



# Emotional intelligence and its relation to everyday behaviour

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Received 17 September 2002; accepted 9 June 2003

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## Abstract

This study assessed the discriminant, criterion and incremental validity of an ability measure of emotional intelligence (EI). College students ( $N = 330$ ) took an ability test of EI, a measure of the Big Five personality traits, and provided information on Life Space scales that assessed an array of self-care behaviours, leisure pursuits, academic activities, and interpersonal relations. Women scored significantly higher in EI than men. EI, however, was more predictive of the Life Space criteria for men than for women. Lower EI in males, principally the inability to perceive emotions and to use emotion to facilitate thought, was associated with negative outcomes, including illegal drug and alcohol use, deviant behaviour, and poor relations with friends. The findings remained significant even after statistically controlling for scores on the Big Five and academic achievement. In this sample, EI was significantly associated with maladjustment and negative behaviours for college-aged males, but not for females.

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*Keywords:* Emotional Intelligence; Emotions; Life Space; Maladjustment; Behaviour; MSCEIT; Personality; Big Five

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Evidence is accumulating that emotional intelligence (EI) is a distinct mental ability that can be reliably measured (Brackett & Mayer, 2003; Ciarrochi, Chan, Caputi, & Roberts, 2001; Mayer, Caruso, & Salovey, 1999; Mayer, Salovey, Caruso, & Sitarenios, 2003). However, there is as of yet little clarity as to what EI predicts. Some preliminary findings suggest that lower EI is related to involvement in self-destructive behaviours such as deviant behaviour and cigarette smoking (Brackett & Mayer, 2003; Rubin, 1999; Trinidad & Johnson, 2001), whereas higher EI is related to positive outcomes such as prosocial behaviour, parental warmth, and positive peer and family relations (Mayer et al., 1999; Rice, 1999; Salovey, Mayer, Caruso, & Lopes, 2001). Beyond these preliminary studies, more research is necessary to assess the criterion validity of EI.

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From a scientific perspective, ability traits such as EI should be understood in terms of their real world behavioural expressions (Funder, 2001). Surprisingly, few researchers have focused their attention on the criterion validity of personality variables with respect to behavioural criteria (Magnusson & Torestad, 1992). Paunonen and Ashton (2001), for instance, employed an assortment of self-report behavioural criteria in their research on the predictive validity of the Big Five personality traits (i.e., Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness). They showed that these five super-traits were correlated with a number of behaviours. For example, Conscientiousness correlated with study habits and college GPA, and Extraversion correlated with frequent dating. However, many of the predictive validity coefficients in their research were low or non-significant. Two possible reasons for weak predictive validity include the use of single-item assessments of behaviours for which reliability cannot be assessed, and the use of fairly narrow behavioural criteria that are not organized according to any specific hypotheses (e.g., Epstein, 1979, 1983).

The goal of the present study is to assess the criterion validity of EI, and hence the social significance or external utility of EI by relating the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT, 2002a) to selected scales from the College Student Life Space Scale (CSLSS; Brackett, 2001). The CSLSS expands upon recent measures of self-reported Life Space data (e.g., Mayer, Carlsmith, & Chabot, 1998; Paunonen, 1998; Paunonen & Ashton, 2001) because each scale is comprised of multiple self-reported behaviours, which are internally consistent. For this study, 13 scales that assess hypothesized expressions of EI were selected, including measures of self-care behaviours, leisure pursuits, academic activities, and interpersonal relations. The present study also examines the discriminant and incremental validity of EI; that is, the extent to which EI is independent of well-studied measures of personality and verbal intelligence, and the ability of EI to predict selected criteria beyond what can be predicted by these other constructs.

## 1. Background

Correlating EI with a few external criteria such as college grades or alcohol consumption, although worthwhile, provides an incomplete picture of the person. Thus, the present study takes a new ability measure of EI and relates it to a cluster of Life Space scales, which assess self-reported behaviours that have either been associated with EI in preliminary studies or have been hypothesized to be related to EI.

Unlike measures of internal personality, which ask people to endorse items such as “I like to attend parties” or “I enjoy smoking cigarettes”, Life Space scales ask about the objective events and behaviours in the world surrounding the individual, such as “How many parties have you been to in the last month?” or “How many packs of cigarettes have you smoked in the last week?” (Mayer et al., 1998). In this section we discuss current conceptions and measures of EI and then do the same for the Life Space.

### 1.1. Emotional intelligence

Emotional intelligence involves the capacity to carry out reasoning in regard to emotions, and the capacity of emotions to enhance reasoning. More specifically, EI is said to involve the ability

to perceive and accurately express emotion, to use emotion to facilitate thought, to understand emotions, and to manage emotions for emotional growth (Mayer & Salovey, 1997). A number of related concepts exist, including emotional competence, emotional creativity, and empathic accuracy (Averill & Nunley, 1992; Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990; Saarni, 2001). There are also other approaches to EI. “Mixed” conceptions of EI (e.g., Bar-On, 1997; Goleman, 1995, 1998; Schutte et al., 1998) are so-called because they mix in well-studied but mostly uncorrelated traits such as optimism, motivation, and well-being with aspects of ability EI (Mayer, Salovey, & Caruso, 2000). These mixed models are primarily based on a popularization of the concept (Goleman, 1995), and the measures that stem from them are weakly related to EI ability (Brackett & Mayer, 2003).

Earlier EI ability scales (e.g., Mayer et al., 1999; Mayer, DiPaolo, & Salovey, 1990) were criticized for possessing lower-than-desirable reliability (Davies, Stankov, & Roberts, 1998; Roberts, Zeidner, & Mathews, 2002). The Multi-factor Emotional Intelligence Test (MEIS; Mayer et al., 1999) has a full-scale reliability of  $r = 0.96$ , and subscores that also are quite reliable; earlier concerns about reliability were directed to individual tasks scores that are not typically studied (Mayer et al., 2003). Similarly, the most recent EI ability test, the Mayer–Salovey–Caruso Emotional Intelligence Scale (MSCEIT; 2002a), has a full-scale reliability of  $r = 0.91$ . The MSCEIT is content valid and possesses a factor structure congruent with the four-part model of EI (Mayer & Salovey, 1997; Mayer et al., 2003). The four EI abilities the MSCEIT measures are: (a) Perceiving Emotion, (b) Using Emotion to Facilitate Thought, (c) Understanding Emotion, and (d) Managing Emotion. The MSCEIT measures the ability to perceive emotion by showing people faces and designs and asking them to identify emotions in them. The Use of Emotion to Facilitate Thought is measured by assessing people’s ability to describe emotional sensations and their parallels to other sensory modalities, and through an individual’s ability to assimilate pre-determined mood into their thought processes. Understanding Emotions is measured by asking test-takers how emotions combine to form other emotions, and how emotional reactions change over time. Finally, Emotion Management is measured by having test-takers choose among more or less effective means of emotional management in private and interpersonal emotional situations.

The MSCEIT and its predecessor test, the MEIS appear to measure something that has not been measured before (Ciarrochi et al., 2001). Scores on both tests are related to but mostly independent of verbal intelligence, the Big Five, and empathy ( $r_s < 0.35$ ) (Brackett & Mayer, 2003; Ciarrochi et al., 2001; Mayer et al., 1999; Mayer et al., 2002a; Roberts et al., 2001; Salovey et al., 2001). Emotional intelligence also appears to predict important external criteria, as we will discuss shortly.

## *1.2. Emotional intelligence in the Life Space*

### *1.2.1. Conceptions of the Life Space*

Mayer et al. (1998) designed an initial comprehensive measure of the Life Space. They borrowed the term “Life Space” from Lewin (1936, 1951), redefined it so that it pertained to the external environment, and divided it into four broad areas: (a) biological bases (e.g., height, weight, physical health), (b) situational elements (e.g., possessions such as clothing and pictures), (c) interactive situations (e.g., self-care behaviour, activities with friends), and (d) incorporative groups (e.g., sports team memberships). These four areas emerge as surrounding personality if

one depicts personality in a two-dimensional space defined, first, by a vertical molecular-molar dimension (i.e., from the brain to the individual's psychology to groups of individuals) and, second, by a horizontal, internal-external dimension (e.g., from the individual brain and its psychology to the outside environment, situations, and groups) (Mayer, 1998; Mayer et al., 1998). Using such an approach Mayer et al. developed 26 Life Space scales, which were dispersed throughout these four domains. Many of the scales correlated with measures of internal personality.

Conceptually speaking, Life Space data fall into a different category than self-report data, in being a report of the external qualities of one's world (Mayer, *in press*). More specifically, Life Space data focus on external, observable, discrete aspects of a person's surrounding environment. The items require minimal interpretations on the part of the participant, and the answers are definite and potentially verifiable. For example, the life space question, "How many times in the last month have you said 'I love you' to your romantic partner?" is somewhat different from a parallel self-report of an internal sentiment such as, "How much do you love your partner?" (Buss & Craik, 1985; Mael, 1991; Mayer et al., 1998). Such question formats also minimize social desirability response bias (Shaffer, Saunders, & Owens, 1986).

Following Mayer et al. (1998), Formica (1998) related the MEIS with Life Space dimensions that assessed potential expressions of EI. Emotional intelligence correlated positively with a Relatedness scale (e.g., keeping a private journal of hopes and feelings, surrounding oneself with sentimental items such as photos of friends) and negatively with both a Rational Control scale (e.g., taking college courses in engineering, math, and computer science) and a Destructive Behaviour scale (e.g., drug and alcohol use, selling drugs, engaging in acts of mischief/destruction). Formica's research raised two important questions about EI: Can these relations between EI and real-world criteria be replicated? And, what else might EI correlate with? To address these questions, the present research correlated the MSCEIT with a more powerful measure of the Life Space.

Brackett (2001) extended both Mayer et al. (1998) and Formica's (1998) work by creating an omnibus measure of the Life Space, the College Student Life Space Scale (CSLSS). The CSLSS sampled a large set of items from each of the four domains previously described. Factor analysis of the CSLSS resulted in numerous meaningful and reliable scales in all four domains. The 27 scales in the interactive domain provide a rich description of college students' daily lives, including: self care behaviours, leisure pursuits, academic activities, and interpersonal relations. The scales also correlated with the Big Five personality traits in expected ways. Intellect was related to an Introspective Lifestyle scale (e.g., time spent meditating, writing in diary); Extraversion correlated with a Promiscuous Lifestyle scale (e.g., number of sexual partners, age of first sexual intercourse); Agreeableness correlated (negatively) with a Deviant Behaviour scale (e.g., number of physical fights, times vandalized something); Conscientiousness was related to a Studious Lifestyle scale (e.g., time spent studying, hours spent in the library); and Neuroticism correlated with an Isolated Environment scale (e.g., lack of friends, spending entire weekends alone).

In the present study, we examined relations between the MSCEIT and 13 scales from the CSLSS in order to replicate and expand upon the range of behaviours that have been hypothesized as expressions of EI. For example, preliminary validity evidence indicates that high EI is related to self-reported parental warmth, secure attachment, and informant reports of both children's pro-social behaviour in school and manager effectiveness (Mayer et al., 1999; Rice, 1999). Therefore, we predict that EI will be positively correlated with better-quality relationships with peers and family

members. Lower EI, however, has been related to higher levels of smoking, alcohol consumption, and social deviance (Brackett & Mayer, 2003; Formica, 1998; Rubin, 1999; Trinidad & Johnson, 2001). Therefore, we predict that EI will be negatively correlated with these adverse life conditions.

## 2. Introduction to the present study

In the present research we investigate relations between the MSCEIT and self-reported behaviours that are potential expressions of EI. First, preliminary analyses will be conducted on the MSCEIT and Life Space scales. Then, the MSCEIT will be compared to the Big Five and to verbal intelligence. In our main analyses, relations between the MSCEIT and the Life Space will be examined.

## 3. Methods

### 3.1. Participants

Analyses are based on participants ( $N=330$ ; 241 females, 89 males) who were part of a larger study that examined the relation between the Big Five personality traits and the Life Space. The participants were between 17 and 20 years old, 96% were Caucasian. All were recruited from introductory psychology courses and received course credit for their involvement in the study. Each participant signed an informed consent upon arrival to the study and received a debriefing sheet upon completion.

### 3.2. Measures

#### 3.2.1. College Student Life Space Scale (CSLSS; Brackett, 2001): Interactive Domain

The 13 scales from the CSLSS improve upon earlier developed Life Space scales (Formica, 1998; Mayer et al., 1998) and other self-report measures of everyday behaviour (Paunonen, 1998; Paunonen & Ashton, 2001). The scales are organized according to three broad content areas: healthy versus unhealthy behaviour (e.g., attending to one's physical appearance, alcohol consumption), general leisure and academic activities (e.g., having a studious lifestyle, engaging in deviant behaviour), and interpersonal relations (e.g., positive or negative relations with mother or best friend). The items measure discrete, observable and potentially verifiable behaviours in a person's life. For example, the question, "How many hours did you study yesterday?" is followed by response options "0," "1," "2–3," and so on. Each of the 13 scales had between 3 and 14 items ( $M=8.7$ ) and reliabilities ranging from  $\alpha=0.62$  to  $0.88$  ( $M=0.81$ ).

The construction of the Life Space scales is described elsewhere (Brackett, 2001). Here, only a few of the scales from each content area (i.e., self-care, daily activities, interpersonal relations) will be discussed. In the self-care area, there is an Illegal Drug User scale (e.g., smokes marijuana, spends money on illegal drugs) and a Care of Physical Appearance scale (e.g., wears makeup or uses skin care products, spends time grooming and choosing clothes). In the daily activities area there is a Deviant Behaviour scale (e.g., physical fights, gambling behaviour). Finally, in the interpersonal relations area, there are scales such as Positive Relations with Father (e.g., displays

affection, laughs, seeks advice), and Negative Relations with Friends (e.g., screams, fights, and uses illegal drugs). In Table 2 of the Results Section, the most representative items from each scale are presented.

### 3.2.2. *Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT, 2002a)*

Emotional Intelligence was measured with the MSCEIT Version 2.0 (Mayer et al., 2002a). The test contains 141 items that are answered in approximately 35 minutes. The test consists of eight tasks, which are divided into four classes or branches of abilities including (a) perceiving emotion, (b) using emotion to facilitate thought, (c) understanding emotion, and (d) managing emotions. Analysis of the data provides three scores reported here: a total EI score, and two area scores: Experiencing EI (comprised of perceiving emotion and facilitating thought) and a Strategic EI (comprised of understanding and regulating of emotion). Correct answers on the test are evaluated in terms of agreement with a general or expert consensus, which closely converge (Mayer et al., 2003). The split-half reliability of the scale in this sample was high ( $r=0.90$ ). The mean MSCEIT score for females was 96.62 (S.D. = 10.34) and for males it was 89.33 (S.D. = 11.61). More detailed information on the construct validity of the MSCEIT is available in the User's Manual (Mayer et al., 2002b).

### 3.2.3. *Big Five personality traits*

Personality was assessed using the 50-item personality scale from the International Personality Item Pool (Goldberg, in press). The scale assesses the five personality factors (Neuroticism, Extraversion, Intellect (or Openness), Agreeableness, and Conscientiousness) of the Big Five. The internal consistency of each scale was high: Neuroticism ( $\alpha=0.85$ ;  $M=3.02$ , S.D.=0.72), Extraversion ( $\alpha=0.84$ ;  $M=3.43$ , S.D.=0.70), Intellect ( $\alpha=0.80$ ;  $M=3.49$ , S.D.=0.58), Agreeableness ( $\alpha=0.82$ ;  $M=4.16$ , S.D.=0.58), and Conscientiousness ( $\alpha=0.80$ ;  $M=3.58$ , S.D.=0.62).

### 3.2.4. *Academic ability*

We obtained permission from the participants to acquire their verbal SAT scores ( $M=533.33$ , S.D.=71.78) and college grade-point averages ( $M=2.89$ , S.D.=0.58) from the university registrar.

## 3.3. *Procedure*

All participants took the CSLSS, the Big Five, and the MSCEIT in two testing sessions, each lasting two hours.

## 4. Results

We first conducted preliminary analyses on the MSCEIT and the Life Space scales. The MSCEIT was then compared to the Big Five measure of personality and to verbal SAT scores to assess its discriminant validity. Following these analyses, we focused on the predictive and incremental validity of the MSCEIT (relative to the Big Five and verbal intelligence).

#### 4.1. Preliminary Analyses on the MSCEIT and Life Space

We obtained both consensus and expert scores for the MSCEIT from the test publisher. Consensus scores reflect the proportion of people in the normative sample (over 5000 people from various countries) who endorsed each MSCEIT test item. Expert norms were obtained from a sample of 21 members of the International Society Research on Emotions (ISRE) who provided their expert judgment on each of the test's items. The correlation between the two scoring methods was nearly perfect ( $r = 0.98$ ), which is consistent with the information in the technical manual (Mayer et al., 2002b; see also Mayer et al., 2003). We conducted all subsequent analyses using consensus scores. Rechecking them with expert scoring led to no meaningful differences. Next, we correlated the two area scores (Experiencing EI and Strategic EI). There was a moderate relationship between the two ( $r = 0.46$ ), which indicated that the abilities associated with the two EI areas are related to one another but still distinguishable warranting separate analyses with the criteria.

Because gender differences in EI were found in earlier studies (Mayer et al., 2000), we assessed the extent to which these differences existed in the present study. Consistent with previous research, overall female EI ( $M = 96.62$ ,  $S.D. = 10.34$ ) was significantly higher than overall male EI ( $M = 89.33$ ,  $S.D. = 11.61$ ),  $t(328) = -5.48$ ,  $P < 0.001$ . This effect, however, was small,  $\eta^2 = 0.08$ . Similar gender differences were also found for the Experiencing EI and Strategic EI subscores on the MSCEIT.

We then assessed whether gender differences existed on the 13 Life Space scales. Independent sample  $t$  tests showed significant differences between males and females on 10 of the 13 scales ( $P < 0.05$ ). For example, the mean score on the Care of Physical Appearance Scale was higher for females than for males, but for the Deviant Behaviour scale the reverse was true.

Because significant gender differences were found on both the MSCEIT and the Life Space scales we conducted analyses separately for males and females, in addition to the analyses on the full sample. We thought there might be gender differences in the correlations between EI and the Life Space in addition to the mean gender differences on both scales.

#### 4.2. Discriminant validity of the MSCEIT

In order to evaluate whether MSCEIT scores were redundant with Big Five scales and academic achievement, correlations between all scales were examined. Table 1 shows the zero-order correlations among the MSCEIT, Big Five, and measures of academic achievement. MSCEIT scores were modestly correlated with just two Big Five dimensions: Agreeableness and Intellect ( $r_s < 0.24$ ). MSCEIT total scores also correlated with verbal SAT scores ( $r = 0.35$ , for the full sample) and to a much lesser extent with college GPA. No significant gender differences were found in any of these correlations. These findings mirror previous research, which showed that MSCEIT scores are mostly independent from personality and verbal intelligence (Brackett & Mayer, 2003; Salovey et al., 2001). The MSCEIT, therefore, has discriminant validity; it taps information about individual differences not contained in the Big Five or measures of academic achievement.

#### 4.3. Criterion validity of the MSCEIT

To assess whether EI predicted the Life Space criteria, we first examined zero-order correlations between MSCEIT scores and the Life Space scales. Table 2 shows the correlations between these

scales for the full sample, and separately for males and females. Six of the 13 life space scales significantly correlated with EI. A careful examination of the correlations shows a pattern of expected negative relations between EI and the Life Space scales, but for the male subgroup only. For males, lower EI (particularly Experiencing EI, which combines the ability to perceive emotions and the ability to use emotions to facilitate thought) was related a number of scales measuring adverse aspects of life such as Illegal Drug Use, Alcohol Consumption, Deviant Behaviour, and Negative Relations with Friends ( $r_s = -0.28$  to  $-0.45$ ). Of note, the absolute value of the correlations for males was statistically significantly higher than that for females when directly tested against each other with a  $z$ -test ( $P < 0.05$ ). Only two small positive relations between EI and the Life Space were found for the full sample, Care of Physical Appearance, and Positive Relations with Friends scales ( $r_s = 0.12, 0.17$ , respectively).

In contrast to our expectations, EI was not related to many positive aspects of the Life Space. Specifically, the MSCEIT did not correlate with scales that measured positive relations with parents or best friends. Furthermore, in our sample of college students lower EI was not predictive of smoking behaviour as it was in Trinidad and Johnson's (2001) sample of adolescent males and females.

Many of the findings pointed to the importance of conducting analyses separately for each gender. First, most of the correlations suggested an interaction between gender and EI as predictors of life space criteria. In other words, the size of the correlation between EI and Life Space scales was different for men versus women. For example, the correlation between the Illegal Drug User scale and EI for males was  $-0.34$ , whereas for females it was  $0.09$ . The difference in this correlation for males and females was statistically significant, which suggests that the relations between these variables were different for each gender. Second, some of the correlations between EI and the criteria (e.g., Care of Physical Appearance) were not significant within the male only or female only subgroups, but were significant for the full sample. As shown in Fig. 1, the

Table 1  
Correlations Among Measures of Emotional Intelligence, Personality, and Academic Performance

	Emotional Intelligence								
	Experiencing EI			Strategic EI			Total EI		
	A	M	F	A	M	F	A	M	F
Extraversion	0.04	0.04	0.06	-0.01	-0.05	-0.03	0.03	0.00	-0.02
Agreeableness	<b>0.21***</b>	<b>0.21*</b>	<b>0.15*</b>	<b>0.17**</b>	0.05	<b>0.14*</b>	<b>0.24***</b>	0.16	<b>0.19**</b>
Conscientiousness	0.07	-0.04	0.08	0.02	-0.03	-0.02	0.05	-0.04	0.04
Neuroticism	0.02	0.02	0.06	0.01	0.02	0.04	0.02	0.02	0.06
Intellect	<b>0.13*</b>	<b>0.28**</b>	0.11	<b>0.14**</b>	0.13	<b>0.20**</b>	<b>0.17**</b>	<b>0.24*</b>	<b>0.19**</b>
Verbal SAT	<b>0.23***</b>	0.20	<b>0.27***</b>	<b>0.39***</b>	<b>0.27*</b>	<b>0.47***</b>	<b>0.35***</b>	<b>0.29*</b>	<b>0.42***</b>
College GPA	0.07	0.13	-0.02	<b>0.18**</b>	-0.02	<b>0.22**</b>	<b>0.14*</b>	0.01	0.10

Sample size for all subjects =  $302 \leq N \leq 332$ , for males =  $74 \leq N \leq 89$ , and for females =  $209 \leq N \leq 242$ . A = all subjects, M = males, F = females. All significant correlations are shown in boldface.

\*  $P < 0.05$ .

\*\*  $P < 0.01$ .

\*\*\*  $P < 0.001$ , two tailed.

Table 2  
Zero-order correlations between emotional intelligence and life space scales

Life Space Scale	$\alpha$	Sample Items	Emotional Intelligence								
			Experiencing EI			Strategic EI			Total EI		
			A	M	F	A	M	F	A	M	F
<i>Self care behaviours</i>											
Illegal Drug User	0.87	Times smoked marijuana in last month, money spent on drugs in last month	-0.09	<b>-0.34*</b>	0.11	-0.10	<b>-0.23*</b>	0.02	<b>-0.11*</b>	<b>-0.32*</b>	0.09
Care of Physical Appearance	0.78	Time spent grooming yesterday, time spent choosing clothes yesterday	0.07	-0.14	-0.04	<b>0.13*</b>	-0.05	0.00	<b>0.12*</b>	-0.11	0.02
Smoking Behaviour	0.84	Cigarettes smoked yesterday, packs of cigarettes smoked last week	0.05	-0.04	0.09	0.08	0.09	0.08	0.08	0.03	0.11
Alcohol User	0.81	Most amount of alcohol consumed in one day, days drank in last two weeks	<b>-0.13*</b>	<b>-0.32*</b>	0.01	-0.10	-0.16	-0.02	<b>-0.13*</b>	<b>-0.28*</b>	0.02
<i>General Leisure and Academic Activities</i>											
Studious Lifestyle	0.62	Time spent studying alone last week, amount of time studied last weekend	-0.04	-0.01	-0.11	-0.01	-0.02	-0.08	-0.03	-0.02	-0.10
Deviant Behaviour	0.71	Number of physical fights in last year, times vandalized something in last year	<b>-0.27*</b>	<b>-0.45*</b>	0.01	<b>-0.18*</b>	<b>-0.21*</b>	0.05	<b>-0.27*</b>	<b>-0.40*</b>	-0.03
Promiscuous Lifestyle	0.79	Number of different sexual partners, age had first sexual intercourse(r)	-0.02	-0.21	0.04	0.03	-0.05	0.05	0.01	-0.16	0.11

Table 2 (continued)

Life Space Scale	$\alpha$	Sample Items	Emotional Intelligence								
			Experiencing EI			Strategic EI			Total EI		
			A	M	F	A	M	F	A	M	F
<i>Interpersonal relations</i>											
Best Friend (positive relations)	0.85	Times had 30 minute or longer conversations, times sought advice from friend	0.08	0.06	0.02	0.06	-0.03	0.03	0.07	0.00	0.02
Best and New Friend (negative relations)	0.83	Times been screamed at by in last month, times used illegal drugs with friend	<b>-0.15*</b>	<b>-0.28*</b>	0.03	<b>-0.15*</b>	-0.10	-0.09	<b>-0.18*</b>	<b>-0.23*</b>	-0.03
New Friend (positive relations)	0.82	Times ate dinner with last week, times had long conversation with friend	<b>0.13*</b>	-0.02	0.06	<b>0.16*</b>	0.05	0.06	<b>0.17*</b>	0.00	0.08
Father (positive relations)	0.88	Times ate dinner with last summer, times displayed affection with father	-0.04	-0.21	-0.02	-0.02	-0.11	-0.02	-0.03	-0.20	-0.02
Mother (positive relations)	0.85	Times called last month, times said, "I love you" to mother in last month	0.04	-0.13	-0.02	0.01	-0.06	-0.10	0.04	-0.12	-0.06
Family (negative relations)	0.83	Times screamed at parents last year, times had fight and didn't speak to parents	-0.02	-0.13	0.01	-0.07	-0.10	-0.08	-0.04	-0.14	-0.04

Sample size for males =  $74 \leq N \leq 89$ , for females =  $209 \leq N \leq 242$ , for entire sample  $302 \leq N \leq 332$ . A = all subjects, M = males, F = females, r = reverse scored. All significant correlations are shown in boldface.

\*  $P < 0.05$ , two tailed.

correlation between EI and the Care of Physical Appearance scale probably occurred because women scored higher than men on both measures. In that sense, the correlation for the full sample reflects group differences on both measures rather than individual differences.

#### 4.4. Incremental validity of the MSCEIT

Although EI was only modestly correlated with the Big Five and verbal SAT scores, we thought it was important to report the incremental validity of the MSCEIT. That is, we examined partial correlations between the MSCEIT and the Life Space controlling for selected Big Five variables and SAT scores. This would ensure that the correlations in Table 2 were not due to other variables that covary with EI. Table 3 shows the partial correlations for the six scales that were significantly related to EI after Agreeableness, Intellect, and verbal SAT scores were statistically controlled. Four of the negative correlations between EI and the Life Space scales remained significant for the male subgroup and the two scales for which there were small positive correlations with EI became non-significant. The MSCEIT, therefore, has incremental validity; it is predictive of behavioural criteria over and above the predictions that can be made from the Big Five and verbal intelligence.

In sum, the present research suggests that EI predicts important behavioural criteria, particularly for the male college students in our sample. The results support and expand upon earlier studies (Brackett & Mayer, 2003; Formica, 1998; Rubin, 1999; Trinidad & Johnson, 2001) and

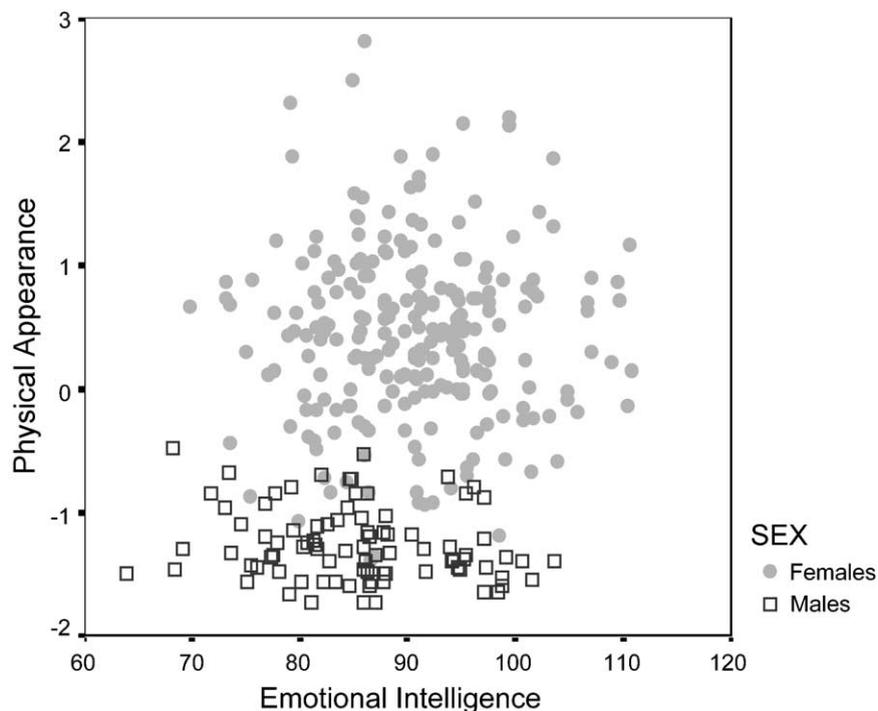


Fig. 1. Illustration of how between gender differences in means on Emotional Intelligence and Life Space criteria can lead to a spurious correlation in the overall sample.

Table 3  
 Partial correlations between Emotional Intelligence and Life Space Scales

Life Space Scale		Emotional Intelligence					
		Experiencing EI		Strategic EI		Total EI	
		M	F	M	F	M	F
Remained significant	Illegal Drug User	<b>-0.37***</b>	0.12	-0.21	0.02	<b>-0.34**</b>	0.09
	Alcohol User	<b>-0.29**</b>	0.02	-0.13	0.01	<b>-0.26*</b>	0.02
	Deviant Behaviour	<b>-0.35***</b>	-0.04	-0.08	0.00	<b>-0.27*</b>	-0.03
	Best/New Friend Relations (-)	<b>-0.28**</b>	0.06	-0.08	-0.05	-0.22	0.02
Became non-significant	New Friend Positive Relations	-0.11	0.01	-0.03	0.02	-0.12	0.01
	Care of Physical Appearance	-0.10	-0.02	0.01	0.07	-0.05	0.02

Sample size for males =  $74 \leq N \leq 89$ , for females =  $209 \leq N \leq 242$ . M = males, F = females. All significant correlations are shown in boldface.

\*  $P < 0.05$ .

\*\*  $P < 0.01$ .

\*\*\*  $P < 0.001$ , two tailed.

indicate that a male's lower EI may be predictive of poor adjustment and negative life outcomes such as illegal drug use, excessive alcohol consumption, deviant behaviour, and poor relations with friends. With respect to females, few distinguishing qualities in the Life Space were found for EI in this study.

## 5. Discussion

Psychologists and educators are interested in EI because they want to know its implications for people's lives. What is its relation to academic success and to leisure pursuits? How does it affect interpersonal relations? Do people with high EI behave differently than people with low EI? One way to answer these questions is in the context of a person's external Life Space. A number of studies in the past have related EI to a few aspects of daily life such as children's pro-social behaviour and smoking habits (e.g., Rubin, 1999; Trinidad & Johnson, 2001). However, examining just a few variables in a person's life provides a limited view of how EI may be expressed.

This article presented a research program that jointly studied EI and multiple assessments of positive and negative aspects of a person's everyday behaviour. Many of the Life Space scales, chiefly for males, conveyed information about EI is expressed in people's lives. For example, males with lower EI reported having poor quality peer relations, suggesting that individuals with low EI may have trouble establishing meaningful social interactions. Furthermore, males with lower EI demonstrated significantly more involvement than females in potentially harmful behaviours such as using illegal drugs, drinking alcohol excessively, and engaging in deviant behaviour. Thus, the present study supports an emerging pattern of correlations between lower EI and larger amounts of alcohol consumption, illegal drug use, and involvement in deviant behaviour (Brackett & Mayer, 2003; Formica, 1998; Trinidad & Johnson, 2001). Moreover, these findings

remained significant after the Big Five and verbal SAT scores were statistically controlled. Finally, this study pointed to the importance of examining relations between EI and external criteria separately for males and females. There were more correlations large enough to be judged statistically significant for males than for females in spite of the fact that the size of the male sample was substantially smaller than the female sample.

### 5.1. *Future directions*

The present study raised many interesting questions. Why were women higher in EI than men? Why was lower EI more predictive of negative aspects of a male's life than of positive aspects? Why wasn't EI predictive of aspects of the Life Space for females?

With respect to the first question, there is a large body of research that shows women are better able to read unstated social information, including feelings from facial expressions and other nonverbal clues (e.g., Hall, 1978, 1984; Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979). Perhaps women develop higher EI because of early child-parent interactions. Brody (1985), for example, reviewed research showing that mothers not only speak more to daughters about feelings but actually display a wider range of feelings to them as well. In contrast, with their sons, mothers tend to hold back and to respond less expressively. Brody reports that when communicating with their daughters (as compared with their sons) mothers also use more vivid facial expressions, which may help girls to develop better skills at recognizing each other's emotions. Furthermore, recent research has shown that areas of the brain devoted to emotional processing may be larger in women than men, which may also be related to the observed gender differences in EI (Gur, Gunning-Dixon, Bilker, & Gur, 2002).

It is not clear why EI was related to more negative aspects of a male's life than of positive or negative aspects of a female's life. However, studies on a related construct, alexithymia (i.e., self-reported difficulty in identifying and expressing emotions), yield similar findings. Researchers have shown that males with high scores on alexithymia measures report increased alcohol consumption and drug use, and psychoactive substance dependence (Helmers & Mente, 1999; Kauhanen, Julkunen, & Salonen, 1992; Taylor, Parker, & Bagby, 1990).

It is also possible that there is a threshold effect; there may be some minimum level of EI that is necessary for good judgment in social situations, and the proportion of males who fall below this threshold may be higher than the proportion of females. Perhaps above this threshold, further increases in EI do not correlate highly with behaviour. Furthermore, the lack of predictive validity for females on some scales such as the social deviance scale may also be related to the lower frequency and range of violent acts for females than for males (White, 2001). For example, the variance of the social deviance scale used in this study was more restricted for females than for males. The social deviance scale in this study only contained overt physical aggressive behaviours; perhaps stronger associations for females may have emerged if more covert or verbal aggressive tactics like ostracism, gossip, and indirect vendettas had been included (White, 2001).

Finally, a person with low EI may have less emotional knowledge than others. It is very likely that emotional knowledge can be improved through education (note that such training is different from raising or lowering an intelligence). If these relations are causal, perhaps training children and adults in EI, and males in particular, can lead to their more adaptive behavior. For example, it appears that infusing emotional literacy programs into existing school curricula can help

increase emotional knowledge and work against the initiation and progression of harmful behaviours such as excessive alcohol consumption, illegal drug use and deviant behaviour (Bruene-Butler, Hampson, Elias, Clabby, & Schuyler, 1997; Elias, Gara, Schuyler, Branden-Muller, & Sayette, 1991). Only well-designed longitudinal studies will help us see if EI develops naturally through maturation, or the extent to which EI can be changed.

### *5.2. Limitations*

In the present study, we did not expect EI to explain large amounts of variance, but to increase predictive accuracy in important but modest ways. The correlations between EI and the criteria were not high ( $r_s < 0.45$ ) in absolute terms. It is likely that more extensive criteria will yield additional interesting predictions, some stronger and some less strong than the above. For example, it is possible that the negative association between smoking behaviour and EI found by Trinidad and Johnson (2001) would have been replicated had we used standardized scales of smoking behaviour.

Another concern is whether the group differences in EI and the predictive validity of EI for males and females will replicate in larger and more diverse samples. It is possible that the effects found in this study are unique to college students in the New England area of the United States and will not generalize to individuals in ethnically diverse areas.

Finally, given the gender differences in EI and its relation to the Life Space criteria, future research should examine the possible gender differences in the factor structure of the MSCEIT and whether other variables such as gender role orientation will account for the observed group differences in EI between men and women. Clearly, this study could not address all of these issues. The validity of the MSCEIT will need to be developed over multiple studies with numerous samples and a variety of theoretically related criteria.

### *5.3. Conclusion*

This study examined relations between EI and everyday life conditions. Emotional intelligence was measured as an ability by the MSCEIT; life conditions were measured by a scale of Life Space, the CSLSS. We thought it was important to conduct such a study, as we believed the results would yield a better picture of EI as it is lived in the real world. Because males and females had significantly different scores on the MSCEIT and many of the Life Space scales, we examined the correlations separately for each gender. Emotional intelligence was related to many aspects of the Life Space for our sample of male college students. Our findings suggest that EI may protect males from engaging in potentially harmful behaviours such as drug use and social deviance. There were fewer relations obtained in this sample for women. More research is needed to understand how EI is expressed in people's lives.

### **Acknowledgements**

The authors gratefully acknowledge the contributions of Elizabeth Stine-Morrow and Zorana Ivcevic whose input throughout the project greatly improved it. This research was supported in part by a Research Enhancement Award, a Summer Fellowship from the University of New

Hampshire, and a small grant from Sigma Xi, which were awarded to the first author. Parts of this research were presented at the Annual Conference for the Society of Personality and Social Psychology, Los Angeles, CA, February 2003. The Life Space scales can be obtained by writing to Marc A. Brackett. The MSCEIT is available from Multi-health Systems, Toronto, ON.

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