low Stress Reaction scores) (Hicks et al., 2004). Post secondary students who score high on measures of psychopathy and alexithymia show reduced responses to experimentally induced stress. For example, male (but not female) students who scored high in psychopathy did not display an increase in cortisol to under stress (O'Leary et al., 2007) and high levels of alexithymia are linked to reduced ability to cope with stress (Fukunishi and Rahe, 1995). Furthermore, students who scored high in alexithymia demonstrated a blunted cardiovascular response to stress (e.g., Linden et al., 1996). Moreover, several researchers have reported a close relation between alexithymia and trauma-related conditions, such as posttraumatic stress disorder (Fukunishi et al., 1996; Yehuda et al., 1997). However, alexithymia is not always related to a reduced response to stress. For example, cervical dystonia patients exposed to cognitive and emotional stressors showed increased physiological and subjective responses if they had high alexithymia scores compared to low scores (Gündell et al., 2002). Additionally, Connelly and Denney (2007) reported no differences between alexithymic and non-alexithymic people in their physiological responses to stress (i.e., heart rate and skin conductance) though the alexithymic participants showed heightened negative affect to the experimental stressors. Similarly, though salivary cortisol levels were positively correlated with measures of alexithymia in male university students, changes in cortisol levels to a stressor were similar for those with high and low levels of alexithymia (de Timary et al., 2008).

Research has associated stress and personality traits, initially reporting that Neuroticism and Extraversion are important predictors of stress and coping. For example, individuals high in Neuroticism experience more stressful events, whereas those high in Extraversion experience both more stressful and more pleasurable events (Bolger and Schilling, 1991; Fergusson and Horwood, 1987; Magnus et al., 1993; Suls et al., 1998). Moreover, Neuroticism predisposes people to experience negative emotions and distress, regardless of level of stress (Bolger and Schilling, 1991; Watson and Clark, 1984), whereas Extraversion predisposes them to experience positive affect (Watson et al., 1988). Rovik et al. (2007) concluded that the combination of the personality dimensions of Neuroticism, Extraversion, and Conscientiousness may be important in understanding an individual's reaction to stress.

Psychopathy and alexithymia can be distinguished by the level of anxiety which is a facet of Neuroticism. For example, alexithymia is characterized by high anxiety and psychopathy is

characterized by low anxiety (Haviland et al., 2004). However, though low levels of anxiety have traditionally been associated with psychopathy (e.g., Cleckley, 1941), the link between anxiety and psychopathy is not clear (see Williams et al., 2007). Nonetheless, the level of Neuroticism is correlated with responses to stress including cortisol response (Mangold and Wand, 2006; McCleery and Goodwin, 2001) and job stress (Cieslak et al., 2007).

The first objective of the present study was to confirm that FFM could describe psychopathy and alexithymia in a nonclinical and noninstitutionalized sample of students. The second objective was to test a model for understanding and contrasting psychopathy and alexithymia. This model is based on three sets of findings: (1) personality factors are related to stress, (2) stress is related to alexithymia and psychopathy and (3) personality factors are related to alexithymia and psychopathy. Therefore, the present study investigated whether the relation between the FFM and alexithymia and psychopathy is mediated by stress.

## 2. Method

### 2.1. Participants

Two hundred and five volunteers (73% boys and 27% girls) aged 18–27 years ( $M = 20.67$ ,  $SD = 1.69$ ) participated. The sample was comprised of graduate and undergraduate technology students. Participants included 192 (93.7%) individuals whose father was employed and 58 (28.3%) individuals whose mother was also employed. The majority of individuals (85.4%,  $n = 175$ ) reported that they were from a nuclear family and the remaining participants (14.6%,  $n = 30$ ) were from a joint family. 91.7% ( $n = 188$ ) of participants were from urban areas and 8.3% ( $n = 17$ ) were from rural areas of India.

### 2.2. Measures

Participants were given a booklet containing standardized instructions for tests, a final debriefing sheet, and a demographic profile sheet. The four psychological self-report tests assessed aspects of personality, psychopathy, alexithymia, and stress.

#### 2.2.1. Revised NEO Personality Inventory (NEO PI-R; Costa and McCrae, 1992)

The NEO PI-R consists of 240-items and uses a 5-point Likert scale (1 = strongly agree, 5 = strongly disagree) to assess five personality dimensions. Higher scores indicate higher incidence of the personality trait. Internal consistency (Cronbach's alpha) for Form S is reported to range from  $\alpha = 0.86$  to  $\alpha = 0.92$  for domain scales and from  $\alpha = 0.56$  to  $\alpha = 0.81$  for facet scales (Costa et al., 1991). In the present study, Cronbach's alphas were  $\alpha = 0.86$  for Neuroticism,  $\alpha = 0.78$  for Extraversion,  $\alpha = 0.73$  for Openness,  $\alpha = 0.81$  for Agreeableness and  $\alpha = 0.87$  for Conscientiousness.

#### 2.2.2. Levenson Self-Report Psychopathy (LSRP) scales (Levenson et al., 1995)

The LSRP is a 26-item measure, developed to assess psychopathic attitudes and beliefs. The primary psychopathy subscale consists of 16 items measuring an inclination to lie, lack of remorse, callousness, and manipulativeness. The secondary psychopathy subscale consists of 10 items measuring impulsivity, frustration tolerance, quick-temperedness, and lack of long-term goals. Internal reliability for the LSRP total score (26 items), F1 (D1; 16 items) and F2 (D2; 10 items) were  $\alpha = 0.80$ ,  $\alpha = 0.81$ , and  $\alpha = 0.52$ , respectively (Lynam et al., 1999). Recently, Ross et al. (2007) reported  $\alpha = 0.83$  for D1 and  $\alpha = 0.65$  for D2. In the present sample, Cronbach's alphas were  $\alpha = 0.78$  for primary psychopathy,  $\alpha = 0.63$  for secondary psychopathy, and  $\alpha = 0.82$  for the LSRP total score.

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