



Trait Emotional Intelligence and the Dark Triad Traits of Personality

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This study presents the first behavioral genetic investigation of the relationships between trait emotional intelligence (trait EI or trait emotional self-efficacy) and the Dark Triad traits of narcissism, Machiavellianism, and psychopathy. In line with trait EI theory, the construct correlated positively with narcissism, but negatively with the other two traits. Generally, the correlations were consistent across the 4 factors and 15 facets of the construct. Cholesky decomposition analysis revealed that the phenotypic associations were primarily due to correlated genetic factors and secondarily due to correlated nonshared environmental factors, with shared environmental factors being nonsignificant in all cases. Results are discussed from the perspective of trait EI theory with particular reference to the issue of adaptive value.

■ **Keywords:** trait emotional self-efficacy, Dark Triad, behavioral genetics, narcissism, Machiavellianism, psychopathy, TEIQue

Trait emotional intelligence (*trait EI* or *trait emotional self-efficacy*) is a constellation of emotional self-perceptions located at the lower levels of personality hierarchies (Petrides et al., 2007b). In lay terms, the construct concerns people's self-perceptions of their emotional abilities. Trait EI provides a comprehensive operationalization of the affective aspects of personality (see Table 1 for facet descriptions and sample items) and lies wholly outside the taxonomy of human cognitive ability (Carroll, 1993).

Research on trait EI has gathered significant momentum in the last few years, which has helped establish a nomological network for the construct. Some salient contributions include studies demonstrating the relation of trait EI to alcohol dependency (Uva et al., 2010), frontal cortex activation (Mikolajczak et al., 2010), reaction times measured in laboratory tasks (Austin, 2009), psychopathology (Williams et al., 2010b), and relationship satisfaction (Smith et al., 2008). A growing number of studies have revealed mediating, moderating, and incremental trait EI effects over various relevant variables including general health, socioemotional outcomes, and life satisfaction (e.g., Johnson et al., 2009; Mavroveli et al., 2009; Petrides et al., 2007a; Saklofske et al., 2003).

Dark Triad

The Dark Triad, comprising narcissism, Machiavellianism and psychopathy, represents a collection of subclinical, socially aversive traits. Although significantly and positively intercorrelated (Paulhus & Williams, 2002), these traits reflect distinct elements of the antisocial personality and show differential correlations with other personality constructs, such as the Big Five traits, humor styles, and measures of self-enhancement (e.g., Jakobwitz & Egan, 2006; Lee & Ashton, 2005; Paulhus & Williams, 2002; Veselka et al., 2010). Narcissism is defined by a grandiose self-concept, as well as by feelings of entitlement and superiority (Emmons, 1984); Machiavellianism entails the display of cold and manipulative behaviors that stem from a lack of conventional morality (Christie & Geis, 1970); and subclinical psychopathy is characterized by high impulsivity and thrill-seeking, paired with low anxiety and empathy (Hare, 1985).

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To date, there has been no research on the relationships between trait EI and the Dark Triad. However, several studies examining the Dark Triad traits individually with reference to trait EI or to some of its facets have been reported, and these offer initial insight into the potential associations between these variables. Several investigations of psychopathy and trait EI adopted the heterogeneous model of psychopathy. According to this model, psychopathy comprises two subtypes: primary psychopathy — the interpersonal-affective dimensions characterized by callous traits and cruelty, and secondary psychopathy — the impulsive-antisocial dimension that is defined by irresponsibility and socially deviant behaviors (Levenson et al., 1995).

Malterer et al. (2008) found that primary psychopathy was negatively associated with attention to feelings, suggesting that individuals with high scores on this psychopathic subtype exhibit a decreased tendency to pay attention to their own emotions. Secondary psychopathy, however, was negatively correlated with mood repair, suggesting that high scorers on secondary psychopathy are less confident about regulating their moods and repairing negative emotions. The researchers cited these findings as evidence that psychopathy may stem from core emotional deficits that create insensitivity to emotional information, as initially posited by Patrick and Lang (1999).

Ali et al. (2009) also considered the two-factor model of psychopathy in an investigation using an image task to assess the empathic responses of participants to the emotional displays of others. The results showed 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. The opposite pattern of results was observed for trait EI. Like Malterer et al. (2008), Ali et al. suggested that a difficulty in processing emotional expressions may play a key role in the development of psychopathic tendencies.

Petrides et al. (2007a) examined the possibility that very low trait EI levels may have psychopathological consequences. The study was conducted with reference to the personality disorders (PDs) in the Tenth Revision of the International Classification of Diseases (ICD-10; WHO, 1992). Trait EI scores were negatively related to the IPDE disorders, with the relationships holding up after partialing out individual differences in dispositional mood (positive and negative affect), which are known to be linked to psychopathology (Watson, 2000).

Another recent study employed a small-scale longitudinal design examining the effects of trait EI on psychopathology across the transition from primary to secondary school (Williams et al., 2010a). The results showed that measures of trait EI contributed strongly to the prediction of psychopathology (in contrast to mea-

asures of ability EI), concurrently as well as prospectively (notwithstanding an erroneous interpretation in the abstract; see correlations between the TEIQue-ASF measured at time 1 and the psychopathology variables measured at time 2 in Williams et al.'s Table 2).

Studies of Machiavellianism and trait EI have yielded similarly consistent results. Austin, Farrelly, Black, and Moore (2007) were the first to report significant negative correlations between Machiavellianism and trait EI, a finding that has since been corroborated by studies using a variety of measures and culturally diverse samples (e.g., Ali et al., 2009; Pilch, 2008). The consensus appears to be that, although skilled in interpersonal manipulation, individuals scoring high on Machiavellianism tend to score lower on most other aspects of trait EI.

Of the three Dark Triad traits, narcissism has been studied the least in the context of trait EI. Like psychopathy and Machiavellianism, higher scores on narcissism have been correlated with lower levels of empathic concern and perspective-taking, leading to the suggestion that narcissists may be emotionally unresponsive to others (Watson et al., 1984; Watson & Morris, 1991). However, narcissism also reflects a high and often exaggerated sense of self-worth and tends to correlate positively with self-esteem (e.g., Raskin et al., 1991), a key trait EI facet. It has also been positively associated with several other trait EI facets, including assertiveness (Watson et al., 1988), happiness (Rose, 2002), optimism (e.g., Farwell & Wohlwend-Lloyd, 1998; Hickman et al., 1996), achievement motivation (Trijsburg & Duivenvoorden, 1987), and success in relationships (e.g., Foster & Campbell, 2005; Varga, 1987). Overall, a positive relationship between trait EI and narcissism is expected mainly on the grounds that high trait EI entails some degree of hubris (Petrides, 2010).

Study Hypotheses

Based on trait EI theory and the foregoing review, the following hypotheses were advanced:

- H1.** Trait EI will be negatively related to psychopathy.
- H2.** Trait EI will be negatively related to Machiavellianism.
- H3.** Trait EI will be positively related to narcissism.

Method

Participants

Participants were 214 adult twin pairs: 156 monozygotic (MZ) twin pairs (131 female pairs, 25 male pairs) and 58 same-sex dizygotic (DZ) twin pairs (52 female pairs, 6 male pairs). The twins' zygosity had been established earlier via the use of a zygosity questionnaire (Nichols & Bilbro, 1966). This asks the twins to rate their degree of similarity on several physical characteristics (such as height and eye color) and asks the frequency with which the twins are mistaken for one another by friends and relatives. Participants ranged in age from 18 to 92 years (*M*

= 41.17, *SD* = 17.36) and resided in Canada and the United States.

Measures

Trait Emotional Intelligence Questionnaire (TEIQue; Petrides, 2009). The TEIQue is a 153-item questionnaire providing comprehensive coverage of the sampling domain of trait EI. The instrument has shown excellent psychometric properties in a series of studies (see Freudenthaler et al., 2008, and Mikolajczak et al., 2007). Items are scored on a 7-point Likert scale and completion time is approximately 20 minutes. The 20 TEIQue variables (15 facets, 4 factors, and global trait EI) are presented in Table 1, along with brief explanations and example items. All TEIQue instruments are available, free of charge, for academic research purposes.

MACH-IV. Individual differences in Machiavellianism were measured via the MACH-IV (Christie & Geis, 1970). The MACH-IV consists of 20 items, each of which is presented as a single statement. Participants respond by indicating the extent to which they agree with each statement on a 5-point Likert scale. In this questionnaire, higher scores represent higher levels of Machiavellianism, as defined by manipulative interpersonal strategies and a skeptical view of others. An example item is 'The best way to handle people is to tell them what they want to hear.' The MACH-IV has been shown to be psychometrically sound (e.g., Paulhus & Williams, 2002; Wrightsman, 1991).

Narcissistic Personality Inventory (NPI). Individual differences in subclinical narcissism were measured using the NPI (Raskin & Hall, 1979), which assesses four distinct factors: exploitativeness/entitlement, leadership/authority, superiority/arrogance, and self-absorption/self-admiration (Emmons, 1984). The NPI consists of 40 forced-choice

items. For each item, participants were presented with two self-reflective statements representing divergent views on a single topic and were asked to select the one that best describes them. An example item is 'A. I prefer to blend in with the crowd; B. I like to be the center of attention.' The NPI has been shown to be psychometrically sound (e.g., Jakobwitz & Egan, 2006; Paulhus & Williams, 2002).

Self-Report Psychopathy Scale (SRP-III-R12). The 62-item SRP-III-R12 (Hare, 1985) was used to assess individual differences in sub-clinical psychopathy. Participants indicated the extent to which they agree with each item on a 5-point Likert scale. An example item is 'I have never been involved in delinquent gang activity'. The published psychometric properties of the SRP-III-R12 indicate that it is a valid and reliable measure of psychopathy in various samples (e.g., Paulhus & Williams, 2002).

Procedure

Participants were initially recruited in 2006 via newspaper advertisements. Interested individuals who responded to these advertisements by telephone or by e-mail were given further details about the study and formally asked to participate. Those who agreed to take part in the study were sent a package through standard mail containing the TEIQue, as well as additional questionnaires not relevant to the present report. The following year, a subset of this initial sample (those whose contact information had not changed) was invited to complete the three Dark Triad measures, along with other questionnaires not pertinent to this report. In each of these testing periods, participants were asked to fill out the questionnaires individually. Upon completion, they sent the questionnaires back via standard mail using self-addressed stamped envelopes. In each mail-out, participants received \$20.00 and were also entered into a draw for a chance to win one of ten \$100

TABLE 1

The Sampling Domain of Trait Emotional Intelligence in Adults

Facets	High scorers view themselves as ...	Sample item
Adaptability	... flexible and willing to adapt to new conditions.	I usually find it difficult to make adjustments to my lifestyle. (R)
Assertiveness	... forthright, frank, and willing to stand up for their rights.	When I disagree with someone, I usually find it easy to say so.
Emotion expression	... capable of communicating their feelings to others.	Others tell me that I rarely speak about how I feel. (R)
Emotion management (others)	... capable of influencing other people's feelings.	I'm usually able to influence the way other people feel.
Emotion perception (self and others)	... clear about their own and other people's feelings.	I often find it difficult to recognize what emotion I'm feeling
Emotion regulation	... capable of controlling their emotions.	When someone offends me, I'm usually able to remain calm.
Empathy	... capable of taking someone else's perspective.	I find it difficult to understand why certain people get upset with certain things. (R)
Happiness	... cheerful and satisfied with their lives.	Life is beautiful.
Impulsiveness (low)	... reflective and less likely to give in to their urges.	I tend to get 'carried away' easily. (R)
Optimism	... confident and likely to 'look on the bright side' of life.	I generally believe that things will work out fine in my life.
Relationships	... capable of maintaining fulfilling personal relationships.	I generally don't keep in touch with friends. (R)
Self-esteem	... successful and self-confident.	I believe I'm full of personal strengths.
Self-motivation	... driven and unlikely to give up in the face of adversity.	I tend to get a lot of pleasure just from doing something well.
Social awareness	... accomplished networkers with superior social skills.	I can deal effectively with people.
Stress management	... capable of withstanding pressure and regulating stress.	I'm usually able to deal with problems others find upsetting.

TABLE 2

Zero-order Correlations between the Dark Triad and the TEIQue Facet, Factor, and Global Scores

Facets	Twin 1			Twin 2		
	Narcissism	Machiavellianism	Psychopathy	Narcissism	Machiavellianism	Psychopathy
Adaptability	.10	-.24*	-.15	.09	-.25*	-.06
Assertiveness	.37	-.10	.11	.35*	-.07	.14
Emotion expression	.15	-.30*	-.18	.07	-.16	-.28*
Emotion management	.38*	-.01	.21*	.33*	-.02	.11
Emotion perception	.18*	-.29*	-.15	.13	-.12	-.22*
Emotion regulation	.04	-.24*	-.18*	.01	-.17	-.06
Impulsiveness	-.08	-.32*	-.44*	-.01	-.25*	-.32*
Relationships	.03	-.30*	-.32*	.01	-.36*	-.44*
Stress management	.07	-.23*	-.09	.10	-.20*	-.05
Self-esteem	.29*	-.19*	-.09	.31*	-.11	-.03
Self-motivation	.10	-.28*	-.26*	.13	-.29*	-.21*
Social awareness	.34*	-.21*	-.06	.26*	-.15	-.04
Trait empathy	.02	-.31*	-.33*	-.01	-.17*	-.30*
Trait happiness	.11	-.28*	-.20*	.11	-.25*	-.16
Trait optimism	.12	-.36*	-.22*	.11	-.24*	-.15
Factors						
Emotionality	.13	-.37*	-.29*	.06	-.24*	-.38*
Self-control	.01	-.32*	-.29*	.04	-.25*	-.18*
Sociability	.43*	-.13	.10	.38*	-.10	.09
Wellbeing	.19*	-.32*	-.20*	.20*	-.23*	-.14
Global trait EI	.20*	-.37*	-.21*	.22*	-.29*	-.24*

Note: * $p < .01$, two-tailed

prizes. Over 96% of the participants who agreed to take part in the follow-up period returned their completed questionnaires.

Results

Zero-order correlations between the Dark Triad and the TEIQue facets, factors, and global scores are presented in Table 2. For these correlations, one twin in each pair was randomly designated as 'Twin 1' and their co-twin was designated as 'Twin 2'. Correlations were then computed among all the Twin 1 data (MZs and DZs combined) and separately among all the Twin 2 data (MZs and DZs combined). This not only avoids violating the assumption of independence, which could occur if both twins in a pair were used when computing correlations, but also allows for a cross-replication of the findings.

Looking first at the correlations between the Dark Triad and the TEIQue global score, as predicted, Machiavellianism and psychopathy both correlate negatively, while narcissism correlates positively with it. This pattern of negative correlations for Machiavellianism and psychopathy and positive correlations for narcissism was also observed for three of the four TEIQue factors. The exception was a nonsignificant positive correlation between psychopathy and the Sociability factor in both Twin 1 and Twin 2 data.

The patterns described above were also noted for most of the TEIQue facets and factors. Across the Twin 1 and the Twin 2 data, Machiavellianism showed its strongest negative correlations with adaptability, impulsiveness, relationships, stress management, self-motivation, empathy, happiness, optimism, and with the emotionality, self-control, and wellbeing factors. Narcissism showed its strongest positive correlations with assertiveness, emotion management, self-esteem, social awareness, and with the Sociability factor. Finally, psychopathy showed its strongest negative correlations with emotion expression, impulsiveness, relationships, self-motivation, empathy, and with the Emotionality and Self-control factors. With few exceptions, the pattern and magnitude of the correlations among the two sets of data converged well (Pearson r s between the Twin 1 and Twin 2 datasets were .96, .78, and .88 for narcissism, Machiavellianism, and psychopathy, respectively).

Subsequently, bivariate behavioral genetic analyses were conducted using the software package Mx (Neale et al., 2006). In these analyses, MZ and DZ cross-correlations are computed to assess how strongly a twin's score on one variable correlates with their co-twin's score on another variable. Cholesky or triangular decomposition analysis can reveal the extent to which the observed (phenotypic) correlations reported in Table 2 are attributable to correlated genetic (rg) and/or correlated environmental (re) factors.

Almost all significant phenotypic correlations between the Dark Triad and the TEIQue facets and factors were entirely attributable to correlated genetic and correlated nonshared environmental factors; all shared environmental correlations were nonsignificant. In most cases, genetic correlations (averaging $|.44|$ for both the facets and factors) were greater than non-shared environmental correlations (averaging $|.17|$ for the facets and $|.19|$ for the factors). Genetic correlations between the Dark Triad and global trait EI were $.23$ for narcissism, $-.37$ for Machiavellianism, and $-.49$ for psychopathy; the corresponding environmental correlations were $.28$, $-.30$, and $.04$. Narcissism showed its strongest genetic correlations with assertiveness ($.44$), emotion management ($.47$), self-esteem ($.33$), social awareness ($.36$) and the sociability factor ($.50$). Machiavellianism exhibited strong genetic correlations with adaptability ($-.48$), impulsiveness ($-.40$), relationships ($-.33$), stress management ($-.48$), self-motivation ($-.34$), empathy ($-.36$), happiness ($-.33$), optimism ($-.42$) and the Self-control factor ($-.48$). Of the three Dark Triad traits, psychopathy showed the largest genetic correlations with the trait EI variables: $-.40$ with emotion expression, $-.53$ with emotion perception, $-.70$ with impulsiveness, $-.61$ with relationships, $-.41$ with self-motivation, $-.68$ with empathy, $-.61$ with the Emotionality factor, and $-.48$ with the Self-control factor.

Discussion

The results from the present study provide clear support for all of the proposed hypotheses. Specifically, global trait EI was positively related to narcissism and negatively related to Machiavellianism and psychopathy. A number of important conclusions can be drawn based on these findings, and we start from those concerning the global construct.

It is now well established that trait EI is conducive to mental health and inversely related to psychopathology (Ali et al., 2009; Malterer et al., 2008; Williams et al., 2010; for a comprehensive meta-analysis, see Martins et al., 2010). The negative association with Machiavellianism is also straightforward in the context of trait EI theory, given that high trait EI individuals view themselves as empathetic and basically good-natured (hence the possibility of mapping high trait EI onto the positive pole of the General Factor of Personality; Petrides et al., 2010; Rushton et al., 2009). This association was also in line with previous findings (Ali et al., 2009; Austin et al., 2007).

Of particular theoretical interest is the positive association between trait EI and narcissism. Trait EI theory was the first, and remains the only account in the field that departs from the 'EQ is good for you' platform, and provides cogent explanations for the undesirable effects the construct manifests in some contexts (Petrides & Furnham, 2003; Sevdalis et al., 2007). The present results show a clear positive relationship between high trait EI

and subclinical narcissism that is fully in line with the tendency of high trait EI individuals to exhibit hubristic behavior (Petrides, 2009, 2010). The results are also in line with previous findings regarding narcissism and variables encompassed by trait EI (e.g., Foster & Campbell, 2005; Raskin et al., 1991; Watson et al., 1988).

Trait EI is a hierarchical, multidimensional construct and its global level cannot possibly encapsulate the entire variation in affect-relevant self-perceptions positioned underneath. In fact, as previously pointed out (e.g., Petrides et al., 2010), the use of a global trait EI score may potentially mask differential relationships between the trait EI factors and criteria. Such masking effects can extend beyond mere discrepancies in statistical significance (e.g., see correlations between the trait EI factors and narcissism) into discrepancies of direction (e.g., see correlations between emotion management, assertiveness, and psychopathy). Taken together, these findings illustrate the benefits of using the full form of the TEIQue as a comprehensive and multidimensional measure of trait EI.

The results of our behavioral genetic analyses contribute to the understanding of the underlying reasons for the observed (phenotypic) correlations between the Dark Triad and trait EI. As has been observed in previous studies with other personality variables (see Johnson et al., 2008), the phenotypic correlations that we reported here were almost entirely attributable to correlated genetic and correlated nonshared environmental factors. That is to say, the phenotypic correlations were in part due to the fact that those genes that contribute to individual differences in the Dark Triad traits also contribute to individual differences in global trait EI. Nonshared environmental factors (that is, the experiences of one twin that the co-twin does not experience, and which contribute to the expression of a trait in the first, but not the second, twin) also contributed to the phenotypic correlations between variables.

Although this may seem counter-intuitive because non-shared environmental factors do not contribute to the correlation between *twins*, the following example illustrates how they can (and do) contribute to the correlation between *variables*. Suppose one twin is exposed to some traumatic event that causes them to become both anxious and depressed. If their co-twin was not exposed to this event, there is no reason why they should become anxious or depressed, and so this environmental factor, which the twins did not share, contributes to a correlation between anxiety and depression.

In line with previous work, genetic factors made, on average, a larger contribution to the correlations than did environmental factors and this was particularly true for the correlation between psychopathy and global trait EI. In fact, this correlation is entirely attributable to correlated genetic factors, perhaps reflecting the fact that, at the univariate level, psychopathy has been reported to be more

highly heritable and less influenced by environmental factors than either Machiavellianism or narcissism (Vernon et al., 2008).

In conclusion, the present study is the first to assess the phenotypic, genetic, and environmental correlations between trait EI and the Dark Triad variables. Taken together, the obtained results help to clarify the role of trait EI in the antisocial realm of human personality. Specifically, the construct provides a buffer against Machiavellian tendencies and psychopathology, although it may also result in the expression of narcissistic characteristics in some contexts. These findings accord well with existing literature on emotion-related self-perceptions. The study's novel finding that common genetic and non-shared environmental factors underlie the phenotypic associations between the constructs helps to shed light on their shared etiology and the nature of their interrelationships.

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