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## Emotional Intelligence and Personality Traits: Assessing Response Distortion in a Motivated Faking Task

By

Gabriela D. B. Sheinin

A Thesis
Submitted to the Faculty of Graduate Studies through the Department of Psychology in Partial Fulfillment of the Requirements for the Degree of Master of Arts at the University of Windsor

Windsor, Ontario, Canada

2018

<b>Emotional Intelligence and Personality</b>	Traits:	Assessing	Response	Distortion	in a Motivated
	Faking	2 Task			

by

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#### **Abstract**

Although research on emotional intelligence (EI) and Cluster B personality traits has considerable potential for elucidating aspects of the emotional and interpersonal difficulties experienced by individuals with elevations on these traits, the findings to date have been mixed. The purpose of this study was to use an experimental manipulation to examine the pattern of associations between both trait and ability EI and Cluster B disorders, to test whether individuals could fake their EI via self-report versus maximum performance tests to appear more socially desirable, as well as to explore the pattern of associations between EI and Cluster B disorders, after accounting for the capacity to fake EI and social desirability. The results showed that a) antisocial personality disorder traits, borderline personality disorder traits, and narcissistic personality disorder traits were negatively correlated with EI; b) participants could fake their trait EI responses, bit not their ability EI responses, when motivated to do so; c) only honest trait EI scores predicted faked trait EI scores, but honest ability EI scores and impression management predicted faked ability EI scores; and d) after accounting for variance from faking, EI was negatively associated with antisocial, borderline, and narcissistic personality disorder traits. EI was found to be a core feature of Cluster B disorders, and as such, offers a multitude of implications for everyday situations, clinical settings, and future research.

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#### **CHAPTER 1**

#### Introduction

The current wave of interest in Emotional Intelligence (EI) in fields of social and clinical psychology beginning began in earnest in the 1990s, but has roots reaching back to the 1920s (Bar-On, 2006). Various models and ways of conceptualizing EI have been developed in recent years and, with them, a wide range of implications have been discerned. Regardless of model, research has shown EI to be associated with successful and close interpersonal relationships, as well as various other outcomes, such as workplace and school success, physical health, selfactualization, self-perceived wellbeing, psychological health, and emotional functioning (Bar-On, 2006; Mayer, Salovey, & Caruso, 2008). As such, it is perhaps unsurprising that researchers have begun to turn their attention to the relationship between EI and Cluster B personality disorders, the latter of which is characterized by dramatic and erratic behaviour as well as emotion dysregulation (APA, 2013). Although there are theoretical and clinical features that overlap (as will be made clear in the review that follows), this nascent literature is characterized by mixed findings. The objective of the current study was to add to the literature by replicating two key studies within a single integrated study and, importantly, extending this research by investigating the vulnerability of two distinct approaches to measuring EI (trait vs. ability models) to 'faking' (that is, deliberately misrepresenting one's EI for the purposes of making oneself appear in a more positive light) as a function of Cluster B personality traits. It is the nature of the Cluster B set of personality traits (rather than other adaptive or maladaptive personality traits) that renders them of particular interest here, given that emotional dysregulation and related deficits are considered core to them and also that social desirability response biases

(here, responding to questionnaire items in a manner intended to create a positive impression and perhaps also reflective of self-deception about one's positive and negative attributes) might be particularly pronounced among those with elevated Cluster B traits. This vulnerability issue is of central importance, with both theoretical and applied implications, raising as it does the question of measurement validity. As such, the potential contributions of the current study are considerable.

### **Emotional Intelligence (EI)**

Emotional intelligence (EI) is a construct that refers to the ability to monitor and understand one's own, as well as others', emotions (Salovey & Mayer, 1990). This information can then be used to guide behaviour and regulate emotions. EI has implications for oneself, but it also has implications for relationships and interactions with others. EI encompasses assessing and expressing one's own emotions, verbally and non-verbally. EI also includes the perception of others' emotions and the ability to respond empathically to them. Another component of EI is emotion regulation, in oneself and of others. Individuals with high levels of EI have awareness that allows them to be attentive to how they are feeling, as well as how others are feeling, and to respond appropriately (Cherniss, Extein, Goleman, & Weissberg, 2006; Salovey & Mayer, 1990). The company of these individuals has been reported as more pleasant by others and likely to elevate others' moods (Salovey & Mayer, 1990). It follows that deficits in EI can lead to interpersonal difficulties. Salovey and Mayer (1990) suggest that EI is an adaptive mechanism that helps individuals achieve their goals.

EI is a separate construct from IQ and has been linked to various life outcomes, including better mental health (Petrides, 2011), more successful and satisfying relationships (Schutte et al., 2001), and higher performance in academic and workplace settings (Bar-On, 2006; Caruso,

Mayer, & Salovey, 2002; Mayer, Salovey, & Caruso, 2004). Definitions of EI, generally encompass perception, understanding, regulation, and use of emotions (Ciarrochi, Chan, & Caputi, 2000). As the conceptualization of EI is still developing, there exist multiple differing constructs (Cherniss et al., 2006), two of which, however, appear to be prominent in the EI literature: trait EI and ability EI (Petrides, 2011). The distinction between these two can be productively discussed, first, by considering their fundamental differences and then by reviewing the manner in which each have been operationalized and measured in the empirical literature.

### Trait Emotional Intelligence vs. Ability Emotional Intelligence

Despite the presence of the word 'intelligence,' rather than being construed as a cognitive ability (or set of cognitive abilities), trait EI has been viewed in the same sort of vein as personality traits, with the trait part reflecting the view that EI is stable across environments and situations (Bar-On, 2006; Petrides & Furnham, 2000; Petrides, Furnham, & Mavroveli, 2007). It is also known as emotional self-efficacy (Petrides et al., 2007) or a "mixed model" of EI (Caruso et al., 2002). Trait EI is comparable to social intelligence, as it relates to the understanding and management of one's own, as well as others' emotions (De Raad, 2005; Salovey & Mayer, 1990). Trait EI is based on how individuals subjectively see themselves, and thus, is measured through self-report questionnaires. Items from these questionnaires tend to ask how the individual behaves and feels on a regular basis, and taps into constructs, such as empathy, optimism, and impulsivity, as well as motivation, self-awareness, and happiness (Petrides & Furnham, 2000). Trait EI is not related to intelligence (Bar-On, Tranel, Denburg, & Bechara, 2003; Brackett & Mayer, 2003; Brackett & Salovey, 2006; Davies, Stankov, & Roberts, 1998; Derksen, Kramer, & Katzko, 2002; O'Connor & Little, 2003; Roberts, MacCann, Matthews, & Zeidner, 2010), but it is highly correlated with personality traits, such as the Big 5 (De Raad,

2005; Grubb & McDaniel, 2007; O'Connor & Little, 2003; Petrides & Furnham, 2003; Van der Linden, Tsaousis, & Petrides, 2012). More specifically, there is significant overlap between trait EI and the Neuroticism (i.e., emotional stability) and Extraversion facets of personality (MacCann, Matthews, Zeidner, & Roberts, 2003; Tett, Fox, & Wang, 2005), as well as the agreeableness factor (De Raad, 2005; Tett et al., 2005).

Although trait EI is closely related to personality and is considered by some as a lowerlevel personality dimension, it remains a unique construct (Cherniss et al., 2006; Petrides et al., 2007; Tett et al., 2005). According to Cherniss et al. (2006), various studies have demonstrated effects of EI that are separate from personality, despite associations between trait EI and personality. For example, Law, Wong, and Song (2004) found that although EI was related to personality traits and the Big 5, EI and personality, together, predicted life satisfaction better than personality alone. Also, EI accounted for additional variance in determining life satisfaction and feelings of powerlessness, as well as prediction of job performance ratings, when variance from the Big 5 was controlled for. Similarly, Petrides et al. (2007) sought to locate trait EI within the context of existing personality factors. Using a regression analysis, the researchers successfully isolated trait EI from existing personality factors, demonstrating that it accounted for unique variance in predicting life satisfaction, emotional control, and coping, despite correlating with the Giant Three and Big Five personality factors. Thus, despite overlap between trait EI and Big Five traits, there exists theoretical and explanatory utility in trait EI (Petrides & Furnham, 2001).

The ability EI perspective, on the other hand, maintains that EI is an "actual intelligence" (Mayer, Salovey, Caruso, & Sitarenios, 2001) and argues that EI is a model of information processing (Petrides & Furnham, 2000). It is viewed as a combination of intelligence and

emotion (Mayer et al., 2004): a cognitive capability focusing on the use of emotional information that is gathered (Mayer et al., 2001). Ability EI is concerned with using emotional information to aid processes like reasoning. According to Mayer, Caruso, and Salovey (1999), there are three criteria that a construct should meet to be considered an intelligence, and they concluded that ability EI meets all three: it must reflect mental performance, it should be similar to, but distinct from, already-existing intelligences, and it must develop with time. On the basis of this conceptualization, Mayer et al. (2000) developed a measure, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), for which responses could be evaluated for correctness, and found that ability EI correlated with verbal intelligence. Construed as a cognitive ability, ability EI is measured using maximum performance tests, in which the items have objectively correct and incorrect answers. As opposed to responses being based on subjective, retrospective opinion of the self, the MSCEIT items consist of tasks or problems that respondents are required to solve. Responses or answers to these tasks are then evaluated for correctness using standardized data and expert criteria (Mayer et al., 2003). Mayer et al. (1999) also found that adults' ability EI scores were significantly higher than those of adolescents, which might reflect developmental differences in the acquisition and maturation of ability EI.

Not only is ability EI related to intelligence, it is also related to personality, but not as strongly as trait EI (Bastian, Burns, & Nettelbeck, 2005). Although ability EI is related to both personality and intelligence, it remains distinct from both, correlating to a small degree with prosocial personality traits and knowledge-based intelligence measures (MacCann et al., 2003). Bastian et al. (2005) found that ability EI was associated with agreeableness and openness, while also correlating with knowledge. Consistent with these findings, Farrelly and Austin (2007)

found that ability EI is related to crystallized knowledge (i.e., use of knowledge to problem solve), as opposed to fluid intelligence.

#### Measures of EI

There are various measures of EI that are currently in use by researchers. There are four widely used measures of trait EI: the Emotional Quotient Inventory (EQ-i; Bar-On, 1997), the Trait Meta Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), the Trait Emotional Intelligence Questionnaire (TEIQue; Petrides, 2009b), and the Schutte Self-Report Emotional Intelligence Test (SSEIT; Schutte et al., 1998). They are all self-report questionnaires. The EQ-i subscales assess one's capability to recognize, and be aware of and understand one's own emotions (i.e., *intrapersonal* subscale), as well as those of others (i.e., *interpersonal* subscale; Dawda & Hart, 2000). It also encompasses the extent to which one can identify problems and adjust emotions to specific situations (i.e., *adaptability* subscale), having impulse control and the ability to cope with stressful events (i.e., *stress management* subscale), and one's general mood (i.e., *mood* subscale). Research by its developers and independent researchers have reported sound psychometric properties (e.g., Dawda & Hart, 2000). See Figure 1 for a visual depiction of the EQ-i model.

Similarly, the TMMS measures perceives emotional intelligence through self-report items that address one's reflective mood experience (Extremera & Fernandez-Berrocal, 2005). It measures individuals' beliefs about their own emotional *attention* (i.e., consideration given to own emotional status), *clarity* (i.e., understanding of emotions), and *repair* (i.e., ability to regulate emotions). The TEIQue has 15 facets that, like the other trait EI measures, assess characteristics such as emotion expression, management, perception, and regulation (Petrides, 2009a). Finally, the SSEIT is a one-dimensional measure of trait EI (Petrides & Furnham, 2000).

Petrides and Furnham (2000) advise against using this measure, however, as, although they found face, construct, predictive, and discriminant validity, they also found it to be multidimensional and to not represent only one general EI factor, as conceptualized.

Unlike trait EI, ability EI is consistently measured throughout the literature by only one measure: the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). The MSCEIT is a measure of EI as a cognitive ability and contains items that have correct and incorrect responses (Brackett & Salovey, 2006). It measures four branches of EI: perceiving emotions, using emotions to facilitate thought, understanding emotions, and managing emotions (Caruso et al., 2002; Mayer et al., 1999). *Perceiving emotions* encompasses being aware of emotions and being able to differentiate between real and fake emotions. Using emotions to facilitate thought refers to redirecting emotions, enabling decision making, considering multiple perspectives, and encouraging multiple methods of problem solving. *Understanding emotions* concerns the ability to comprehend complex emotions and how emotions can transition into one another, as well as the ability to distinguish the cause of emotions and the relationships among them. Finally, managing emotions refers to the ability to determine the nature of emotions and to express the appropriate emotion(s) based on the situation. Brackett and Salovey (2006) found the MSCEIT to be a reliable and valid measure of EI as a mental ability. For a visual depiction of the MSCEIT model, see Figure 2.

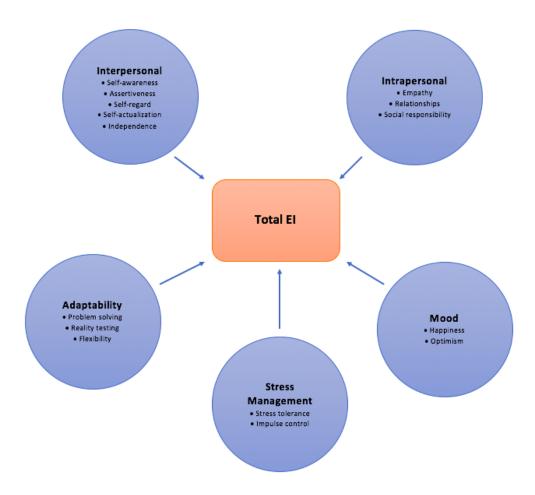


Figure 1. A visual depiction of the EQ-i trait EI model.

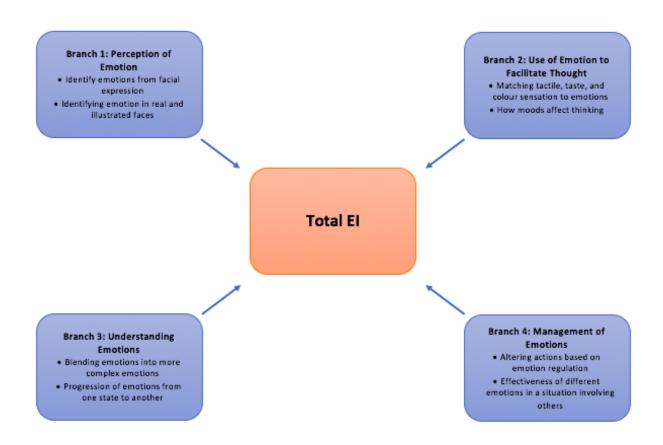


Figure 2. A visual depiction of the MSCEIT ability EI model.

#### Implications of EI for Psychological and Social Functioning

Trait EI is associated with various life outcomes (Bar-On, 2006). Importantly, there is a positive relationship between trait EI and psychological health (Petrides, 2011), which suggests lower levels of EI are associated with higher levels of psychopathology (Leible & Snell, 2004; Malterer, Glass, & Newman, 2008). For example, using a longitudinal design, Williams, Daley, Burnside, and Hammond-Rowley's (2010) found that low trait EI predicted the development of psychopathology when transitioning into secondary school. Bar-On (2006) suggested that perhaps the components of EI that have the greatest impact on psychological health are management of emotions and coping with stress, drive to accomplish goals and to achieve self-actualization, and verification of emotions, as deficits in these domains may specifically

contribute to the development of psychopathology. For instance, anxiety may be associated with difficulties managing emotions, while depression may be related to the inability to reach self-actualization, and dissociation from reality may be linked to difficulties with verifying emotions. Additionally, Santesso, Reker, Schmidt, and Segalowitz (2006) reported that higher levels of trait EI were associated with less aggressive and fewer delinquent behaviours. Santesso et al. (2006) found that externalizing behaviours were related to lower levels of the interpersonal, stress management, and adaptability components of trait EI. The authors suggested that this finding implies that individuals with externalizing issues may have lower levels of empathy and social responsibility, and may lack impulse control, as well as interpersonal problem solving skills. Further, Santesso et al. (2006) found that aggression and delinquency were associated with activation in the right frontal area of the brain. Previous findings by Davidson (2000) support that this pattern of brain activity is reflective of difficulties regulating emotions, as well as a tendency towards negative affect and negative emotional responses.

Some researchers have proposed that EI may be a protective factor. Protective factors have been construed as functioning in a number of ways (see Rutter, 1985). Two fundamental means through which a protective factor might operate are (i) through a direct effect on an outcome (for example, the development of psychopathology), making that outcome less likely (as opposed to a risk factor that would be associated with a higher likelihood of the adverse outcome occurring), and (ii) through an interaction effect, reducing the association between a risk factor and the adverse outcome (Langton & Worling, 2015).

In the literature regarding EI, Mikolajczak, Petrides, and Hurry (2009) found that low trait EI predicted likelihood of self-harm, and they suggested that high levels of trait EI might be considered a protective factor against self-harm. Parker, Taylor, and Bagby (2001) investigated

trait EI and alexithymia, which they showed to be highly related constructs. Alexithymia consists of difficulties identifying emotions and distinguishing between emotions and bodily sensations, difficulty expressing emotions, limited imagination, and having a literal and external way of thinking (Taylor & Bagby, 2000). Parker et al. (2001) found that individuals with alexithymia tended to have low EI, especially adaptability and stress management, suggesting that individuals with alexithymia struggle with coping and regulating emotions. Thus, paired with previous findings that alexithymia is related to psychiatric disorders, the researchers suggest that their findings support high trait EI as a protective factor for mental health. Similarly, Grabe, Spitzer, and Freyberger (2004) found associations between alexithymia and various disorders. They suggested that difficulties identifying and understanding emotions may cause individuals to become emotionally confused and unable to react appropriately.

Studies have also shown that trait EI can predict quality of social interactions. For example, Schutte et al. (2001) found that individuals with higher levels of trait EI were more likely to have better social skills (e.g., social and emotional control, social and emotional sensitivity, and social and emotional expressivity), were more cooperative, and experienced more feelings of inclusion and affection from others. Petrides, Sangareau, and Frederickson (2006) also reported that individuals perceived peers with higher levels of EI as more cooperative and as having leadership qualities.

Further, throughout the literature, higher levels of trait EI have been associated with higher levels of performance (Bar-On, 2006). Higher levels of trait EI have been associated with academic success (Parker, Summerfeldt, Hogan, & Majeski, 2004), as well as success in the workplace (Petrides & Furnham, 2006). Moreover, the use of self-awareness, and emotion and stress management to solve problems within oneself and interpersonally are related to positive

health outcomes, as well as an optimistic disposition (Bar-On, 2006; Petrides, 2011). For example, Mavroveli, Petrides, Rieffe, and Bakker (2007) found that higher levels of trait EI were associated with fewer somatic symptoms, and Tsaousis and Nikolaou (2005) found that high levels of EI were associated with good physical health. Interestingly, trait EI is a construct that appears to be amenable to interventions intended to enhance it, to some extent (Bar-On, 2006; Dunkley, 1996; Freedman, 2003). Nelis, Quoidbach, Mikolajczak, and Hansenne (2009) reported improvement specifically in the domains of identifying and managing emotions, but no change in understanding of emotions. In a later extension of this study, Nelis et al. (2011) showed that emotion regulation, understanding of emotion, and overall EI could all be improved, and this, in turn, resulted in more positive life outcomes (i.e., improved psychological wellbeing, health, and quality of social relationships, as well as employability). Various researchers, however, have suggested limitations of studies supporting the improvement of trait EI. Groves, McEnrue, and Shen (2008) suggest that future studies may benefit from a more objective measure of EI than self-report measures, to ensure an actual change in behaviour. Kotsou, Nelis, Grégoire, and Mikolajczak (2011) similarly suggested that future research on the improvement of EI could benefit from the use of objective EI measures, as well as comparing the effects of individual differences, and examination of biological or neural changes.

Ability EI is also associated with numerous positive life outcomes (Mayer, Salovey, & Caruso, 2008). Higher levels of ability EI, especially managing emotions, tend to be indicative of more prosocial behaviours (Lopes, Salovey, & Straus, 2003; Mayer et al., 2004). Individuals with higher levels of ability EI tend to be more open and agreeable, and are more likely to be employed in a position that involves considerable social interactions (e.g., teacher, counsellor; Mayer et al., 2004). Additionally, the quality of social interactions appears to be better for

individuals with higher levels of ability EI, and these individuals tend to be liked and valued more than those with lower levels of ability EI. Further, individuals with lower levels of ability EI have been linked to increased deviant behaviour, as well as engagement in substance use (Brackett & Mayer, 2003; Brackett, Mayer, & Warner, 2004; Mayer et al., 2004). Like trait EI, ability EI has been associated with lower levels of psychopathology (Brackett, Rivers, & Salovey, 2011). Lower levels of ability EI have been coupled with disorders such as depression, anxiety, and schizophrenia.

Higher levels of ability EI has also been found to lead to academic success, as well as leadership and job performance (Brackett & Mayer, 2003; Mayer et al., 2004). More specifically, Rosete and Ciarrochi (2005) found that executives who have higher levels of EI are more likely to be considered effective leaders, as well as to achieve workplace goals. EI is thought to help academic performance in the sense that it helps students prioritize thinking and manage emotions in high-stress situations (Brackett et al., 2011). Of note, it is possible to improve one's ability EI, especially the understanding and managing emotions abilities (Pool & Qualter, 2012).

### Faking by Participants in EI Research

The validity and reliability of EI as a construct, as well as its measures, has been questioned by numerous researchers (e.g., Christiansen, Janovics, & Siers, 2010; Day & Carroll, 2008; Tett, Freund, Christiansen, Fox, & Coaster, 2012; Whitman, Rooy, Viswesvaran, & Alonso, 2008). More specifically, faking responses on EI measures is a concern. Faking refers to the conscious effort to depict oneself in a favourable light by responding to items in a way that minimize faults and overstate positive qualities (Komar, Brown, Komar, & Robie, 2008; Tett et al., 2012). From Paulhus's (1984) perspective, this is a form of impression management and needs to be controlled for when using self-report measures. This appears to be more of an issue

with measures of trait EI and various personality and non-cognitive ability tests that have already been shown to be vulnerable to faked responses (Roberts et al., 2010). For example, meta-analytic work conducted by Birkeland, Manson, Kisamore, Brannick, and Smith (2006) confirmed that responses by individuals who were instructed to fake responses to appear more desirable for an employment position (e.g., job applicant vs. nonapplicant condition) were more likely to produce a personality profile that reflected positively on them. Such vulnerability to faking has negative implications for the predictive validity and construct validity of these types of measures (Griffin, Hesketh, & Grayson, 2004).

With regards to EI, Grubb and McDaniel (2007) sought to establish the potential to fake on the Emotional Quotient Inventory Short Form (EQ-i:S). They did so by asking participants to respond once to the measures honestly and then again in a way the participants thought would ensure they would be hired for an imaginary job. The researchers found that participants were able to positively exaggerate their trait EI scores. In addition, cognitive ability and agreeableness predicted how well participants could do this. The researchers proposed that individuals with higher cognitive abilities may have been better able to recognize opportunities to make themselves appear more favourable on the basis of responses to items on the measure. The researchers also suggested that perhaps higher levels of agreeableness meant these individuals were more likely to follow the instructions given by the experimenter.

Day and Carroll (2008) extended this line of research by testing both an ability EI measure, the MSCEIT, and a trait EI measure, the EQ-i, for susceptibility to faking. Based on the overlap between trait EI measures and personality measures, which have been shown to be vulnerable to faking, Day and Carroll (2008) predicted that participants would be able to fake responses on the EQ-i, but not on the MSCEIT. The researchers created two conditions: the

applicant condition and the non-applicant condition. In the applicant condition, the participants were presented with a fictional Peer Counsellor job description and were asked to complete the measures as though they were applying for the job. Cash rewards were offered to increase incentive to enhance responses. In the non-applicant condition, the participants were told to complete the measures in an honest manner. All participants completed both conditions. The researchers found that the EQ-i was more vulnerable to faking than the MSCEIT, as participants were able to enhance their EQ-i scores in the applicant condition, but not their MSCEIT scores. It should be clear that if trait EI responses can be faked, social desirability response bias may be obscuring the associations between trait EI and various correlates and outcomes in studies (for a summary of methods used in motivated faking studies, see Table 1). Given these results, for the current investigation, it seemed reasonable to expect that individuals would be able to fake their EI scores and also that socially desirable responding would predict faked EI scores (in prediction models including honest EI scores). Further, it seemed important to incorporate personality traits for which EI would appear to be a centrally important construct and which may be strongly associated with social desirability response biases.

Table 1
Summary of Methods in Motivated and Instructed Faking Studies of EI

	Grubb & McDaniel (2007)	Day & Carroll (2008)	Choi et al. (2011)	Hartman & Grubb (2011)	Tett et al. (2012)
Purpose	To explore the extent to which one can fake responses on the EQ-i	To compare the susceptibility of the EQ-i and the MSCEIT to faking.	To test the susceptibility of two trait EI measures to socially desirable responding.	To examine the extent to which personality traits and EI can be faked.	To explore the effects of cognitive ability, opportunity, and job relevance to faking.
Design	The participants completed self-report questionnaires on two separate occasions. One occasion was the faking condition and the other was the honest responding condition. The order in which they completed the faking and honest conditions was randomized.	The participants completed both the faking and the honest responding conditions. They completed the measures as though they were an applicant for a job first. They then returned two weeks later to complete the measures honestly.	Half of the participants completed the measures honestly, a quarter were randomly assigned to a motivated faking condition in which they were to imagine they are university applicants, and a quarter were explicitly instructed to fake.	All participants completed the measures in both the honest and faking conditions in a randomized order.	Participants completed the measures honestly first, and then under the motivated faking condition. In the motivated faking condition, they were asked to imagine they were applying to be a nurse practitioner, marketing manager, or computer programmer.
Findings	The participants were able to elevate their EI scores in the faking condition.	Participants were able to elevate EQ-i scores, but not MSCEIT scores in the faking condition.	Individuals were able to enhance their responses when motivated and instructed to do so.	Faking personality traits and EI was possible in the faking conditions.	Faking effects were more likely to be present in individuals with higher intelligence and who scored lower on the measures in the honest responding condition.

*Note.* EQ-i = Emotional Quotient Inventory; MSCEIT = Mayer–Salovey–Caruso Emotional Intelligence Test

### **Cluster B Personality Disorder Traits and EI**

In terms of psychopathology, personality disorders refer to a pattern of cognition, affect, interpersonal functioning, and/or impulse control that depart significantly from the norms and expectations of society (American Psychiatric Association, 2013). There are four personality disorders that all share core features associated with dramatic and impulsive tendencies, which appear in adolescence or early adulthood, and which are associated with significant emotional

and interpersonal distress for the individual and/or those around them. These personality disorders form a set, referred to as Cluster B personality disorders and are, at their core, characterized by erratic and dramatic features and emotion dysregulation (APA, 2013). Individuals with these personality disorders have rigid and maladaptive ways of interacting with others and various negative behaviours are associated with the Cluster B personality traits, such as self-harm (Brent et al., 1994; Casilas & Clark, 2002; Klonsky, Oltmanns, & Turkheimer, 2003), aggression (e.g., McGirr, Paris, Lesage, Renaud, & Turecki, 2007), and substance abuse (Trull, Waudby, & Sher, 2004). Not only can these personality disorders be significantly distressing for the individual and/or those with whom they come into contact, they create an economic burden on society (Soeteman, Hakkaart-van Roijen, Verheul, & Busschbach, 2008). Cluster B traits are associated with absences from work, as well as inpatient and outpatient healthcare. In addition, the Cluster B personality disorders have implications for the justice system, in which, individuals with antisocial, borderline, histrionic, and narcissistic personality disorders are overrepresented (Fazel & Danesh, 2002; Warren & South, 2009), and are at higher risk to reoffend than individuals involved in the justice system who do not meet criteria for these personality disorders (Hiscoke, Langström, Ottosson, & Grann., 2003).

Researchers have investigated purported associations between EI and Cluster B personality traits, due to the overlap in the domain of emotion dysregulation and characteristics that affect interpersonal relationships (Gardner & Qualter, 2009; Leible & Snell, 2004; Petrides, Vernon, Schermer, & Veselka, 2011; Ruiz, Salazar, & Caballo, 2012; Sinclair & Feigenbaum, 2012; Webb & McMurran, 2008). Findings have been mixed, however, and among the studies with demonstrated associations, the lack of consistency in terms of study design and methodology, as well as findings is perhaps the most noteworthy feature.

Many of these studies have used non-clinical (Gardner & Qualter, 2009; Leible & Snell, 2004; Sinclair & Feigenbaum, 2012) and non-forensic samples (Fix & Fix, 2015; Petrides, Vernon, Schermer, & Veselka, 2011). Although subclinical levels of Cluster B personality disorder traits may not be as extreme as clinical or forensic manifestations, use of samples with such subclinical levels may be more representative of the general population (Gardner & Qualter, 2009). In any case, studies have found that individuals with scores on measures of Cluster B traits below clinical thresholds also experience dysfunction in various domains of their lives (Trull, Useda, Conforti, & Doan, 1997).

Antisocial Personality Disorder (ASPD). An individual with ASPD is considered to have an antisocial and criminal personality (Kraus & Reynolds, 2001). Individuals with antisocial personality traits are described as impulsive and irresponsible; they often violate social norms or break the law, and disregard the rights of others, engaging in both physical and relational aggression (American Psychiatric Association, 2013). Over the lifespan, these individuals tend to be deceitful and often manipulate and mistreat others for their own gain or amusement. They feel little to no remorse for their actions. Kraus and Reynolds (2001) suggested that perhaps it is their deceitfulness that makes individuals with ASPD traits difficult to diagnose. Additionally, not only are individuals with ASPD traits at a higher risk of having a comorbid disorder, up to 10% of individuals with ASPD have a higher risk of suicide (Kraus & Reynolds, 2001).

Although psychopathy and ASPD are related constructs, they are distinct from one another and the current study does not include psychopathy. Although psychopathy is not considered a personality disorder (and is not a formal diagnosis), it is characterized by callousness, lack of remorse, limited affect, arrogance, deceitfulness, impulsivity,

irresponsibility, and consistent antisocial behaviours (Neumann, Hare, & Pardini, 2015). Of note, many individuals with elevated psychopathic traits meet the criteria for ASPD, but most individuals with ASPD would not meet the criteria for psychopathy (Hare, 1996). Further, researchers have shown that individuals with elevated psychopathic traits have highly distinct patterns of performance on cognitive and affective tasks (e.g., Patrick, 1994; Williamson, Harpur, & Hare, 1991). For example, individuals meeting criteria for psychopathy have been shown to be less able to process or use deep contextual meanings of language or to demonstrate normative awareness of the emotional significance of life experiences.

There are few known studies focused on the relationship between EI and ASPD.

Furthermore, the available literature is mixed. Leible and Snell (2004) found a negative correlation between ASPD traits and indices of emotional understanding and regulation. Ruiz et al. (2012) conducted a replication of the Leible and Snell (2004) study, but reported inconsistent results. Ruiz et al. (2012) found a positive correlation between ASPD traits and emotional awareness, but no other significant correlations between ASPD and EI components (see Table 2 for further details). No studies examining the relationship between ASPD traits and components of EI, as operationalized and measured by the EQ-i or the MSCEIT, have been conducted to date.

Although the nature of the relationship between ASPD and EI is unclear, various aspects of EI do appear to have implications for individuals with ASPD. For example, Davidson, Putnam, and Larson (2000) highlight the importance of emotion regulation in inhibiting aggressive behaviour. The more effectively individuals are able to control their emotions, as well as correctly perceive cues from others (e.g., verbal and non-verbal signs of anger or fear), the less emotionally reactive they are likely to be, and therefore, the less likely they may be to act

aggressively. Roberton, Daffern, and Bucks's (2012) study highlighted the importance of the role emotion regulation plays in the occurrence of aggressive behaviour. Roberton et al. (2012) found that aggressive behaviour was more prevalent in individuals who were unable to regulate their negative emotions (e.g., anger, anxiety), as well as in individuals who tended to overregulate their negative emotions. Individuals who overregulate their emotions appeared to be aggressive due to denial of negative emotions or difficulty expressing them. Velotti et al. (2016) also found results consistent with these findings in individuals with alexithymia. They reported that individuals who were unable to recognize and understand their emotions were more likely to act in an aggressive manner. These findings suggest that a deficit in EI could be a contributing factor in aggressive behaviour exhibited by individuals with ASPD. Thus, based on findings from previous studies, for the current study, it was hypothesized that lower EI scores would be associated with higher ASPD trait scores.

Table 2
Summary of Key Findings Regarding the Relationship between ASPD and EI

Study	Leible & Snell (2004)	Ruiz et al. (2012)
Sample	1418 university students (810 females and 566 males)	354 participants – mix of university students and members of the community (252 females and 94 males)
Measures	<ol> <li>Trait Meta-Mood Scale</li> <li>Multidimensional Emotional Awareness         Questionnaire     </li> <li>Personality Diagnostic Questionnaire-4+</li> </ol>	<ol> <li>Personality exploratory questionnaire-III</li> <li>Trait Meta Mood Scale</li> <li>Difficulties in Emotion Regulation Scale</li> </ol>
Study Design	Participants completed the self-report questionnaires in one 50-55 minute sitting.	Participants completed the self-report questionnaires in one 50 to 65 minute sitting.
Main Findings	<ol> <li>ASPD was negatively correlated with emotional clarity</li> <li>ASPD was negatively correlated with emotional repair</li> <li>ASPD was negatively correlated with emotional attention.</li> <li>ASPD was negatively correlated with private emotional attention</li> <li>ASPD was negatively correlated with private emotional attention</li> <li>ASPD was negative correlated with private emotional preoccupation</li> </ol>	<ol> <li>ASPD was not correlated with emotional clarity</li> <li>ASPD was not correlated with emotional repair</li> <li>ASPD was positively correlated with emotional attention</li> </ol>

Borderline Personality Disorder (BPD). Individuals with BPD traits endure a great deal of suffering and experience intense deficiencies in controlling emotion and impulses, as well as coping with negative emotions (American Psychiatric Association, 2013). BPD is characterized by desperate efforts to prevent real or perceived abandonment, unstable social relationships, disruption in identity, emotional instability, negative affect, expressions of anger at inappropriate times, paranoid ideation, and persistent suicidal behaviour. These individuals are constantly in a state of catastrophe and tend to have contradictory beliefs, affect, and behaviour (Kraus & Reynolds, 2001). Self-harming and self-destructive behaviours are characteristic of individuals with BPD traits.

Researchers have reported that higher levels of BPD traits tend to be associated with lower levels of total EI (Gardner & Qualter, 2009; Leible & Snell, 2004; Ruiz et al., 2012; Sinclaire et al., 2012). More specifically, researchers have found that higher levels of BPD traits

were related to more difficulty understanding emotions (Gardner & Qualter, 2009; Leible & Snell, 2004; Ruiz et al., 2012). They have also shown that individuals who reported higher levels of BPD traits tended to have more difficulties regulating emotions (Gardner & Qualter, 2009; Leible & Snell, 2004; Ruiz et al., 2012; Sinclaire et al., 2012). Further, Ruiz et al. (2012) found that individuals higher in BPD traits tended to pay more attention to their emotions. Although one study has examined this relationship using the EQ-i, the researchers did not find statistically significant associations (Webb et al., 2008). See Table 3 for a summary of other key findings.

Researchers have postulated that EI may play a variety of important roles among those who develop personality disorders. Gardner and Qualter (2009) proposed that low EI could be a potential risk factor in developing poor emotional skills and, as a result, developing maladaptive borderline traits. Similarly, Petrides et al. (2011) labelled high EI as a buffer against the genetic and environmental factors that contribute to the development of antisocial traits. Moreover, Leible and Snell (2004) proposed that a treatment focus of emotional development may be beneficial in improving outcomes for individuals with elevated Cluster B traits. Moreover, Sinclair and Feigenbaum (2012) also believe EI training could contribute positively to treatment of BPD. This has already been observed in individuals with BPD who participate in Dialectical Behaviour Therapy (DBT; Linehan, 1993). For example, Goodman et al. (2014) found an improvement in emotion regulation and a decrease in amygdala hyperactivity in individuals with BPD who underwent DBT for 12 months. In addition, Sinclair and Feigenbaum (2012) also proposed that EI scores may be helpful in assessing BPD traits in clinical settings. As such, for the current study, it was predicted that lower EI scores would be significantly associated with higher BPD trait scores.

Table 3
Summary of Key Findings Regarding the Relationship between BPD and EI

Study	Leible & Snell (2004)	Ruiz et al. (2012)	Webb et al. (2008)	Gardner & Qualter (2009)	Sinclair & Feigenbaum (2012)
Sample	1418 university students (810 females and 566 males)	354 participants – mix of university students and members of the community (252 females and 94 males)	134 undergraduate students	523 – mix of community members and university students	72 participants – clinical sample
Measures	<ol> <li>PDQ-4+</li> <li>Trait Meta-Mood Scale</li> <li>Multidimensional Emotional Awareness Questionnaire</li> </ol>	<ol> <li>Personality         exploratory         questionnaire-III</li> <li>Trait Meta Mood         Scale</li> <li>Difficulties in         Emotion Regulation         Scale</li> </ol>	1) EQi: S 2) TAS-20 3) Personality Assessment Inventory	Schutte EI Scale     MSCEIT     Items from multiple     BPD questionnaires	<ol> <li>TEIQue</li> <li>Borderline Evaluation of Severity over Time</li> <li>Difficulties in Emotion Regulation Scale</li> <li>Five Facet Mindfulness Questionnaire</li> </ol>
Study Design	Participants completed the self-report questionnaires in one 50-55 minute sitting.	Participants completed the self-report questionnaires in one 50 to 65 minute sitting.	Participants completed the self-report questionnaires online.	Participants completed the self-report questionnaires online.	The measures were mailed to the participants.
Main Findings	<ol> <li>BPD negatively correlated with emotional clarity</li> <li>BPD negatively correlated with emotional repair</li> </ol>	1) BPD was negatively correlated with emotional clarity 2) BPD was negatively correlated with emotional repair 3) BPD was positively correlated with emotional attention	EI failed to predict BPD traits.	Correlations with trait EI were negative and moderate     Poor emotion management was related to higher BPD traits	<ol> <li>Low trait EI was associated with more severe borderline traits</li> <li>Low trait EI was associated with difficulties in emotion regulation</li> </ol>

*Note*. PDQ – 4+ = Personality Diagnostic Questionnaire-4+; EQ-i:S = Emotional Quotient Inverntory: Short Version; TAS-20 = Toronto Alexithymia Scale; MSCEIT = Mayer–Salovey–Caruso Emotional Intelligence Test; TEQue = Trait Emotional Intelligence Questionnaire.

Histrionic Personality Disorder (HPD). HPD is characterized by a pattern involving exaggerated expression of shallow emotions and attention-seeking behaviours (APA, 2013). Individuals with HPD traits feel uncomfortable if they are not the center of attention and tend to be dramatic. They also tend to be overly offended by critical comments. They go to excessive lengths to be the center of attention by engaging in behaviours, such as spending large amounts of money and time, or making up stories. Individuals with HPD need affection, are egocentric, seductive, and engage in obviously manipulative behaviours. Further, individuals with HPD traits can either be exhibitionists or they may be more timid and reserved (Kraus & Reynolds,

2001). Individuals with HPD traits who also exhibit shyness still want attention but are more concerned with appearing too excited or difficult to manage.

There is limited available research on the link between HPD traits and EI, and findings reported have been mixed in terms of the direction of the relationship between HPD traits and components of EI. Consistent across the few published studies is the finding that individuals with higher levels of HPD traits are more likely to pay attention to their emotions. However, Leible and Snell (2004) found that individuals with higher levels of HPD traits tended to have lower levels of emotional understanding; in their study, they found no relationship between HPD traits and emotional regulation. In contrast, Ruiz et al. (2012) found that individuals with higher levels of HPD traits tended to be able to understand their own emotions, as well as regulate them. No studies examining the relationship between HPD traits and components of EI, as operationalized and measured by the EQ-i or the MSCEIT, have been conducted to date. See Table 4 for a comparison of more detailed results. In accordance with Leible and Snell's (2004) findings, for the current study, it was hypothesized that lower EI scores would be associated with higher HPD trait scores.

Table 4
Summary of Key Findings Regarding the Relationship between HPD and EI

Study	Leible & Snell (2004)	Ruiz et al. (2012)
Sample	1418 university students (810 females and 566 males)	354 participants – mix of university students and members of the community (252 females and 94 males)
Measures	1) PDQ-4+	1) Personality exploratory questionnaire-III
	2) Trait Meta-Mood Scale	2) Trait Meta Mood Scale
	<ol> <li>Multidimensional Emotional Awareness Questionnaire</li> </ol>	3) Difficulties in Emotion Regulation Scale
Study Design	Participants completed the self-report questionnaires in one 50-55 minute sitting.	Participants completed the self-report questionnaires in one 50 to 65 minute sitting.
Main Findings	HPD was negatively correlated with emotional clarity	HPD traits were positively correlated with emotional clarity
	<ol><li>There was no correlation between HPD traits and emotional repair</li></ol>	HPD traits were positively correlated with emotional repair
	<ol> <li>HPD traits were positively correlated with emotional attention</li> </ol>	<ol> <li>HPD traits were positively correlated with emotional attention</li> </ol>
	<ol> <li>HPD traits were positively correlated with private emotional attention</li> </ol>	
	<ol> <li>HPD traits were negatively correlated with private emotional preoccupation</li> </ol>	
	<ol> <li>HPD traits were positively correlated with emotional awareness in public</li> </ol>	

*Note.* PDQ -4+ = Personality Diagnostic Questionnaire-4+

Narcissistic Personality Disorder (NPD). Individuals with NPD traits tend to be entitled, grandiose in reference to their own self-importance, require admiration, and lack empathy (American Psychiatric Association, 2013). They expect a lot from others and can become very upset, should others not meet their expectations. These individuals also often fail to tend to others' emotional needs and exploit them.

Mixed findings have also emerged from the research focused on NPD traits and EI.

Leible and Snell (2004) found that individuals with NPD traits tended to have difficulties with understanding and regulating their emotions. Petrides (2009), however, found that high levels of EI were associated with certain characteristics in individuals with narcissistic traits, such as being overly self-confident. Petrides, Vernon, Schermer, and Veselka's (2011) study, exploring the relationship between the Dark Triad (narcissism, psychopathy, and machiavellianism) and EI, indicated that individuals with narcissistic traits tended to have higher levels of trait EI, as did

Nagler, Reiter, Furtner, & Rauthmann (2014). Ruiz et al.'s (2012) findings supported this as well, as they found that individuals with narcissistic traits tended not only to be aware of their own emotions, but also to understand their emotions. No studies examining the relationship between NPD traits and components of EI, as operationalized and measured by the EQ-i or the MSCEIT, have been conducted to date. See Table 5 for a comparison of more detailed results.

The implications of EI for NPD is somewhat different than for the other Cluster B disorders. Researchers like Nagler et al. (2014) found that high scores in some domains of EI, in individuals with NPD, aid them in the manipulation of others; in contrast, low scores on other domains of EI leave these individuals unempathetic and unable to understand others' emotions. Thus, in the presence of NPD, it is both the elevations and the deficits in components of EI that have implications. Given these findings, for the current study, it was hypothesized that higher EI scores would be associated with higher NPD trait scores.

Table 5
Summary of Key Findings Regarding the Relationship between NPD and EI

Study	Leible & Snell (2004)	Ruiz et al. (2012)	Petrides et al. (2011)	Nagler et al. (2014)
Sample	1418 university students (810 females and 566 males)	354 participants – mix of university students and members of the community (252 females and 94 males)	214 adult twin pairs: 156 monozygotic (MZ) twin pairs	Two samples were used for this study, aggregated to one sample $(N = 594)$
Measures	<ol> <li>PDQ-4+</li> <li>Trait Meta-Mood Scale</li> <li>Multidimensional Emotional Awareness Questionnaire</li> </ol>	<ol> <li>Personality exploratory questionnaire-III</li> <li>Trait Meta Mood Scale</li> <li>Difficulties in Emotion Regulation Scale</li> </ol>	<ol> <li>Trait Emotional Intelligence Questionnaire</li> <li>MACH-IV</li> <li>Narcissistic Personality Inventory (NPI)</li> <li>Self-Report Psychopathy Scale (SRP-III-R12)</li> </ol>	Social Skills Inventory     Narcissistic Personality Inventory
Study Design	Participants completed the self-report questionnaires in one 50-55 minute sitting.	Participants completed the self-report questionnaires in one 50 to 65 minute sitting.	Packages of self-report questionnaires were mailed to the participants and they were asked to complete them individually.	Self-report questionnaires
Main Findings	<ol> <li>NPD traits were negatively correlated with emotional clarity</li> <li>NPD traits were negatively correlated with emotional repair</li> <li>NPD traits were negatively correlated with private emotional preoccupation</li> <li>NPD traits were positively correlated with public emotional monitoring</li> </ol>	<ol> <li>NPD traits were positively correlated with emotional clarity</li> <li>No correlation was found between NPD traits and emotional repair</li> <li>NPD traits were positively correlated with emotional attention</li> </ol>	Narcissism correlated positively with total EI     Narcissism showed strongest positive correlations with assertiveness, emotion management, self-esteem, social awareness, and with the sociability	1) Narcissism showed a positive relationship with socio-emotional expressivity and control 2) Narcissism had no relationship with emotional and social sensitivity 3) Emotional manipulation was positively associated with narcissism 4) Narcissism had an interaction effect on the relationship between emotional expressivity and emotional manipulation 5) Narcissism had an interaction effect on the relationship between emotional control and emotional manipulation – higher levels of narcissism were associated with a stronger relationship between emotional control and emotional manipulation

*Note.* PDQ – 4+ = Personality Diagnostic Questionnaire-4+; MACH-IV = Machiavellianism Test

# Faking on Measures of EI and Personality Disorder Traits

Having noted already that measures of EI are vulnerable to faking, it is important to consider whether individuals with traits associated with personality disorders might be expected to misrepresent themselves on these measures in systematic ways or whether elevations or deficits in components of EI are actually indicative of particular personality profiles.

Researchers have proposed that individuals with antisocial traits may be able to artificially increase their EI scores for their own advantage (Salovey & Mayer, 1990). This may implicate

the use of EI in day-to-day manipulations of others for personal gain. Although the positive implications of EI has been the focus of much research, researchers have proposed a "dark side" to EI (Bausseron, 2012). For individuals with antisocial traits, Kilduff, Chiaburu, and Menges (2010) suggested that using emotions to facilitate thought could be translated into focusing on strategically important targets. For example, employees high in EI are likely to be attentive to the emotional cues of their supervisors in order to meet or exceed their expectations. Similarly, supervisors with high EI are likely to be attuned to employees' emotions when improving their performance will benefit them or to corroborate their own social status. Managing emotions could be translated into disguising or expressing emotions for personal gain (e.g., career advancement, building reputation, improve social status, power, interpersonal control). It could also be translated into a tendency to attempt to shape others' emotions and exert strategic control of emotional information through altering meaning of events and manipulating ambiguous scenarios. Côté, DeCelles, McCarthy, Van Kleef, and Hideg (2011) found that emotion regulation can elicit positive outcomes, as well as harmful ones, depending on the individual's motives. Similarly, Kahn, Ermer, Salovey, and Kiehl (2016) found that higher levels of EI may be associated with the ability to manipulate others for self-serving purposes. On the basis of these interesting findings, the field is greatly in need of investigations of associations between components of EI and personality disorder traits, in both honest responding and motivated faking conditions, in order to gain a clearer understanding of whether associations incorporate deliberate misrepresentation or are better viewed as revealing elevations and depressions in components of EI that meaningfully reflect the interpersonal and emotional features of these personality profiles.

# **Other Factors Requiring Consideration in EI Work**

In the process of researching EI, as well as personality traits, researchers have identified a number of additional variables that merit consideration. Among these, two are of particular note for the present study.

Intelligence. As discussed previously, although trait EI is not related to intelligence (Bar-On, Tranel, Denburg, & Bechara, 2003; Derksen et al., 2002), ability EI is considered a cognitive ability and is related to intelligence (MacCann et al., 2003). When using the MSCEIT, multiple studies also included a measure of cognitive ability in order to account for the overlap between ability EI and intelligence in associations under investigation (e.g., Ermer, Kahn, Salovey, & Kiehl, 2012; Kahn et al., 2016).

Gender. Although studies exploring the relationship between Cluster B personality traits and EI did not explore differences between men and women, studies have found subtle differences in EI between men and women. For example, Petrides and Furnham (2009) found that although there was no significant difference in total trait EI, women scored higher on social skills than men. Abdellatif, Hussien, Hamed, and Zoromba (2017) found that total EI was slightly higher in women than men, as did Palmer et al. (2012). Further, studies have shown that men are more likely to enhance their self-presentation and females are more likely to be self-critical when completing self-report measures (Beyer, 1990, 2002; Petrides & Furnham, 2009).

# **Present Study**

Although research on EI and Cluster B traits appear to have considerable potential for helping understand aspects of the emotional and interpersonal difficulties experienced by individuals with elevations on these traits, mixed findings mean further research is clearly required. The use of two well-validated measures, one each for trait EI and ability EI, with a

single sample represents an important advance on much of the relevant research, not least because the two measures selected have not been widely used in investigations of Cluster B traits, and never together despite their strong psychometric properties. Further, given the documented vulnerability of measures of trait EI but not ability EI to faking, the importance of replicating those findings, and extending that work so that associations between trait EI and ability EI and the Cluster B traits are examined in both honest responding and motivated faking conditions, will represent a significant contribution to the extant literature.

The purpose of this study is to, first, replicate previous research showing that lower levels of components of EI are associated with higher trait scores on measures of three of the four Cluster B personality disorders, while higher levels of EI are associated with higher trait scores on NPD (all sets of personality traits that, in common, reflect emotional dysfunction and interpersonal conflict). In addition, for the first time in the literature, associations between these personality traits and EI will also be investigated using a methodology that accounts for faking by individuals to appear more socially desirable. As such, the present study has the potential both to contribute to the understanding of distinct Cluster B personality disorders and also to address a key question, concerning vulnerability to faking, for distinct approaches to assessing EI.

## **Hypotheses**

Based on the literature, it is hypothesized that (1) lower levels of trait EI will be associated with higher scores for antisocial, borderline, and histrionic personality traits, and high levels of trait EI will be associated with high scores of narcissistic personality traits; (2) individuals' trait EI scores, under honest responding instructions, will be significantly lower than those under the motivated faking instructions; (3) motivated faking trait EI scores will be predicted by honest responding trait EI scores and social desirability scores; (4) the pattern of

associations expected in hypothesis 1 will be replicated using residuals of trait EI and personality trait scores (i.e., controlling for faking). Day and Carroll's (2008) null findings regarding ability EI requires further investigation so the above hypotheses will be tested again using a measure of ability EI. Given the relative absence of research on sex differences in studies of faking on measures of EI, no specific hypotheses regarding sex differences are advanced and analyses of such differences will be preliminary in nature.

#### **CHAPTER 2**

#### Methods

## **Participants**

A total of 169 individuals participated in the present study, but only 118 completed both part 1 and part 2 of the study. As honest EI scores were collected in part 1 and faked EI scores were collected in part 2, only data from the 118 participants that completed both parts were included in the analyses, in order to maintain consistent variance. One of these individuals needed to be excluded from the analyses, due to her not completing the faking instructions appropriately, thus, the final sample size was 117 participants (85% women). As such, the hypotheses were tested using the total sample that included both men and women. Undergraduate students from the University of Windsor were recruited through the participant pool. The psychology participant pool at the University of Windsor facilitates the collection of data for research studies. It is a service that allows researchers to advertise their studies and recruit participants. Undergraduate students can then sign up to participate in studies through the participant pool and, once they have completed the study, they are then awarded extra credit for psychology courses. No specific exclusion criteria was applied other than the ability to read and provide responses in English. Students received appropriate course credit, as compensation for participation.

## Measures

**Emotional Quotient Inventory: Short (EQ-i:S; Bar-On, 2002).** The EQ-i:S is a 51-item self-report questionnaire designed to measure trait EI (Bar-On, 2002). Items are rated on a 5-point Likert type scale (i.e., I = Very seldom true of me and 5 = very often true of me). Bar-On's (1997, 2002, 2006) measure of trait EI consists of five subscales of self-perceived abilities that,

when combined, create a total EI score, which represents an estimate of emotional and social competencies. The *Intrapersonal* subscale measures self-respect, how well one can identify and understand their own emotions, assertiveness, independence, and self-actualization. The *Interpersonal* subscale measures empathy, social responsibility, and how well one can identify and understand others' emotional states. The *Stress Management* subscale refers to stress tolerance, impulse control, and regulation of one's own emotions, as well as those of surrounding individuals. The *Adaptability* subscale measures one's flexibility, problem solving skills, and ability to perceive objectively. Finally, the *General Mood* subscale refers to optimism, affinity to communicate positive emotions, and tendency to enjoy oneself. The EQ-i:S also incorporates a positive impression scale and inconsistency index (Bar-On, 2002; Parker, Keefer, & Wood, 2011).

Based on the correlation between the EQ-i:S items and EQ-i items (correlations ranging between .73 and .97), the EQ-i:S's positive correlation with other measures of EI (i.e., the MSCEIT, the Trait Meta Mood Scale, and the Toronto Alexithymia Scale), and the low to moderate correlations between the EQ-i:S items and personality traits support the construct validity of the EQ-i:S (Bar-On, 2002). Further, predictive validity of the EQ-i:S is supported by the positive relationship between the EQ-i:S and job performance, leadership, and academic success. In addition, the internal reliability for the EQ-i:S was supported by Bar-On (2002; Cronbach's alpha = .76 to .93), as well as Parker et al. (2011; Cronbach's alpha = .75 to .87). The EQ-i:S was also found to have good test-retest reliability (correlations ranging from .46 to .80; Bar-On, 2002). Using the present study's sample, the Cronbach's alpha for the EQ-i:S total was 0.89.

## Mayer-Salovey-Caruso Emotional Intelligence Test Version 2.0 (MSCEIT V2.0).

The MSCEIT is a well-established measure of ability EI (Mayer, Salovey, Caruso, & Sitarenios, 2003). The MSCEIT is a maximum-performance test that contains items that have correct and incorrect responses, based on the usual practice of collecting standardized data for test construction and validation, but also expert criteria and consensus responses (Mayer et al., 2003). Authorities in the field of emotion research selected responses they perceived as correct, and consensus responses were established when the majority of participants selected the same response. Mayer et al. (2003) found that the MSCEIT V2.0 has good split-half reliability (r = .91 to .93) and test-retest reliability (r = .86). Rossen and Kranzler (2009) also found good incremental validity of the MSCEIT V2.0 over measures of positive relations with others and alcohol use (Alcohol Use Disorders Identification Test). Additionally, Brackett and Salovey, (2006) reported good predictive validity and discriminant validity.

This measure is based on the notion that EI is an ability (or set of related abilities) that encompasses problem solving about emotions and using emotions (Mayer et al., 2003). It is a 141-item measure intended to assess the four domains of ability EI (i.e., perceiving emotions, understanding emotions, using emotions to facilitate thought, and managing emotions) using performance on tasks. *Perceiving emotions* is assessed with the faces and pictures tasks. The faces task consists of participants rating a photo of a face for how present a specific emotion is and the pictures task entails rating landscapes and abstract designs. *Using emotion to facilitate thought* is measured with the sensations and facilitations tasks, and *understanding emotions* is assessed via blends and changes tasks. The sensations task asks participants to match a sensation to an emotion they have generated. The facilitation task requires the respondents to evaluate emotions that are associated with or assist specific tasks or behaviours. Further, the blends task

asks respondents to distinguish emotions that could be blended to make another emotion. The changes task entails the participant selecting an emotion that is the consequence of the intensification of another separate emotion. Finally, *managing emotions* is measured with an emotion management task and emotion relationships task. The emotion management task presents the respondent with a story from which they need to select the behaviours that are most effective in obtaining the desired emotion. Lastly, the emotion relationships task consists of the participant selecting the appropriate actions to manage others' emotions. The MSCEIT demonstrated excellent reliability in the present study, which a Cronbach's alpha value of 0.95.

Personality Diagnostic Questionnaire-4+ (PDQ-4+). The PDQ-4+ (Hyler, 1994) is a self-report measure of personality disorder traits (Fonseca-Pedrero, Paino, Lemos-Giráldez, & Muñiz, 2013). It consists of 99 true or false items, which reflect personality traits associated with the Diagnostic and Statistical Manual of Mental disorders (DSM) criteria. Previous research in this area has used this measure to assess personality traits in non-clinical samples (Gardner & Qualter, 2009; Leible & Snell, 2004; Webb & McMurran, 2008). The PDQ-4+ has adequate psychometric properties (Widiger & Samuel, 2005) with good overall internal consistency (Cronbach's alpha = .81) and good discriminant validity (Blackburn, Donnelly, Logan, & Renwick, 2004). According to Bagby and Farvolden (2004) reported reasonable concurrent and predictive validity. The Cronbach's alpha for the PDQ-4+ in the present study was 0.90, which suggests excellent reliability.

Balanced Inventory of Desirable Responding (BIDR). The BIDR is a 40-item self-report measure designed to assess self-deception and impression management (Paulhus, 1991). Responses are made on a 7-point Likert type scale (Kam, 2013). The BIDR measures self-deception, which refers to responses that are inaccurate, but believed by the respondent, as well

as impression management, which refers to inaccurate responses facilitated by wanting to appear more favorable (Kroner & Weekes, 1996). The BIDR has good internal consistency (Cronbach's alpha = .83) and test-retest reliability (r = .65 to .69) and also good concurrent and discriminant validity (Paulhus, 1988). In the present study, Cronbach's alpha was 0.81, which is indicative of good reliability.

Wechsler Abbreviated Scale of Intelligence, Second Edition (WASI-II; Wechsler, **2011).** The WASI-II is a recently-updated shortened measure of cognitive ability, for individuals ages 6 to 90 years, that can be used when a full intelligence measure is not feasible (McCrimmon & Smith, 2013). The two-subtest version of the WASI-II, which includes the Vocabulary and Matrix Reasoning subtests, was used for the present study. For both of these subsets, a trained examiner uses set procedures and standardized stimuli (testing materials that comprise the kit) to assess the examinee's performance, recording the examinee's responses, scoring them according to the correct answers, and interpreting results with reference to normative data. The Vocabulary subtest consists of 31 items that assess individuals' word knowledge, verbal concept formation, knowledge, crystallized intelligence, and degree of language formation. Words are orally presented to the examinee, who must then define or describe them verbally. On the other hand, the Matrix Reasoning subtest is a measure of fluid and visual intelligence, spatial ability, and perceptual organization. The examinee assesses the uncomplete matrix and select one out of five options that appropriately completes the matrix. The WASI-II has sound psychometric properties (McCrimmon & Smith, 2013). Internal consistency of the WASI-II is good (r = .92 to .97), as is test-retest reliability (r = .79 to .96), and interrater reliability (r = .94 to .99). Similarly, the WASI-II has good concurrent validity with the WAIS-IV and WISC-IV (r = .71 to .92). It also has good internal validity, as the subscales are all interrelated, but factor analysis showed that

each subtest is also unique. This measure will be used as a control, given the research confirming associations between cognitive ability and ability EI and the influence of cognitive abilities on ability to fake responses.

#### **Procedure**

Undergraduate participants, recruited from the participant pool at the University of Windsor, were asked to participate in two testing sessions. The first involved the online completion of a battery of self-report questionnaires in a single session. The participants were given instructions to complete the measures as honestly as possible (the honest responding condition). Their honest responses were highlighted as essential to the validity of the study and they were encouraged to respond honestly regardless of whether their responses made them appear unappealing. The ability EI measure could not be completed remotely online, given its format and the administration requirements of the publisher, thus, a second session took place in the lab. Participants first completed the ability EI measure, with instructions to respond as honestly as possible (the final measure to be completed as part of the *honest responding* condition). Following this, participants completed an assessment of cognitive abilities (i.e., the Matrix Reasoning and Vocabulary subtests of the WASI-II). Then, in the same lab session, the participants completed the motivated faking condition. The student researcher gave the participants a form of prompts (Appendix A) to complete. This form indicated that the participants were to imagine that they were applying for their dream job. The form explained that after answering some questions regarding the details of the job, the participants would complete the EI measures again, but this time participants were to imagine they were applying for this dream job and that the individuals hiring them for the job would have access to their responses to the EI measures. They were then asked to complete the EQ-i:S and MSCEIT again. Participants

were directed to respond to items on the trait and ability EI measures in a manner they believed would optimize anticipated success for their fictional job application while still appearing believable.

#### **CHAPTER 3**

#### Results

## **Approach to Data Analysis**

First, data were examined for potentially invalid responding, using the Inconsistency Index, which is built into the EQ-i:S. A missing values analysis was then performed and multiple imputation was conducted to estimate the missing values. Composite scores were calculated for the BIDR, EQ-i:S, and PDQ-4. MSCEIT composite scores were calculated by the publisher and provided to the research team, as per the publisher's standard practice with investigators using the MSCEIT for research purposes. Assumptions of parametric tests (i.e., Pearson correlations, t-test, multiple regression analysis) were evaluated. Proposed analyses to test the main hypotheses of the present study were then undertaken. Finally, some additional analyses (i.e., Pearson correlations) were conducted to address the concern that EI and personality (therefore, personality disorders) overlap too much. All analyses were conducted using Statistical Package for the Social Science (SPSS) software, Version 24.

## **Preliminary Analyses**

**Invalid responding.** The Inconsistency Index, embedded in the EQ-i:S, was used to determine whether participants were responding invalidly. This index is composed of 10 pairs of items that asked about similar issues. The difference between the responses of each of those pairs were calculated and summed. If the sum of the differences was 12 or greater, the participant was likely providing random responses. Six participants' Inconsistency Indexes exceeded this cutoff, thus, they were excluded from the analyses.

**Missing data.** A missing values analysis was conducted in order to determine the amount of missing data present. The proportion of missing data among variables ranged from 0% to

2.5%. Overall, 0.558% of the data were missing. Little's MCAR test indicated that the data were missing completely at random,  $X^2(17997) = 43.678$ , p = 1.000. As the sample in the present study was small, multiple imputation was conducted to estimate the missing values for cognitive ability, the BIDR-SDE, BIDR-IM, the EQ-i:S (from both conditions) and the PDQ-4.

**Assumptions.** Before analyzing the data to test the hypotheses, the following assumptions of parametric tests were evaluated.

*Outliers.* A multiple regression analysis (MRA) assumption is having an absence of both outliers and influential observations. Outliers were tested for using standardized residuals (i.e., a value of  $\pm 2.5$  is a violation; Field, 2013). There were three outliers for faked trait EI scores, three for Vocabulary, one for Matrix Reasoning, six for the BIDR-SDE, four for the BIDR-IM, three for ability EI scores, and four for faked ability EI scores. All outliers were winsorized to improve normality and to preserve sample size. To test for influential observations, Cook's distance was examined. All values were less than one, thus, this assumption was not violated (Cook & Weisberg, 1982).

*Normality*. Univariate normality is expected when conducting Pearson correlations, t-tests, and multiple regression analysis. Shapiro-Wilk values were not significant for cognitive ability, BIDR-IM, and honest EQ-i:S, indicating normality of these variables. Shapiro-Wilk values were significant, however, for BIDR-SDE, faked EQ-i:S, antisocial, borderline, histrionic, and narcissistic traits, and honest and fake MSCEIT scores, indicating non-normal distribution. These variables were not a concern, however, as the Shapiro-Wilk test can be sensitive to small deviations from normality (Field, 2013) and their skewness and kurtosis values were within the accepted range (i.e.,  $\pm 2$  and  $\pm 3$ , respectively; Tabachnick & Fidell, 2016). Their normality also improved once outliers were winsorized. Of particular concern, however, were faked trait EI scores and faked

ability EI scores. Although skewness and kurtosis were in the acceptable range for faked trait EI scores (skewness = -1.176, kurtosis = 2.203), the histogram appeared to be quite negatively skewed. Similarly, although skewness and kurtosis values were acceptable for faked ability EI scores (skewness = -1.390, kurtosis = 1.724), the histogram was clearly negatively skewed. As these were dependent variables in the MRAs and the present study has a small sample size, in addition to the data deviating slightly from linearity, slight heteroscedasticity, and non normality of residuals, faked trait EI scores and faked ability EI scores were transformed. Both variables were negatively skewed, thus, the data were reflected first. A log transformation was then performed for both variables. After the transformations of the two dependent variables (i.e., faked trait EI scores and faked ability EI scores), the residuals reflected a normal distribution. ASPD, BPD, HPD, and NPD traits all had acceptable skewness and kurtosis values. Histograms of the residuals were examined as well to determine normality of the data.

Linearity. Another assumption of MRA requires that the relationship between the dependent and independent variables to be linear (Field, 2013). Each predictor variable was plotted against the dependent variable for each MRA. For both the trait EI MRA and the ability EI MRA, the scatter plots of the standardized residuals and the standardized predicted values were linear, once the data were transformed.

Homoscedasticity. Scatter plots of the residuals were examined in order to determine whether the assumption of homoscedasticity was met. Upon examination of the plotted standardized residuals and standardized predicted value for the trait EI regression, the data were heteroscedastic. Although this assumption was violated, MRA is considered to be robust to the violations of homoscedasticity (Cohen et al., 2003) and the data appeared to be more homoscedastic once the dependent variables were transformed.

*Multicollinearity*. A correlation matrix and VIF values were examined in order to test for multicollinearity and singularity. None of the variables shared a correlation higher than .9 and VIF values remained far below 10 (Field, 2013), satisfying this assumption.

*Independence of errors.* The Durbin-Watson values were examined to ensure that no two residual terms were correlated. Durbin-Watson values were all within normal limits (i.e., between 1 and 3; Field, 2013), thus, this assumption was met.

# **Descriptive Analyses**

For descriptive statistics of the present study's variables, see Table 6. For correlations between the present study's variables, see Table 7. The faked trait EI scores and faked ability EI scores were changed to be positively skewed, instead of negatively skewed, in order to be log transformed. As such, these scores reflect a low score, when they should be reflecting high scores. Thus, when interpreting the log transformed faked trait EI and log transformed faked ability EI, the direction of the relationship needs to be reversed. For example, when interpreting the correlations from Table 7, the correlation between LOG EQI and HONEST EQI appears to be negative (i.e., r = -.332), but due to the above explanation, it should be interpreted as a positive relationship.

Table 6 Descriptive Statistics for all Variables, N = 117

Variable	M	SD	Min.	Max.
AGE	22.15	4.53	18	44
VOCAB	47.50	9.16	27.00	68.00
MATRIX	47.64	7.73	27.00	66.00
BIDR-SDE	84.11	11.25	59.00	109.00
BIDR-IM	80.82	13.09	56.00	109.00
HONEST EQI	32.74	3.81	23.52	44.80
FAKED EQI	41.32	2.91	33.20	45.00
LOG FAKED EQI	.70	.21	.30	1.14
HONEST MSCEIT	.49	.06	.33	.56
FAKED MSCEIT	.49	.06	.31	.56
LOG FAKED MSCEIT	80	.13	-1.00	46
ANTISOCIAL	.97	1.05	0.00	5.00
BORDERLINE	2.74	1.99	0.00	8.00
HISTRIONIC	2.18	1.47	0.00	6.00
NARCISSISTIC	2.55	1.81	0.00	9.00

Note. VOCAB = Vocabulary subtest from WASI-II; MATRIX = Matrix Reasoning subtest from WASI-II; BIDR-SDE = Balanced Inventory of Desirable Responding – Self-Deceptive Enhancement; BIDR-IM = Balanced Inventory of Desirable Responding – Impression Management; HONEST EQI = trait EI scores from the honest responding condition; FAKED EQI = trait EI scores from the motivated faking question that have been transformed; HONEST MSCEIT = ability EI scores from the honest responding condition; FAKED MSCEIT = ability EI scores from the motivated faking condition; LOG FAKED MSCEIT = ability EI scores from the motivated faking question that have been transformed; ANTISOCIAL = the Antisocial Personality Disorder subscale from the Personality Diagnostic Questionnaire, Version 4; HISTRIONIC = the Histrionic Personality Disorder subscale from the Personality Diagnostic Questionnaire, Version 4; NARCISSISTIC = the Narcissistic Personality Disorder subscale from the Personality Diagnostic Questionnaire, Version 4 version 4

Table 7
Correlations Between Study Variables

Correlations Between	n Study Vo	ariables												
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. VOCAB	-													
2. MATRIX	.175*	-												
3. BIDR-SDE	107	084	-											
4. BIDR-IM	139	140	.396**	-										
5. HONEST EQI	.199*	.070	.489**	.106	-									
6. FAKED EQI	.195*	.128	.022	009	.288**	-								
7. LOG EQI	188*	129	084	042	332**	963**	-							
8. HONEST MSCEIT	.332**	.275**	.016	029	.324**	.443**	426**	-						
9. FAKED MSCEIT	.295**	.303**	033	135	.266**	.403**	377**	.883*	-					
10. LOG MSCEIT	309**	318**	.043	.157*	277**	406**	.384**	859**	983**	-				
11. ANTISOCIAL	090	.025	225**	372**	308**	120	.151	104	006	.002	-			
12. BORDERLINE	108	.002	415**	221**	541**	184*	.187*	170*	097	.080	.456**	-		
13. HISTRIONIC	.128	.128	287**	321**	110	039	.023	088	049	.044	.326**	.379**	-	
14. NARCISSISTIC	040	.049	307**	359**	200*	144	.134	148	023	.013	.282**	.260**	.365**	-

Note. \*\*p < .05, \*\*p < .001 ; Note. VOCAB = Vocabulary subtest from WASI-II; MATRIX = Matrix Reasoning subtest from WASI-II; BIDR-SDE = Balanced Inventory of Desirable Responding – Self-Deceptive Enhancement; BIDR-IM = Balanced Inventory of Desirable Responding – Impression Management; HONEST EQI = trait EI scores from the honest responding condition; FAKED EQI = trait EI scores from the motivated faking question that have been transformed; HONEST MSCEIT = ability EI scores from the motivated faking condition; LOG FAKED MSCEIT = ability EI scores from the motivated faking condition; LOG FAKED MSCEIT = ability EI scores from the motivated faking condition; LOG FAKED MSCEIT = ability EI scores from the Personality Disorder subscale from the Personalit

## **Main Analyses**

**Hypothesis 1.** The first hypothesis was that lower levels of trait and ability EI would be associated with higher scores for antisocial, borderline, and histrionic personality traits, and high levels of trait and ability EI would be associated with high scores of narcissistic personality traits. Hypothesis 1 was tested using Pearson correlations. As shown in Table 7, this hypothesis was partially supported. As expected, trait EI was negatively correlated with ASPD traits (r = -.308, p < .001) and BPD traits (r = -.541, p < .001). NPD traits were significantly correlated with trait EI, but, contrary to what was predicted, this was also a negative relationship (r = -.200, p = .015). Thus, participants who had higher levels of ASPD, BPD, and NPD traits tended to also have lower trait EI. HPD and trait EI were not correlated (r = -.110, p = .118).

As expected, BPD traits were negatively associated with ability EI (r = -.170, p = .034), meaning individuals who had higher levels of BPD trait also tended to have lower ability EI. Contrary to Hypothesis 1, ASPD traits (r = -.104, p = .133), HPD traits (r = -.088, p = .173), and NPD traits (r = -.148, p = .056) were not significantly associated with ability EI.

**Hypothesis 2.** The second hypothesis was that individuals' trait and ability EI scores, under honest responding instructions, would be significantly lower than those under the motivated faking instructions. Paired sample t-tests were conducted in order to test Hypothesis 2 (see Table 8). As predicted, trait EI scores were significantly higher in the motivated faking condition than they were in the honest responding condition, t(116) = -22.77, p < .001, d = -2.10, representing a very large effect size. With regards to ability EI, the honest responding group was not significantly different from the motivated faking group, t(116) = .007, p = .994.

Table 8
Paired Samples t-Tests Comparing Honest and Motivated Faking EI

	Mean	SD	t	Sig.
Trait EI (EQI) Motivated faking vs. honest	-8.58	4.08	-22.77	.000
Ability EI (MSCEIT) Motivated faking vs. honest	.000019	.03	.007	.994

Hypothesis 3. The third hypothesis was that motivated faking EI scores would be predicted by honest responding EI scores and social desirability scores, for both ability and trait EI. This hypothesis was tested using MRA; one MRA was conducted using trait EI scores and a second MRA was conducted using ability EI scores (see Table 9 and Table 10). Due to the data being reflected when transformed, the direction of the relationships (i.e., whether the coefficient is positive or negative) were reversed.

For trait EI, the first step of the model, in which honest trait EI was added, significantly predicted EI scores from the motivated faking condition ( $R^2$  = .110, adjusted  $R^2$  = .102, F (1, 115) = 14.218, p < .001). Therefore, trait EI scores from the honest responding condition accounted for 10% of the variance in faking trait EI scores. Upon closer inspection, for every one standard deviation increase in honest trait EI scores, trait EI scores from the motivated faking condition increased by .332 standard deviations,  $\beta$  = -.332, p < .001, 95% CI [-.028, -.009]. In the second step, when socially desirable responding was added as a predictor, the change in amount of variance accounted for was not significant. Neither self-deception or impression management contributed significantly to the model, but honest trait EI scores remained a significant predictor,  $\beta$  = -.388, p < .001, 95% CI [-.033, -.010]. With every one standard deviation increase in honest trait EI scores, faked trait EI scores increased .388 standard

deviations. As such, the hypothesis was partially supported; higher faked trait EI scores were predicted by higher honest EI scores, but faked trait EI scores not predicted by social desirability.

Faked ability EI was also significantly predicted by the first step, in which WASI-II Vocabulary and Matrix Reasoning subtests were entered ( $R^2 = .159$ , adjusted  $R^2 = .144$ , F(2,113) = 10.66, p < .001), as well as the second step, in which cognitive ability, ability EI scores from the honest responding condition, self-deceptive socially desirable responding, and impression management were included in the model all together ( $R^2 = .869$ , adjusted  $R^2 = .743$ , F(3, 110) = 89.06, p < .001). Cognitive ability was included in the first step of the model, as it was not a main predictor, but needed to be controlled for. In the first step of the model, Vocabulary was a significant predictor ( $\beta = -.263$ , p = .003, 95% CI [-.006, -.001]), as was Matrix Reasoning ( $\beta = -.257$ , p = .004, 95% CI [-.008, -.001]). With every one standard deviation increase in Vocabulary scores, faked ability EI scores increased .263 standard deviations, and with each one standard deviation increase in Matrix Reasoning scores, faked ability EI scores increased .257 standard deviations. At the second step of the model, together, cognitive ability and honest ability EI scores accounted for 74% of faked ability EI's variance  $(R^2 = .743, adjusted R^2 = .736, F(1, 112) = 254.70, p < .001)$ . Cognitive ability was no longer a significant predictor of ability EI scores, but honest ability EI scores ( $\beta = -.833$ , p < .001, 95% CI [-2.23, -1.74]) accounted for a significant amount of faked ability EI's variance. With each one standard deviation increase in honest ability EI scores, faked ability EI scores increased .833 standard deviations. At the third step, when socially desirable responding was added, the change in amount of variance accounted for was not significant; however, honest ability EI scores remained a significant predictor ( $\beta = -.837$ , p < .001, 95% CI [-2.23, -1.74]) and impression management ( $\beta = .112$ , p = .031, 95% CI [.000, .002]) accounted for a significant amount of

faked ability EI's variance. With each one standard deviation increase in honest ability EI scores, faked ability EI scores increased .837 standard deviations, and with each one standard deviation increase in impression management, faked ability EI scores decreased by .112 standard deviations. Again, Hypothesis 3 was partially supported; higher ability EI scores from the honest responding condition and lower levels of impression management predicted higher ability EI scores from the motivated faking condition. Self-deception did not account for a significant amount of the variance.

Table 9
Multiple Regression Analysis Predicting Faked EQ-i Scores

							95%	6 CI					
Step	Variable	В	SE B	β	t	Sig.	Lower	Upper	$\mathbb{R}^2$	Adjusted R <sup>2</sup>	$\Delta R^2$	F Change	Sig. F Change
1	CONSTANT	1.307	.161	-	8.10	.000	.987	1.627	.110	.102	.110	14.22	.000
	HONEST EQI	018	.005	332	-3.77	.000	028	009					
2	CONSTANT	1.276	.193		6.62	.000	.894	1.658	.120	.097	.010	.657	.520
	HONEST EQI	022	.006	388	-3.81	.000	033	010					
	BIDR-SDE	.002	.002	.126	1.14	.255	002	.006					
	BIDR-IM	001	.002	051	52	.602	004	.002					

Note. BIDR-SDE = Balanced Inventory of Desirable Responding – Self-Deceptive Enhancement; BIDR-IM = Balanced Inventory of Desirable Responding – Impression Management; HONEST EQI = trait EI scores from the honest responding condition

Table 10
Multiple Regression Analysis Predicting Faked MSCEIT Scores

	, and a second s		U				95%	CI					
Step	Variable	В	SE B	β	t	Sig.	Lower	Upper	$\mathbb{R}^2$	Adjusted R <sup>2</sup>	$\Delta R^2$	F Change	Sig. F Change
1	CONSTANT	397	.089		-4.46	.000	573	220	.159	.144	.159	10.66	.000
	VOCAB	004	.001	263	-3.00	.003	006	001					
	MATRIX	005	.002	257	-2.93	.004	008	001					
2.	CONSTANT	.245	.064		3.849	.000	.119	.371	.743	.736	.584	254.70	.000
	VOCAB	.000	.001	019	374	.709	002	.001					
	MATRIX	001	.001	071	-1.415	.160	003	.001					
	HONEST MSCEIT	-1.978	.124	833	-15.959	.000	-2.223	-1.732					
3.	CONSTANT	.147	.086		1.71	.089	023	.317	.755	.743	.012	2.60	.079
	VOCAB	000074	.001	005	10	.921	002	.001					
	MATRIX	001	.001	062	-1.25	.213	003	.001					
	HONEST MSCEIT	-1.99	.122	837	-16.23	.000	-2.229	-1.744					
	BIDR-SDE	.000	.001	010	19	.851	001	.001					
	BIDR-IM	.001	.001	.112	2.19	.031	.000	.002					

Note. VOCAB = Vocabulary subtest from WASI-II; MATRIX = Matrix Reasoning subtest from WASI-II; BIDR-SDE = Balanced Inventory of Desirable Responding – Self-Deceptive Enhancement; BIDR-IM = Balanced Inventory of Desirable Responding – Impression Management; HONEST MSCEIT = ability EI scores from the honest responding condition

**Hypothesis 4.** The fourth hypothesis was that the pattern of associations expected in Hypothesis 1 would be replicated after controlling for faking. A multiple regression analysis was conducted once with honest EI scores as the dependent variable and faked EI scores as the predictor variable and then again with honest EI as the dependent variable and both faked EI scores and socially desirable responding as predictor variables. This was done for both trait and ability EI. Thus, these produced residuals, which were then correlated with the Cluster B trait scores. When faked EI scores and socially desirable responding were both controlled for (see Table 11), the relationships between trait EI and ASPD traits (r = -.232, p < .001), and trait EI and BPD traits (r = -.367, p < .001) .001), and the relationship between ability EI and NPD traits (r = -.185, p < .001) remained negatively correlated. When only faked EI scores were controlled for (See Table 12), the relationships between trait EI and ASPD traits (r = -.273, p < .001), trait EI and BPD traits (r = -.507, p < .001), and trait EI and NPD traits (r = -.165, p = .037) remained statistically significant. The relationships between ability EI and ASPD traits (r = -.184, p = .024), ability EI and BPD traits (r = -.191, p = .020), and ability EI and NPD traits (r = -.245, p = .004) also remained statistically significant.

Table 11

Correlations between Residuals and Personality Traits, Including Social Desirability

	1.	2.	3.	4.	5.	6.	7.	8.
1. EQI	-							
2. MSCEIT	.085	-						
3. BIDR-SDE	.000	.000	-					
4. BIDR-IM	.000	.000	396**	-				
5. ASPD	232**	-120	225**	372**	-			
6. BPD	367**	151	415**	221**	.456**	-		
7. HPD	.009	055	287**	321**	.326**	.379**	-	
8. NPD	054	185*	307**	359**	.282**	.260**	.365**	-

*Note.* \* p < .05, \*\*p < .001

Table 12

Correlations between Residuals and Personality Traits, Not Including Social Desirability
1. 2. 3. 4. 5. 6.

	1.	2.	5.	4.	3.	0.
1. EQI	-					
2. MSCEIT	.082	-				
3. ASPD	273**	184*	-			
4. BPD	507**	191*	.456**	-		
5. HPD	109	119	.326**	.379**	-	
6. NPD	165*	245**	.282**	.260**	.365**	-

*Note.* \* p < .05, \*\*p < .001

Post hoc analyses. As acknowledged in the Introduction, there is conceptual overlap between Cluster B personality disorders and EI, with the latter representing core features of the former. In the relative absence of systematic work on personality disorders and the subscales of trait and ability EI measures, post hoc correlation analyses were undertaken to unpack this overlap. The correlations in Table 13 demonstrate that different personality disorders were associated differently with various EI subscales.

Higher HPD trait scores were significantly associated with higher ability to understand others' emotions (r = .210, p = .023), and lower ability to manage stress (r = -.274, p < .001) and perceive emotions (r = -.213, p = .021). In other words, individuals who had higher HPD trait scores appeared more able to establish cooperative, constructive, and satisfying interpersonal relationships than those with lower HPD traits scores. However, individuals with higher HPD trait scores also appeared more impulsive, having difficulties remaining calm and working well under pressure, and having difficulties recognizing the emotions of others around them.

Higher NPD trait scores were significantly associated with low ability to manage stress (r = -.328, p < .001) and understand emotions (r = -.197, p = .033). As such, individuals with higher NPD trait scores also tended to also have difficulties remaining calm and working well under stress, be more impulsive, and have difficulties labelling emotions and recognizing groups of emotions.

Higher BPD trait scores were significantly associated with low understanding of one's own emotions (r = -.301, p < .001), poor stress management (r = -.630, p < .001), less adaptability (r = -.237, p = .010), negative general mood (r = -.549, p < .001), and less ability to use emotions to facilitate thought (r = -.222, p = .017). That is to say, individuals with higher BPD trait scores also tended to have EI scores that indicated poor self-awareness and limited

ability to express their own emotions, difficulties remaining calm and working well under pressure, greater impulsivity, less flexibility regarding change and everyday problems, lack of optimism, energy, and self-motivation, and difficulties using emotional knowledge to problemsolve.

Higher ASPD trait scores were significantly associated with low ability to understand others' emotions (r = -.190, p = .040), poor stress management (r = -.481, p < .001), and negative general mood (r = -.198, p = .032). As such, individuals with higher ASPD trait scores also tended to have EI scores that indicated difficulties establishing cooperative, constructive, and satisfying relationships, difficulties remaining calm and working well under pressure, and a lack of optimism, energy, and self-motivation.

As there is now statistical evidence of specific associations between specific subscales of trait and ability EI, and Cluster B disorders, specific hypotheses can be made in future research regarding associations between these variables and directions of these variables. As such, a path analysis model has been proposed (Appendix B), for both trait and ability EI, to be tested by the follow-up study for which data is currently being collected.

These patterns of correlations suggested that there were some core features that overlap among personality disorders (i.e., poor stress management), but there was notable variability in associations between the personality disorder traits and the various EI subscales. Weaknesses or deficits (and some strengths) in EI traits and abilities are core to Cluster B personality disorders but they cannot be viewed, on the basis of these post hoc analyses, as synonymous. These empirical findings, preliminary though they are, are broadly consistent with the clinical conceptualizations of the Cluster B personality disorders, as is evident when considered in light of the diagnostic criteria for each.

Table 13

Connelations Patrocan Parsonality Disorder Traits and EQ is S and MSCEIT subscales

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. HISTRIONIC	-												
2. NARCISSISTIC	.365**	-											
3. BORDERLINE	.379**	.260**	-										
4. ANTISOCIAL	.326**	.282**	.456**	-									
5. EQI-INTRA	071	102	301**	051	-								
6. EQI-INTER	.210*	119	137	190*	.453**	-							
7. EQI-STRESS	274**	328**	630**	481**	.333**	.184*	-						
8. EQI-ADAPT	093	.023	237*	166	.178	.260*	.289**	-					
9. EQI-MOOD	145	145	549**	198*	.651**	.369**	.481**	.376**	-				
10. BRANCH 1	213*	066	097	061	.285**	.243**	.085	013	.069	-			
11. BRANCH 2	137	076	222*	094	.220*	.317**	.227*	.250**	.174	.477**	-		
12. BRANCH 3	.032	197*	105	130	.102	.390**	.123	.143	.050	.244**	.529**	-	
13. BRANCH 4	.066	.033	050	.028	.073	.234*	.007	007	.003	.250**	.425**	.466**	-

Note. Note. \* p < .05, \*\*p < .001; EQI-INTRA = EQ-i:S Intrapersonal subscale; EQI-INTER = EQ-i:S Interpersonal subscale; EQI-STRESS = EQ-i:S Stress Management subscale; EQI-ADAPT = EQ-i:S Adaptability subscale; EQI-MOOD = EQ-i:S General Mood subscale; BRANCH 1 = MSCEIT Perceiving Emotions subscale; BRANCH 2 = MSCEIT Facilitating Thought subscale; BRANCH 3 = MSCEIT Understanding Emotions subscale; BRANCH 4 = MSCEIT Managing Emotions subscale

### Personality disorder diagnostic criteria and EI subscales.

Each personality disorder was associated with a different combination of EI aspects, likely depending on the defining and differentiating characteristics between the personality disorders. As shown by Tables 14 through 17, some of the correlations between EI and the Cluster B personality disorders overlapped with the diagnostic criteria, but many do not, again indicating that EI seems to be of central importance to the Cluster B disorders, but not synonymous with them.

As can be seen in Table 14, ASPD diagnostic criteria mapped onto the EI domains of understanding others' emotions, negative affect, and impulsivity and poor planning, but there were other diagnostic criteria (i.e., failure to conform to social norms, deceitfulness, reckless disregard for the safety of self or others, and repeated irresponsibility) that did not map on to trait or ability EI constructs.

As seen in Table 15, BPD diagnostic criteria mapped, to at least some degree, onto numerous EI domains (i.e., lack of self-awareness, difficulties remaining calm, impulsivity, low affect, and inability to use emotional information to problem solve), but there were also diagnostic criteria (i.e., unstable and intense personal relationships) that were not reflected in the post hoc associations with EI. Further, the finding that lacking emotional flexibility was associated with BPD traits did not equate to any diagnostic criteria.

Similarly, HPD's diagnostic criteria did appear to map onto some EI domains (i.e., difficulties recognizing and understanding others' emotions), but again, there were multiple EI domains that were not significantly associated with HPD scores (i.e., self-awareness, emotional flexibility, overall positive affect, perceiving, facilitating thought, understanding emotions, and managing emotions). There were also diagnostic criteria that were not reflected in EI domain

scores (i.e., believes relationships to be more intimate than they are, discomfort when not the center of attention, inappropriately sexually seductive or provocative, uses physical appearance to gain attention, rapidly shifting and shallow expressions of emotion, speech style that is excessively impressionistic and lacks detail, self-dramatization, theatricality, and exaggerated emotion, easily influenced by others), and correlations between HPD trait scores and EI domain scores that did not map on to HPD diagnostic criteria (i.e., impulsivity, difficulties remaining calm and working well under pressure, ability to establish cooperative, constructive, and satisfying interpersonal relationships, difficulties recognizing others' emotions around them; see Table 16).

Finally, a similar mixed platter was seen in NPD traits (see Table 17). Difficulties labelling and recognizing emotions were reflected in the correlations between NPD trait scores and EI domain scores, and also NPD diagnostic criteria. But there were various EI domains that were not significantly associated with NPD (i.e., self-awareness, understanding of others' emotions, emotional flexibility, general positive affect, perceiving emotions, facilitating thought, and managing emotions). Further there were diagnostic criteria that were not reflected in the correlations between EI and NPD (i.e., grandiose sense of self-importance, fantasies of unlimited success, power, brilliance, beauty, or ideal love, belief that he/she is special and unique, requires excessive admiration, sense of entitlement, exploitative, often envious of others or believes others envy him/her, and arrogant, haughty behaviours or attitudes). Lastly, there were correlations between NPD and EI that did not map on to NPD diagnostic criteria (i.e., difficulties remaining calm and working well under stress and impulsivity).

Table 14
Antisocial Personality Disorder: Correlations vs. Diagnostic Criteria

Associations with Emotional Intelligence	DSM-5 Criteria
Poor understanding of others' emotions	Lack of remorse (i.e., indifference to or rationalization after hurting or mistreating others)
Lack of optimism, energy, and self-motivation	Irritability and aggressiveness
Impulsivity, difficulty remaining calm and working well under pressure	Impulsivity/failure to plan ahead
	Failure to conform to social norms with respect to lawful behaviours
	Deceitfulness (i.e., lying, use of aliases, conning others)
	Reckless disregard for the safety of self or others
Note Diagnostic criteria reported according to the	Repeated irresponsibility (i.e., failure to sustain work behaviour or financial obligations)

Table 15
Borderline Personality Disorder: Correlations vs. Diagnostic Criteria

Associations with Emotional Intelligence	DSM-5 Criteria
Poor self-awareness and ability to express their own emotions	Identity disturbance (i.e., unstable self-image)
Difficulties remaining calm and working well under pressure	Frantic efforts to avoid abandonment
Impulsivity	Impulsivity in a minimum of two self-damaging areas (e.g., sex, spending, substance use)
Lack of optimism, energy, and self-motivation	Affective instability/mood reactivity; chronic feelings of emptiness; inappropriate, intense anger; transient, stress-related paranoia
Difficulties using emotional knowledge to problem-solve	Recurrent suicidal or self-mutilating behaviour
Lack of flexibility regarding change and everyday problems	
	Unstable and intense interpersonal relationships

Table 16
Histrionic Personality Disorder: Correlations vs. Diagnostic Criteria

Associations with Emotional Intelligence	DSM-5 Criteria
Impulsivity	
Difficulties remaining calm and working well under pressure	
Able to establish cooperative, constructive, and satisfying interpersonal relationships	
Difficulties recognizing others' emotions around them	Considers relationships to be more intimate than they are
	Discomfort when not the center of attention
	Inappropriately sexually seductive or provocative
	Uses physical appearance to gain attention
	Rapidly shifting and shallow expressions of emotion
	Speech style that is excessively impressionistic and lacks detail
	Self-dramatization, theatricality, and exaggerated emotion

Easily influenced by others

Table 17
Narcissistic Personality Disorder: Correlations vs. Diagnostic Criteria

Associations with Emotional Intelligence	DSM-5 Criteria
Difficulties remaining calm and working well	
under stress	
Impulsivity	
Difficulties labelling emotions and recognizing groups of emotions	Lacks empathy, unwilling to recognize or identify with feelings and needs of others
	Grandiose sense of self-importance
	Fantasies of unlimited success, power, brilliance, beauty, or ideal love
	Belief that he/she is special and unique
	Requires excessive admiration
	Sense of entitlement
	Exploitative
	Often envious of others or believes others envy him/her
Note. Diagnostic criteria reported according to the	Arrogant, haughty behaviours or attitudes

#### **CHAPTER 4**

#### Discussion

The purpose of the present study was to further explore the relationship between Cluster B personality disorder traits and EI, as well as further our understanding of the potential for individuals to fake their responses on trait EI measures vs. ability EI measures, and how this might relate back to personality disorder traits. This study was largely designed with two previous studies in mind. One was a study by Leible and Snell (2004), which looked at the correlations between personality disorders and EI, and the other was by Day and Carroll (2008), which explored the capacity to fake on EI measures. The overall goal of the present study was to replicate what these two studies found, with the EQ-i:S and MSCEIT, and to extend these lines of research by linking the potential to fake on EI measures to the relationship between Cluster B personality disorder traits (i.e., dramatic, erratic, emotion dysregulation) and EI.

### **Hypothesis 1**

The first hypothesis, that lower levels of EI would be associated with higher levels of ASPD, BPD, and HPD traits, and higher levels of NPD traits was partially supported. Individuals who had lower levels of trait EI tended to have higher levels of ASPD, BPD, and NPD traits, while participants that had lower levels of ability EI tended to also have higher levels of BPD traits. In other words, individuals who had more BPD traits also tended to have both low trait and low ability EI, and individuals who had more ASPD and NPD traits also tended to report lower trait EI. These findings are broadly consistent with those reported by Leible and Snell (2004), Gardiner and Qualter (2009), and Sinclair and Feigenbaum (2012), but somewhat contrary to those reported by Ruiz et al. (2012), Webb et al. (2008), Petrides et al. (2011) and Nagler et al. (2014).

Similar to the present study's findings, Leible and Snell (2004) found that ASPD traits, as measured by the PDQ-4+ in a university sample, were negatively associated EI, as measured by the Trait Meta Mood Scale (TMMS) and Multidimensional Emotional Awareness Questionnaire (MEAQ), across the board. According to Ruiz et al. (2012), however, ASPD traits, as measured by the Personality Exploratory Questionnaire-III (PEQ-III) in a mixed community and university sample, were not significantly correlated with emotional clarity or repair, and they were positively associated with emotional attention, as measured by the TMMS.

Akin to the present study's findings, Leible and Snell (2004) also found BPD traits among university students, as measured by the PDQ-4+, to be negatively associated with EI, as measured by the TMMS and MEAQ. Ruiz et al. (2012), on the other hand, found that BPD traits in a mixed community and university sample, as measured by the PEQ-III, were negatively associated with emotional clarity and repair, but positively correlated with emotional attention. Further, Gardiner and Qualter (2009) found a negative correlation between BPD traits in a mix of community members and university students, as measured by an assortment of items from multiple BPD measures, and trait EI, as measured by the Schutte EI scale. These findings are consistent with the present study. They also found, however, a negative relationship with the emotion management aspect of ability EI, as measured by the MSCEIT, while the present study found a negative correlation between BPD and overall ability EI. Further, Webb et al. (2008) focused on associations between BPD traits, as measured by the Personality Assessment Inventory, and the full EQ-i, in undergraduate students. Unlike in the present study, they found no relationship between BPD traits and trait EI, despite similarities in measures and population. Finally, in a clinical sample, Sinclair and Feigenbaum (2012) found a negative correlation

between BPD traits, as measured by the Borderline Evaluation of Severity over Time, and trait EI, as measured by the Trait Emotional Intelligence Questionnaire (TEIQue).

According to Leible and Snell (2004), HPD traits in university students, as measured by the PDQ-4+, were not correlated with emotional repair, were negatively correlated with emotional clarity and preoccupation, and were positively associated with emotional attention and awareness, as measured by the TMMS and MEAQ. Meanwhile, Ruiz et al., (2012), found that HPD traits in a mixed community and university sample, as measured by the PEQ-III, were positively correlated with EI, as measured by the TMMS, across the board.

Finally, Leible and Snell (2004) found that NPD traits in university students, as measured by the PDQ-4+, were negatively correlated with emotional clarity, repair, and preoccupation, and positively associated with emotional monitoring, as measured by the TMMS. Contrarily, Ruiz et al. (2012) found that NPD traits in a mixed community and university sample, as measured by the PEQ-III, showed no correlation with emotional repair, and a positive correlation with emotional attention and clarity, as measured by the TMMS. Further, Petrides et al. (2011) sought to examine the relationship between NPD traits and EI in twin pairs, but they used the TEIQue to measure EI and the Narcissistic Personality Inventory to measure NPD traits. Contrary to the present study's findings, they found that NPD was positively correlated with EI. Lastly, Nagler et al. (2014) examined NPD traits and EI using the Social Skills Inventory to measure EI and the Narcissistic Personality Inventory to measure NPD traits. Again, contrary to the present study's results, they found a positive relationship between NPD traits and emotional expressiveness and control, and no relationship between NPD traits and social sensitivity.

A possible explanation for the discrepancies in findings could be the differences in sample. Previous studies have discussed varying prevalence of personality disorder traits in

university vs. community vs. clinical samples. For example, Ellison, Rosenstein, Morgan, and Zimmerman (2018) found that the prevalence of BPD in the general population is approximately 1%, while it is approximately 12% in outpatient psychiatric populations and 22% in inpatient populations. Further, Lenzenweger, Loranger, Korfine, and Neff (1997) found a prevalence rate of 1.3% for BPD in university students, but Lenzenweger (2006) also found that the trajectory of BPD could be quite variable for university students. Meaney, Hasking, and Reupert (2016) conducted a meta-analysis in which they found that rates of BPD in university samples could range from 0.5% to 32.1%. The authors suggested that one possible explanation for this variability could be differences in the way BPD traits are measured and a diagnosis made. Thus, it is possible that the range of BPD trait scores in the present study's sample may be wider or not as wide as the range found in other studies that also use the PDQ-4+. Further, other ways of operationalizing and measuring personality disorder traits do not lend themselves easily to direct comparisons with studies employing other operationalizations and measures.

Similarly, another potential partial explanation for the various findings, between the present study and previous findings, is that various measures of EI were used. As mentioned above, the measures used to assess EI in the present study were the EQ-i:S and the MSCEIT, consistent with some previous studies but not others, for which the TEIQue, TMMS, and Social Skills Inventory have been used. Although all these measures assess (domains of) EI, they each have their own subscales and items that differ from one another, based on the model from which they originate. Thus, there could be differences at the item or subscale level that, at least partially, account for the differing results. For example, the EQ-i:S subscales are intrapersonal abilities, interpersonal abilities, stress management, adaptability, and general mood, while the TEIQue:SF's subscales are well-being, self-control, emotionality, and sociability. Although there

is overlap and similarities between the subscales of different measures (i.e., stress management from the EQ-i:S and self-control from the TEIQue:SF), they are comprised of different items, which might be expected to tap different aspects of core constructs or even (subtly) distinct constructs (Pérez, Petrides, & Furnham, 2005).

Finally, another possible contributor to the varying results across the literature and in the present study is the effects of malingering. Malingering is characterized by intentionally producing dishonest or greatly exaggerated symptoms for the purpose of attaining external incentives (e.g., money, avoiding work; APA, 2013). Across the literature, malingering is considered strategic and can also be referred to as motivated distortion, dissimulation, and faking (Grieve & Mahar, 2010). Malingering behaviours are also considered to be intermittent and situation specific (Bass & Halligan, 2014). Researchers have found that individuals with psychopathic traits were able to alter their EI scores to match diagnostic criteria for depression (Grieve & Mahar, 2010). This effect was not facilitated by general cognitive ability or EI. Although psychopathy is not synonymous with Cluster B disorders, there is conceptual and clinical overlap. Huchzermeier et al. (2007), for example, found that individuals that had Cluster B disorders also tended to score higher on Hare's Psychopathy Checklist (PCL-R; Hare, 2003). Further, they found that NPD was associated with Factor 1 (i.e., egocentric/grandiose, unempathic, manipulative characteristics), and ASPD and BPD to be associated with Factor 2 (i.e., unstable and antisocial lifestyle). Thus, it is possible that individuals (and participants in research studies) that have more Cluster B traits have the capacity to make their EI look bad on purpose or they believe they have poor emotional skills, when, in reality, they do not. Malingering would seem to be unlikely in a sample of undergraduate students who were assured that their participation and data would remain confidential, and for whom there would be no

obvious grounds to deliberately attempt to 'fake bad.' But, certainly, when one considers applied settings (such as forensic mental health agencies and correctional services), where individuals may wish to appear less able or more dysfunctional in order to mitigate responsibility, these considerations take on considerable significance.

Based on the lack of consistency in the literature, more research and replication studies are needed. Clinically, with consistency and clarity, this research avenue should afford support and direction for a greater focus on EI domains in the treatment of those with Cluster B traits and, indeed, diagnosed personality disorders.

## **Hypothesis 2**

The second hypothesis that trait and ability EI scores from the motivated faking condition would be significantly higher than trait and ability EI scores from the honest responding condition was also partially supported. Participants were able to achieve higher trait EI scores when they were motivated to make themselves look good. Participants were not able to achieve higher ability EI scores, however, even when they were provided with motivation to do so. These results were consistent with Day and Carroll's (2008) findings and support their hypothesis that this pattern is a result of the type of measure used to assess each type of EI. Previous studies have shown that individuals can, in fact, positively exaggerate their trait EI scores (e.g. Day & Carroll, 2008; Grubb & McDaniel, 2007). Grubb and McDaniel (2007) suggested that self-report EI measures are transparent and easy to reason out. In other words, perhaps individuals were able to fake their trait EI scores because the nature of self-report questionnaires on EI domains allows individuals to answer in ways that makes them appear to have high EI, even if what they are saying was characteristic of them was not truly characteristic of them or vice versa. Responses to maximum performance tests, like the MSCEIT, however, do not appear to be vulnerable to

faking because there are right and wrong answers that cannot be deduced as easily. The findings reported here and by others support this.

With regards to faking trait EI measures, Roberts et al. (2010) pointed to an earlier study conducted by Dunning, Heath, and Suls (2004), in which they discuss the systematic flaws in self-report measures. Based on this research Roberts et al. (2010) proposed the additional explanation for the bias and response distortions on self-report EI measures; namely that situations in which individuals are required to rate their own EI are paradoxical. Self-report EI measures require that individuals have a certain level of self-awareness, thus, perhaps individuals that have low EI, perhaps past a certain threshold, do not have the ability to provide valid responses. So, in studies such as the present one, not only are these individuals not providing an accurate baseline measure of honest EI, but they may also not be providing 'valid' faking data. Additionally, perhaps there are more factors contributing to an individual's ability to fake responses on trait EI (i.e., self-report) measures, such as higher levels of education, superior cognitive ability, or unknown situational details (e.g., failure to correctly interpret a social interaction due to a lack of information; Dunning et al., 2004). The present study considered cognitive ability as a control variable for this reason. Previous studies have demonstrated that high ability EI is often accompanied by high cognitive ability (e.g., Ermer, Kahn, Salovey, & Kiehl, 2012; Kahn et al., 2016; MacCann et al., 2003). In the present study, both verbal and nonverbal cognitive abilities were positively associated with ability EI. In the regression model for ability EI, verbal and non-verbal ability were entered in the first step. Both accounted for a significant portion in of the variance for faked EI scores, but once honest EI scores were added to the model, they were no longer significant. This suggests that although cognitive ability was associated with ability EI, the capacity to fake EI was not dependent on it. As such, in order to

eliminate it as a potential bias, future studies should continue this practice and include cognitive ability as a control when exploring ability EI.

# **Hypothesis 3**

The third hypothesis, that faked EI scores would be predicted by honest EI scores and socially desirable responding, for both trait and ability EI, was also partially supported. In both cases, higher honest EI scores predicted higher faked EI scores. For trait EI, neither self-deceptive enhancement or impression management aspects of social desirability responding predicted faked EI scores. For ability EI, self-deceptive enhancement did not predict faked EI scores, but impression management did. Day and Carroll (2008) also found that honest EI scores significantly predicted faked EI scores, for both trait and ability EI, but they found both impression management and self-deceptive enhancement to predict faked trait EI scores, but neither predicted ability EI scores.

The present study's finding that ability EI was predicted by impression management and not self-deceptive enhancement is not necessarily surprising given that the self-deceptive enhancement subscale measures one's distorted perspective of themselves, while the impression management subscale pertains to deliberate attempts to alter responses to appear more favorable to others. Perhaps higher impression management was associated with lower faked ability EI scores due to ability EI not being susceptible to faking. In other words, when completing the ability EI maximum performance test in the honest responding condition, responses weren't immediately obvious and participants would have needed to reason out their answers, meaning individuals were already trying to do their best on the maximum performance ability EI test.

Thus, when they were motivated to fake their responses, those that had higher impression management may have felt it was necessary to change their responses, resulting in them selecting

responses that were not what they had initially reasoned out, which worsened their scores. Conceivably, this was not the case for trait EI because it is considered "easier" to fake responses on such scales (Day & Carroll, 2008); impression management was not predictive of faked trait EI scores, because the threshold for being able to fake trait EI responses is lower. For these reasons, it is plausible that, even though ability EI was shown to not be vulnerable to faking by the present studies as well as others (e.g., Day & Carroll, 2008; Grubb & McDaniel, 2007), faked ability EI scores can still be linked to socially desirable responding.

## **Hypothesis 4**

The final hypothesis, that lower levels of EI would be associated with higher levels of ASPD, BPD, and HPD traits, and higher levels of NPD traits, after controlling for capacity to fake was also partially supported. When social desirability was controlled for, in addition to faked EI scores, trait EI was significantly correlated with ASPD and BPD traits; individuals who scored lower on trait EI also tended to have higher ASPD and BPD trait scores. Thus, individuals with more ASPD traits and individuals with more BPD traits also tended to have lower EI, regardless of their capacity to fake their trait EI scores or their social desirability. This could be indicative of EI being a core feature of both ASPD and BPD traits, as there was still a relationship present even after the two theorized explanations for capacity to fake (capacity to fake EI and social desirability response biases) had been statistically addressed. Ability EI tended to be lower in individuals who had higher levels of NPD traits. Thus, individuals with more NPD traits were still more likely to have lower ability EI, regardless of their capacity to fake or their inclination to appear socially desirable. Thus, again, perhaps ability EI was a core feature of NPD, as it was still associated with the disorder after the two theorized explanations for capacity to fake (capacity to fake EI and social desirability response biases) had been statistically

addressed. In summary, even though individuals were able to fake their trait EI scores and even though impression management was related to faked ability EI scores, the correlations between ASPD and BPD and trait EI and the correlation between NPD and ability EI still existed.

When only faked EI was controlled for, and not social desirability, both trait and ability EI tended to be lower in individuals who also had more ASPD, BPD, and NPD traits. Individuals who had more ASPD, BPD, and NPD traits tended to also have lower trait and ability EI, regardless of their capacity to fake EI. As such, these significant associations persisted even after capacity to fake was taken into account. Thus, even if individuals were able to fake their EI responses, the correlations between trait and ability EI and ASPD, BPD, and NPD still existed. There were more significant correlations when only capacity to fake EI was controlled for, as opposed to both capacity to fake and social desirability. This could suggest that EI is linked to these personality disorders, despite one's capacity to fake their EI, but perhaps the relationship between trait EI and NPD, and ability EI and ASPD and BPD were a result of individuals with these disorders wanting to appear more socially desirable. For instance, perhaps social desirability responding should be construed here as an aspect of deceitfulness in ASPD (APA, 2013), used to manipulate people (e.g., Austin, Farrelly, Black, & Moore, 2007), and this is the aspect that EI is related to specifically. Similarly, social desirability could be an aspect of avoidance of abandonment in BPD (APA, 2013). Ability EI could be partially linked to BPD traits through this peripheral relationship. Finally, as in the case of ASPD, NPD also has characteristics relating to exploitativeness (APA, 2013), which could involve wanting to manage the impressions others form in order to manipulate them (e.g., Austin et al., 2007). Again, perhaps trait EI is associated with NPD through this type of relationship. In summary, for the correlations that were significant when capacity to fake was accounted for and social desirability,

as opposed to capacity to fake only, perhaps EI is partially associated with those personality disorders through the role that impression management plays in that particular disorder.

These correlations were not all as hypothesized, but they did reflect similar results to those found when testing Hypothesis 1, especially when only faked EI was controlled for. Further, the relationship between ability EI and NPD traits, and ability EI and ASPD traits became statistically significant in these correlation analyses, but they were not in the original correlation matrix. This could be attributed to "noise" being removed from ability EI scores that was interfering with the relationship and the "true" variance then being reflected in the correlation. Researchers (e.g., Day & Carroll, 2008; Grubb & McDaniel, 2007) who have investigated the capacity to fake trait EI expressed concern about the validity of these measures. Very importantly then, the present study demonstrated that, in the case of Cluster B disorders, even though individuals could fake their responses to trait EI, "true" trait EI, or honest EI, regardless of ability to fake, was still related to the Cluster B disorders.

## **Post Hoc Analyses**

Specific a priori hypotheses on the relationship between the Cluster B disorders and the various components or domains of trait and ability EI (as operationalized by subscales on the measures) were not advanced due to a relative lack of theoretical work and empirical studies in this area. As discussed in the introduction, there were some studies (e.g., Leible & Snell, 2004; Ruiz et al., 2012) that looked at different components of EI, but, for these studies, the components of EI were operationalized differently by measures of EI other than the EQ-i:S and the MSCEIT. As such, post hoc analyses were carried out to inform the development of a follow-up study. These results of the post hoc analyses also contribute to discussion about the conceptual overlap between EI and the Cluster B disorders, demonstrating in this data set that domains of EI would appear to be important in understanding Cluster B sets of traits but EI and Cluster B disorders are clearly not interchangeable constructs.

More ASPD traits were associated with having a poor understanding of others' emotions, a lack of positive affect, and impulsivity and difficulties remaining calm in stressful situations. When matched with DSM-5 criteria, these findings were consistent with the diagnostic criteria of lacking remorse, irritability and aggressiveness, and impulsivity, respectively. There were various components of trait and ability EI that did not significantly correlate with ASPD, however, and four diagnostic criteria that do not appear to be matched by findings. As such, these aspects of trait and ability EI are clearly relevant to but not synonymous with ASPD traits.

Similarly, more BPD traits were associated with poor self-awareness and ability to communicate own emotions, difficulties remaining calm, impulsivity, poor general affect, and difficulties using emotional knowledge to problem-solve. These map on to the DSM-5 diagnostic criteria of identity disturbance, frantic efforts to avoid abandonment, impulsivity, emotional

instability, and recurrent suicidal or self-mutilating behaviour, respectively. Lack of flexibility in change and everyday issues was also associated with more BPD traits, but did not map well on to any diagnostic criteria, while unstable and intense interpersonal relationships is a diagnostic criterion that was not matched with findings. So, as was the case with ASPD, certain aspects of trait and ability EI are clearly relevant to but not synonymous with BPD traits.

More HPD traits were associated with impulsivity, difficulties remaining calm, and difficulties recognizing others' emotions, but also the ability to have cooperative, constructive, and satisfying relationships. EI may well be less of a core feature for HPD, as the only correlation that was clearly mapped onto diagnostic criteria was difficulties recognizing others' emotions, which match up to the diagnostic criterion that reflects these individuals view that relationships are more intimate than they are in actuality. The positive correlation between HPD and ability to establish cooperative, constructive, and satisfying relationships seems contradictory to the negative correlation between HPD and difficulties recognizing other's emotions, as one would expect the latter to facilitate the former. Perhaps the diagnostic criteria that individuals with HPD perceive relationships to be more intimate than they are leads individuals to respond positively to items included in the interpersonal subscale score (i.e., ability to establish cooperative, constructive, and satisfying relationships), which creates the positive relationship between this subscale and HPD traits.

Finally, more NPD traits were associated with difficulties remaining calm, impulsivity, and difficulties labelling emotions and recognizing groupings of emotions. The only diagnostic criterion that appears to be relevant here is the lack of empathy and unwillingness to recognize or identify with feelings or needs of others, which could be seen to be reflected in the correlation between NPD traits and difficulties labelling and recognizing emotions. As with the other Cluster

B disorders, especially, HPD, there were correlations that did not map on to DSM-5 criteria and vice versa. As such, while certain aspects of EI appear to be relevant in understanding NPD traits, there is little ground to suggest the constructs are synonymous.

It should be noted that the correlations do not match perfectly with the diagnostic criteria. These are preliminary findings and more research, with more sophisticated statistical analyses, should be conducted to further explore these comparisons. The correlations reported here offer some direction for future research, and follow-up work is already underway in this regard.

#### **Limitations and Future Directions**

Although a number of findings from the present study were consistent with the hypotheses and the very few studies that have been reported in this emerging area of interest, the study itself had a number of weaknesses that should be acknowledged. First, the regression analyses lacked statistical power. An a priori power analysis was conducted using G\*Power. It indicated that in order to detect a medium effect size, 138 participants were needed. With a total sample size of 117, 21 more participants would have satisfied this requirement. Thus, it is possible that the analyses conducted were underpowered and that there were findings that would be shown to be statistically significant with a larger sample. To address this, a follow-up study is already underway for which we will seek to replicate and extend the present study with a larger sample that also permits analyses by gender.

The gender distribution was another limitation of this study. The literature supports differences in EI based on gender (e.g., Abdellatif et al., 2017; Petrides & Furnham, 2009), but only 15% of participants (i.e., 18 individuals) self-identified as male. In the continuation of this line of research, males will continue to be recruited, with the goal of conducting analyses separately based on gender. Another limitation of the present study is that there were no

hypotheses advanced regarding subscales of the EQ-i:S or MSCEIT. As a result of limited research in the area, there was a lack of theoretical and empirical grounds on which to base hypotheses at this level, although the earliest work in this area is intriguing. For example, a recent study by Peter, Arntz, Klimstra, and Vingerhoets (2018) demonstrated that BPD clients had specific deficits in ability to understand emotions and stress management. Certainly, this is an avenue that should be addressed in future studies; as already noted, a follow-up study is underway in which we will attempt to replicate the pattern of associations found in the post hoc analyses of the current study. We will attempt to articulate an integrated theoretical basis for this pattern of associations within the four Cluster B sets of traits and align this with clinical reasoning; we intend to derive a priori hypotheses grounded in this work and to utilize path analysis to test our efforts (see Appendix B). It would be beneficial to determine what specific areas of ability and trait EI relate to distinct Cluster B traits and to determine if the different domains of EI are more susceptible to faking than others.

Additionally, with regards to the methodology of the present study, the honest responding and motivated faking conditions were not counterbalanced. This was done intentionally, however, in order to accommodate the completion of the MSCEIT on the publisher's website, as was required by the publisher. It was determined that it would be impractical (or at least more likely to result in attrition) for participants to leave Qualtrics to complete the MSCEIT on the publisher's website, return to the Qualtrics survey and continue completing questionnaires, only to return to the MSCEIT publisher's website for a second time, and then back to Qualtrics again. Thus, in order to avoid attrition, the procedure was carefully planned to maximize the likelihood that individuals would complete the entire study. That being said, it is possible there were biases

introduced. In future studies, researchers may benefit from creating a procedure that allows for counterbalancing (e.g., a completely in-lab study).

The fifth consideration is also related to the study's methodology. It is possible that some of the associations that were hypothesized were not found due to the motivated faking instructions not being optimally effective. Day and Carroll (2008) instructed participants to imagine they were applying for a Peer Counsellor position and to respond to the measures in their study as though they were applying for the job. They also announced that \$50 would be awarded to the individuals that performed the best (an element of their design that involved deception because there was, in actuality, no competition and the \$50 was awarded to two participants selected at random). The present study differed in two ways: participants were asked to answer a series of prompts/questions that helped them imagine in some detail their own dream job and then to complete the EI measures a second time in a way that they felt would increase their chances of securing that dream job, while still being believable. Participants were not offered the chance to 'win' \$50 and no element of deception was employed because it was thought possible to induce motivated faking without mention of a financial competition that was not authentic; the significant difference found between the honest and motivated faking conditions for trait EI suggests this effort was at least somewhat successful. Nevertheless, it may not have been motivating enough for some participants. In future studies, researchers should consider conditions such as the one employed in the present study and also ones that include monetary rewards to motivate participants to fake their responses.

A sixth area to consider is malingering. This was not an area explored in the present study, but it is related to emotional manipulation or using emotional information to get what one wants. There is also a literature related to criminal defendants and malingering (e.g., Kucharski,

Toomey, Fila, & Duncan, 2007; Young, Jacobson, Einzig, Gray & Gudjonsson, 2016). As mentioned above, individuals with Cluster B disorders are overrepresented in prison populations; it may be illuminating to explore the nature of malingering in individuals with Cluster B disorders and how this is associated with domains of EI. Related to this consideration, it will be important to undertake research with clinical and community samples. Moving beyond an undergraduate sample would permit a more focused consideration of comorbid psychological disorders. Further, it may be beneficial to extend this research to similar constructs in children. Although personality disorders in children is a controversial topic, they can be diagnosed in older adolescents (APA, 2013; Links, Gould, & Ratnayake, 2003) and there are domains related to the overlapping underlying characteristics (i.e., dramatic, erratic, emotionally dysregulated) that apply to disorders and emotional/behavioural difficulties in childhood (e.g., conduct disorder, oppositional defiant disorder, antisocial behaviours, emotion dysregulation, suicidal behaviour). Future studies should focus on the exploration of the relationship between domains of EI and these types of traits and behavioural tendencies, while taking faking into account (in the context of development and other pertinent factors such as early childhood experiences, environment, genetics; Forgatch & Gewirtz, 2017). For example, Westbrook and Berenbaum (2017) conducted a study in which they found that emotional attention helped explain the relationship between child abuse and the development of BPD, suggesting EI as a mediating variable.

# **Summary and Implications**

Due to the limited literature in this area, more research is needed, but some of the main findings reported in the present study are consistent with previous research, and advance the field with added novel findings. The present findings support a significant negative relationship between Cluster B personality disorder traits, specifically ASPD, BPD, and NPD, and both trait

and ability EI, regardless of the capacity to fake EI. There are treatment implications. Improving EI has the potential to help address behaviours that are characteristic of individuals with Cluster B traits, whether it is informally teaching clients about emotional awareness and regulation or formal EI skills training.

There are multiple evidence-based therapies that are specific to each Cluster B disorder (Caligor, Levy, & Yeomans, 2015), but teaching EI skills could be included in multiple areas of therapy, in order to enhance treatment effects. For example, when conducting dialectical behaviour therapy (DBT), there is a focus on emotions in general, but also more specifically, emotion regulation, interpersonal effectiveness, and distress tolerance (Linehan, 2015). Emotion regulation is a central area of skill development in DBT. There is great emphasis placed on the importance of understanding and naming emotions as a first step, then moving to changing, reducing vulnerability to, and managing negative or extreme emotions. Another main aspect of DBT is improving interpersonal effectiveness, or in other words, learning to manage interpersonal conflicts proficiently and build healthy relationships. Linehan (2015) also outlines distress tolerance as an essential part of DBT. This aspect of DBT teaches clients to refrain from impulsiveness, how to self-soothe, and how to accept the situation. Many of these concepts and target areas are overlapping with the construct of EI (e.g., understanding emotions, managing emotions, establishing satisfying relationships). Given the relationships between Cluster B disorders and EI, as discussed in the present study, and these overlapping features, DBT is supported as a promising method of psychotherapy to treat Cluster B disorders.

Cognitive behaviour therapy (CBT) is another area of treatment relevant to the relationship between EI and Cluster B disorders (Beck & Freeman, 2015). Emotion is part of the CBT model, in which thoughts, behaviours, and emotions all interact, and clients work on

changing thoughts and behaviours will, in turn, improve emotions. One main area of CBT is creating dysfunctional thought records, in which clients need to name emotions they were feeling in specific situations and rate the intensity of those emotions. These dysfunctional thought records help clients recognize why they feel a particular way and what they can do to change it. Other areas of CBT, specifically relating to personality disorders, that link closely with EI are working to improve coping skills to avoid impulsivity, as well as problem solving (e.g., skill training, pros and cons list) to help with a variety of areas (e.g., interpersonal relationships). Again, there are many components of CBT for individuals with personality disorders that relate back to EI (e.g., understanding emotions, building satisfying relationships, managing emotions). As such, the findings from the present study support the use of CBT to treat individuals with Cluster B disorders, as well as highlights the importance that clients with Cluster B disorders have developed adequate awareness and understanding of emotions in order to participate effectively in CBT.

Finally, emotion-focused therapy (EFT) is another clinically-relevant topic related to the relationship between EI and Cluster B disorders. Two core features of EFT are accessing and responding to adaptive emotional experiences and promoting the client's experiences of attention to and exploration of emotions (Paivio, 2013). In other words, two main focuses of EFT are improving self-related difficulties, such as poor self-awareness, and exploring and reflecting on the meaning of one's internal experience (e.g., emotions, beliefs, desires). Once again, there are connections between the relationship between EI and Cluster B disorders and EFT. Aspects of EI (e.g., self-awareness, understanding emotions) lend themselves as points of foci in EFT. As such, EFT is an important consideration when planning treatment for individuals with Cluster B disorders and whether or not these areas of focus are promising for these individuals.

Additionally, if an individual with a Cluster B disorder is participating in EFT, the clinician must be aware of the deficits the client could have in these areas of EI, and work on specifically monitoring and improving them.

Additionally, as individuals with Cluster B disorders also had specific EI patterns, this adds an extra layer of understanding and a potential additional aid in detection of the Cluster B disorders (Biskin, 2015; Sinclair & Feigenbaum, 2012). For example, BPD can be difficult to diagnose and is comorbid with a variety of disorders. The knowledge of specific EI patterns could be beneficial in identifying BPD. Likewise, NPD has various presentations of the disorder, thus it can be difficult to diagnose (Caligor et al., 2015). Again, EI is not a part of the diagnostic criteria of NPD, but the specific pattern of EI associated with NPD traits could be a helpful preliminary screener for relevant difficulties for clinicians.

More specifically relating to childhood, although personality disorders are not diagnosed in children, children do have traits that are indicative of later development of personality disorders or have traits that resemble those of individuals that have personality disorders (Bleiberg, 2002). In addition to similar treatment implications, perhaps if taught EI skills early on in school, the development of a Cluster B disorder could be mitigated (Petrides et al., 2011; Sinclair & Feigenbaum, 2012). For example, Finlon et al. (2015) conducted a study in which they explored the effects of the Emotion-Based Prevention Program, which is designed as a prevention program to develop social and emotional skills in children ages 3 to 5. They found that in classrooms where this intervention was implemented, children developed more knowledge of emotions, had fewer instances of expressing negative emotions, and had fewer internalizing difficulties. Again, the parallels with EI features are evident (e.g., emotional awareness and understanding, emotion regulation). Further, they also found that this intervention

was effective even when children experienced more stress and/or less support, which may be the case in children that have Cluster B related traits.

The present study also confirms previous findings in the literature indicating that it is not possible to fake ability EI scores or, at the very least, it is more difficult to do so. This finding has implications for the development of EI measures. Although the EQ-i:S and the MSCEIT are both well-validated measures (Bar-On, 2002; Parker, Keefer, & Wood, 2011; Mayer et al., 2003), participants in the present study demonstrated that they could fake EQi:S scores but not MSCEIT scores, which speaks to reliability and validity. In future measure development work, maximum performance tests would appear to be preferable when faking (whether in forensic or industrial/organization psychology contexts) might or should be anticipated. The issue of being able to fake when responding, is, of course, a concern across self-report measures, not just trait EI measures (see, for example, Birkeland et al., 2006; Hartman & Grubb, 2011).

In employment/human resources contexts, in which EI assessments are undertaken for personnel selection (Day and Carroll, 2008), a maximum performance test, like the MSCEIT, may be preferable. Day and Carroll (2008) raised the issue of fairness when utilizing EI measures that can be faked. Not only is fairness in question, however. There are many broader implications (e.g., general productivity, team cohesiveness) that also need to be taken into consideration. For instance, if an individual artificially increases their EI score, they may appear to be someone who works well under pressure and gets along well with others. If, in actuality, this is not the case, said individual could get behind in their work, submit subpar work, or disrupt group cohesiveness, and therefore, the project(s) on which the group works.

It would also be beneficial for future work to explore other explanations for why individuals fake responses on EI measures. The present study, along with previous findings, have

supported that honest EI scores and social desirability response biases predict faked EI scores, but it would be beneficial to determine what accounts for the other portion of the variance of faked EI scores. Perhaps this blank could be filled in by individuals who use emotional manipulation (Austin et al., 2007). It is characteristic of Cluster B disorders to be exploitative or manipulative in order to attain a certain result (e.g., avoiding abandonment, personal gain), thus, perhaps an aspect of this manipulation can partially account for faking. Further, Dunning et al. (2004) found that, generally with self-report, but also more specifically self-report EI, there may be systematic biases built into the measurement. For example, there may be consistent differences in EI self-reports based on overall level of cognitive ability or level of education. As aforementioned, the present study did account for this potential bias. Although both verbal and nonverbal ability were positively associated with ability EI, they did not account for a significant amount of variance of faked EI once honest EI was added to the model. This should be considered when reviewing literature that did not account for this potential bias, as well as when designing future studies. Again, the paradox Roberts et al., (2010) highlighted is of importance to consider. If individuals who have low self-awareness complete a self-report EI measure, their responses may not be valid.

Alexithymia is also relevant when considering valid responding on EI measures. Alexithymia is characterized by difficulties identifying emotions and distinguishing between emotions and bodily sensations, difficulties expressing emotions, limited imagination, and having a literal and external way of thinking (Taylor & Bagby, 2000). Based on what Roberts et al. (2010) proposed, individuals with alexithymia would likely not produce valid EI scores, as they are characterized by a lack of EI, thus, a lack of emotional awareness. Contrary to this line of thought, however, Parker et al. (2001) and Grabe et al. (2004) established patterns of

associations between alexithymia and EI, and alexithymia and psychopathology, that indicated a negative relationship between alexithymia and EI, and a positive relationship between alexithymia and psychopathology. These patterns of associations are theoretically sound, but given the paradox introduced by Roberts et al. (2010), one must consider how individuals with a lack of emotional awareness were able to accurately respond to self-report measures regarding their own behaviours and emotions. Thus, future work should also consider, and make an effort to include, a measure of alexithymia and/or individuals diagnosed with alexithymia.

Another factor that could be taken into account when evaluating self-report EI scores, as well as maximum performance test EI scores, is cultural differences. Not only does culture affect emotional adjustment and well-being, defining characteristics of a culture (e.g., individualistic vs. collectivistic), affect one's perspective of emotions (Fernández-Berrocal, Salovey, Vera, Extremera, & Ramos, 2005). Again, these factors may influence the way in which individuals from a specific cultural background respond to EI measures, and may introduce a level of systematic error if all individuals from a specific cultural background respond in the same way. This is an area in need of focused research.

Finally, the post hoc analyses from the present study have implications for future research in the area, and directly, the continuation of this study. Previous research has not been conducted using the EQ-i:S and MSCEIT that provided enough information to advance hypotheses specific to the specific subscales of EI. The findings from the present study demonstrate that there are patterns of significant associations, warranting the continuation of research in this area. These preliminary data provide a basis for hypotheses regarding the relationships between both trait and ability EI subscales and Cluster B disorders. A potential path analysis model has been

created, for both trait and ability EI, based on the findings of the post hoc analyses from the present study (Appendix B).

The promise of further work on the interface between maladaptive personality traits and EI is, indeed, considerable.

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## Appendix A

## **Faking Condition Instructions**

A few moments ago you completed a measure of how you think about, understand, and manage emotions. You may recall that you completed a questionnaire that also concerned emotions when you participated in the online questionnaire part of this study (don't worry if you don't remember though!). Now we would like you to complete both measures again here in the lab. But this time we are NOT asking you to complete the measures as honestly as you can. Instead, we would like for you to respond in a way that makes yourself look as good as possible while still being believable.

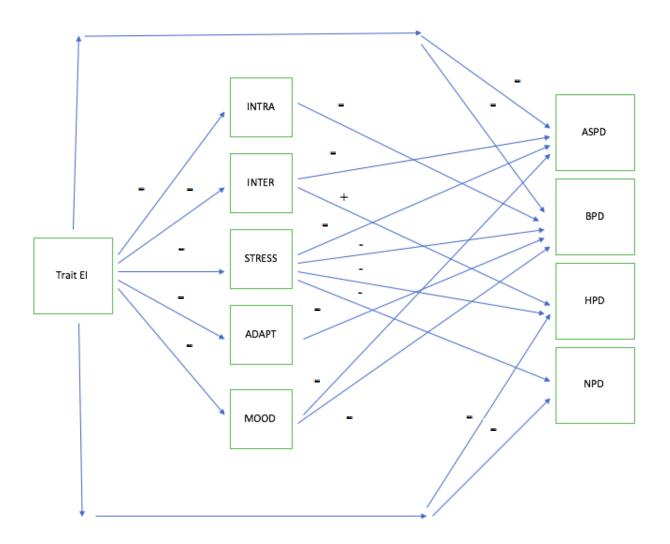
We want you to imagine you are applying for your dream job. In this imaginary scenario, the person making the decision about whether you get your dream job will be using your responses to the two measures to decide if you have the characteristics and skills they want. Please complete the measures as though you are the ideal candidate for the job and try to make sure your responses on the measures make you look ideal while still being believable. Before you start on the measures again, please complete the following to make sure you have your ideal job firmly in mind (we won't keep this information – it is just to get you thinking):

What type of job is this ideal job? Does it have a title?
What kind of tasks will you be doing?
In what type of location will you be doing most of your work?
Will you be in charge of other people? If so, how many?
How much money will you be paid per year?
Will you be in charge of other people? If so, how many?  How much money will you be paid per year?

So, you really want this dream job, right? Now complete the two measures again and make sure your responses make you look great while still being believable.

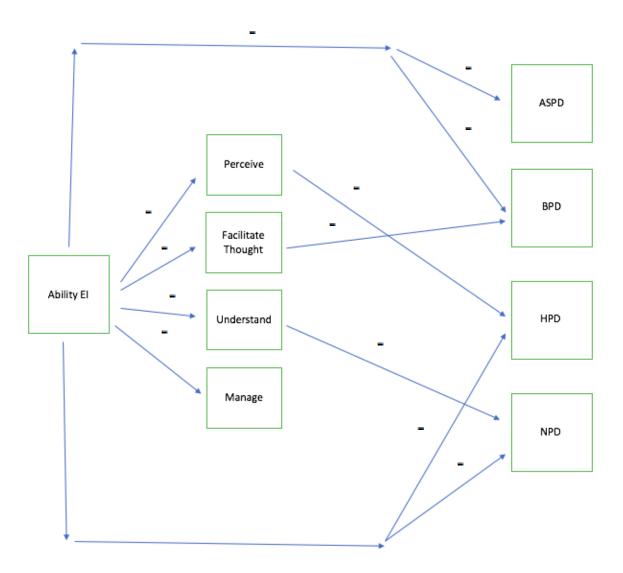
## Appendix B

Figure 3. Proposed Associations between Trait EI Subscales and Cluster B Personality Disorder Traits



Note. INTRA = Intrapersonal ability EQ-i:S subscale; INTER = Interpersonal ability EQ-i:S subscale; STRESS = Stress Management EQ-i:S subscale; ADAPT = Adaptability EQ-i:S subscale; MOOD = General Mood EQ-i:S subscale; ASPD = Antisocial Personality Disorder; BPD = Borderline Personality Disorder; HPD = Histrionic Personality Disorder; NPD = Narcissistic Personality Disorder

Figure 4. Proposed Associations between Ability EI Subscales and Cluster B Personality Disorder Traits



Note. Perceive = Perceiving Emotions MSCEIT subscale; Facilitate Thought = Facilitating Thought MSCEIT subscale; Understand = Understanding Emotions MSCEIT subscale; Manage = Managing Emotions MSCEIT subscale ASPD = Antisocial Personality Disorder; BPD = Borderline Personality Disorder; HPD = Histrionic Personality Disorder; NPD = Narcissistic Personality Disorder

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