Emotional Intelligence and the Trait Meta-Mood Scale: Relationships with Empathy, Attributional Complexity, Self-control, and Responses to Interpersonal Conflict.

Julie Fitness (jfitness@psy.mq.edu.au)
Department of Psychology
Macquarie University, Sydney NSW 2109 Australia

Marie Curtis
Department of Psychology
Macquarie University, Sydney NSW 2109 Australia

Abstract

According to Salovey and Mayer (1990), the construct of emotional intelligence refers to individual differences in the ability to process and utilise emotional information related to key areas of effective functioning in everyday life. In the current study, 170 participants completed measures of empathy, attributional complexity, self-control, and emotional intelligence (Trait Meta-Mood Scale; Salovey, Mayer, Goldman, Turvey & Palfai, 1995). Participants' responses to a recalled episode of interpersonal conflict were also coded as functional or dysfunctional. Empathy, attributional complexity and self-control were positively associated with aspects of the TMMS, and TMMS scores were negatively related to dysfunctional responses to interpersonal conflict. However, TMMS scores were not positively associated with functional responses to conflict. The findings are discussed in relation to the theoretical basis of emotional intelligence and the validity of the Trait Meta-Mood Scale.

Psychologists and members of the lay public alike have long regarded intellectual ability as one of the most powerful predictors of achievement in various domains. However, the contribution of emotional abilities to life accomplishments is less well understood. On a common sense level it is readily apparent that people differ in their emotional as well as their intellectual ability. For example, they differ in their capacity to express and understand emotions, to assign meaning from emotional experiences, and to competently regulate emotions in adaptive or functional ways. Such abilities have been conceptualised under the umbrella term "emotional intelligence" (Mayer & Salovey, 1993; Salovey & Mayer, 1990), defined as "the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotion knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth" (Mayer & Salovey, 1997, p. 5).

Since its inception by Salovey and Mayer (1990) the construct of emotional intelligence has generated a growing amount of interest both within the scientific (e.g., Davies, Stankov & Roberts, 1998; Martinez-Pons, 1997) and 'popular' literatures (e.g., Goleman, 1996; Segal, 1997). Despite its growing popularity and intuitive appeal, however, some researchers have suggested that the emotional intelligence construct "may be limited by measurement properties of its [various] tests" (Davies et al., p. 989); moreover, there has been little empirical investigation into what emotional intelligence may predict (Mayer, Salovey & Caruso, 2004). The overall aim of the current study, then, was to investigate various aspects of the construct of emotional intelligence, using the original inventory developed by the originators of the construct, the Trait Meta-Mood Scale (TMMS, Salovey et al., 1995).

The Trait Meta-Mood Scale and Theoretically-Related Constructs

The TMMS was developed to provide an index of individual differences in a mood regulation process termed the 'meta-mood experience' that involves monitoring, evaluating, and regulating feelings and emotions (Salovey, Mayer, Goldman, Turvey & Palfai, 1995). The TMMS is purported to measure three cognitive components of the emotional intelligence construct: attention to feelings (i.e., how much attention individuals pay to their inner feelings and emotional states); clarity (i.e., the ability to understand and discriminate among feelings); and repair (i.e., the ability to regulate moods and repair negative emotional experiences). Scores on the Trait Meta-Mood Scale are held to assess stable, individual differences in the manner in which people respond to their feeling states.

In a recent examination of the factorial and construct validity of the TMMS with an Australian sample, Palmer, Gignac, Bates and Stough (2003) found support, both for the factorial structure of the measure (though some evidence of a fourth factor was found) and for its construct validity as a measure of emotional management ability. Despite its promise as a measure of some aspects of emotional intelligence, however, and as Palmer et al. noted, there has to date been very little research on the TMMS and its potential association with other aspects of emotional functioning and personality. The first aim of this study,

then, was to further explore the validity of the TMMS by examining the inter-relationships among attention, clarity and repair, and three, theoretically-relevant constructs: empathy, attributional complexity, and self-control.

Empathy Recent theoretical and empirical data suggest that empathy and the related ability of emotion perception are important psychological correlates of emotional intelligence (Ciarrochi, Chan, & Caputi, 2000; Davies et al., 1998). According to Salovey and Mayer (1990), empathic ability enables an individual "to accurately gauge the affective responses in others and to choose socially adaptive behaviours in response" (p. 195). Empathic ability is thus viewed as important in the realm of interpersonal functioning. It should be noted, however, that there are both cognitive and affective dimensions to empathy (Feshbach, 1997). In particular, empathy may facilitate understanding through affective dimensions such as immediate perception or experiential (tacit) knowing (Bohart & Greenberg, 1997), but also through cognitive dimensions which may range from labelling the affective state of another to role taking or perspective taking (Davis, 1994). As noted above, the TMMS purports to measure people's abilities to pay attention to their inner feelings and emotions, and to accurately identify and discriminate amongst them. Such abilities may, in turn, be associated with empathically-derived affective (or 'felt') knowledge and cognitive understandings of other people's feelings and emotions. Accordingly, it was hypothesised in the current study that high levels of empathy would be positively related both to the "attention to feelings" and "clarity" subscales of the TMMS.

Attributional complexity The theoretical basis of emotional intelligence suggests that in addition to being emotionally responsive, people who function in an emotionally intelligent manner should be able to clearly discriminate amongst, and reason about, feelings (Salovey & Mayer, 1990). Moreover, recent studies suggest that cognitive dimensions of social acuity may mediate the empathic accuracy component of emotional responsiveness. For example, Davis and Kraus (1997) found that accurate judgement in the interpersonal domain was characterised by high cognitive complexity (indicating a tendency to think deeply about others' behaviours), low levels of dogmatic or rigid thinking, and high field independence, indicating an ability to perceive discrete units of behaviour that might be unnoticeable to others. In line with Ickes (1993), Davis and Kraus proposed that, because perceivers often have little "meta-knowledge" about their own empathic abilities, traditional self-report measures of dispositional empathy and social sensitivity may be of limited value in assessing empathic accuracy, and that psychological measures that include a dimension of cognitive complexity may be more useful.

One dimension of cognitive complexity that specifically focuses on aspects of social cognition is the construct of attributional complexity (Fletcher, Danilovics, Fernandez, Peterson & Reeder, 1986). The Attributional Complexity Scale (Fletcher et al, 1986) measures the extent to which individuals allegedly use complex reasoning when thinking about the causes and meanings of people's behaviours. Given this emphasis on the cognitive dimensions of social acuity, it was considered an appropriate measure with which to explore the theoretical and psychometric dimensions of emotional intelligence. Specifically, it was hypothesised that attributional complexity would be positively related to the "clarity" subscale, reflecting the self-reported ability to clearly discriminate among, and reason about, feelings and emotions.

Self-Control According to Mayer and Salovey (1995), emotional intelligence should be positively associated with mental control and adaptive emotion management. That is, emotionally intelligent behaviour should reflect a person's ability to monitor, evaluate, and change moods. These abilities may be assessed by measures of self regulation or self-control. Self-control strategies reflect an individual's ability both to understand and to regulate emotional and cognitive responses to social interactions in adaptive ways. Thus, it was hypothesised that the use of effective self-control strategies would be positively related to both the "clarity" and the "mood repair" subscales of the TMMS.

Emotional Intelligence and Functional or Dysfunctional Responses to Interpersonal Conflict

In their recent exploration of the TMMS, Palmer et al. (2003) called for more research on the utility of the TMMS in predicting important life criteria such as interpersonal success. Certainly, the predictive potential of emotional intelligence suggests that it should be related to functional and dysfunctional ways of responding in both intrapersonal and interpersonal domains. The second aim of the current study was, therefore, to determine if emotional intelligence, as measured by the TMMS, is related to functional ways of responding to, and coping with, interpersonal conflict.

Coping strategies are important determinants of an individual's physical and psychological well being in response to negative or stressful life events (Endler & Parker, 1990). According to Salovey et al. (1993), coping strategies are associated with emotion-management related experiences, and are thus important components of emotional intelligence. Lazarus and Folkman (1984) proposed that coping serves two functions: to regulate negative emotional responses (emotion-focused coping) and to manage or change the circumstances causing the distress (problem-focused coping). Whereas problem-focused strategies are generally viewed as functional, emotion-focused coping includes such strategies as distancing, minimisation, avoidance, and selective attention

which may be less functional in certain contexts (Lazarus & Folkman, 1984). Similarly, recent empirical evidence suggests that individuals low in emotional intelligence may also demonstrate emotion-oriented and avoidance-oriented coping styles (e.g., see Emmons & Colby, 1995). In contrast, individuals with high levels of emotional intelligence may use adaptive strategies to alleviate emotional distress (McFarland & Buehler, 1997).

In the current study, three coping strategies that are held to differentiate between adaptive and less adaptive strategies were utilised: task-oriented, emotion-oriented, and avoidance-oriented (Endler & Parker, 1990). Task-oriented coping is characterised by the use of adaptive, problem-focused strategies; thus it was hypothesised that task-oriented coping would be positively related to emotional intelligence. Emotion-oriented coping involves self-preoccupation, fantasising, and focusing on the emotional content of responses, and avoidance-oriented coping is characterised by attentional diversion strategies, such as seeking out other people, or engaging in activities which deflect focus from the issue at hand. Emotion-oriented and avoidant-oriented coping strategies are conceptualised as less adaptive responses; thus, it was hypothesised that both emotion-oriented and avoidant-oriented coping strategies would be negatively related to emotional intelligence.

Given the theoretical proposition that emotionally intelligent behaviour should be adaptive and direct the individual in beneficial ways, a criterion measure of constructive and destructive responses to an interpersonal conflict situation was also devised for use in this study. Specifically, constructive responses were considered to be those that alleviate emotional distress or unpleasant emotional experiences in the self and in others, and destructive responses were considered to be those that perpetuate, ignore, or focus upon negative emotional experiences in the self and in others.

In order to classify behaviours as constructive or destructive, a coding scheme was adapted from the exit-voice-loyalty-neglect typology of accommodation processes (Rusbult, Zembolt & Gunn, 1982). Accommodation refers to a person's willingness to inhibit impulses to react destructively, and act constructively instead, in response to a partner's potentially destructive behaviour. In line with this model, it was hypothesised that constructive (i.e., voice or loyalty) responses to an interpersonal conflict would be positively related to emotional intelligence, whereas destructive (i.e., exit or neglect) responses would be negatively related to emotional intelligence.

Summary of Aims

The main aims of the current study were to examine whether individual differences in emotional intelligence, as measured by the three subscales of the TMMS, are a) positively related to measures of empathic tendency, attributional complexity and self-control; and (b) positively related to constructive, and negatively related to destructive, behaviours and ways of coping in response to interpersonal conflict.

Method

Participants One hundred and ten first-year psychology students from Macquarie University participated in the study as part of their course requirements, and a further 60 participants comprised students' friends and relatives. The final sample comprised 170 participants: 127 females and 43 males, whose ages ranged from 17 to 71 years (M = 26 years; SD = 11 years). The majority of participants were aged 18 years (38%). These figures reflect the predominance of first year students in the sample (65%).

Measures

A survey was conducted using a two-part, 187 item questionnaire. The first part contained four self-report inventories, measuring emotional intelligence, empathy, attributional complexity, and self-control. The second part dealt with participants' responses to actual interpersonal conflict situations. Participants were asked to recall and write down a recent, real-life conflict episode and to respond to questions about it derived from the literature on interpersonal conflict and ways of coping.

The Trait Meta-Mood Scale (Salovey et al., 1995). Developed as a measure of emotional intelligence, the Trait Meta-Mood Scale comprises 30 items that load onto three factors, or subscales: Attention to Feeling, Clarity in Discrimination of Feeling, and Mood Repair (Salovey et al., 1995). Sample items from each sub-scale include: Attention - 13 items (8 reverse scored): "Feelings give direction to life"; Clarity - 11 items (5 reverse scored): "I am usually very clear about my feelings"; Repair - 6 items (2 reverse scored): "When I become upset I remind myself of all the pleasures in life". Participants were required to indicate their level of agreement with each statement on a five-point scale from "strongly disagree" (1) to "strongly agree" (5). Previous reported internal consistencies for each sub-scale have been high (coefficient α= .86, .88, .82, respectively; Salovey et al, 1995). The following Cronbach alpha coefficients were obtained in the present study: attention, α=.78, clarity α=.85, repair α=.78.

The Questionnaire Measure of Empathic Tendency (Mehrabian & Epstein, 1972). This measure of emotional (rather than cognitive), empathy consists of 33 statements,

such as: "I tend to get emotionally involved with a friend's problems"; and "I am able to make decisions without being influenced by people's feelings" (reverse scored). Participants responded to each statement on a nine-point scale from "very strong disagreement" (- 4) to "very strong agreement" (+ 4). The authors purport that empathic tendency is distinct from approval seeking tendency, as measured by Crowne and Marlowe's (1960) social desirability scale (r = 0.06). The split-half reliability reported was .84 (Mehrabian & Eptstein, 1972). A high Cronbach alpha coefficient was obtained for the present study (α=.81), and the split-half reliability was .79.

The Attributional Complexity Scale (Fletcher et al, 1986). This scale measures the extent to which individuals allegedly use complex reasoning when thinking about the causes and meanings of people's behaviours. It is positively correlated with the Profile of Nonverbal Sensitivity (PONS: Rosenthal et al., 1979), which is a measure of non-verbal perception (Funder & Harris, 1986). Sample items of the scale include: "I have found that the causes for people's behaviour are usually complex rather than simple"; and "I think very little about the different ways that people influence each other" (reverse scored). Participants were required to rate the extent to which they agreed with each of the scale's 28 items, on a seven-point scale from "strongly disagree" (-3) to "strongly agree" (+3). The reported internal reliability of the scale is .85 (Fletcher et al, 1986). In the present study the Cronbach alpha coefficient was high (α=.89).

The Self-Control Schedule (Rosenbaum, 1980). This scale is a measure of learned resourcefulness. It is defined as an acquired repertoire of cognitive and behavioural skills which may enable a person to regulate internal events such as emotions and cognitions, that might otherwise interfere with the smooth implementation of a target behaviour (Rosenbaum, 1983). The 36-item schedule includes statements such as: "When I am faced with a difficult problem, I try to approach its solution in a systematic way". Participants indicated the degree to which items were characteristic or descriptive of them on a six-point scale from "very uncharacteristic of me, extremely nondescriptive" (-3) to "very characteristic of me, extremely descriptive" (+3). Reported reliability ranges from α =.78 to .84 (Rosenbaum, 1980). The present study obtained a similar alpha coefficient (α=.82).

Recalled Interpersonal Conflict Episode The following instructions asked participants to recall and record a recent interpersonal conflict episode:

"In the following section we are looking at individual differences in spontaneous reactions to interpersonal conflict. We ask you to recall a recent real-life situation, where you experienced conflict with someone close to you. Please take some time to visualise the event vividly in your mind. Try to visualise the person involved and try to remember exactly what happened. Think about what was said, how it was said, and the emotional climate at the time. Recall your thoughts and feelings at that time. Please write down what happened, how you felt, and your thoughts and feelings regarding the other person involved."

On the next page participants responded to a series of questions about the episode. Participants were asked to state the nature of their relationship with the person involved in the conflict situation; the extent to which the relationship was important to them; and the amount of time since the reported conflict occurred. The following statement was then used to preface the remainder of items. "It is possible that you may have experienced this type of situation before, but please focus on the situation t*hat you have just recalled* as you answer the questions that follow. Remember to *answer according to your reactions at that time.*"

Ways of Coping Scale A subset of 15 items was derived from the Multidimensional Assessment of Coping Scale, which identifies three types of coping styles: task-oriented, emotion-oriented and avoidant-oriented coping (Endler & Parker, 1990). The selected items were those with the highest factor loadings on each of the three sub-scales. Examples include: Task-oriented - 5 items: "I worked to understand the situation"; Emotion-oriented - 5 items: "I daydreamed about a better time or place"; Avoidant-oriented - 5 items: "I treated myself to a favourite snack or food". Participants reported the degree to which they engaged in these types of behaviours on a five-point scale from "not at all" (1) to "very much" (5). Moderate alpha coefficients were obtained in the present study (task, α=.67; emotion α=.70, avoidance α=.66).

Ways of Responding Scale A series of 20 items designed to assess constructive versus destructive responses to interpersonal conflict situations was adapted from Rusbult, Zembrodt and Gunn's (1982) exit-voice-loyalty-neglect typology of conflict responses. According to this typology, destructive responses are characterised by actively harming or terminating a relationship (exit) or passively allowing conditions to deteriorate (neglect); constructive responses are typified by actively attempting to improve conditions (voice) or optimistically waiting for improvement (loyalty). The following items illustrate each response category: Constructive (voice)- 5 items: "I talked to them to try and resolve the situation"; Constructive (loyalty) - 4 items: "I supported the other person in the face of criticism"; Destructive (exit) - 5 items: "I threatened to leave"; Destructive (neglect) - 6 items: "I criticised them for things unrelated to the real problem". Participants indicated the extent to which they behaved in the manners described by the 20 items on five-point scales from "not at all" (1) to

"very much" (5). Cronbach alpha coefficients were moderately high for the two measures: constructive, α=.71; destructive, α=.76.

Procedure

The questionnaire was administered with an accompanying consent form, which informed participants of the general nature and purpose of the study. University students completed the questionnaire in small groups, in the presence of the researcher. The other participants completed the questionnaire in their own time. All questionnaires were returned in envelopes in order to preserve participants' anonymity.

Results

Preliminary analyses were conducted to determine whether type of recruitment strategy (first year students versus community residents) had affected any of the results. In line with Rosenbaum's (1980) finding that students obtained lower self-control scores than older, non-student populations, a significant difference between first year students (M = 10.7) and community participants (M = 19.2) was obtained on the self-control scale, $t(168) = -2.31$, $p<.05$. Age was therefore included as a control variable in subsequent analyses.

With respect to gender, a series of t-tests found that females (Mf = 55.05) obtained significantly higher mean scores than males (Mm = 33.15) on empathy, $t(168) = -5.53$, $p < .0005$; constructive responses (Mf = 21.17, Mm = 18.27), $t(168) = -2.88$, $p < .005$; task-oriented coping (Mf = 15.79, Mm = 13.49), $t(168) = -3.26$, $p < .005$; emotion-oriented coping (Mf = 13.07, Mm = 10.91), $t(168) = -2.61$, $p < .01$; and avoidant-oriented coping (Mf = 10.42, Mm = 8.79), $t(168) = -2.24$, $p < .05$. Gender was entered as a control variable in subsequent analyses.

Means and standard deviations for all variables are displayed in Table 1 and intercorrelations among variables are displayed in Table 2. The means for attention, clarity, and repair were very similar to those obtained in another Australian study by Davies et al. (1998). The only significant association among the subscales was obtained between clarity and repair (r = .41).

Associations between Empathy, Attributional Complexity, Self-Control, Attention to Feelings, Clarity, and Repair

The first aim of the study was to examine the interrelationships amongst emotional intelligence as measured by the TMMS, and empathy, attributional complexity and self-control. Specifically, it was hypothesised that empathy would be positively related to attention to feelings and clarity; attributional complexity would be positively related to clarity; and self-control would be positively related to clarity and mood repair.

Table 1: Means, standard deviations and ranges of all numeric variables, by gender

	Gender	*M*	*SD*	Range
Attention	Male	49.93	6.03	38-62
	Female	51.69	6.45	36-63
Clarity	Male	40.72	6.42	25-55
	Female	36.06	7.76	16-54
Repair	Male	18.98	3.99	8-25
	Female	18.00	3.86	7-25
Empathy	Male	33.15	23.82	-17-96
	Female	55.05	20.92	-1-100
Attribution Complexity	Male	33.77	21.74	-11-83
	Female	40.87	20.32	-18-80
Self-Control	Male	19.39	20.97	-39-59
	Female	11.79	24.17	-40-84
Constructive Responses	Male	18.27	6.12	7-30
	Female	21.17	5.54	7-35
Destructive Responses	Male	13.49	4.09	7-24
	Female	15.79	3.98	7-25
Task Coping	Male	13.49	4.09	7-24
	Female	15.79	3.98	7-25
Emotion Coping	Male	10.91	4.09	5-22
	Female	13.07	4.89	5-25
Avoidant Coping	Male	8.74	4.57	5-22
	Female	10.42	4.12	5-23
Age	Male	28.56	12.44	17-56
	Female	24.79	10.39	17-71
Importance of Relationships	Male	4.26	1.00	1-5
	Female	4.48	1.10	1-5

Note: Less than 1 month since event N=71 (21 males, 60 females). More than 1 month since event N= 89 (22 males, 67 females).

The pattern of bivariate correlations among empathy, attributional complexity and self-control with the sub-scales of the TMMS revealed that, as hypothesised, empathy was significantly positively correlated with attention to feelings (r = .47), and self-control was positively associated with clarity (r = .42) and repair (r = .55). Contrary to expectations, attributional complexity was associated with attention to feelings (r = .35) but not with clarity; moreover, there was no significant relationship between empathy and clarity.

In order to more thoroughly explore the interrelationships amongst the variables, canonical correlations were computed between the set of measures defined by empathy, attributional complexity and self-control, and the set of emotional intelligence measures: attention, clarity and repair. Of three pairs of canonical variates[1] generated, the first two were reliable, and accounted for the significant relationships between the two sets of measures, $F(4,324)$ =

Table 2: Intercorrelations amongst all variables (*N* =170).

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Attention	-	.09	.04	.47**	.35**	-.11	.02	.03	.07	.14*	.07	-.14*	.12	.03	.04
2 Clarity		-	.41**	-.05	.03	.42**	.05	-.16*	.04	-.32**	-.14*	.28**	-.26**	-.07	.02
3 Repair			-	-.01	-.03	.55**	.05	-.21**	.14*	-.25**	.03	.17*	-.11	.01	-.13*
4 Empathy				-	.40**	-.14*	.22**	.11	.15*	.30**	.14*	-.12	.40**	.20**	-.06
5 Attribution Complexity					-	-.02	.20**	-.03	.24**	.23**	.08	-.15	.15*	.15*	-.04
6 Self Control						-	.10	-.17*	.12*	-.28**	-.05	.25**	-.14*	-.03	-.03
7 Constructive							-	-.04	.60**	.31**	.33*	-.01	.22**	.25**	-.06
8 Destructive								-	-.06	.37**	.28**	-.16*	.09	.06	.26**
9 Task									-	.29**	.36**	.01	.24**	-.05	.10
10 Emotion										-	.54**	-.13	.20**	.11	.10
11 Avoidant											-	-.14	.17*	.01	.21**
12 Age												-	--.15*	-.06	.07
13 Gender													-	.09	.01
14 Importance														-	-.19**
15.Time															-

12.51, $p < .0005$. The first canonical correlation was .59 (representing 34% of overlapping variance for the first pair); the second canonical correlation was .49 (representing 24% of overlapping variance for the second pair). Thus, each pair was moderately related.

Data from the first two pairs of canonical variates appear in Table 3, which shows correlations between the variables and canonical variates, standardised canonical variate coefficients, percent of variance accounted for by the canonical variates within each set of variables, redundancies, and canonical correlations. The total percent of variance figure indicates that 78% of the variance in empathy, attributional complexity and self-control is explained by the canonical variables, and 23% of the variance in attention, clarity and repair is explained by the canonical variables. This suggests that despite significant associations in the data set, there remains a substantial amount of variance in the emotional intelligence measures that was not accounted for by empathy, attributional complexity, and self-control.

The first pair of canonical variates was defined primarily by self-control (-.99) in the first set of measures, and clarity (-.65) and repair (-.91) in the emotional intelligence measures. This finding suggests that people with high self-control reported being able to clearly discriminate among emotions, and, as predicted, to repair negative moods. The second pair of canonical variates was defined by empathy (.92) and attributional complexity (.70) in the first set of measures, and attention to feelings (.98) and clarity (.31) in the emotional intelligence measures. In this case a more complex interpretation is suggested. Specifically, people with high scores on empathy and attributional complexity reported paying attention to a range of emotions and, to a somewhat smaller degree, being able to discriminate among them.

Summary

At the bivariate level, the following associations were found: empathy and attention to feelings were positively related; attributional complexity and attention to feelings were positively related; and self-control was positively related to both clarity of feelings and mood repair. No support was found for the hypothesis that attributional complexity would be positively associated with clarity of feelings. However, the results of the canonical correlation analysis indicated that people with high scores on both empathy and attributional complexity reported paying attention to a range of emotions and, to a smaller degree, reported being able to discriminate amongst them. A substantial proportion of variance in emotional intelligence measures was not explained by empathy, attributional complexity and self-control.

Table 3: Correlations, Standardised Canonical Coefficients, Canonical Correlations, Percents of Variance, and Redundancies between Empathy, Attributional Complexity and Self-Control and Emotional Intelligence Measures and their Corresponding Canonical Variates (*N*=170).

	First Canonical Variate		Second Canonical Variate		
	Correlation	Coefficient	Correlation	Coefficient	
Associated Measures					
Empathy	.092	-.005	.921	.777	
Att. Complexity	-.012	.047	.695	.407	
Self-Control	-.999	-1.002	.028	.067	
Percent of variance	.335		.444		Total=.78
Redundancy	.115		.108		Total=.22
Emotional Intelligence					
Attention	.168	.275	.983	.957	
Clarity	-.649	-.387	.309	.148	
Repair	-.906	-.775	.194	.072	
Percent of variance	.145		.089		Total=.23
Redundancy	.424		.366		Total=.79
Canonical Correlation	.585***		.493***		

*** $p < .0005$

Emotional Intelligence and Responses to Interpersonal Conflict

The second aim of this study was to determine whether emotional intelligence is positively related to adaptive behaviours in response to an interpersonal conflict situation. Specifically, it was hypothesised that: a) emotional intelligence measures would be positively related to constructive responses to interpersonal conflict and to task-oriented coping; and b) emotional intelligence measures would be negatively associated with destructive responses to interpersonal conflict, and negatively associated with emotion-oriented and avoidant-oriented coping strategies.

The measures used were ways of responding (constructive versus destructive) and ways of coping (task-oriented, emotion-oriented, and avoidant-oriented). Of the independent measures, the variables of theoretical interest were attention to feelings, clarity and repair (the sub-scales of the Trait Meta-Mood scale). Also included in the independent measures were empathy, attributional complexity and self-control, in order to examine the usefulness of emotional intelligence measures in the presence of these constructs. Once again, age and gender were entered as covariates. Two other independent measures, importance of relationship and time since the event, were also included as control variables for the conflict situation. Intercorrelations among all variables appear in Table 2.

The bivariate correlations in Table 2 indicate that all significant correlations between the independent and dependent measures were in the low to moderate range. In line with the hypothesis that functional coping and emotional intelligence would be positively related, task-oriented coping was positively correlated with repair (r = .14); similarly, emotion-oriented coping was negatively correlated with clarity (r = -.32) and repair (r = -.25), and avoidance-oriented coping was negatively correlated with clarity (r = -.14). Emotion-oriented coping was, however, positively correlated with attention to feelings (r = .14).

With respect to ways of responding to interpersonal conflict, in line with the hypotheses, destructive responses (exit and neglect) were negatively correlated with clarity (r = -.16) and with repair (r = -.21); however, constructive responses (voice and loyalty) were not significantly correlated with any of the emotional intelligence subscales.

Intercorrelations Among the Dependent Measures

In order to obtain more global measures of functional and dysfunctional responses to interpersonal conflict for entry into regression analyses, the dependent measures (ways of responding and ways of coping) were inspected for the presence of intercorrelations, and a principal components analysis with oblique rotation computed. The Kaiser-Meyer Measure of sampling adequacy (.6688), and Bartlett's test of sphericity (p < .0001), confirmed the factorability of the measures. The final statistics extracted two factors accounting for 71.7% of the variance in measures of ways of responding and ways of coping.

The predominant factor to emerge was defined by constructive responses and task-oriented coping (eigenvalue = 2.28), which indicated a functional response to interpersonal conflict. A dysfunctional response to conflict was suggested by the next factor to emerge, primarily defined by destructive responses and emotion-oriented coping (eigenvalue =1.31). Avoidant-oriented coping was found to be a complex variable, with dual loadings on both factors. Given this fact, and the low endorsement rate of avoidance strategies in the present sample, avoidant-oriented coping was dropped from the final analysis. Regression analyses were therefore conducted with functional and dysfunctional responses to interpersonal conflict, as defined by the factor analysis.

The objective of the regression analyses was to explore theoretical relationships, rather than to obtain a predictive model for the dependent measures. Regression summaries for the full and reduced models are presented in Tables 4 and 5. The tables provide zero-order correlations (r), unpartialled R-square values (r^2), the raw regression coefficients, beta standardised values, t-values and the percentage of variance fitted last (sr^2) for each measure.

Functional Responses to Interpersonal Conflict

The reduced regression model, shown in Table 4, shows that gender and attributional complexity explained 10.8% of the variance in functional responses in the final model, $F(2,167) = 10.10$, $p < .0001$. Thus, functional responses to recalled interpersonal conflict were more strongly associated with being female, and the tendency to use complex reasoning when thinking about the causes of people's behaviour. Although the zero-order correlations indicated that empathy and importance of the relationship were positively associated with functional responses, they did not contribute uniquely to the regression.

Dysfunctional Responses to Interpersonal Conflict

The reduced regression model, shown in Table 5, shows that time since the event, clarity, repair, and empathy explained 18.7% of the variance in dysfunctional responses in the final model, $F(2,167) = 10.10$, $p < .0001$. Thus, dysfunctional responses to recalled interpersonal conflict were related to a less recent episode, high empathy, low clarity, and low repair. Although the zero-order correlations indicated that age, gender (being female) and self-control were negatively associated with dysfunctional responses, they did not contribute uniquely to the regression.

Table 4: Summary Regression Table for Functional Responses: Full and Reduced Models (*N*=170).

Independent Variable	*r*	r^2 (%)	beta (raw reg)	β (stand.)	*t*	*p*	sr^2 (%)
Age	.001	< .01	.014	.017	.219	.83	.03
Gender	.26	6.5***	4.651	.228	2.739	.01	4.00
Importance	.14	1.9*	.731	.088	1.153	.25	.71
Time	.005	< .01	.801	.045	.596	.55	.19
Attention	.05	.20	- .121	-.087	- .996	.32	.53
Clarity	.05	.25	.050	.043	.485	.63	.13
Repair	.10	.93	.131	.057	.625	.53	.21
Empathy	.21	4.4**	.032	.085	.895	.37	.43
Attrib. Com.	.24	5.9**	.084	.197	2.384	.02	3.03
Self Control	.12	1.4	.040	.107	1.145	.25	.70
Reduced Model -Functional Responses							
Gender		6.5***	5.01	.246	3.33	.001	4.87
Attrib. Complex		5.9**	.10	.209	2.86	.005	4.32
			R^2 = 10.807%		MSE=71.54	Error df=167	

*p<.05,**p<.005,***p<.0005

Table 5: Summary Regression Table for Dysfunctional Responses: Full and Reduced Model (*N*=170).

Independent Variable	*r*	r^2 (%)	beta (raw reg)	β (stand.)	*t*	*p*	sr^2 (%)
Age	-.18	3.1*	- .093	-.094	-1.23	.22	.75
Gender	.16	2.4*	- .058	-.002	-0.03	.98	<.01
Importance	.09	0.9	.929	.091	1.23	.22	.76
Time	.24	5.6**	5.507	.252	3.45	<.01	5.92
Attention	.08	0.7	-.036	-.021	-0.25	.80	.03
Clarity	-.26	6.8***	-.188	-.132	-1.55	.12	1.19
Repair	-.26	7.0***	-.336	-.120	-1.35	.18	.91
Empathy	.21	4.5**	.089	.193	2.10	.03	2.20
Attrib. Com.	.08	0.6	-.003	-.006	-0.07	.95	.02
Self Control	-.25	6.4***	-.034	-.073	-0.81	.42	.33
Reduced Model - Dysfunctional Responses							
Time		2.4*	4.920	.225	3.17	.002	4.96
Clarity		6.8***	- .257	-.181	-2.35	.020	2.72
Repair		7.0***	- .445	-.159	-2.04	.043	2.06
Empathy		4.5**	.100	.215	3.06	.003	4.60
			R^2 = 18.7%	MSE=99.69	Error df=165		

*p<.05,**p<.005,***p<.0005

Summary

At a multivariate level, functional responses to interpersonal conflict were not related to emotional intelligence measures. However, dysfunctional responses were associated with an inability to discriminate amongst feelings (low clarity), and an inability to repair negative moods (low repair). Even so, the amount of variance explained by clarity and repair was substantially reduced in the presence of the other measures.

Of the control measures, there were significant contributions from gender and time since the conflict episode. Being female was the most significant explanatory variable of functional responses, whereas dysfunctional responses were associated with a conflict episode that had occurred some time ago (and possibly still unresolved). Of the remaining measures, attributional complexity contributed to the explained variance in functional responses, and empathy contributed to the explained variance in dysfunctional responses. These measures explained significant amounts of variance in the presence of emotional intelligence measures.

Discussion

According to Salovey and Mayer (1990), people who function in an emotionally intelligent manner pay attention to a range of emotional experiences. They can understand and clearly identify their own and others' emotions and respond to emotional experiences in adaptive ways. Emotional intelligence should, therefore, be related to empathic accuracy (including both emotional empathy and the cognitive capacity to reason about the causes of others' behaviours) and to the ability to regulate emotional and cognitive responses to interpersonal conflict in functional ways. It should also be positively related to constructive responses to conflict and task-oriented coping strategies. Conversely, emotional intelligence should be negatively related to destructive responses to conflict and to emotion- and avoidance-oriented coping strategies.

The findings of the first part of this study indicated that self-reported measures of empathy, attributional complexity and self-control, were positively associated with various aspects of the three psychometric dimensions of emotional intelligence: attention to feelings, clarity in discrimination of feelings, and mood repair. Interestingly, however, the three aspects of emotional intelligence were not all significantly related to one another; in particular, clarity and repair were positively associated, but attention to feelings was related to neither of them. The findings of the second part of the study indicated that clarity and repair were negatively associated with destructive responses to interpersonal conflict, and to emotion-focused and avoidant coping strategies. However, although repair was positively related to task-oriented coping strategies, neither attention to feelings nor clarity were associated with constructive behavioural responses to interpersonal conflict in the present study.

Overall, these findings provide some evidence for the theoretical basis of emotional intelligence as measured by the Trait Meta-Mood Scale. However, consideration of the pattern of associations among the variables used in this study suggests that emotional abilities are highly complex psychological phenomena. For example, empathy is considered by many theorists to be an important component of emotional intelligence, and in the current study empathy was positively associated with attention to feelings, constructive behaviours, and a task-oriented coping style. However, empathy was also positively associated with less adaptive coping strategies. Clearly, then, empathy or emotional responsiveness alone is not sufficient to predict adaptive interpersonal functioning, a result underscored by the findings that attention to feelings was associated with neither clarity of feelings nor mood repair. Specifically, it appears that paying attention to feelings, whether self or other generated, may potentially serve an informational function, but more cognitive work is required to make sense of what the feelings signify, what their consequences might be, and how to adaptively regulate them.

In this regard, the finding that a measure of effortful cognition, attributional complexity, was not significantly associated with clarity of feelings, was unpredicted, though perhaps not surprising; presumably it is quite possible to ruminate over the whys and wherefores of people's behaviours without explicitly drawing on emotional cues. However, a positive association between attributional complexity and clarity did emerge in the presence of empathy, a pattern of associations that evokes the proposed theoretical construct of emotional intelligence itself: that is, attention to feelings (or emotional responsiveness), coupled with the propensity to think about the causes of one's own and others' behaviours, appears to enhance the capacity to make sense of emotional information and to adaptively manage one's own and others' emotions (see also Martinez-Pons, 1997; Palmer et al., 2003).

Relatedly, it was interesting to note that clarity and repair were, as predicted, negatively associated with destructive responses to interpersonal conflict, and to emotion-focused and avoidant coping strategies. Surprisingly, however, minimal support was found for an association among functional responses to interpersonal conflict and emotional intelligence measures; rather, functional responses were more strongly associated with being female, and with attributional complexity. These results are in line with other research that has found that women think more about relationships and relationship issues than do men (Acitelli & Young, 1996). Moreover, a study of married couples by Acitelli, Douvan, and Veroff (1993) demonstrated that

wives' understanding of their husbands' destructive behaviours was positively related to wives' marital wellbeing, suggesting that women's propensity to think about relationship problems is associated with potentially adaptive outcomes. Other research has found that, compared to men, women are more likely to cope with work and family stress by drawing on their social networks for emotional support (see Taylor, 2002, for a review). Men, on the other hand, are more likely than women to cope with stress by withdrawal, or by expressing their frustrations in destructive ways; e.g., creating an angry or hostile family environment (Fitness & Duffield, 2004; Stets, 1995). Overall, these findings suggest that over the course of their socialisation, women may acquire adaptive strategies that help them deal constructively with interpersonal stress and conflict, over and above the contribution of emotional intelligence.

Psychometric Considerations

With regard to the TMMS, the findings of the present study suggest that the dimension of clarity is a vital component of emotionally intelligent responses. All behavioural reactions associated with dysfunctional responses to interpersonal conflict were negatively associated with clarity. This finding is in line with recent work on emotional intelligence reported by Ciarrochi et al. (2000) (who used a different measure of the construct). Similarly, Palmer, Donaldson, and Stough (2002) found that, after accounting for positive and negative mood state, clarity was positively and uniquely associated with reported life satisfaction. Overall, these findings suggest that the ability to identify and clearly discriminate one's feelings and emotions is a highly adaptive one. However, it is important to note that clarity was not positively related to functional responses per se in the current study. One problem may be that the items on the clarity scale refer only to the self (e.g., "I am often aware of my feelings on a matter", and "I am usually very clear about my feelings"); thus, there are no items on the clarity scale which ask respondents if they are clear about the emotional content of the responses of others. A further consideration derives from a critical theoretical distinction suggested by Lazarus (1991) and the authors of emotional intelligence (Mayer & Salovey, 1995) between people's beliefs about how well they understand their own emotions, and their actual abilities to understand the content of, and discriminate amongst, their emotional responses. In this respect, items on the clarity subscale appear to more precisely measure people's beliefs about their abilities to understand and clearly discriminate their emotions, rather than their actual abilities to do so.

Mayer and Salovey (1995) raised similar concerns about the dimension of clarity. In particular, they stated that the self-report of a clear mood may be a function of factors other than a clear differentiation of feeling. For example, optimism or social desirability rather than expertise may influence self-reports of the ability to discriminate among feeling states (Mayer & Salovey, 1995). Further, previous research indicates that traditional self-report measures of social sensitivity that do not include dimensions of cognitive-intellectual functioning may not adequately indicate accurate judgement in the social domain (Davis & Kraus, 1997). Arguably, the ability to discriminate among feeling states (particularly the emotional states of others) may not be adequately assessed by the clarity dimension of the TMMS. Future studies could explore the clarity subscale with ability measures of emotion perception and social acuity; e.g., the Profile of Nonverbal Sensitivity (PONS: Rosenthal et al., 1979). Alternatively, studies could employ measures similar to those used in the newer Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 1999) which utilises ability measures rather than relying on self report (see also Mayer, Salovey & Caruso, 2004).

Limitations

There are a number of limitations to the current study. In particular, the findings are correlational in nature and therefore do not provide evidence of causality. Moreover, some of the correlations obtained were relatively weak (e.g., *r*s =.14). In addition, the measures used to examine the validity of the emotional intelligence construct clearly did not tap all its dimensions. The methodological strategy utilised self-report inventories, with all the attendant problems of self-reporting biases, and functional versus dysfunctional responses were analysed in only one context– that of an interpersonal conflict situation, the nature of which was unspecified.

Clearly, there is more work to do in identifying and measuring the psychological variables that may influence, or motivate, emotionally intelligent people to act in constructive, adaptive ways. In addition, future studies might consider the use of measures that better operationalise adaptive responses to interpersonal conflict, including on-line measures of actual behaviour, and examine a broader range of interpersonal contexts (e.g., the workplace) and relationship tasks (e.g., problem solving; decision-making) in which emotional intelligence might be expected to matter. Such studies clearly have the capacity to considerably extend and enrich our understanding of the relationship between emotional intelligence and social behaviour.

Despite its limitations, the findings of this study provide some supportive empirical evidence for the construct of emotional intelligence, help to clarify the nature of its underlying dimensions, and point to the potential adaptiveness of emotional intelligence, as measured by the TMMS, in the interpersonal domain. Given the continuing interest from psychologists and laypeople alike in the

features, consequences, and applications of emotional intelligence, the coming years will doubtless see a great deal more work on this fascinating construct.

[1] Canonical variates are the linear combinations of the variables of interest. They are computed for each set of measures (e.g., empathy, attributional complexity and self control form one linear combination, which is paired with another linear combination of attention, clarity and repair). Canonical variates are orthogonal, and more than one pair may be generated. Interpretation is similar to multiple regression, except that there are several measures on both sides of the equation : "A variate is interpreted by considering the pattern of variables highly correlated (loaded) with it" (Tabachnick & Fidell, 1989, p.217)

Acknowledgements

The authors wish to thank Dr. Alan Taylor for statistical advice, and Dr. Trevor Case for his helpful comments on an earlier draft of this manuscript.

References

Acitelli, L. K., & Young, A. (1996). Gender and thought in relationships. In G. J. O. Fletcher & J. Fitness (Eds.), *Knowledge structures in close relationships*: *A social psychological approach* (pp. 147-168). Mahwah, New Jersey: Erlbaum.

Acitelli, L. K., Douvan, E., & Veroff, J. (1993). Perceptions of conflict in the first year of marriage: How important are similarity and understanding? *Journal of Social and Personal Relationships, 10*, 5-19.

Bohart, A. C., & Greenberg, L. S. (1997). Empathy: Where are we and where do we go from here? In A. C. Bohart and L. S. Greenberg (Eds.), *Empathy reconsidered: New directions in psychotherapy* (pp. 419-449). Washington DC: APA.

Ciarrochi, J., Chan, A., & Caputi, P. (2000). A critical evaluation of the emotional intelligence construct. *Personality and Individual Differences, 28*, 539-561.

Crowne, D.P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*, 349-354.

Davies, M., Stankov, L., & Roberts, R. D. (1998). Emotional intelligence: In search of an elusive construct. *Journal of Personality and Social Psychology, 75*, 989-1015.

Davis, M. H. (1994). *Empathy: A social psychological approach.* Wisconsin: Brown & Benchmark.

Davis, M. H., & Kraus, L. A. (1997). Personality and empathic accuracy. In W. Ickes (Ed.), *Empathic accuracy* (pp. 144-168). New York: Guilford Press.

Emmons, R. A., & Colby, P. M. (1995). Emotional conflict and well-being: Relation to perceived availability, daily utilization, and observer reports of social support. *Journal of Personality and Social Psychology, 68*, 947-959.

Endler, N. S., & Parker, J. D. A. (1990). Multidimensional assessment of coping: A critical evaluation. *Journal of Personality and Social Psychology, 58*, 844-854.

Feshbach, N. D. (1997). Empathy: The formative years implications for clinical practice. In A. C. Bohart and L. S. Greenberg (Eds.), *Empathy reconsidered. New directions in psychotherapy* (pp. 419-449). Washington DC: American Psychological Association.

Fitness, J., & Duffield, J. (2004). Emotion communication in families. In A.Vangelisti (Ed.), *Handbook of family communication* (pp. 473-494). Mahwah, New Jersey: Erlbaum.

Fletcher, G. J. O., Danilovics, P., Fernandez, G., Peterson, D., & Reeder, G. D. (1986). Attributional complexity: An individual differences measure. *Journal of Personality and Social Psychology, 51*, 875-884.

Funder, D. C., & Harris, M. J. (1986). On the several facets of personality assessment. *Journal of Personality, 54*, 528-550.

Goleman, D. (1996). *Emotional intelligence*. London: Bloomsbury.

Ickes, W. (1993). Empathic accuracy. *Journal of Personality, 61*, 587-610.

Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company.

Martinez-Pons, M. (1997). The relation of emotional intelligence with selected areas of personal functioning. *Imagination and Cognition, 17*, 3-13.

Mayer, J. D., & Salovey, P. (1993). The intelligence of emotional intelligence. *Intelligence, 17*, 433-442.

Mayer, J. D., & Salovey, P. (1995). Emotional intelligence and the construction and regulation of feelings. *Applied and Preventive Psychology, 4*, 197-208.

Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. J. Sluyter (Eds.), *Emotional development and emotional intelligence* (pp. 3-31). New York: Basic Books.

Mayer, J. D., Salovey, P., & Caruso, D. R., & Sitarenios, G. (2003). Measuring emotional intelligence with the MSCEIT V2.0. *Emotion, 3*, 97-105.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2004). Emotional intelligence: Theory, findings, and implications. *Psychological Inquiry, 15*, 197-215.

McFarland, C., & Buehler, R. (1997). Negative affective states and the motivated retrieval of positive life events: The role of affect acknowledgment. *Journal of Personality and Social Psychology, 73*, 200-214.

Mehrabian, A., & Epstein, N. (1972). A measure of emotional empathy. *Journal of Personality, 40*, 525-543.

Palmer, B., Donaldson, K., & Stough, C. (2002). Emotional intelligence and life satisfaction. *Personality and Individual Differences, 33*, 1091-1100.

Palmer, B., Gignac, G., Bates, T., & Stough, C. (2003). Examining the structure of the Trait Meta-Mood Scale. *Australian Journal of Psychology, 55*, 154-158.

Rosenbaum, M. (1980). A schedule for assessing self-control behaviors: Preliminary findings. *Behavior Therapy, 11*, 109-121.

Rosenbaum, M. (1983). Learned resourcefulness as a behavioral repertoire for the self-regulation of internal events: Issues and speculations. In M. Rosenbaum, C. M. Franks, & Y. Jaffe (Eds.), *Perspectives on behavior therapy in the eighties* (pp. 54-73). New York: Springer Publishing Co.Publishers.

Taylor, S. (2002). *The tending instinct*. New York: Times BooksRosenthal, R., Hall, J. A., DiMatteo, M. R., Rogers, P. L., & Archer, D. (1979). *Sensitivity to nonverbal communication: The PONS test.* Baltimore: John Hopkins University Press.

Rusbult, C. E., Zembrodt, I. M., & Gunn, L. K. (1982). Exit, voice, loyalty, and neglect: Responses tom dissatisfaction in romantic involvements. *Journal of Personality and Social Psychology*, *43*, 1230 – 1242.

Salovey, P. Hsee, C. K., & Mayer, J. D. (1993). Emotional intelligence and the self-regulation of affect. In D. M. Wegner & J. W. Pennebaker (Eds.), *Handbook of mental control* (pp. 258-277). New Jersey: Prentice Hall.

Salovey, P., & Mayer, J. D. (1990). Emotional Intelligence. *Imagination, Cognition and Personality, 9*, 185-211.

Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the trait meta-mood scale. In J. W. Pennebaker (Ed.), *Emotion, disclosure, and health* (p.125-154). Washington, DC: APA.

Segal, J. (1997). *Raising your emotional intelligence*. New York: Holt.

Stets, J. (1995). Job autonomy and control over one's spouse: A compensatory process. *Journal of Health & Behavior, 33*, 244-258.

Tabachnick, B. G., & Fidell, L. S. (1989). *Using multivariate statistics*. New York: Harper & Row

Correspondence to: Dr. Julie Fitness
Department of Psychology
Macquarie University, Sydney
NSW 2109
Australia.
jfitness@psy.mq.edu.au

Research Profile

Julie Fitness obtained her PhD in 1991 at the University of Canterbury, New Zealand. She is a social psychologist whose research interests include emotions and emotion functioning in close relationships (marriage and family) and in the workplace. She also has theoretical and research interests in social evolutionary psychology. Her latest book (co-edited with Kim Sterelny, ANU) is entitled "From mating to mentality: Evaluating evolutionary psychology" (2003), Psychology Press. Marie Curtis has a Masters degree in Counselling and works in counselling-related contexts. Her research interests include marital and family functioning, and her Masters thesis examined emotional intelligence and the nature and function of secret keeping.