Emotional Attention, Clarity, and Repair: Exploring Emotional Intelligence Using the Trait Meta-Mood Scale

Peter Salovey, John D. Mayer, Susan Lee Goldman, Carolyn Turvey, and Tibor P. Palfai

In differing ways, all of the contributors to this volume take it for granted that the disclosure of emotions can have positive consequences for individuals—that emotional disclosure is a Good Thing, this has not been the prevailing view in much of Western thought not even in twentieth-century psychology. For example, the psychologists who first studied human intelligence contrasted rational thought with emotional experience (Schaffer, Gines, & Schoen, 1960; Woodworth, 1940; Young, 1956). To
think clearly, they believed, one had to keep emotions in check. This idea resides in popular psychological theories about human nature even today; Eller (1985), for instance, wrote, "when emotions are directly involved in action, they tend to overwhelm or subvert rational mental processes, not to supplement them" (p. 379).

In recent years, however, there has been something of a backlash against the view that reason and passion are incompatible. Even cognitively oriented investigators recognize that emotions can serve as a source of information to individuals (cf. Schwarz, 1990), and that individuals may be more or less skilled at processing this kind of information. The ability to utilize information provided by emotions can be adaptive, and the relationship between emotion and thought need not be antagonistic. Many of the contributors to this volume also take this positive view of human emotions. For example, Rime's view that most emotional experiences are socially shared suggests that emotions can serve social goals such as social comparison, clear communication, or the elicitation of assistance from others (chapter 14, this volume).

In considering individual differences in the ability to use the information conveyed by emotions adaptively, Gardner (1983) described what he called personal intelligence in part as "access to one's own feeling life—one's range of affects or emotions: the capacity instantly to effect discriminations among these feelings and, eventually, to label them, to enmesh them in symbolic codes, to draw upon them as a means of understanding and guiding one's behavior" (p. 239). We, too, believe that individuals differ in the skill with which they can identify, their feelings and the feelings of others, regulate these feelings, and use the information provided by their feelings to motivate adaptive social behavior. These skills are likely related to the use of feelings to motivate, plan, and achieve in life. Elsewhere, we have organized these competencies into a framework termed emotional intelligence (Mayer & Salovey, 1993; Salovey & Mayer, 1990; Salovey, Hsee, & Mayer, 1993).

It is the purpose of this chapter first to describe a measure of individual differences in the ability to reflect upon and manage one's emo-
ual differences in people’s tendency to attend to their moods and emotions, discriminate clearly among them, and regulate them.

Studies presented subsequently provide data regarding both the concurrent and predictive validity of the TMMS. Its correlations with related personality constructs are examined, and associations between rumination, thought and attending to feelings, experiencing them clearly, and beliefs about regulating them were studied in a laboratory experiment in which subjects watched a distressing film and then provided ongoing reports of their thoughts and feelings.

DEVELOPMENT OF THE TRAIT META-MOOD SCALE

We started our investigation of the trait meta-mood construct by asking nearly 200 individuals to respond to 48 items drawn from a larger item set employed by Mayer, Mamberg, and Vainth (1988) that divide into 5 term domains: clarity of emotional perception, strategies of emotional regulation, integration of feelings, attention to emotions, and attitudes about emotion. Half of the items in each domain were worded positively, and half were worded negatively. Items in the clarity of emotional perception domain referred to the ability to understand one’s own mood (e.g., “I always know exactly how I am feeling”). The items concerning the strategies of emotional regulation referred to the degree to which individuals moderate their moods (e.g., “When I become very upset, I remind myself of all the little pleasures in life”). The items concerning integration of feelings involved questions about correspondences between feelings and thoughts (e.g., “When I am in a good mood, I am optimistic about the future”). Attention to emotions conveyed the degree to which individuals notice and think about their feelings (e.g., “I pay a lot of attention to how I feel”). Finally, attitudes toward emotions referred to subjects’ perceptions of the importance of emotional experiences (e.g., “I believe in acting from the heart”). Subjects responded to randomly ordered items along a five-point scale anchored by 1 = strongly disagree and 5 = strongly agree. Our hope was that the factor structure of the measure would map onto the three primary domains of reflective mood experience described by Mayer and Gaschke (1988): monitoring moods, discriminating among moods, and regulating them.

Indeed, the three factor solution was clearly interpretable, and it presented the most optimal solution from the standpoint of the usual factor extraction criteria. Items loading on the three factors are illustrated in Table 1. We reversed the direction of scoring for all items loading on the first factor so that items phrased positively would have positive loadings and vice versa. Thus, the highest positively loading item was now “I pay a lot of attention to how I feel,” and the highest negative item was now “I don’t pay much attention to my feelings.” This factor was thus labeled Attention to Feelings. The second factor was labeled Clarity of Feelings because its highest positive loading item was “I am usually very clear about my feelings,” and its highest negative item was “I can’t make sense out of my feelings.” The final factor was labeled Mood Repair, because the items loading on it primarily concerned attempts to repair unpleasant moods or maintain pleasant ones. Its highest positive loading item was “Although I am sometimes sad, I have a mostly optimistic outlook.” The most highly negative loading item was “Although I am sometimes happy, I have a mostly pessimistic outlook.” Additional items concerned descriptions of active strategies for improving mood (e.g., “When I become upset, I remind myself of all the pleasures in life”).

Three scales were created based on the factor analysis. At first, we included all 48 items; 21 defined the first scale (Attention), 15 the second (Clarity), and 12 the third (Repair) with all negatively loading items reverse scored. The internal consistency of these three scales was evaluated by computing Cronbach’s coefficient alpha for each scale (Attention: \( \alpha = .86 \); Clarity: \( \alpha = .87 \); Repair: \( \alpha = .82 \)). Intercorrelations among the three factors are provided in Table 2. The only significant intrascale correlation was that between Clarity and Repair. These two scales seem to have about 19% overlapping variance in this data set.

We next tried to evaluate whether a shorter version of each scale could be derived by dropping items with low loadings. Three scales were con-
### Table 1

<table>
<thead>
<tr>
<th>Factor</th>
<th>Factor I</th>
<th>Factor II</th>
<th>Factor III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1: Attention to Feelings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don't pay much attention to my feelings.</td>
<td>0.75</td>
<td>-0.13</td>
<td>0.03</td>
</tr>
<tr>
<td>I never give in to my emotions.</td>
<td>0.05</td>
<td>-0.30</td>
<td>0.30</td>
</tr>
<tr>
<td>I don't usually care much about what I'm feeling.</td>
<td>0.63</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>I should never be guided by emotions.</td>
<td>0.62</td>
<td>-0.13</td>
<td>-0.08</td>
</tr>
<tr>
<td>It is usually a waste of time to think about your emotions.</td>
<td>0.58</td>
<td>-0.11</td>
<td>-0.11</td>
</tr>
<tr>
<td>People would be better off if they felt less and thought more.</td>
<td>0.52</td>
<td>0.05</td>
<td>-0.13</td>
</tr>
<tr>
<td>Feelings are a weakness humans have.</td>
<td>0.49</td>
<td>-0.18</td>
<td>-0.10</td>
</tr>
<tr>
<td>I don't think it's worth paying attention to your emotions or moods.</td>
<td>0.46</td>
<td>-0.00</td>
<td>-0.21</td>
</tr>
<tr>
<td>I don't let my feelings interfere with what I am thinking.</td>
<td>0.26</td>
<td>0.25</td>
<td>0.20</td>
</tr>
<tr>
<td>When I am happy I sometimes remind myself of everything that could go wrong.</td>
<td>0.36</td>
<td>-0.14</td>
<td>-0.33</td>
</tr>
<tr>
<td>It's important to block out some feelings in order to preserve your sanity.</td>
<td>0.16</td>
<td>-0.14</td>
<td>0.05</td>
</tr>
<tr>
<td>When I am happy I realize how foolish most of my worries are.</td>
<td>-0.31</td>
<td>-0.11</td>
<td>0.07</td>
</tr>
<tr>
<td>I think about my mood constantly.</td>
<td>-0.34</td>
<td>-0.30</td>
<td>-0.28</td>
</tr>
<tr>
<td>I usually have lots of energy when I'm happy.</td>
<td>-0.34</td>
<td>-0.04</td>
<td>0.30</td>
</tr>
<tr>
<td>I believe it's healthy to feel whatever emotion you feel.</td>
<td>-0.36</td>
<td>0.28</td>
<td>0.06</td>
</tr>
<tr>
<td>Feelings give direction to life.</td>
<td>-0.40</td>
<td>-0.06</td>
<td>-0.17</td>
</tr>
<tr>
<td>The best way for me to handle my feelings is to experience them as they are.</td>
<td>-0.40</td>
<td>0.15</td>
<td>0.05</td>
</tr>
<tr>
<td>When I'm in a good mood, I'm optimistic about the future.</td>
<td>-0.43</td>
<td>-0.02</td>
<td>0.37</td>
</tr>
<tr>
<td>I believe in acting from the heart.</td>
<td>-0.44</td>
<td>-0.18</td>
<td>0.01</td>
</tr>
</tbody>
</table>

### Table 1 (cont.)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Factor I</th>
<th>Factor II</th>
<th>Factor III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 2: Clarity of Feelings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am usually very clear about my feelings.</td>
<td>-0.39</td>
<td>-0.27</td>
<td>0.13</td>
</tr>
<tr>
<td>I am rarely confused about how I feel.</td>
<td>-0.34</td>
<td>0.46</td>
<td>0.09</td>
</tr>
<tr>
<td>I almost always know exactly how I am feeling.</td>
<td>0.28</td>
<td>0.85</td>
<td>0.00</td>
</tr>
<tr>
<td>I feel at ease about my emotions.</td>
<td>-0.10</td>
<td>5.58</td>
<td>0.24</td>
</tr>
<tr>
<td>I usually know my feelings about a matter.</td>
<td>-0.11</td>
<td>0.58</td>
<td>0.22</td>
</tr>
<tr>
<td>I am often aware of my feelings on a matter.</td>
<td>-0.25</td>
<td>0.44</td>
<td>0.20</td>
</tr>
<tr>
<td>I have lots of energy when I feel sad.</td>
<td>0.05</td>
<td>0.29</td>
<td>-0.09</td>
</tr>
<tr>
<td>The variety of human feelings makes life more interesting.</td>
<td>-0.20</td>
<td>0.20</td>
<td>-0.07</td>
</tr>
<tr>
<td>When I'm depressed, I can't help but think of bad thoughts.</td>
<td>0.02</td>
<td>-0.32</td>
<td>-0.22</td>
</tr>
<tr>
<td>I usually don't have much energy when I'm sad.</td>
<td>0.02</td>
<td>-0.42</td>
<td>0.03</td>
</tr>
<tr>
<td>My beliefs and opinions always seem to change depending on how I feel.</td>
<td>0.08</td>
<td>-0.46</td>
<td>-0.22</td>
</tr>
<tr>
<td>I can never tell how I feel.</td>
<td>0.21</td>
<td>-0.50</td>
<td>-0.12</td>
</tr>
<tr>
<td>Sometimes I can't tell what my feelings are.</td>
<td>-0.06</td>
<td>-0.64</td>
<td>-0.07</td>
</tr>
<tr>
<td>I am usually confused about how I feel.</td>
<td>0.06</td>
<td>-0.68</td>
<td>-0.11</td>
</tr>
<tr>
<td>I can't make sense out of my feelings.</td>
<td>-0.10</td>
<td>-0.70</td>
<td>-0.11</td>
</tr>
</tbody>
</table>

### Factor 3: Mood Repair

**Although I am sometimes sad, I have a mostly optimistic outlook.**

-0.09 | 0.29 | 0.72

**No matter how badly I feel, I try to think about pleasant things.**

0.04 | 0.17 | 0.57

**When I become upset, I remind myself of all the pleasures in life.**

0.48 | 0.19 | 0.56

**I try to think good thoughts no matter how badly I feel.**

0.04 | 0.16 | 0.56
Table 1 (cont.)

<table>
<thead>
<tr>
<th>Factor I</th>
<th>Factor II</th>
<th>Factor III</th>
</tr>
</thead>
<tbody>
<tr>
<td>If I find myself getting mad, I try to calm myself down.</td>
<td>-0.01</td>
<td>-0.10</td>
</tr>
<tr>
<td>I never worry about being in too good a mood.</td>
<td>-0.23</td>
<td>0.13</td>
</tr>
<tr>
<td>I don’t have much energy when I am happy.</td>
<td>-0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>When I’m angry, I usually let myself feel that way.</td>
<td>-0.22</td>
<td>0.12</td>
</tr>
<tr>
<td>Whenever I’m in a bad mood, I’m pessimistic about the future.</td>
<td>0.12</td>
<td>-0.33</td>
</tr>
<tr>
<td>If I’m in too good a mood, I remind myself of reality to bring myself down.</td>
<td>0.32</td>
<td>-0.15</td>
</tr>
<tr>
<td>When I am upset I realize that the “good things in life” are illusions.</td>
<td>0.05</td>
<td>-0.29</td>
</tr>
<tr>
<td>Although I am sometimes happy, I have a mostly pessimistic outlook.</td>
<td>0.29</td>
<td>-0.15</td>
</tr>
</tbody>
</table>

Table 2

<table>
<thead>
<tr>
<th>Scale Statistic and Inter correlations Among Scales</th>
<th>Items</th>
<th>Alpha</th>
<th>Attention</th>
<th>Clarity</th>
<th>Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Full Scales Created From All 48 Items</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attention</td>
<td>21</td>
<td>.66</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity</td>
<td>15</td>
<td>.87</td>
<td>-11</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Repair</td>
<td>12</td>
<td>.82</td>
<td>-12</td>
<td>.44**</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>30 Item Form Created From Items with Loadings &gt; .40 and Deletion of 2 Other Improperly Assigned Items</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attention</td>
<td>13</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity</td>
<td>11</td>
<td>.88</td>
<td>-13</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Repair</td>
<td>6</td>
<td>.82</td>
<td>-12</td>
<td>.39**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

In order to confirm the factor structure of the TMMS, a second sample of subjects was recruited from 152 students enrolled in an undergraduate psychology course. Of these students, 148 consented to participate in a four phase longitudinal study of psychological stress and health–illness behavior (Goldman, Kraemer, & Salovey, submitted for publication). These students were administered the 48-item TMMS as part of a battery of measures that was collected during the second week of regular classes.

To test the theoretical structure of the TMMS, we performed a confirmatory factor analysis (CFA) using LISREL VI (Joreskog & Sorbom, 1986). The chi-square significance test of global fit suggested that our three factor model fits the data generated by this second sample ($\chi^2 (48) = 49.56, n.s.$). The goodness-of-fit index (GFI) provided by the LISREL program was, 94 (adjusted GFI was .91), indicating that the three-factor structure of the TMMS accounted for a large proportion of the total covariation. The root mean square residual was .85, also suggesting that there was a relatively small discrepancy between the predicted and the actual co-
CONVERGENT AND DISCRIMINANT VALIDITY

Given the stability of the three-factor structure of the TMMS, it is important to determine (a) the extent to which these subscales are related to other measures of mood and mood management and (b) whether these subscales predict the actual regulation and control of mood. A number of measures related to the meta-experience of mood have been described in the literature. A specific sort of evaluation is measured by the Ambivalence Over Emotional Expressiveness Questionnaire (AEQ; King & Emmons, 1998, 1991), for example, which taps, among other thoughts, dissatisfaction with one’s emotional expression. Participants who are high on the scale may want to, but fail to, express a feeling and subsequently regret it. The AEQ is related to self-reported and peer-rated emotional expressiveness and to daily negative moods. Catanzaro and Mearns (1990) have developed an instrument called Expectancies for Negative Mood Regulation (NMR). This construct concerns beliefs about the changeability of negative moods. High scorers are less likely to be depressed than those individuals lacking in such expectancies (Kirsch, Mearns, & Catanzaro, 1990). Similarly, the Life Orientation Test (LOT) was developed to measure the tendency to have optimistic expectancies about future events (Schier & Carver, 1985). Finally, the Self-Concept Scale (SCS) measures the tendency to attend to aspects of ongoing consciousness including mood (Tenigstein, Scheier, & Buss, 1975). Each of these scales is reliable and provides a valid index of what it purports to measure. In general, however, they are not based on a singular theoretical perspective. The result has been more of a bottom-up approach to the issue of emotion evaluation and regulation. We have argued elsewhere that the meta-mood experience and emotional intelligence concepts can be employed to organize such constructs (Mayer & Salovey, 1993; Mayer & Gaschke, 1988; Salovey, Hsee, & Mayer, 1993; Salovey & Mayer, 1990). We would expect that the TMMS scale may capture in the domain of feelings the variance accounted for by this large collection of measures.

Correlations Among Measures

We asked 86 undergraduates to complete the TMMS, all of the measures described above, as well as a measure of depression (the Center for Epidemiological Studies Depression Scale [CES-D]; Radloff, 1977). The correlations among the TMMS subscales and the other measures included in this study are presented in Table 3. In this sample, the Repair scale was correlated positively with both Attention and Clarity, although the magnitude of these correlations was not large. We should also mention that in this sample, the internal consistency of the Repair scale was a bit lower than in previous studies. More importantly, the three TMMS subscales were associated with other measures in the literature with which we would expect them to be correlated (convergent validity) but not with others (discriminant validity). For example, Attention to feelings was associated with private and public self-consciousness. People who attend to their feelings also, to some extent, attend to other aspects of their conscious experience. Clarity was negatively associated with ambivalence over emotional expression and with depression. Individuals who experience their feelings clearly tend not to be depressed and are less likely to experience ambivalence over the amount and quality of the emotions they display to others. These associations of other measures with Attention and Clarity were moderate, suggesting that these two TMMS subscales do account for emotion-related variance not measured by self-consciousness, ambivalence, or depression. Finally, Repair was negatively associated with depression and positively associated with optimism and beliefs about negative mood regulation. These latter two correlations are the highest among those generated in this study, and the discriminant validity of beliefs about the repairability of moods from optimism and other similar constructs will need to be demonstrated in future work.
The Creation of Higher Order Factors

The creation of the TMMs was in part based on our belief that mood-related experiences could be understood as falling in three primary domains: attending to moods, experiencing them clearly, and trying to regulate them. If this is so, the collection of measures that have proliferated in this general area should cluster along these three themes as well. We conducted a principal components analysis in which scores on the three TMMs subscales and on the other measures collected in this study served as "items." Three factors had eigenvalues greater than one and accounted for 63% of the total variance.

The factor loadings following varimax rotation are presented in Table 3. The three TMMs subscales defined the three different factors. The first factor was defined by the TMMs-Attention subscale and included as well Optimism (LOT), Negative Mood Regulation (NMR), and Depression (CES-D), which loaded negatively. The second factor loaded TMMs-Attention highly and also included the two Self-Consciousness Scales (SCS). And the third factor was defined by TMMs-Clarity on one end and Ambivalence About Emotional Expression (AEQ) on the other. Thus, this analysis suggests that the TMMs taps into three fundamental domains of mood experience that are also represented in a more vicarious way by other measures of affective style and processes.

The TMMs subscales, Attention, Clarity, and Repair, seem efficiently to represent several existing measures concerned with the processing of affect. The measures included in this study could be organized empirically around the themes of attending to feelings, experiencing them clearly, and trying to regulate them. Of the many relationships uncovered in this study, one is particularly interesting to us and that concerns the placement of Clarity and Ambivalence About Emotional Expression on opposite ends of the same dimension. Similar data have been reported by Emmons (1992), who calls this factor emotional complexity.

This study assessed the convergent validity of the TMMs with only a few of the measures that can be found in the meta-mood literature. In future work, we would like to examine relationships between the TMMs subscales and other measures. Some ideal candidates include Levels of Emotional Awareness (Lack, O'Quinn, Schwartz, Walker, & Zeitlin, 1990; Lane & Schwartz, 1987), the Mood Awareness Scale (Guiliano & Swinkels, 1992, 1993), Constructive Thinking—especially the CETI subscales of emotional coping, naive optimism, negative thinking, and superstition (Epstein, 1996; Epstein & Metier, 1989; Kar & Epstein, 1991)—and al-4-
information may be too discrepant from existing representations and too overwhelming to be integrated adequately. The individual is motivated to reduce such discrepancies in order to regain a coherent set of representations about the self and the environment and regain a sense of mastery. This process may require repeated experiencing of the negative material in the form of ruminative thought until such processing is complete. This chain of events is quite similar to the distress, disclosure, relief model described by Stiles in this volume.

Research on the treatment of fear and anxiety with exposure-based therapies suggests that other features of the stress reaction require processing in a similar manner (see Foa & Kozak, 1986; Rachman, 1980). Affect, behavior, and cognition are part of an interrelated response structure to the stressful event. Though each component is partially independent from the others in the way that it is processed, they are all related to one another as part of an affective memory structure for the negative event. In other words, the stress response consists of multiple features that follow different processing patterns but are mutually interdependent (see Barlow, 1988, for a review of this literature).

Central to the emotional processing approach is the notion that complete adjustment to a stressor is facilitated by simultaneous activation of the various components of the affective memory structure that underlie the stress reaction. Fear, for example, is represented as (a) information about the feared event, (b) verbal (e.g., reported emotion, cognitions), physiological, and behavioral responses, and (c) interpretive information about the stimulus and the response (Foa & Kozak, 1986). Modification of a fear response requires that the fear structure be activated and then incompatible elements be incorporated within it, otherwise the likely re-action is persistent negative mood, ruminative thought, or fearful images (Rachman, 1980).

In line with this view, we suggest that successful processing of intrusive thoughts may depend on skills related to the activation, experience, and modification of feelings. We examined the relation of individual differences in attention to clarity, and regulation of feelings to sustained negative affect and the intensity, insensitivity, controllability, and negativity of
ruminative thoughts that followed a distressing stimulus. Subjects were first exposed to distressing video footage after which measures of mood and quality of thought were obtained. No differences in affective response or quality of thoughts were expected among subjects immediately after the distressing stimulus. However, subscales of the TMMS were expected to predict recovery of positive mood and improvement in the quality of thought across the time period that followed. Specifically, we hypothesized that individuals who reported greater clarity in discriminating mood and who considered negative mood to be repairable would (a) have fewer, less negative thoughts in general, (b) report more positive thoughts over time, (c) display a decline in intrusiveness and uncontrollability of negative thoughts, and (d) report more positive mood as the conclusion of the experimental session. Attention was not expected to be a predictor because instructions for the thought-sampling procedure explicitly required subjects to pay attention to their thoughts and feelings.

We asked 78 student volunteers to come to the laboratory, where we told them that they would be participating in two studies, one involving watching television and a second one on the stream of consciousness. First, these participants completed a battery of measures that included (a) the Eysenck Personality Inventory (EPI; Eysenck, 1975), (b) the Center for Epidemiological Studies Depression Scale (CES-D Radloff, 1977), (c) the Trait Meta-Mood Scale (TMMS), (d) the Affect Grid (Russell, Weiss, & Mendelsohn, 1989), and (e) the Weinberger Adjustment Inventory (WAI; Weinberger, 1969, 1990).

Next, when all of the subjects in a group completed the battery, a film clip was presented. The video clip was a 12 min segment of a documentary on drunk driving. The film contained graphic footage of serious automobile accidents and the emergency room and hospital sequences that followed. Victims also described the nature of their traumatic experience. This theme was chosen for its relevance to individuals of this age group. After the film, subjects were asked to complete another mood measure. This ostensibly marked the conclusion of the “first experiment.”

At this point, the experimenter redescribed the supposed purpose of the “second experiment” and the rationale of the thought sampling pro-

edure. The instructions asked subjects to: (a) focus on whatever thoughts, feelings, and images they were experiencing at the time of a prearranged signal, (b) jot down a few select words to describe the thoughts on a page in a thought sampling record, and (c) answer the questions that appeared on the bottom of each page with regard to the recorded thought. Four Likert-scale items were included at the bottom of each page that asked subjects to rate the positiveness, intensity, insincerity, and controllability of their recorded thoughts. Subjects were then given a practice thought sampling page and participated in a trial run. The actual thought listing session began after subjects had a chance to ask questions and felt comfortable with the procedure. The thought sampling procedure followed a designated protocol. Subjects were signaled with a tone to report a thought every 60–120 s. This procedure was repeated 12 times. After the last of the thought samples was elicited, subjects were requested to complete another mood measure.

**TMMS and Associations With Other Mood-Relevant Measures**

The intercorrelations among the TMMS subscales and their correlations with the CES-D and WAI subscales are presented in Table 4. In this study, there were no significant correlations among the three subscales of the TMMS, and the internal consistency of all three scales was satisfactory. When we examined the relation of the TMMS with other measures of emotionality and negative affectivity, there was an interesting pattern of correlations with depression. Depression was associated with low Clarity in discriminating feelings, high Attention to envisions, and beliefs that one cannot Repair negative moods. Low Clarity was also associated with neuroticism. In other words, greater mood lability is associated with a lack of clarity about mood. Also worth noting is the coherent pattern of relations between the TMMS subscales and the WAI. Clarity and Repair were negatively related to WAI distress. Clarity in discriminating emotions, as well as the belief that one can regulate emotional experience were associated with lower vulnerability to distress reactions. Moreover, repressive-defensiveness was associated with low attention to moods, as it should be.
Table 4

Correlations Among TMMMS Subscales and With Other Measures in Ruminative Study

<table>
<thead>
<tr>
<th></th>
<th>Alpha</th>
<th>Attention</th>
<th>Clarity</th>
<th>Repair</th>
<th>CES Depression</th>
<th>EPI Neuroticism</th>
<th>WAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>.28</td>
<td>.100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity</td>
<td>.87</td>
<td>.13</td>
<td>.100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair</td>
<td>.76</td>
<td>.52</td>
<td>.12</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CES Depression</td>
<td>.25*</td>
<td>.25*</td>
<td>.26*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPI Neuroticism</td>
<td>.22*</td>
<td>.40**</td>
<td>.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WAI</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Distress</th>
<th>Self-Restraint</th>
<th>Repression-Defensiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.22</td>
<td>.08</td>
<td>.07</td>
</tr>
</tbody>
</table>

Note:  
* p < .05  
** p < .01

Changes in Mood

There was no doubt that watching the drunk driving film had a powerful impact on mood. Our participants reported relatively high levels of positive mood before the film (Time 1). However, mood reports just after the film dropped significantly (Time 2). Finally, there was a significant recovery of positive mood by the very end of the experiment (after the thought sampling task; Time 3).

A hierarchical regression analysis was used to determine the effects of Attention, Clarity, and Repair on mood at each of the three time points. Analysis proceeded in the following manner: Scores on the CES-D, EPI neuroticism subscale, and WAI were entered first to account for any variance explained by depression, neuroticism, or socio-emotional adjustment. Baseline measures of mood were entered next. This strategy allowed for predictions of change in mood by removing from it all variance shared with the earlier measurement. For mood at the beginning of the experi-
more likely to rebound from induced negative mood. The results of these regression analyses are presented in Table 5.

In order to look at the associations between the TMMS scales and mood without worrying about overlap between the TMMS and the other dispositional measures collected, we also calculated a series of regression equations in which we regressed mood at each of the three points during the experiment on just the three TMMS subscales. At the beginning of the experimental session, positive mood was significantly associated with high Repair (β = .34, p < .01) and low Attention (β = −.28, p < .05). Following the film about drunk driving, subjects who scored high on Repair were the least distressed (β = −.26, p < .05), even if mood at the beginning of the experiment was included in the model (β = .30, p < .05).

### Thought Quality

Four characteristics of ruminative thought were examined in this study: intensity, insistency, controllability, and positivity of thoughts that followed a distressing stimulus. Preliminary bivariate analysis of these thought-quality dimensions revealed a strong relationship between intensity and insistency of thought. Due to the high correlation, r (72) = .74, p < .0001, and conceptual relatedness of these two variables, they were combined into an index of the intrusiveness of the thought. Thus, positivity, intrusiveness, and controllability were used as the primary measures of thought quality.

Repeated measures analysis of covariance (ANCOVA) was used to test hypotheses pertaining to the ability of the TMMS subscales to predict improvement in the dimensions of thought quality over time. Because depression is associated with persistent negative cognitive patterns (e.g., Metalsky, Abramson, Seligman, Semmel, & Peterson, 1982), we felt it necessary to control for (i.e., covary) the influence of depression on thought patterns.

For purposes of analysis, subjects were divided into three groups based on their scores on each of the subscales of the TMMS. Those subjects whose score on a particular subscale fell into the upper quartile were considered to possess high ability with respect to that subscale. Those who scored in the lower quartile were considered to possess low ability. Scores for the remaining subjects were classified in the average range. This resulted in three grouping levels (High, Average, and Low) for each of the TMMS subscales: Attention, Clarity, and Repair. The three measures of thought quality (positiveness, intrusiveness, and controllability) were assessed across 10 points in time. Thus, three repeated measures ANCOVAs with one between subjects factor (group) and four within subjects factors (time and the three thought quality ratings) were performed, covarying any possible effect of depression. The only significant effect that emerged was a Time × Group interaction for Clarity, F(18,567) = 1.92, p = .05. To examine this interaction, we collapsed across the three dimensions of thought quality by taking the mean of standardized scores at each time point. The collapsed scores were scaled such that higher numbers indicated more negative, intrusive, uncontrollable thoughts—more ruminative thought. The Time × Group interaction for Clarity indicated that the effect of time on ruminative thought was different in at least one group. Because we were specifically interested in the improvement over time, regression lines were plotted for ruminative thought for each of the three groups. The High Clarity group had a significant negative slope (β = −.66, p = .05), indicating a significant decline in ruminative thought, as compared with a near zero slope for those in the Low Clarity group (β = −.06, ns). The slope difference between High and Low Clarity was significant (z = 1.67, p < .05; one-tailed). The slope coefficient for Average Clarity was not significantly different from the slope coefficients for either the Low or High Clarity groups. Thus, it appears that individuals who report being very clear about their feelings experienced a significant decline in ruminative thought over time when compared with individuals who report being unclear about their moods. These results support our hypothesis that clarity in discriminating feelings is important in the recovery from ruminative thought following a negative or stressful event.

This study investigated individual differences in the persistence of negative mood and ruminative thought. Because affect plays a critical role in rumination, we believed that individuals who possess some of the skills measured by the TMMS would be less prone to continued negative mood and ruminative thought. We were able to demonstrate the importance of...
the regression models, when the TMMS scales were examined alone. Repair was associated with the intensity of negative feelings immediately after viewing the distressing film. Individuals who seem to be good at repairing negative moods reported lower levels of negative affect in this context.

WHAT HAVE WE LEARNED?

This chapter described the development of the Trait Meta-Mood Scale (TMMS) and the extraction and confirmation of its three factors: Attention to Feelings, Clarity in Discrimination of Feelings, and Mood Repair. Scales based on these factors appear to be reliable as well as sufficiently differentiated from related constructs such as neuroticism and repression. Moreover, the Clarity scale in particular demonstrated validity in predicting the unpleasantness of ruminations after a stressful experience.

More important, perhaps, than the reliability and validity of the TMMS is its utility. Is the trait meta-mood construct helpful in understanding individual differences in people’s reactions to changes in their feeling states? We believe that the TMMS is a reasonable operationalization of aspects of emotional intelligence (Mayer & Salovey, 1993; Mayer, DiPaolo, & Salovey, 1999; Salovey et al., 1995; Salovey & Mayer, 1990). Individuals differ in their understanding of and ability to articulate their affective states (and those of others as well). And they vary in their ability to regulate such feelings and use them adaptively to motivate behavior. Attention to, Clarity, and Repair of feelings seem fundamental to the self-regulatory domain of emotional intelligence.

We believe that in this chapter, we have introduced a construct and a measure that will be of use to investigators interested in emotional disclosure. Certainly, however, future research needs to be focused on the discriminant validity of the TMMS vis-à-vis the constructs noted (but not measured) earlier in this chapter. Moreover, we need to explore whether the TMMS can predict emotional adjustment in other domains. In recent work with the TMMS, Emmons (1992) has reported that among a sample of individuals who reported their moods daily for three weeks, positive and negative moods were associated with Attention, Clarity, and
Repair, and, moreover, Repair was associated with the tendency to overestimate levels of positive affect at the end of the day. In another set of studies (Goldman et al., submitted for publication), we have gathered data suggesting that Attention and Repair influence the reporting of physical symptoms and illnesses in the face of stressful conditions such as midterm and final examinations. Such findings may prove useful in understanding the role of emotional intelligence in psychosomatic disorders. Research efforts in the health domain and in other fields (close relationships may be a good place to look as well) should clarify the psychological importance of relatively stable thoughts about one’s feeling life.

REFERENCES


APPENDIX: TRAIT META-MOOD SCALE

Please read each statement and decide whether or not you agree with it. Place a number in the blank line next to each statement using the following scale:

5 = strongly agree
4 = somewhat agree
3 = neither agree nor disagree
2 = somewhat disagree
1 = strongly disagree

1. The variety of human feelings makes life more interesting.
2. I try to think good thoughts no matter how badly I feel.
3. I don't have much energy when I am happy.
4. People would be better off if they felt less and thought more.
5. I usually don't have much energy when I'm sad.
6. When I'm angry, I usually let my feelings out.
7. I don't think it's worth paying attention to your emotions or mood.
8. I don't usually care much about what I'm feeling.
9. Sometimes I can't tell what my feelings are.
10. If I feel myself getting mad, I try to calm myself down.
11. I have lots of energy when I feel sad.
12. I am rarely confused about how I feel.
13. I think about my mood constantly.
14. I don't let my feelings interfere with what I am thinking.
15. Feelings give direction to life.

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16. Although I am sometimes sad, I have a mostly optimistic outlook.
17. When I am upset, I realize that the "good things in life" are illusions.
18. I believe in acting from the heart.
19. I can never tell how I feel.
20. When I am happy, I realize how foolish most of my worries are.
21. I believe it's healthy to feel whatever emotion you feel.
22. The best way for me to handle my feelings is to experience them to the fullest.
23. When I become upset, I remind myself of all the pleasures in life.
24. My beliefs and opinions always seem to change depending on how I feel.
25. I usually have lots of energy when I'm happy.
26. I am often aware of my feelings on a matter.
27. When I'm depressed, I can't help but think of bad thoughts.
28. I am usually confused about how I feel.
29. One should never be guided by emotions.
30. If I'm in too good a mood, I remind myself of reality to bring myself down.
31. I never give into my emotions.
32. Although I am sometimes happy, I have a mostly pessimistic outlook.
33. I feel at ease about my emotions.
34. It's important to block out some feelings in order to preserve your sanity.
35. I pay a lot of attention to how I feel.
36. When I'm in a good mood, I'm optimistic about the future.
37. I can't make sense out of my feelings.
38. I don't pay much attention to my feelings.
39. Whenever I'm in a bad mood, I'm pessimistic about the future.
40. I never worry about being in too good a mood.

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Note: Items in bold face refer to those items included on the measured trait. Items shown in parentheses are included in the scale on which they are assigned in italics. It indicates that the item is scored second.
41. I often think about my feelings. [Attention]
42. I am usually very clear about my feelings. [Clarity]
43. No matter how badly I feel, I try to think about pleasant things. [Repair]
44. Feelings are a weakness humans have. [Attention (R)]
45. I usually know my feelings about a matter. [Clarity]
46. It is usually a waste of time to think about your emotions. [Attention (R)]
47. When I am happy I sometimes remind myself of everything that could go wrong.
48. I almost always know exactly how I am feeling. [Clarity]