Empathy deficits and trait emotional intelligence in psychopathy and Machiavellianism

Farah Ali, Ines Sousa Amorim, Tomas Chamorro-Premuzic *

Department of Psychology, Goldsmiths, University of London, London, UK

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A B S T R A C T
This study investigated the relationships between psychopathy (primary and secondary), Machiavellianism, trait emotional intelligence and empathy, using an image task that required an appropriate empathic response to the emotional displays of others (happy, sad and neutral). Results indicated that primary psychopathy and Machiavellianism were positively associated with the experience of positive affect from sad stimuli, while secondary psychopathy and Machiavellianism were positively associated with the experience of negative affect in response to neutral stimuli, and the opposite pattern was found for trait emotional intelligence. Regressional analyses demonstrated that secondary psychopathy, Machiavellianism, trait emotional intelligence and state anxiety are important predictors when stimuli are ambiguous.

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1. Introduction

The study of aversive personality traits has received much attention in the past few years, particularly the non-clinical traits of psychopathy and Machiavellianism (e.g., Lee & Ashton, 2005; Vernon, Villani, Vickers, & Harris, 2008). Within the personality-based approach to psychopathy there is a consensus that guiltlessness, callousness, dishonesty, egocentricity, failure to form close emotional bonds, low anxiety proneness, superficial charm and blame externalisation all represent core features (Hare, 1991). Theoretically, psychopathy is regarded as a heterogeneous concept consisting of primary psychopathy, which is characterised by features such as cruelty and lack of affect and secondary psychopathy, which is characterised by features such as impulsivity, neuroticism and aggression (Levenson, Kiehl, & Fitzpatrick, 1995).

Machiavellianism involves interpersonal strategies that promote the use of deception, manipulation and exploitation, and the Machiavellian individual can be described as cynical, domineering, aloof and practical (McHoskey, Worzel, & Szyarto, 1998). According to Christie (1970) Machiavellian individuals are successful manipulators characterised by: (a) lack of interpersonal affect in interpersonal relationships, (b) lack of concern with conventional morality, (c) lack of gross psychopathy, and (d) low ideological commitment. Various researchers have noted the conceptual similarity between Machiavellianism and psychopathy (e.g., McHoskey et al., 1998; Mealey, 1995) and it has been suggested that they denote a single construct (Lee & Ashton, 2005; McHoskey et al., 1998). However, Vernon et al. (2008) have demonstrated that Machiavellianism and psychopathy differ in heritability, and research indicates that although overlapping, they are distinct constructs (Paulhus & Williams, 2002; Williams & Paulhus, 2004).

Unsurprisingly, psychopathy (Malterer, Glass, & Newman, 2008) and Machiavellianism (Austin, Farrelly, Black, & Moore, 2007) have been recently associated with lower trait emotional intelligence (also known as trait emotional self-efficacy). Individuals high in trait emotional intelligence are good at managing their stress levels and demonstrate enhanced psychosocial functioning, such as better social relationships (e.g., Schutte et al., 2001).

Being able to empathise is an important part of emotional intelligence and a defining criterion of clinical psychopathy is reduced empathic responding to victims (Hare, 1991). The ability to repeatedly cause serious harm to others is an indicator of a profound disturbance in an appropriate “empathic” response to the suffering of another (Blair, 2005). Empathy is known to inhibit and moderate aggression (Richardson, Hammock, Smith, & Gardner, 1994; Wheeler, George, & Dahl, 2002). Past research indicates that clinical psychopathic individuals show a selective empathic deficit in that they are impaired in the recognition of sad and fearful facial expressions (e.g., Montagne et al., 2005).

Although investigators have recently begun to extend findings from emotional deficits to psychopathy in normal populations, only a few studies have looked at whether empathy deficits exist in non-clinical samples (e.g., Del Gaizo & Falkenbach, 2008;
Mahmut, Homewood, & Stevenson, 2008), this is surprising, especially when research with non-clinical samples has found that despite lower base-rates, there is evidence for diverse expressions of psychopathic traits across the population (Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003). Del Gaizo and Falkenbach’s (2008) study indicated that primary psychopathic traits were positively correlated with accuracy of perception of fearful faces, while secondary psychopathic traits were not related to emotional recognition. Mahmut et al.’s (2008) study indicated that individuals scoring highly on psychopathy demonstrated lower levels of empathy on an emotional empathy questionnaire: the EEQ (Mehrabian & Epstein, 1972).

Analogous to the psychopathic personality, conventional morality is not a concern to Machiavellian individuals; instead, they demonstrate shallow emotional involvement with others and sanction behaviour which is emotionally-manipulative (Austin et al., 2007). Because individuals high in Machiavellianism are likely to exploit others and to view others in a goal-oriented manner (they see people “as a means to an end”), unsurprisingly Machiavellianism has demonstrated negative correlations with empathy (e.g., Austin et al., 2007; Wastell & Booth, 2003).

The aim of the current study was to further explore the relationships between non-clinical psychopathy, Machiavellianism, trait emotional intelligence and deficits in empathy using a purposely-designed visual task to assess appropriateness of empathic responses to the emotional displays of others. Hoffman (2000) defined empathy as “feelings that are more congruent with another’s situation than with one’s own situation” (p. 30), while Mehrabian and Epstein (1972) defined emotional empathy as a “vicariously emotional response to the perceived emotional experiences of others” (p. 525). These definitions suggest an affective reaction (‘affective/emotional empathy”; see Losoya & Eisenberg, 2001), not just a cognitive ability to read another person’s thoughts or feelings correctly (“cognitive empathy”). Following this line of thought, this study is concerned with whether an individual experiences an appropriate empathic response rather than how capable he or she is of such an experience, hence the use of an empathy task that is not limited to emotion recognition.

Although psychopathy is considered a heterogeneous concept, many emotional deficit studies have approached it as homogeneous, potentially missing important differences between the two. An important difference between primary and secondary psychopathy is that negative affect is notably absent from primary psychopathy, whereas secondary psychopathy is associated with negative affect (Del Gaizo & Falkenbach, 2008). For this reason, the current study included a measure of state anxiety in order to measure the levels of anxiety experienced by participants at particular points during the study. Following on from findings from previous research it was hypothesised that primary and secondary psychopathy and Machiavellianism would be associated with low emotional intelligence and empathic deficiencies, i.e. the expression of inappropriate affect in response to images of positive and negative affective content.

2. Method

2.1. Participants

Participants were 84 undergraduates (67 female) who participated in the study in exchange for course credits. Their ages ranged from 18 to 46 years (M = 20.7, SD = 4.1); 30 were White British (36%), 23 White Other (27%), six Black Caribbean (7%) and five Black African (6%). The remaining 20 participants (24%) were of Mixed, South Asian, East Asian and Arab ethnicity. Participants all had normal, or corrected to normal vision.

2.2. Materials

Levenson self-report psychopathy scale (LSRP): The LSRP scale (Levenson et al., 1995) is a 26-item self-report measure designed to assess psychopathic attributes in non-institutionalised samples and to evaluate both the behavioural and personality traits commonly associated with psychopathy in the literature. The primary psychopathy scale consists of 16 items, ranging from disagree strongly (1) to agree strongly (4), designed to assess the core personality features described by Cleckley (1988), such as being selfish, uncaring and manipulative. The secondary psychopathy scale consists of 10 items assessing anti-social behaviour, a self-defeating lifestyle and impulsivity. Cronbach’s α in the current study were .84 for the primary psychopathy scale and .72 for the secondary psychopathy scale. The LSRP is both reliable and valid (McHoskey et al., 1998).

Mach-IV: Machiavellianism was assessed with the Mach-IV (Christie & Geis, 1970), which has 20 items covering the use of deceit in interpersonal relationships, a cynical attitude to human nature and a lack of concern for conventional morality. Participants indicate their response on a seven-point range from disagree strongly (1) to agree strongly (7), with higher scores indicating higher levels of Machiavellianism. The reliability and the validity of the Mach-IV are well documented (Fehr, Samsom, & Paulhus, 1992). Cronbach’s α in the current study was .77.

Spielberger state-trait anxiety (STAI): The STAI (Spielberger, Gorsuch, & Lushene, 1970) consists of two 20-item scales: the state and trait anxiety scales. In this study, only items from the SAI were used (STAI Form Y-I). This is a 20-item self-evaluation questionnaire with responses to the statements about feelings at the present time ranging from 1 (not at all) to 4 (very much so), with higher scores indicative of greater state anxiety. In the current study, six items of the SAI were used due to time constraints. Participants were given the SAI to complete before and after viewing the images. Cronbach’s α for the current study was .82 for time one and .80 for time two.

Trait emotional intelligence questionnaire – short form (TEIQue–SF): The TEIQue–SF (Petrides & Furnham, 2006) is a 30-item self-report scale that yields a global measure of trait emotional intelligence and emotional self-efficacy, namely, the ability to identify and manage one’s own emotions and the emotions of others. The short form is based on the 153-item TEIQue and has demonstrated adequate reliability and validity (Petrides & Furnham, 2006). Participants are asked to rate their degree of agreement with each item on a seven-point Likert-type scale with responses ranging from completely disagree (1) to completely agree (7). Cronbach’s α in this study was .90.

Empathy image task using the self-assessment manikin (SAM). To create the image set we initially selected 45 images; 15 were classified as representing sadness, 15 representing happiness and 15 representing neutral emotion. The stimuli were selected from the gettyimages® database, which depicts individuals of various ages, gender and ethnicity showing a range of emotions. Each image consisted of one individual who was the focal point of the image. Three independent raters (all psychology students) then rated the emotions displayed by the individual in each picture. Subsequently, nine images were discarded due to inter-rater disagreement over the emotion displayed (i.e. disagreement between sadness and fear and happiness and surprise). The resulting image set consisted of 36 images of male and female individuals expressing sad, happy and neutral emotional expressions, namely, 12 images of sadness (overtly sad expressions; α = .81) and 12 images of happiness

1 All images are available on request.
neutral expressions (\(\alpha = .84\)) and 12 images of emotionally neutral expressions (\(\alpha = .78\)). The SAM (Bradley & Lang, 1994), a non-verbal pictorial assessment methodology of a human-like stimulus, was used to assess affective responding after participants viewed each image. The SAM permits the assessment of the core dimensions of emotional experience: valence (scale 1), arousal (scale 2) and control/dominance (scale 3). SAM ratings are made along five figures for each scale. Participants select their current level of affective state along these dimensions on a nine-point scale by placing an “X” over any of the five figures in each scale, or between any two figures. Total scores range from zero to nine for each dimension. In the current study, the valence scale of the SAM was used. Valence refers to whether a stimulus is viewed as pleasant or unpleasant (Lang, 1995). Figures depicting valence range from a low-spirited, frowning manikin to a widely smiling one, going through a middle neutral stance. The SAM has sound psychometric properties and has been successfully employed to measure affective responses (Bradley & Lang, 1994). The SAM scale was chosen for the current study, rather than a simple emotion identifying task, because it allows an insight into the emotions felt vicariously by participants in response to the emotions of others. It has also previously been used alongside other measures in empathy studies (e.g. Brown, Bradley, & Lang, 2006; Danziger, Prkachin, & Willer, 2006). Cronbach’s \(\alpha\) for the valence scale in the current study was .80 for valence to the sad images, .87 for valence to the happy images and .80 for valence to the neutral images.

2.3. Procedure

Every participant was tested individually in a quiet university room (lab cubicle). Each participant was seated in a comfortable chair behind a small table approximately 2 m from the screen on which the slide stimuli were to be displayed. Participants completed the questionnaire battery and were then presented with each image sequentially. The 36 slides were projected individually onto a screen at the front of the room, with the order of presentation of the pictures randomised for each participant. Participants were instructed to look at each image and rate their affect in response to the image on the valence scale (scale 1) of the SAM. Although no limits were issued for viewing the images, all participants were told to “study the image carefully” before responding. Once they had completed the valence scale for that particular image, the next image was displayed.

3. Results

3.1. Correlations

Intercorrelations among primary psychopathy, secondary psychopathy, Machiavellianism, state anxiety (time one and time two), trait emotional intelligence and valence (to the happy, sad and neutral images) are shown in Table 1. Gender correlated with primary psychopathy and Machiavellianism, with males scoring higher on both traits. Primary psychopathy positively correlated with Machiavellianism and valence to the sad images. The correlational analyses indicated that secondary psychopathy positively correlated with Machiavellianism, state anxiety time one and state anxiety time two. Secondary psychopathy correlated negatively with trait emotional intelligence and valence to the neutral images, while Machiavellianism negatively correlated with trait emotional intelligence and with valence to the neutral images, but correlated positively with valence to the sad images. Trait emotional intelligence correlated negatively with state anxiety time one and state anxiety time two and correlated positively with valence to the neutral images. State anxiety at time one and time two correlated negatively with valence to the neutral images.

3.2. Multiple regressions

Two standard multiple regressions were performed next; the first with valence to sad images as the criterion variable and Machiavellianism and primary psychopathy as predictors and the second regression with valence to neutral images as the criterion variable and Machiavellianism, secondary psychopathy, trait emotional intelligence and state anxiety (time one) entered as predictors. State anxiety time two was excluded from the regressions as it was highly correlated with state anxiety time one. Results of these analyses are presented in Table 2. In the first regression, primary psychopathy and Machiavellianism did not significantly predict the variability in valence to sad images (\(F(2,81) = 2.61, p > .05\)). In the second regression, secondary psychopathy, Machiavellianism, trait emotional intelligence and state anxiety significantly predicted the variability in valence to neutral images (\(F(4,79) = 3.62, adjusted \(R^2 = .11, p < .01\)).

Sobel’s tests of mediation (Sobel, 1982) were then performed in three cases where mediation conditions were met (Baron & Kenny, 1986), with one model proving to be significant. The effect of secondary psychopathy on valence to neutral images was fully mediated by trait emotional intelligence (\(Z = -2.30, p < .05\)), with secondary psychopathy negatively affecting trait emotional intelligence. State anxiety did not significantly mediate the effect of secondary psychopathy on valence to neutral images (\(Z = -1.64, p > .05\)) and trait emotional intelligence did not significantly mediate the effect of Machiavellianism on valence to neutral images (\(Z = 1.73, p > .05\)).

4. Discussion

The present study set out to examine whether non-clinical psychopathy (primary and secondary) and Machiavellianism were associated with inappropriate empathic responses to the emotional displays of others. Our results suggest that primary psychopathy and Machiavellianism are positively associated with experiencing positive affect (valence) when looking at sad images. This finding is consistent with the idea that individuals high in primary psychopathy do not experience negative emotions (e.g., Cleckley, 1988; Mealey, 1995) and therefore images of sadness are unlikely to cause them any sort of distress. Interestingly, in the current study, individuals high in primary psychopathy actually responded with positive affect (rather than simply not responding with negative affect), to negative images. Research in clinical samples has demonstrated that psychopathic individuals show reduced autonomic responses to stimuli associated with the distress and sadness of another individual (e.g., Blair, 1999; House & Milligan, 1976); therefore it is possible that individuals who score highly in primary psychopathic traits would actually experience, or at least report, pleasurable affect from the sadness of others. However, a replication of this finding is needed before such conjectures are made, especially when considering the lack and contradictory nature of research addressing the relationship between psychopathy and sadism (e.g., Kirsch & Becker, 2007).

The apparent dysfunction of an appropriate empathic response in primary psychopathy in this sample lends support to research indicating that psychopathic individuals show a selective emotional empathy dysfunction by not processing sad (and fearful) expressions appropriately (Blair, 1999).

When ambiguous (i.e. neutral) images were presented, secondary psychopathy, Machiavellianism and state anxiety (time one and time two) were positively associated with the experience of negative affect. The association between secondary psychopathy
and negative affect experienced in the presence of ambiguous stimuli is consistent with research findings on the positive link between negative emotions and this trait (e.g., Del Gaizo & Falkenbach, 2008). Although Machiavellianism is related to both primary and secondary psychopathy, there is an important difference between Machiavellianism and primary psychopathy; the former trait is linked to heightened experience of anxiety (McHoskey et al., 1998), something which is notably absent from the latter (Cleckley, 1988; Lykken, 1995). Consequently, in a similar vein to individuals high in secondary psychopathy, our findings showed that individuals high in Machiavellianism seem to have also experienced negative affect from the neutral images.

To date, we are aware of only one other study that has indicated an inappropriate response to neutral faces. In a study by Dadds et al. (2006), children scoring highly in psychopathic traits had difficulty in recognising neutral faces in an emotion recognition task; neutral faces where often mistakenly rated as angry. To further understand this apparent misattribution to neutral faces more research into facial emotion processing/recognition should use neutral expressions alongside other emotions in samples with psychopathic traits.

Trait emotional intelligence was associated with attributing positive affect to the neutral images and negatively associated with secondary psychopathy, Machiavellianism and state anxiety at time one and time two. This finding is consistent with studies showing that individuals higher in trait emotional intelligence have a more positive outlook in general (Austin, Saklofske, & Egan, 2005) and experience greater psychological well-being (Mavroveli, Petrides, Rieffe, & Bakker, 2007). No association was found between primary psychopathy and trait emotional intelligence; this is in contrast to previous research as Malterer et al. (2008) found a negative association between primary psychopathy and a measure of emotional intelligence, however, this association was quite small. In relation to the mediation effect, it was not surprising that secondary psychopathy negatively affected trait emotional intelligence when considering that secondary psychopathy is characterised by features such as aggression and impulsivity.

Males were associated with higher scores of primary psychopathy and Machiavellianism. This is consistent with self-report evidence that indicates that males score higher than females in psychopathy (e.g., Lilienfeld & Hess, 2001) and Machiavellianism (e.g., McHoskey, 2001).

The results of the regressions highlight the importance of trait emotional intelligence when it comes to explaining why individuals higher in secondary psychopathy interpret emotionally neutral images in terms of negative affect; thus when individuals are matched in trait emotional intelligence secondary psychopathy no longer affects responses to neutral images. On the other hand, Machiavellianism and state anxiety affect these responses independently of trait emotional intelligence.

There are limitations to the current study, including the use of a small, majority female, undergraduate sample, which may make generalisability to other non-clinical groups difficult. Nevertheless, undergraduate samples have the advantage of being relatively free of severe Axis I disorders (e.g., major depressive disorder, alcohol dependence), which could distort the reporting of enduring personality traits and personality disorder features (Lilienfeld & Penna, 2001).

In the current study, only two of the basic emotions were used; this study could be extended by also using surprised, disgusted, angry, and fearful images. It appears that ambiguous images work the best when predicting individual differences in the traits examined in the current study. The use of static images and the low emotional involvement of impersonal images may have limited the validity of empathic responsiveness on behalf of participants; because emotions displayed in the real world vary in intensity and content. Future studies could use less artificial means for invoking emotional empathy such as video footage. To date, no studies have

### Table 1
Intercorrelations: Bivariate Pearson correlation coefficients.

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<th>M</th>
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<td>Valence happy images</td>
<td>7.08</td>
<td>0.88</td>
<td>0.87</td>
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<td>11.67</td>
<td>3.71</td>
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<td>Valence neutral images</td>
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<td>0.60</td>
<td>0.20</td>
<td>12.13</td>
<td>3.57</td>
<td>0.80</td>
<td>0.16</td>
<td>11.67</td>
<td>3.71</td>
<td>0.82</td>
<td>0.77</td>
<td>7.08</td>
<td>0.94</td>
<td>0.87</td>
<td>0.20</td>
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<tr>
<td>Valence sad images</td>
<td>3.16</td>
<td>0.96</td>
<td>0.80</td>
<td>0.20</td>
<td>12.13</td>
<td>3.57</td>
<td>0.80</td>
<td>0.16</td>
<td>11.67</td>
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<tr>
<td>Valence to sad images</td>
<td>Constant</td>
<td>1.82</td>
<td>0.64</td>
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<td>Valence to neutral images</td>
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<td>State anxiety (time one)</td>
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Note: \( R^2 = .06 \) and \( \Delta R^2 = .04 \) (p > .05) for valence to sad images; \( R^2 = .16 \) and \( \Delta R^2 = .11 \) (p < .01) for valence to neutral images.
measured autonomic responses to affective material in a non-clinical sample with psychopathic traits; this may be worthwhile because clinical psychopathic samples have demonstrated reduced autonomic responses to emotional stimuli.

It should also be noted that while copious research has investigated deficits in facial emotion processing in psychopathy, to date, apart from the current study, no study has investigated this in relation to Machiavellianism. This may be worthwhile, not only when taking into account the results of the current study, but also previous research which has demonstrated that Machiavellianism is associated with empathy deficits.

Despite these limitations, the current results suggest that even in a small student sample, brief self-reports of constructs related to emotional-processing deficits are predictive of individual differences in emotional reactions to images of neutral emotional valence.

We hope that the current study will encourage further research into aversive personality traits and emotional deficits in non-clinical populations and the use of studies that do not rely solely on self-report inventories. Continuing research into the emotional deficits manifested in aversive personality traits such as psychopathy and Machiavellianism may facilitate a greater understanding of both non-clinical and clinical psychopathology.

References


