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Individual Differences in Emotional Creativity as Manifested in Words and Pictures

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ABSTRACT: Two studies were conducted to demonstrate the viability of emotional creativity as a theoretical construct. Participants were selected on the basis of their scores on a self-report inventory designed to measure individual differences in emotional creativity. In Study 1, participants wrote narratives about emotionally challenging events and drew pictures of specific emotions. In Study 2, participants completed a story about an emotionally ambiguous situation and made collages integrating three incompatible emotions. In each study, participants who scored higher on the trait measure of emotional creativity showed greater creativity in expressing emotions, both verbally and nonverbally.

In a review of the creativity literature during the 23-year period between 1967 and 1989, Feist and Runco (1993) found that emotion ranked 30th of 31 topics in frequency of investigation. Emotions have received attention as antecedents of creativity with respect to both major affective disorders (e.g., Jamison, 1994) and more moderate mood swings (e.g., Isen, 1990). Anecdotal accounts also emphasize the emotional accompaniments and consequences of creative endeavors: the anxiety and even guilt that is frequently associated with attempts to overthrow precedent and make new discoveries, and the despair and joy that goes with failure and with success (May, 1975).

If research on the emotional antecedents and accompaniments of creativity has been relatively neglected, research on emotional creativity itself has been almost entirely absent. By *emotional creativity,* we mean emotions as the object or subject matter of creative endeavors. The very idea of emotional creativity may seem like an oxymoron. Creativity often is considered the epitome of free expression and among the loftiest of the "higher" thought processes. By contrast, emotions often are viewed as powerful states of arousal that sweep over individuals, allowing little freedom of response. This everyday view finds its counterpart in psychological theory, where emotions typically have been conceived as biologically primitive responses mediated by the autonomic nervous system and its central (limbic) representations (e.g., Levenson, 1992; Waters, Bernard, & Buco, 1989). Although this traditional conception of emotion is losing sway, it still exerts a subtle but powerful influence, especially with reference to so-called basic emotions (e.g., Frijda, 1986; Lazarus, 1991; Oatley, 1992).

As Collingwood (1938/1955) suggested, a different view of emotions is possible: Emotional experience is not preformed, but is discovered during the act of expression. Furthermore, the act of expression is subject to creative change, depending on the personal talents of the individual experiencing the emotion and the demands of the situation.

For an emotional change to be considered creative, three criteria must be met in varying combination, depending on the person and the situation: novelty, effectiveness, and authenticity (cf. Barron, 1988). An emotion is novel if it incorporates new feelings and

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responses, or if it combines familiar emotions in a new way. But novelty by itself is not sufficient; indeed, nonconforming emotional responses often are indicative of psychopathology, not creativity (e.g., Lovejoy & Steurwald, 1992). To be creative, a novel emotional response must be effective in some way—for example, by resolving the issue at hand, enhancing the individual's sense of self or interpersonal relationships, or opening new possibilities for future action. A creative emotional response should also be an authentic expression of the person's self, and not merely a display to fit the circumstances—no matter how novel and effective the display might be (Morgan & Averill, 1992). The emotionally creative person is not a con artist.

Despite its apparently oxymoronic connotations, the construct of emotional creativity is not without precedent. Rank (1932) was an early advocate of applying creativity to emotional personality development. A half century later, Guilford, Hendricks, and Hoepfner (1968) designed a series of tests to assess creative problem solving in social situations, including the ability to express mixed emotions. Drawing on cognitive approaches to emotion, Sommers (1981) delineated a dimension that she called *emotional range*, defined as the variety of different emotions a person is able to experience in a situation. Most recently, Salovey, Hsee, and Mayer (1992) examined emotional intelligence, by which they mean the ability to monitor one's own and others' emotions accurately—and to use this information to guide thought and action (see also Goleman, 1995).

The above formulations, although suggestive, either lack specificity or are only indirectly related to emotional creativity. For example, in the emotional as in the artistic or the cognitive domains, a person can have a large range of responses, and be intelligent and competent in thought and expression, without necessarily being creative.

The major purpose of this article is to explicate the construct of emotional creativity and to explore some of the ways that emotionally creative responses can be investigated in a laboratory context.

Emotional creativity is a straightforward extension of a social-constructionist view of emotion to individual development and change (Averill, 1980, 1984; Averill & Nunley, 1992). According to this view, emotions are constituted in part by social norms and rules. These social norms can change, and when a constitutive rule of emotion is changed, the emotion itself changes—in both its outward manifestations (appraisals and overt behavior) and in its underlying structure.

Averill and Thomas-Knowles (1991) developed a self-report inventory to measure individual differences in the predisposition toward emotional creativity. This Emotional Creativity Inventory (ECI) subsequently has been refined and related to a variety of personality dimensions. For example, with reference to the big five personality traits measured by the NEO (Costa & McCrae, 1978), emotional creativity is related to openness to experience and agreeableness, but is largely independent of neuroticism, extraversion, and conscientiousness (Gutbezahl, 1994). Scores on the ECI also are correlated with indices of self-esteem, generalized self-efficacy, and proneness to mystical experience, but they are largely independent of academic ability, as measured by the verbal and mathematical sections of the Scholastic Assessment Test (Averill, 1994).

The studies in this article were undertaken to explore how individuals with varying degrees of emotional creativity, as measured by the ECI, might differ in emotional expression in a laboratory context. Typically, laboratory studies of emotion allow little freedom of expression. The range of responses is limited to checking groups of adjectives, registering physiological change, or making narrowly prescribed instrumental responses, such as delivering electric shock. We believe that reliance on such procedures both reflects and reinforces the notion that emotions are simple, automatic responses immune to creative change.

Rather than measuring specific, predefined indicators of emotion, our studies utilized tasks that allowed participants to express their emotional experiences in unique and potentially creative ways. In Study 1, the tasks were (a) describing in words emotionally challenging events, and (b) drawing pictures of five specific emotions. In Study 2, the tasks were (a) resolving an emotionally ambiguous scenario, and (b) creating a collage incorporating three incongruous emotions. We predicted that participants who scored high on the ECI would complete these tasks in a creative manner.

Study 1

> To evoke in oneself a feeling one has once experienced, and having evoked it in oneself, then, by means of movements, lines, colors, sounds, or forms expressed in words, so to transmit that feeling that others may experience the same feeling—this is the activity of art. (Tolstoy, 1896/1960, p. 51)

Art, both verbal and visual, has long been considered a means of emotional expression. Such expression is not limited to the Tolstoys among us. People are natural storytellers; we construct narratives to give meaning to traumatic events and to cope with future challenges (Berry & Pennebaker, 1993; Meichenbaum & Fitzpatrick, 1991). Indeed, emotions themselves have features of narratives: anger narratives to correct wrongs, love narratives to establish and maintain relationships, and so forth (Averill, 1993; Sarbin, 1986). Visual arts, too, have long been recognized as an important means of emotional expression, development, and change. This is indicated, among other things, by the widespread use of art as an adjunct to psychotherapy (e.g., Arrington, 1991; Junge & Linesche, 1993). In this study, we examined the relation between a dispositional measure of emotional creativity and performance on verbal and visual tasks requiring emotional creativity. We predicted that participants who were highly emotionally creative (as measured by the ECI) would complete these tasks in an emotionally creative manner.

Method

Participants

Approximately 800 introductory psychology students completed an abridged version of the ECI as part of a departmentally required prescreening. This abridged version consists of 13 items (plus distractors), rated on 5-point scales; the possible range of scores is thus 13 to 65. In a separate sample of 111 participants, the abridged ECI had high internal consistency ($\alpha = .89$) and was highly correlated with the full (30-item) version of the test ($r = .86$, $p < .005$).[1]

To increase statistical power, participants were selected who had high or low scores on the ECI. This gave power comparable to that which would have been achieved by running a much larger sample comprising students with a full range of scores. A total of 51 students whose scores fell at least 1 *SD* above or below the mean participated. Of these, 29 scored at least 1 *SD* above the mean (13 males, 16 females) and 22 scored at least 1 *SD* below the mean (8 males, 14 females).

[1] A copy of the Emotional Creativity Inventory is available upon request.

Tasks

Narratives. Participants wrote about three emotionally significant events: (a) an event that occurred at the time they were starting college, (b) a serious love relationship or intense crush that they had experienced, and (c) an unspecified (open-ended) but unusual event, either real or imagined. For each of the three events, participants first described the event, then answered the following questions:

1. What was happening in your life at this time?
2. What emotions did you experience?
3. What made the experience unique?
4. What did you learn, or how did you change?

These follow-up questions were designed to aid in the scoring of emotional creativity by eliciting comparable information from all participants. Participants were allowed 20 min for each event. A participant who finished early had to wait the full 20 min before proceeding further. Participants thus were not tempted to rush their responses to finish early.

Drawings. Participants drew crayon pictures of 5 emotions: anger, joy, desperation, hope, and shyness. Participants were given 5 pieces of paper one at a time, each with the following instructions: "Please turn this piece of paper over and draw the emotion <EMOTION NAME> on the other side." Participants were allowed 5 min for each picture.

Rating Participants' Performance

Narratives. Two judges, blind to participants' scores on the ECI, rated the narratives on 5-point scales for novelty, effectiveness, authenticity, and overall emotional creativity. In abbreviated form, the instructions for making these ratings were as follows:

1. *Novelty:* Taking into account the general trend of the narrative, how much did the theme of this participant's story differ from the others? With regard to the emotional experience itself, does it conform to widely accepted social norms and standards? When rating this dimension, focus on the uniqueness of the experience, not its overall quality.

2. *Effectiveness:* Within the context described, was the emotion a constructive response? For example, did the experience open possibilities for further development on either the individual or interpersonal level? In making your rating, think about the potential short- and long-term consequences of the experience. Everything considered, was the response maladaptive or adaptive?

3. *Authenticity:* Did the experience impress you as genuine (even if highly imaginative or implausible), or did it seem artificial, hiding rather than revealing the author? A judgment of authenticity does not mean that you necessarily agree with or like the participant's response. The important thing is that you understand something about the participant from his or her emotional reactions.

4. *Overall emotional creativity:* The overall creativity rating is a gestalt, a whole that may differ from the sum of its parts. Take into account the novelty, effectiveness, and authenticity of the response. Other variables may also be taken into account, such as the complexity of the story, the way potentially conflicting themes are integrated, and so forth. Keep in mind that you are rating the creativity of the emotional experience, not the creativity of the story (e.g., its literary merits).

Because the ratings were on an ordinal scale and did not always meet assumptions of normality, data for these variables were rank-ordered, and analyses were carried out on the rank-ordered data (e.g., Spearman's rho). Preliminary analysis suggested that interrater reliability (as measured by Spearman's rho) was quite low for the college stories. Hence, these stories were treated as a warm-up exercise and dropped from further analysis. Interrater reliability for the ratings of the other two narratives ranged from .37 to .63 ($M = .45$). To increase the stability of the ratings, the 4 variables (novelty, effectiveness, authenticity, and overall emotional creativity) were averaged, yielding a composite emotional creativity score for each narrative.[2] Interrater reliability on the composite scores was .58 for the love narrative and .57 for the open-ended narrative. For subsequent analyses, the ratings of the two judges were averaged.

Correlation between the composite scores for the love narrative and the open-ended narrative was small ($rs = .09$, $p > .5$). This is not surprising. In a sense, each story might be considered a single item on a potentially much longer test. Interitem correlations on most tests are low, typically between .1 and .2 (Mischel, 1977). There is, however, another reason why responses on the two items might diverge. Most participants were in their late teens or early twenties and had only one or two significant love relationships. Hence, there was more uniformity in the particulars of the love events reported, which allowed a more straightforward comparison among the stories. By contrast, the events described in response to the open-ended question varied greatly. Some participants reported events that were quite challenging and uncommon (such as quitting addictive drugs or losing a baby), whereas others reported events that were more mundane and commonplace (such as the death of a family pet). The degree of emotional creativity described was thus freer to vary as a function of the situation as well as individual predisposition.

Drawings. Two judges with art studio experience rated the drawings. These judges were blind to participants' scores on the ECI. Because the use of drawings in this study was exploratory, a variety of variables was assessed. Judges made eight subjective ratings using 5-point scales: (a) technical artistic ability (used as a control for technical expertise), (b) how figurative (as opposed to abstract) the picture was, (c) how much of a story the picture told, (d) use of humor, (e) appropriateness of the drawing to the emotions depicted, (f) creative use of color, (g) creative use of space, and (h) complexity. Judges also assessed two objective variables: (a) the number of colors used, which ranged from 1 to 20; and (b) whether written words were incorporated into the picture, which was dichotomous.

All ratings were rank ordered before analysis. Two of the variables (humor and appropriateness) demon-

[2]The correlation between the overall emotional creativity rating and the composite score was $r = .98$, $p < .00001$. Hence, it would make little difference which of these two scores were used for further analysis. The composite scores, being based on four ratings, were somewhat more stable. Hence, these scores are used in the text. To examine the relative contribution of the novelty, effectiveness, and authenticity ratings to the overall creativity rating, a multiple regression analysis was performed. All three components contributed significantly to the overall emotional creativity rating for both the love narrative (all $ts > 5$, all $ps < .0001$) and the open-ended narrative (all $ts > 6$, all $ps < .0001$).

strated low reliability or lack of variability and hence were eliminated from further analysis. Interrater reliability on the six remaining subjective ratings ranged from .30 to .80 (M = .50). Scores were averaged over raters and over the five target emotions. Cronbach's a for the individual variables (averaged across emotions) ranged from .63 to .87 (M = .77).

Procedure

Participants completed the tasks in groups of two to eight. Half the participants completed the drawings first and half completed the narratives first.

All instructions for the specific tasks were given in written form. In the narratives task, participants completed each event before being given instructions for the next narrative. In the drawing task, participants completed each drawing before receiving the emotion for the next drawing. Participants who completed tasks in less than the time allotted were not given materials for the next narrative or picture until the full time had passed. Total time for the study was approximately 90 min.

Analyses

All scores were rank ordered before any statistical calculations were performed, because the assumptions underlying parametric statistics were not met. The data were all on ordinal scales. The full distribution of the ECI scores was highly skewed to the left; the subjective ratings were extremely heavy-tailed. Thus, statistics that assume an underlying normal distribution, such as Pearson's r, would have been inappropriate.

Although participants were selected on the basis of prescreening to form two groups—one low and the other high in emotional creativity—the range of scores on the abridged ECI was still quite large within each of the two groups. Observed scores for the low group ranged from 16 to 29 and for the high group from 40 to 58. In other words, the range of scores within groups was greater than the range between groups. To take full advantage of the entire range of scores, correlations were used to assess the relation between the abridged ECI scores and performance on the narratives and pictures. Alf and Abrahams (1975) have shown that this procedure is more powerful than two-group tests.[3]

In short, the analyses adopted here were at once more powerful (taking advantage of the full range of scores) and yet more conservative (in terms of potential violation of assumptions) than more traditional t tests on the same data. Probability levels are reported for two-tailed tests, even though all significant results are in the predicted direction.

Results and Discussion

There were no effects due to the order in which the tasks were performed; therefore, this factor was ignored in the analyses of the results.

Many of the variables rated in both the narratives and the drawings showed differences due to the sex of the participant. Some of the variables in the drawings (such as use of color and space) also showed differences due to technical ability. (The zero-order correlations between technical ability and other variables ranged from .06 to .69, M = .35). Therefore, partial correlations were computed, controlling for both sex and technical ability. Both full and partial correlations are presented in the tables; unless otherwise indicated, only the full correlations are discussed in the text.

Narratives

As shown in Table 1, composite creativity scores for the love narrative were significantly correlated (rs = .30, $p < .05$) with scores on the ECI. The corresponding correlation for the composite creativity score for the open-ended narrative was in the same direction (rs = .21), but did not reach traditional levels of statistical significance.

Table 1 also presents correlations separated by sex. Correlations for both sexes were approximately equal for the love narrative. For the open-ended narratives, performance was somewhat more highly correlated

[3] Alf and Abrahams (1975) suggest that a correction is necessary for the greater variance in scores obtained when data are collected on extreme groups rather than a random sample from the entire population. However, the range of raw data does not affect the variance of rank-ordered scores. Nonparametric correlations (Spearman's rho) were used for all analyses, thus obviating the need for the kind of correction suggested by Alf and Abrahams while at the same time assuring that all assumptions for the statistical tests were met.

Table 1. *Correlations (rs) Between Ratings on Narratives and Score on Abridged Emotional Creativity Inventory: Study 1*

Topic	*r* With Inventory ($n = 51$)	Controlling for Sex ($n = 51$)	Sex: Male ($n = 21$)	Sex: Female ($n = 30$)
Love	.30*	.49***	.30	.31
Open	.21	.10	.04	.26

Note: None of the differences between males and females are statistically significant.
*$p < .05$. ***$p < .005$.

with score on the inventory for females than for males, although this difference is not significant.

Drawings

An exploratory (principal component) factor analysis was performed on all variables other than technical ability (which was used as a control in later analyses). Although sample size was small for factor analytic purposes, the results were clear cut. Two factors accounted for 69% of the variance. These factors were rotated (varimax), yielding the loadings presented in Table 2.

Four variables (number of colors, creative use of color, creative use of space, and complexity) loaded onto an Expressionistic factor. The other three variables (use of words, figurativeness, and tells a story) loaded onto a Pictographic factor. Two composite scores were formed by averaging the scores on the subjective variables that loaded onto each factor. The two objective variables (number of colors and use of words) were scaled differently from the subjective variables, which were all rated on a 5-point scale. Thus, they were not included in the composite scores. Loadings on the factors were not changed appreciably by eliminating these two variables.

The expressionistic score is thus the average of the creative use of color, creative use of space, and complexity scores; it corresponds most closely to what we mean by emotional creativity. The pictographic score is the average of the figurativeness and story scores; it corresponds to a literal representation of the emotions depicted. In addition to these two composite scores, analyses were carried out on each variable separately.

Table 2. *Factor Loadings for Variables of Drawings: Study 1*

	Factor 1: Expressionistic	Factor 2: Pictographic
Number of Colors	*.82*	.15
Use of Color	*.85*	−.40
Use of Space	*.70*	−.24
Complexity	*.78*	−.12
Use of Words	−.23	*.64*
Figurativeness	−.16	*.88*
Tells a Story	.04	*.94*
Eigenvalue	3.06	2.90

Note: $N = 51$.

As shown in Table 3, participants who scored high on the ECI were expressionistic in their renditions (*rs* = .41). More specifically, high-scoring participants showed creative use of color and space, and they were likely to use symbolic (nonfigurative) representations of the emotions. To illustrate, one participant who scored quite high on the inventory depicted anger as a violent, disorganized mixture of colors with a flower growing out of the top.

The drawings of participants who scored low on emotional creativity were more pictographic. Participants who scored low on the ECI were more likely to rely on figurative forms and to tell a story with the picture. For example, one participant who scored quite low on the ECI depicted anger by drawing a stick figure being hanged. Several other stick figures are shown watching the hanging, and one is laughing. At the top of the picture is written *PUBLiC HANGinG [sic] FOR LAW BREAKERS.*

Table 3 also presents correlations separated by sex. As with the open-ended narrative, correlations tended to be slightly but nonsignificantly higher for females than for males (e.g., .51 vs. .24 on the Expressionistic factor).

Study 2

> Great art is produced by men who feel acutely and nobly; and it is in some sort an expression of this personal feeling. (John Ruskin, 1856/1987, p. 290)

In Study 1, there was a great deal of variability among the narratives and pictures created by participants at similar levels of emotional creativity as measured by the ECI. This was due, in part, to differences in

Table 3. *Correlations (rs) Between Ratings on Drawings and Scores on Abridged Emotional Creativity Inventory: Study 1*

Element	*r* With Inventory (*n* = 51)	Controlling for Ability and Sex (*n* = 51)	Sex	
			Male (*n* = 21)	Female (*n* = 30)
Number of Colors	.12	.04	.38	−.09
Use of Color	.45**	.37**	.40*	.44*
Use of Space	.37**	.32*	.25	.43*
Complexity	.21	.06	.07	.38
Use of Words	−.36*	−.24	−.35	−.25
Figurative	−.30*	−.31*	−.30	−.31
Tells a story	−.34*	−.33*	−.36*	−.29
Composite Factors				
Expressionistic	.41**	.32*	.24	.51**
Pictographic	−.34*	−.34*	−.35	−.32

Note: None of the differences between males and females are statistically significant.
*$p < .05$. **$p < .01$.

personal experience and the types of stories selected (for the narratives) and to differences in technical ability (for the drawings). To help control for these factors, a second study was conducted that presented all participants with the same raw materials from which to start. For the narrative task, participants were given a background description of an emotionally challenging situation, and they were asked to complete the scenario from the point of view of each protagonist. For the pictorial task, participants were given precut pieces of paper with which to make a collage combining 3 incompatible emotions. Amabile (1982) found collages to be an effective method of measuring creativity while controlling somewhat for technical artistic ability. We predicted that participants who were highly emotionally creative (as measured by the ECI) would complete these tasks in an emotionally creative manner.

Method

Participants

Approximately 900 introductory psychology students completed the abridged ECI during a departmental prescreening. As in Study 1, only students whose scores fell at least 1 *SD* above or below the mean participated in the study. A total of 115 participants who met the criteria participated. Of these, 56 scored at least 1 *SD* above the mean (26 males, 30 females) and 59 scored at least 1 *SD* below the mean (35 males, 24 females).

Tasks

Narrative. For the written task, participants wrote the conclusion to a story involving a specific emotional conflict. The story concerned two dormitory roommates who dislike each other intensely. The mother of one of the roommates commits suicide, and the other roommate discovers this at a time when conflict between the two seems inevitable. Participants were allowed 8 min to describe what happens next. They were then given an additional 7 min to answer a series of questions about the protagonists and situation. Participants were asked to put themselves in each of the two roommates' shoes and to describe any emotions they would experience (with special emphasis on new or unusual emotions), how they might be changed by the experience, and how their responses would reflect the type of person they are. The questions were designed to elicit roughly comparable information from each participant relevant to an assessment of emotional creativity.

Collage. Each participant was given a large piece of heavy paper and a set of 53 pieces of paper of various

colors, shapes, and sizes. The experimenter told the participants, "I would like you to create a collage that expresses the emotions joy, anger and despair. The 3 emotions should all be expressed in the collage as individual emotions, but as much as possible, I'd like you to try to combine the 3 into a coherent whole. You may use as many or as few of the pieces of paper as you like, and there are no other guidelines as to how you should make the collage. Just do what feels right to you." Participants were allowed 10 min to complete the collage. After completion, participants wrote on the back of the collage a brief description of what they were trying to depict. These descriptions assisted the judges in making their ratings of emotional creativity.

Rating Participants' Performance

Two judges rated the narratives (on 5-point scales) for novelty, effectiveness, authenticity, and overall emotional creativity—using the same criteria as in Study 1; two other judges with art studio experience rated the collages—using variations of the same criteria. These judges were blind to participants' scores on the ECI. For the reasons described in Study 1, the ratings were rank-ordered before analysis.

Interrater reliability ranged from .23 to .52 ($M = .41$) for the story, and from .28 to .40 ($M = .36$) for the collage. As in Study 1, scores were averaged over raters within variables, and over the four variables (novelty, effectiveness, authenticity, and overall emotional creativity) to obtain a composite score. Interrater reliability on the composite score was .45 for the story and .42 for the collage.[4] This value is lower than desired. As we discuss more fully later in the article, its influence works against, rather than in favor of the experimental hypotheses.

Procedure

Participants completed the tasks in groups of one to four. The lab was set up so participants could not see one another as they completed the tasks. Order of emotional creativity tasks was randomized: narrative first for one half of the participants and collage first for the other half. Data described were taken from a larger study in which participants completed several tasks that will not be discusses here.[5] Total time for the entire study was approximately 90 min.

Analyses

As in Study 1, all statistics involving ratings of emotional creativity were calculated on rank-ordered data. Because there were moderate differences due to sex of participant and to task order, partial correlations were computed, controlling for these variables. The full correlations are presented in the text; the tables show both full and partial correlations, which do not differ appreciably from one another.

Results

As shown in Table 4, the composite creativity score for the story was correlated with the score on the ECI. The composite creativity score for the collage was in the same direction but not statistically significant. The size of these correlations show only minor changes when sex and order effects are partialed out (see Table

[4]To examine the relation between emotional creativity and its component elements, ratings of novelty, effectiveness, and authenticity were regressed on the overall creativity rating as in Study 1 (see Footnote 2). All three components contributed significantly to the overall emotional creativity rating (all $ts > 4$, all $ps < .0001$).

[5]This study also was designed to investigate the possible influence of mood on emotional creativity. Mood was manipulated (in a between-participants design) by playing background music that had been judged to be happy, neutral, or sad. (For a review of the use of music as a mood-induction technique, see Clark, 1983; Kenealy, 1988.) There were, however, no discernable effects of this manipulation on participants' mood (e.g., as assessed by adjective check lists administered at several points during the study), nor did the music have any discernable influence on the stories or collages. Performing these tasks evidently swamped any effect the music might otherwise have had on mood, thus making this manipulation ineffectual. All data reported in this article therefore were pooled over mood conditions, and this variable is not discussed further.

Participants also completed the Barron–Welch Art Scale (Welsh, 1959). The Barron–Welch Art Scale consists of 86 figures (black and white drawings) that participants rate for preference. The scale was designed as a measure of artistic sensibility. Its intended use in Study 2 was as potential control for artistic talent in the construction of the collages. However, scores on the Barron–Welch Scale were not correlated with scores on the collages, and hence it could not be used as a control. (The Barron–Welch Scale was, however, modestly correlated with scores on the abridged ECI: $rs = .20$, $p < .05$). Complete results from this study are presented elsewhere (Gutbezahl, 1994).

Table 4. *Correlations (rs) Between Ratings on Tasks and Score on Abridged Emotional Creativity Inventory: Study 2*

Task	*r* With Inventory ($n = 115$)	Controlling for Sex and Order ($n = 115$)	Sex: Male ($n = 61$)	Sex: Female ($n = 54$)
Story	.26**	.23**	.17	.36**
Collage	.12	.14	.12	.20

Note. None of the differences between males and females are statistically significant.
**$p < .01$.

4). Table 4 also presents correlations separated by sex. As in Study 2, correlations tended to be slightly but nonsignificantly higher for females than for males.

General Discussion

We predicted that participants who scored high on an abridged version of the ECI would be more creative at expressing their emotions in both narrative and pictorial form. That prediction was confirmed in two studies, more strongly for the verbal than the nonverbal tasks.

The correlations between the ECI and the verbal tasks (.30 and .21 for the stories in Study 1 and .26 for the story in Study 2) are within the range typically found for correlations between personality tests and actual responses in a particular situation. Such correlations seldom exceed .30 (Mischel, 1977). In our studies, the size of the correlations was attenuated by the modest reliabilities attained by the raters of the stories. With additional raters, the correlations could perhaps have been increased (Epstein, 1986), but at an unnecessary cost. The results as they now stand are conservative—that is, biased (if at all) against the experimental hypothesis.

The results with the pictorial tasks reached statistical significance in Study 1 but not in Study 2 (although the latter were in the predicted direction). College students generally are more familiar with expressing themselves in words than in pictures, which might account for the difference in results between these two modes of expression. But whatever the explanation for the higher correlations obtained with the written tasks, the results with the pictures also provide tentative support for the experimental hypotheses.

A critic might object that all we have demonstrated are individual differences in the expression of emotion, not in the underlying emotion itself. This objection assumes that there is an inner core to an emotion—its essence, so to speak—that remains invariant under different modes of expression. We reject this essentialist assumption (see Averill, 1980, 1984 for a detailed discussion). As Collingwood (1938/1955) put it,

> Until a man has expressed his emotions, he does not yet know what emotion it is. The act of expressing it is therefore an exploration of his own emotions. He is trying to find out what these emotions are. (p. 111)

A critic might also question whether the ECI is measuring an ability for emotional creativity in particular, or creativity in general (i.e., regardless of domain). Elsewhere (Averill, 1994; Averill & Thomas-Knowles, 1991), data are presented that suggest some degree of discriminant validity for the ECI. For purposes of our studies, however, the issue is moot. The studies reported here were designed primarily to demonstrate the viability of emotional creativity as a psychological construct. From that perspective, it matters little whether the underlying ability is specific to the domain of emotion or whether it manifests itself in other domains as well.

Raters of the stories and pictures were instructed to ignore the literary and artistic quality of the works and focus instead on qualities of the emotions being expressed. In the case of the narratives, this was not too difficult, for the stories consisted of brief descriptions of initiating episodes, followed by answers to specific questions. Literary skill was not required and, for the most part, not exhibited. In the case of the pictures, distinguishing the underlying emotion from its artistic expression was more difficult. But here, too, few of the drawings or collages could be considered of high artistic merit, and the measures taken to control for technical expertise added nothing to the precision of the results. This suggests that differences in subjective ratings were due to emotional, rather than artistic, creativity.

A more relevant issue is the extent to which laboratory tasks, such as writing stories and drawing pictures, are valid indices of emotional creativity outside the laboratory. Data reported elsewhere (Averill, 1994) suggest that emotional creativity, as measured by the ECI, is manifested in everyday behavior—such that it can be recognized by friends and peers—as well as in narratives and pictures, as indicated by the present research.

We believe emotional creativity to be an important construct for both theoretical and practical reasons. Theoretically, it brings together two domains of discourse, emotions and creativity, that traditionally have been kept apart; by exploring the interface between the two domains, both may be enriched. Practically, many of the problems that face us, whether on the individual (e.g., clinical syndromes) or group (e.g., overpopulation, ethnic conflict) level require emotional as well as technological innovation. Thus, no matter how one might conceive of emotional creativity on a theoretical level, its realization in practice is a requisite for a viable future.

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