Journal of Personality and Social Psychology
1997, Vol. 72, No. 2, 435–448

0022-3514/97/$3.00

Revealing Feelings: Facets of Emotional Expressivity in Self-Reports, Peer Ratings, and Behavior

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Drawing on an explicit model of emotion, we propose a multifaceted approach to emotional expressivity, defined as the behavioral (e.g., facial, postural) changes associated with emotion. Study 1 shows that self-reported expressivity has 3 facets (Impulse Strength, Negative Expressivity, Positive Expressivity). Study 2 shows that the same 3 facets emerge in peer ratings and that there are robust relations between self- and peer-rated expressivity. In Study 3, emotion-expressive behavior was videotaped and related to expressivity self-reports obtained several months earlier. As expected, Negative Expressivity predicted behavioral expressions of sadness (but not amusement), whereas Positive Expressivity predicted amusement (but not sadness). These relations remained even when subjective emotional experience and physiological response were controlled. These studies demonstrate the importance of a multifaceted approach to emotional expressivity and have implications for the understanding of personality and emotion.

Emotions help us respond adaptively to environmental challenges and opportunities (Frijda, 1988; Levenson, 1994; Plutchik, 1980). Unlike other biologically based response tendencies, such as reflexes, however, emotions only incline us to act in certain ways; they do not compel us to do so. This means that we may deny expression to some emotional impulses while freely expressing others. Striking individual differences in expressivity suggest that people differ in their response tendencies and in how they express these impulses as they arise. Because emotions influence such a wide range of intra- and interpersonal processes (e.g., Diener, 1984; Ekman & Davidson, 1994; Salovey, Mayer, & Rosenhan, 1991; Snyder, 1987), these differences long have intrigued scientists (e.g., Darwin, 1872). In this article, we conceptualize individual differences in emotional expressivity in terms of three facets and use self-reports, peer ratings, and behavioral observations to explore this domain.

Defining Emotional Expressivity

By emotional expressivity, we mean the behavioral (e.g., facial, postural) changes that typically accompany emotion, such as smiling, frowning, crying, or storming out of the room. According to this definition, an individual is emotionally expressive to the extent that he or she manifests emotional impulses behaviorally. Our definition is not as broad as others, such as that proposed by Friedman, Prince, Riggio, and DiMatteo (1980), which includes the "desire to excite or captivate others" (p. 348). Yet, our definition is not so narrow as to be limited to a specific channel of expression (e.g., gestural, facial, or vocal) or to a specific emotion (e.g., anger, amusement, or sadness). We expect important features of emotional expressivity to be revealed by examining expressivity across different channels and across diverse emotional states.

A Model of Emotional Expressivity

Figure 1 contains a model of emotion that serves as our framework for understanding individual differences in emotion-expressive behavior (cf. Ekman, 1972; Gross & Muñoz, 1995; Levenson, 1994; Plutchik, 1990). According to this model, emotion occurs when external or internal input is processed in such a way that an emotion program is triggered (e.g., sadness or amusement). Once activated, the emotion program generates response tendencies (including physiological changes, subjective feelings, and behavioral impulses) that prepare an organism to respond adaptively to environmental challenges or opportunities. However, emotions do not force us to act in any particular way, they only suggest that we do. For this reason, feeling is not always revealing: Emotional response tendencies may or may not be expressed as visible behavior.

Individual Differences in Emotional Expressivity

Individual differences in emotional expressivity may arise at several steps in the emotion-generative process. First, people's day-to-day experiences vary enormously, thereby providing extremely different inputs to their emotion programs. Second, these differential inputs may be diminished or magnified by the

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This research was supported by National Research Service Award MH1003401 and by Grants MH53859-01 and MH49255 from the National Institute of Mental Health.

We gratefully acknowledge the assistance of Dacher Keltner (Study 1), Mimy Eng (Study 2), and Robert Levenson (Study 3). We are indebted to Eva C. Klohnen for her invaluable statistical help with Studies 1 and 2. We also would like to thank David C. Funder, Lewis R. Goldberg, Stephen N. Haynes, Eva C. Klohnen, Ann M. Kring, and Robert W. Levenson for their many helpful comments on a draft of this article.

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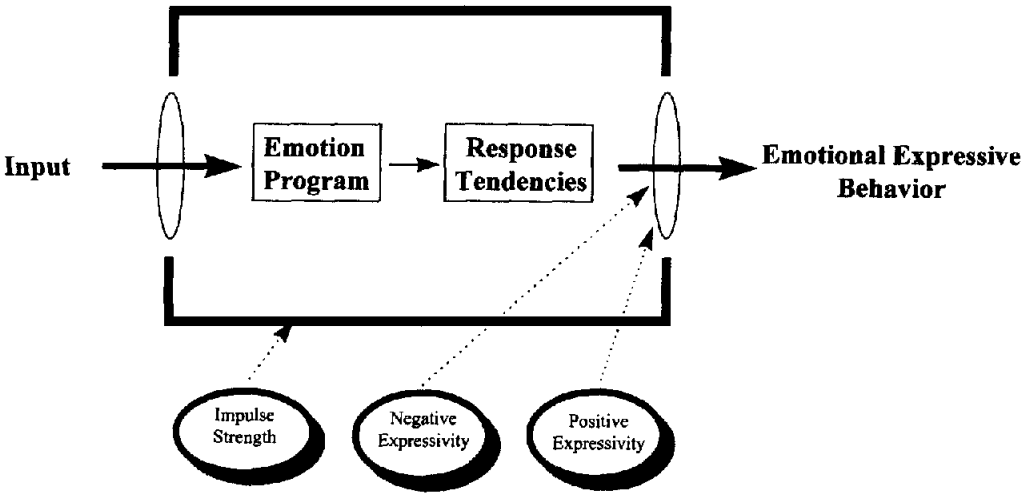

Figure 1. Hypothesized relations between an emotion-generative model (state level of analysis) and the three-facet Berkeley Expressivity Questionnaire (trait level of analysis).

way they are appraised by the individual. Third, research on temperament suggests that there are important individual differences both in the activation thresholds of emotion programs and in the emotional response tendencies that result (Goldsmith, 1993; Kagan & Snidman, 1991). Finally, there may be important individual differences in the modulatory "output filter," that is, differences in how any given emotional response tendency is translated into behavior.

Although individual differences in emotional expressivity may arise at any of these steps in the emotion-generative process, we focus on the two determinants of emotion-expressive behavior that we believe to be preeminent: (a) the activation of emotion-response tendencies, and (b) their subsequent modulation.

According to our conception, emotion-response tendencies give rise to emotion-expressive behavior. This suggests that individual differences in emotion-response tendencies are one important determinant of individual differences in expressivity. Yet, although emotion-response tendencies are necessary for manifest emotion-expressive behavior, they are not sufficient. This is because individuals may modulate their response tendencies, thereby determining whether (and how) response tendencies are expressed behaviorally. Such modulation may occur to conform to cultural "display rules" regarding the appropriate expression of emotion (e.g., inhibiting laughter in church; see Ekman, 1972) or for personal reasons (e.g., not wanting to appear weak by expressing feelings). This suggests that a second important determinant of individual differences in expressivity may be individual differences in emotion modulation, that is, differences in the degree to which a response tendency of any given kind and strength is expressed behaviorally.

Toward a Multifaceted Conception of Expressivity

To capture the two major hypothesized determinants of individual differences in expressivity, we conceptualized emotional expressivity as a stable trait and developed a short self-report questionnaire, the Berkeley Expressivity Questionnaire (BEQ; Gross & John, 1995), to measure it. This 16-item questionnaire was designed to assess both (a) the general strength of emotion-response tendencies, as measured by the Impulse Strength subscale and (b) the degree to which such tendencies are typically expressed as manifest behavior. However, rather than finding one facet representing typical levels of behavioral modulation, we found two: Negative Expressivity, which represents the degree to which negative emotional response tendencies are expressed behaviorally, and Positive Expressivity, which represents the degree to which positive emotional response tendencies are expressed behaviorally (see also King & Emmons, 1990). All three facets of emotional expressivity correlate about .50 with one another, meaning that people with strong emotional impulses are more likely to express both negative and positive emotions and that people who express negative emotions are also likely to express positive emotions. These relations among the facets of expressivity define a hierarchical model that is depicted in Figure 2.

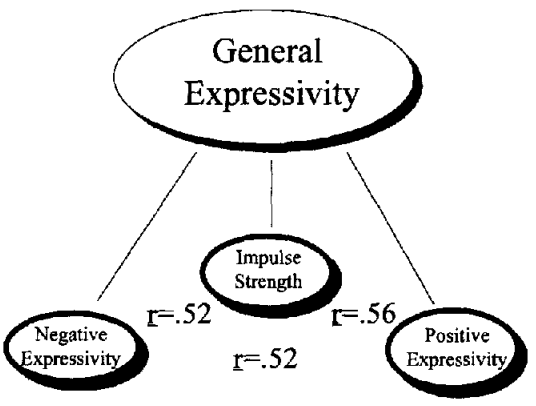

Figure 2. Relations among the three facets of emotional expressivity (correlations are from Study 1).

Despite the fact that the facets are positively correlated, they differ in important ways. In keeping with our theoretical expectation, the facets capture the distinction between emotion-response tendencies (Impulse Strength) and the habitual expression of such response tendencies in behavior (Negative and Positive Expressivity). Furthermore, the distinction between Negative and Positive Expressivity parallels the distinction between two major dimensions of mood, Negative and Positive Affectivity (Tellegen, 1985; Watson & Tellegen, 1985). Finally, important empirical distinctions appear among these facets (see Gross & John, 1995). For example, as one would expect from an analysis of cultural display rules, participants report substantially greater levels of Positive Expressivity than Negative Expressivity; somatic complaints relate to Impulse Strength and Negative Expressivity but not to Positive Expressivity; and broader personality constructs show differential relations, with Extraversion and Agreeableness most closely related to Positive Expressivity and Neuroticism most closely related to Impulse Strength and Negative Expressivity.

In the present article, we explore the implications of our multifaceted approach to emotional expressivity in three studies. In Study 1, we asked whether the three-facet structure of self-reported emotional expressivity discovered previously would replicate in a new sample, whether the three subscales would relate to habitual emotional experience, and whether expressivity would relate meaningfully to other forms of impulse control. In Study 2, we tested whether the same three-facet structure would appear in peer reports of expressivity and whether self-ratings and peer-reports of expressivity would converge, even after taking into account emotional experience. In Study 3, we asked whether self-reported expressivity would predict negative and positive emotion-expressive behavior in the laboratory and, if so, whether these relations were mediated by the momentary experience of emotion.

Study 1: Self-Reports of Expressivity

In this study, we tested the robustness of the model of emotional expressivity presented in Figure 2 in a new sample, using both exploratory and confirmatory factor analysis. Given our interest in the potential for dissociation between emotion expression and emotion experience, we also examined the relation of emotional expressivity to habitual emotional experience, which provides one index of underlying emotion-response tendencies. Our model suggests a positive relation between inner emotional experience and outer expressive behavior (see Adelmann & Zajonc, 1989; E. L. Rosenberg & Ekman, 1994), and we expected participants' habitual experience of negative and positive affect to correlate both with the strength of their underlying emotion-response tendencies and with their behavioral expressivity. We expected these correlations to be positive and modest in size, with (a) both negative- and positive-affect experience related to impulse strength, (b) negative-affect experience most strongly related to negative expressivity, and (c) positive-affect experience most strongly related to positive-affect expressivity.

Our input–output model of emotion is stated in rather general terms. For this reason, we wished to ascertain how emotional expressivity related to the expression of other, nonemotional impulses. We reasoned that emotionally expressive individuals would be less likely to inhibit their emotions than emotionally inexpressive individuals and, therefore, expected our expressivity scales to be negatively related to measures of emotion control. However, we had no reason to believe that our expressivity scales should be related to the inhibition of other, nonemotional impulses, such as instrumental aggression or emotion-laden thoughts. To explore the relation between emotion expression and a broad range of impulse inhibition, we administered the Emotion Control Scale (Roger & Najarian, 1989), a broad-band measure including four impulse-control scales: (a) Emotional Inhibition, which involves the inhibition of emotion-expressive behaviors, (b) Aggression Control, which involves the inhibition of instrumental aggression in response to interpersonal challenges, (c) Benign Control, which involves the control of distracting impulses during task performance, and (d) Rehearsal, which involves rumination about negative experiences. Note that despite the name of this general measure, only the first scale should relate directly to emotional expressivity as we define it, whereas the other three scales should measure nonemotional aspects of impulse control. Thus, we expected that our expressivity scales would be related negatively to emotional inhibition (thereby demonstrating convergent validity) but not to the three other forms of impulse control (thereby showing discriminant validity).

Finally, we tested whether our measure of expressivity was confounded with social desirability or generally positive self-views. Emotion expressions are value laden, and cultural display rules generally promote the expression of positive emotions and curtail the expression of negative emotions (Wallbott & Scherer, 1989). In keeping with this notion, we found that participants generally reported higher levels of positive than negative expressivity (Gross & John, 1995). This finding raised the possibility that self-reported expressivity might be related to socially desirable responding. A related control variable is self-esteem. Because one important aspect of self-esteem is the experience of positive self-related feelings, beliefs, and attitudes, we wondered whether our expressivity scales might overlap substantially with self-esteem, with Positive Expressivity correlating positively and Negative Expressivity correlating negatively.

Method

Participants. Participants were 1,379 undergraduates (665 men, 714 women) at a large state university in the Midwest. The students participated to fulfill an introductory psychology course requirement. On average, they were 19 years old ($SD = 2.8$), and most were Caucasian (87% Caucasian, 2% Hispanic, 1% African American, 10% other).

Measures. Participants completed a packet of self-report measures. Five measures were included in this study. In addition to the BEQ, we administered a measure of subjective emotion experience, a measure of various forms of impulse control, and two measures of possible confounding variables.

The Berkeley Expressivity Questionnaire (BEQ) is a 16-item self-report measure of individual differences in emotional expressivity (Gross & John, 1995). The BEQ items are presented in Table 1. Participants received the following instructions: "For each statement below, please indicate your agreement or disagreement. Do so by filling in the blank in front of each item with the appropriate number from the following rating scale," which ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). In addition to the total scale score, the BEQ has three subscales (see Table 1): Negative Expressivity, Positive Expressivity, and Impulse

Table 1
Varimax-Rotated Factor Loadings for the Three BEQ Expressivity Factors in Self-Reports (Study 1) and Peer Ratings (Study 2)

BEQ items and item numbers	Self-reports		Peer ratings[c]
	Observed[a]	Expected[b]	
Negative Expressivity factor			
9. No matter how nervous or upset I am, I tend to keep a calm exterior. (R)	.67	.58	.60
13. Whenever I feel negative emotions, people can easily see exactly what I am feeling.	.66	.66	.71
16. What I'm feeling is written all over my face.	.65	.63	.60
3. People often do not know what I am feeling. (R)	.61	.68	.67
5. It is difficult for me to hide my fear.	.51	.53	.46
8. I've learned it is better to suppress my anger than to show it. (R)	.39	.37	.69
Mean item loading	**.58**	**.58**	**.62**
Positive Expressivity factor			
6. When I'm happy, my feelings show.	.77	.80	.84
1. Whenever I feel positive emotions, people can easily see exactly what I am feeling.	.68	.74	.77
4. I laugh out loud when someone tells me a joke that I think is funny.	.66	.62	.63
10. I am an emotionally expressive person.	.38	.44	.48
Mean item loading	**.63**	**.65**	**.68**
Impulse Strength factor			
15. I experience my emotions very strongly.	.74	.69	.77
11. I have strong emotions.	.72	.68	.62
14. There have been times when I have not been able to stop crying even though I tried to stop.	.68	.66	.76
7. My body reacts very strongly to emotional situations.	.65	.60	.50
2. I sometimes cry during sad movies.	.62	.62	.63
12. I am sometimes unable to hide my feelings, even though I would like to.	.53	.53	.46
Mean item loading	**.66**	**.63**	**.63**

Note. Item numbers reflect the order in which items were administered. Item text is given in the self-report form. For the peer-rating form used in Study 2, items were written in the third person, with an X referring to the target individual being described. BEQ = Berkeley Expressivity Questionnaire; (R) = Item was reverse scored. BEQ reprinted from *Personality and Individual Differences*, v. 19, J. J. Gross and O. P. John, "Facets of emotional expressivity: Three self-report factors and their correlates," pp. 555–568, Copyright 1995, with kind permission from Elsevier Science Ltd., The Boulevard, Langford Lane, Kidlington, 0X5 1GB, UK.
[a] Study 1. [b] Mean factor loadings from Gross and John (1995). [c] Study 2.

Strength. In the present sample, alphas were .86 for the total BEQ, and .70, .70, and .80 for the three subscales, respectively.

To measure the subjective experience of emotion, we used the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). This is a 20-item inventory that consists of 10 adjectives measuring positive affect (e.g., excited, interested) and 10 adjectives measuring negative affect (e.g., distressed, irritable). Items were administered in the general format, with the instructions to rate "to what extent you generally feel this way" on a scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*).

The Emotion Control Questionnaire (Roger & Najarian, 1989) is a 56-item true–false measure of impulse control that consists of four 14-item subscales: Emotional Inhibition (e.g., "I seldom show how I feel about things"), Aggression Control (e.g., "If someone pushed me, I would push back" [reverse scored]), Benign Control (e.g., "Almost everything I do is carefully thought out"), and Rehearsal (e.g., "I often find myself thinking over and over about things that have made me angry"). In the present sample, alphas for these subscales were .71, .61, .72, and .76, respectively. Note that these four scales were not intended to form one coherent domain of impulse control. Indeed, in the present sample, their intercorrelations were not consistently positive. For example, Emotional Inhibition and Benign Control were correlated −.02, and Aggression Control and Rehearsal were correlated −.24.

The last two measures were the Marlowe–Crowne Social Desirability Scale (Crowne & Marlowe, 1960), which is a 33-item true–false questionnaire that measures participants' tendencies to respond in a socially desirable manner, and the Rosenberg Self-Esteem Scale (M. Rosenberg, 1965), which consists of 10 items rated on a 5-point scale.

Results and Discussion

Factor structure: General factor and three facets. Gross and John (1995) used exploratory factor analyses (principal components with varimax rotation) to derive the hierarchical model of emotional expressivity presented in Figure 2. To test the robustness of this factor structure, we again conducted exploratory factor analyses and compared them to the previous results. In a second step, we used confirmatory factor analysis to compare the hierarchical model to several alternative models.

Exploratory factor analyses. The 16 items in the BEQ were all positively intercorrelated, with a mean interitem correlation of .27. To test whether the BEQ items would again form a General Expressivity factor with three facets, we subjected the interitem correlation matrix to a principal-components analysis. The first unrotated factor accounted for 33% of the total variance, and all 16 items loaded positively, with a mean loading of .57. The two items with the highest loadings (.75 and .73, respectively) were "I am an emotionally expressive person,"

and "What I'm feeling is written all over my face." Neither of these items mentions specific emotions, suggesting that the unrotated first component captures the intended general dimension of emotional expressivity.

Next, we examined whether distinct facets could again be identified within the General Expressivity domain. The scree test suggested three factors, which together accounted for 50% of the total variance. Varimax-rotated loadings for the three expressivity factors are presented in Table 1, along with the varimax loadings obtained in a sample of Berkeley students (Gross & John, 1995). As Table 1 shows, the three-factor solution was closely replicated.[1]

As expected, the Negative Expressivity factor was defined by the general marker item for negative-emotion expression, as well as by items referring to the expression of specific negative emotions, such as anger, fear, nervousness, or upset.[2] The items on the Positive Expressivity factor referred to the expression of emotions such as joy and amusement. Finally, the Impulse Strength factor was defined by items referring to strong emotional reactions that are accompanied by the experience of physical and behavioral changes that participants find difficult to control, stop, or hide. Finally, as one would expect for facets of a General Expressivity dimension, the three subscales were all positively correlated (mean $r = .54$), as shown in Figure 2.

Confirmatory factor analyses. To test our hierarchical model more stringently than is possible in exploratory analyses, we used confirmatory factor analysis (CFA). We compared the viability of three competing structural models. The first was a one-factor model, which posits that emotional expressivity is a unidimensional construct with no distinct facets. The second was a three-orthogonal-factors model, which specifies that emotional expressivity can be described in terms of three uncorrelated dimensions. Finally, the third was our hierarchical model, which postulates that emotional expressivity consists of three correlated latent factors that together define a broad, superordinate factor. We used LISREL 7 (Jöreskog & Sörbom, 1989), to test which of these models provided the best fit to the data.[3]

The LISREL results indicated that the one-factor model provided the worst fit across all three standard fit indexes (i.e., the chi-square statistic, the goodness-of-fit index, and the root mean squared of the residuals). The hierarchical model showed the best fit, and the three-orthogonal-factors model fell in between. Given that all three models are nested within each other (i.e., the parameters of one model are a subset of another), it is possible to compare the models statistically. The difference in their chi-squares is distributed as a chi-square, with $df_1 - df_2$ degrees of freedom (Bentler & Bonnet, 1980). Applying this technique to evaluate the relative goodness of fit of the three models, we found that the three-orthogonal-factors model provided a better fit than the one-factor model, $\chi^2(8, N = 1{,}379) = 5{,}439$, $p < .001$. More important, the hierarchical model provided a better fit than the three-orthogonal-factors model, $\chi^2(3, N = 1{,}379) = 492$, $p < .001$. Thus, the results of the CFA dovetail nicely with the results of the exploratory factor analyses, providing additional support for the hierarchical model of emotional expressivity in Figure 2.

Relations with emotional experience. To assess the degree to which participants' emotional experience was related to their expression of emotion, we examined the correlations between PANAS and BEQ, with particular attention to the differential relations between the experience and expression of positive emotions (PANAS Positive Affect and BEQ Positive Expressivity) and the experience and expression of negative emotions (PANAS Negative Affect and BEQ Negative Expressivity). As presented in Table 2, the PANAS Positive Affect scale related more strongly to Positive Expressivity ($r = .34$) than to Negative Expressivity ($r = .12$), as shown by the test for differences in correlations in dependent samples, $t(1285) = 8.6$, $p < .05$. Conversely, the PANAS Negative Affect scale correlated more strongly with Negative Expressivity ($r = .14$) than with Positive Expressivity ($r = -.02$), $t(1285) = 6.0$, $p < .05$. Finally, as expected, both PANAS scales showed positive relations with the Impulse Strength scale and the BEQ total scale, a finding consistent with the general, nonvalenced definition of these two scales. One question raised by these findings is why Positive Affect was more strongly related to Positive Expressivity than Negative Affect was to Negative Expressivity. One possible explanation is that display rules are more restrictive for negative than for positive emotions, leading to weaker relations between experience and expression for negative affect. In summary, the relations between emotional experience and expression were theoretically meaningful but small in size, suggesting that the experiential and the expressive components of emotion be considered separately when predicting expressive behavior. We return to this point in Study 3.

Relations with various types of impulse control. As shown in Table 2, only one of the four impulse-control subscales showed substantial correlations with the BEQ scales. As expected, this was the Emotional Inhibition scale, which showed strong negative relations both with the total BEQ and with each of the facets, thereby demonstrating convergent validity. At the same time, the lack of significant correlations for the three other impulse-control scales provided evidence of discriminant validity. Thus, the BEQ is related to the tendency to inhibit one's emotions but does not assess (a) the expression of aggressive and hostile impulses toward others, (b) general impulsivity, such as acting without thinking, and (c) rumination about past experiences. As intended, then, the focus of the BEQ is limited to the specific domain of emotional impulses.

Relations to social desirability and self-esteem. As shown in Table 2, neither social desirability nor self-esteem was highly correlated with the BEQ or its subscales. Apparently, there was little overlap or confounding of BEQ scores with desirability or self-esteem. The one correlation reaching .20 suggests that people high in self-esteem express positive emotions to a somewhat greater extent than do those low in self-esteem.

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[1] As in Gross and John (1995), a factor analysis using oblique rotation produced the same three-factor solution.

[2] Negative emotion content is not stated explicitly in two of the items (3 and 16), but seems implied; the loadings suggest that participants interpret these items as indicating socially inappropriate leakage of negative emotions.

[3] In both the three-orthogonal-factors and the hierarchical models, all primary loadings from the exploratory factor analysis (Gross & John, 1995) were freed to be estimated by LISREL (see Table 1). On theoretical grounds, four additional items (Items 5, 10, 12, 16) were freed to have secondary loadings; these items had cross-loadings greater than .30 in Gross and John's (1995) exploratory analysis.

Table 2
Correlations of BEQ Scales With Measures of Emotional Experience, Emotion Control, Social Desirability, and Self-Esteem in Study 1

Measure	BEQ subscales			
	Negative Expressivity	Positive Expressivity	Impulse Strength	BEQ total
Emotional experience				
PANAS Positive Affect	.12	**.34**	**.12**	.22
PANAS Negative Affect	**.14**	−.02	**.24**	.16
Emotion Control Scale				
Emotional Inhibition	**−.56**	**−.52**	**−.42**	**−.59**
Aggression Control	−.05	.04	.10	.04
Benign Control	−.10	.00	−.10	−.08
Rehearsal[a]	.06	−.07	.19	.08
Marlowe-Crowne Social Desirability Scale	−.01	.12	−.04	.02
Rosenberg Self-Esteem Scale	**.02**	**.20**	−.06	.05

Note. Predicted correlations are set in bold. n = 1,288 for PANAS; n = 1,014 for Emotion Control; n = 1,153 for Social Desirability; n = 1,290 for Self-Esteem. All $rs > |.07|$ significant at $p < .01$. BEQ = Berkeley Expressivity Questionnaire; PANAS = Positive and Negative Affect Schedule.
[a] The Rehearsal scale was reverse scored.

Summary. This study replicated the factor structure of the BEQ, initially derived in a Berkeley sample, in a large Midwestern sample. Both exploratory and confirmatory analyses showed that self-reported emotional expressivity is best described by a hierarchical model with three correlated facets. These facets, as measured by the BEQ subscales, show (a) positive relations with emotion experience, (b) differential relations with the experience of positive and negative emotion, (c) substantial negative relations with a measure of emotional control, and (d) essentially zero relations with nonemotional aspects of impulse control, with self-esteem, and with social desirability.[4]

These findings indicate that when participants are asked about their own expressivity, the three-facet structure of emotional expressivity emerges reliably. However, one might ask whether the three facets are simply the result of participants' introspection about their expressivity or whether they indeed reflect the underlying structure of expressivity per se. If these facets actually reflect underlying individual differences in expressivity, we would expect them to generalize to expressivity ratings made by knowledgeable informants other than the self.

Study 2: Peer Ratings of Emotional Expressivity

Because emotional expressivity involves manifest emotion-expressive behavior, our interactions with others naturally give rise to impressions about their expressivity. Thus, well-acquainted peers who see an individual in a wide range of emotion-eliciting circumstances would provide an important additional perspective on his or her emotional expressivity, one that reflects trends in the individual's expressive behavior over time and across situations. Of course, even the most intimate associate does not have access to all the situations in which an individual is emotionally expressive (e.g., when the individual is alone). Nonetheless, enough of an individual's emotional responding takes place in social settings that close acquaintances should have an adequate behavioral sample to judge an individual's emotional expressivity.

Thus, in Study 2, we asked whether the three-facet model of emotional expressivity derived from self-reports could be recaptured in peer ratings. In addition, we reasoned that if participants' self-reports of emotional expressivity were valid reflections of their behavioral conduct across time and situations, self-ratings on our three facets of expressivity should show convergent and discriminant relations with ratings obtained from several well-acquainted peers (cf. John & Robins, 1993). Given the known sex differences in emotional expressivity (women are more expressive; see Footnote 4, as well as Gross & John, 1995; Hall, 1979; LaFrance & Banaji, 1992; Shields, 1987) and the important role of subjective experience in emotion expression, we also tested whether relations between self-reports and peer ratings of expressivity were independent of sex and emotion experience.

Method

Participants. A total of 184 students from a large West Coast university participated in this study. Of these, 57 were targets (49 female and 8 male), who participated in this study to fulfill a requirement of an introductory psychology course. As in Study 1, they rated their own emotional expressivity, on the self-report version of the BEQ (Gross & John, 1995), and their general level of negative and positive affect, on the PANAS (Watson et al., 1988). On average, they were 21 years old (SD = 1.7) and of mixed ethnic background (2% African American, 19% Asian American, 54% Caucasian, 14% Latino, and 11% other).

[4] Gross and John (1995) documented both sex and ethnic differences in three samples. The sex differences were again replicated in this sample, with women reporting greater expressivity than men on all BEQ scales. Respective means for women and men were 5.1 and 4.2 for BEQ total, 4.1 and 3.4 for Negative Expressivity, 5.7 and 5.1 for Positive Expressivity, and 5.4 and 4.1 for Impulse Strength. In terms of ethnic differences, Gross and John (1995) documented that Asian Americans reported less expressivity than African Americans, Caucasians, and Hispanics; the ethnic composition of the present samples did not allow us to assess ethnic differences.

An additional 127 participants were acquaintances of the targets and served as peer raters. These raters were selected by the targets who were instructed to select up to 3 others who knew them well enough to describe their personality. Because not all of the peers nominated by the targets returned their ratings, the number of peer ratings varied somewhat across targets. For 44 targets there were at least two peer ratings (26 targets had 3 peer raters, 18 targets had 2 peer raters, and 13 targets had 1 peer rater). Peer raters were most often friends (61%) and roommates (25%) of the targets; 6% were relatives. On average, they had known the targets for about 3 years; 78 of the peers were female and 49 were male.

Procedure. Peer raters completed a peer version of the BEQ; the 16 BEQ items were rewritten in third-person form to refer not to oneself, but to another person. For example, in the peer version, Item 6 read, "Whenever X is happy, his/her feelings show." Peer raters were told that their ratings would be confidential and would not be revealed to the target participants. In addition to the BEQ ratings, peer raters indicated the nature of their relationship with the target and how long they had known the target. They returned the rating forms to the experimenters by means of a preaddressed and stamped envelope.

Results and Discussion

Our analyses addressed three questions. The first was whether peer ratings of emotional expressivity would show the same factor structure as had been demonstrated for self-reported emotional expressivity in Study 1. The second question was whether the BEQ self-report scales would show convergent and discriminant validity with peer ratings of emotional expressivity. Third, we tested whether the self–peer convergence correlations could be attributed to individual differences in subjective emotional experience or to sex.

Exploratory factor analyses. To provide a comparison with the previous findings by Gross and John (1995) and with Study 1, we first conducted exploratory factor analyses. These analyses tested whether the peer-rated BEQ items would form a General Expressivity factor with three facets. A principal-components analysis showed that the first unrotated factor accounted for 33% of the total variance; all 16 items loaded positively, with a mean loading of .65, thus closely replicating the General Expressivity factor from Study 1. Next we examined whether distinct facets could be identified within this General Expressivity domain. The scree test suggested three factors accounting for 54% of the total variance. Varimax-rotated loadings for the three expressivity factors are presented in the third column of Table 1. As this table shows, the three peer-reported expressivity factors closely replicated the self-reported expressivity factors, with peer-BEQ items loading on the same factors as the self-BEQ items, with loadings of comparable size. The Negative Expressivity factor was defined by all six target items, with an average loading of .62, which compares favorably with average loadings of .58 in the two self-report samples included in Table 1. Similarly, the Positive Expressivity factor was defined by its four target items, with an average loading of .68. Finally, the composition of the Impulse Strength factor was replicated, with an average loading of .63. Given that the factor structure was replicated so clearly, it is not surprising that the coefficient alpha reliabilities for the peer-rated BEQ were similar to those of the self-reported BEQ in Study 1, with alphas of .76 (Negative Expressivity), .71 (Positive Expressivity), .77 (Impulse Strength), and .84 (total BEQ). Finally, the scale intercorrelations averaged .55, quite similar to the .54 obtained for the self-report version of the BEQ in Study 1.

Confirmatory factor analyses. Using CFA, we again compared the viability of the three structural models considered in Study 1: (a) the one-factor model, which posits that emotional expressivity is a unidimensional construct with no distinct facets; (b) the three-orthogonal-factors model, which specifies three uncorrelated dimensions; and (c) our hierarchical model. We used LISREL analyses that paralleled those in Study 1, which again showed that the one-factor model provided the worst fit, the hierarchical model the best fit, and the three-orthogonal-factors model in between. Although the three-orthogonal-factors model provided a better fit than the one-factor model, $\chi^2(8, N = 127) = 552, p < .001$, the hierarchical model provided an even better fit, $\chi^2(3, N = 127) = 36, p < .001$. Thus, both the exploratory and confirmatory analyses provide compelling support for the hierarchical model in peer ratings of emotional expressivity.

Convergent and discriminant validity. For 44 targets, two or three peer ratings of emotional expressivity were available. For these targets, we created composite measures of emotional expressivity by averaging across the peers who rated that target. Coefficient alphas for these composite peer ratings were .81 for both the Positive and Negative Expressivity subscales, .85 for Impulse Strength, and .90 for the total scale. As shown in Table 3, the self-reported expressivity scales were positively and substantially related to these composite peer ratings. Self-reports and peer ratings of total BEQ correlated .58. Even for the three shorter subscales, the convergent validity correlations were substantial, ranging from .41 to .48. To address the issue of discriminant validity (i.e., whether each of the subscales had unique relations with its peer-rated counterpart), we partialed out the effects of both of the other two self-report BEQ subscales from each convergent validity correlation. As shown in the second column of Table 3, these analyses indicated that each self-reported expressivity subscale possessed significant validity independent of the other two facets.

Table 3
Self–Peer Validity Correlations in Study 2: Zero-Order Effects and Partialing Discriminant BEQ Self-Report Subscales, Sex, and Subjective Experience of Negative and Positive Affect

		Partialing		
BEQ expressivity scales	Zero order	BEQ subscales[a]	PANAS[b]	Sex
Subscales				
Negative Expressivity	.41	.36	.40	.42
Positive Expressivity	.43	.29	.42	.35
Impulse Strength	.48	.30	.49	.52
Total scale	.58	—	.58	.53

Note. Peer ratings are composites of at least two peers. $N = 44$. All correlations are significant $p < .05$. BEQ = Berkeley Expressivity Questionnaire; PANAS = Positive and Negative Affect Schedule.
[a] Partialing self-reports of the other two BEQ subscales.
[b] Partialing both PANAS Positive and Negative Affect subscales.

Controlling for subjective emotion experience and sex. We also tested the hypothesis that the relations between self-reports and peer ratings of emotional expressivity might be due to habitual patterns of emotion experience rather than to emotional expressivity per se. We used partial correlations to control for the effects of both positive and negative affect, as measured by the PANAS. The findings in Table 3 show that the observed relations between self-reports and peer ratings of expressivity could not be attributed to individual differences in emotion experience, with partial correlations ranging from .40 to .58. Finally, we tested whether the substantial validity correlations might be due, in part, to the effects of sex differences. As shown in Table 3, however, the validity coefficients remained significant and substantial in size, even when the effect of sex was partialed out.

Summary. This study showed that the hierarchical three-facet model of expressivity identified in Study 1 also emerged in peer ratings. Moreover, self-reports and peer ratings on the three facets were substantially correlated, showing both convergent and discriminant validity. These findings indicate that the three facets are not only factorially distinct but also valid across two data sources. The substantial self–peer relations did not depend on the target's subjective experience of either negative or positive emotion and were also independent of subject sex.

Having demonstrated the reliability and validity of our three-facet conception of expressivity in self-reports and peer ratings, we conducted an even more stringent test in Study 3, asking, Do our expressivity facets differentially predict the behavioral expression of negative and positive emotion in a specific laboratory situation?

Study 3: Emotion-Expressive Behavior in the Laboratory

Our model of emotion (see Figure 1) suggests that emotion-expressive behavior is partly a function of emotion-response tendencies and partly a function of the manner in which these response tendencies are modulated. In the ebb and flow of emotion in everyday life, someone who is not emotionally expressive may have weak emotional impulses, may inhibit the expression of whatever impulses do arise, or both. To begin to disentangle the determinants of expressivity, emotion experience and emotion expression need to be observed under controlled conditions.

To do this, we used a carefully validated emotion-induction procedure known to generate emotion-response tendencies for a prototypic negative emotion (sadness) and a prototypic positive emotion (amusement) in most participants (Gross & Levenson, 1995). Compared with less structured situations, this increased the likelihood that observed differences in emotion-expressive behavior would be due to the hypothesized modulatory filter. Moreover, although emotion-response tendencies cannot be measured directly, the laboratory-based approach allowed us to estimate emotion-response tendencies in two ways. We used both reported emotion experience (which we knew from Study 1 would be positively related to expressivity) and direct measures of physiological responding (heart rate and electrodermal activity). Our general expectation was that the Negative and Positive Expressivity scales would predict participants' expressive behavior even after their emotion-response tendencies (indexed by self-reported emotion experience and objectively measured physiological responding) were taken into account.

Method

Participants. Seventy-four female undergraduates at a large West Coast university volunteered to participate, to fulfill a requirement of an introductory psychology course.[5] On average, participants were 19 years old (SD = 1.0). The ethnic composition of the sample was comparable to that of the general student population (7% African American, 30% Asian American, 28% Caucasian, 18% Hispanic, and 17% other).

Procedure. Participants completed the BEQ as part of a general pretesting survey. Approximately 2 months later, they participated in an individual experimental session as part of a larger study (Gross & Levenson, 1997). On arrival, participants were seated in a well-lit 3-m × 6-m room. They were informed that we were "interested in learning more about emotion" and that their reactions would be videotaped. Physiological sensors were attached, and participants answered questions about demographics and their present mood. To accustom participants to the laboratory, we first showed a film of flowers in a park. During the next three film trials (sadness, neutral, amusement), participants sat quietly during a 1-min baseline and then watched the 3.5-min film under the instructions to watch the film carefully. After each film, participants completed a self-report inventory to describe their emotional responses during the film. The order of film presentation was counterbalanced, and all participants saw all three films on a 27-in. color television monitor at a distance of 1.75 m. Instructions were prerecorded and presented through the television monitor.

Film stimuli. Four films were used. Each film had been pretested previously to determine the subjective experience of emotion it elicited (Gross & Levenson, 1995). The first film (1.5 min, soundless) shows flowers in a park (Ekman, Friesen, & O'Sullivan, 1988) and elicits emotion reports that are generally similar to baseline. The sadness film (3.5 min, with sound) shows a funeral scene with a distraught mother (Stark & Ross, 1989). It elicits emotion reports of sadness, with little other emotion. The neutral film (3.5 min, soundless) shows an abstract geometric display (ScreenPeace screensaver). It elicits a relatively neutral emotional state characterized by limited emotional responding. The amusement film (3.5 min, with sound) shows a comedy routine by Robin Williams (Morra, Brezner, & Gowers, 1986). This film elicits emotion reports of amusement, with little other emotion.

Expressive behavior. Participants' facial behavior and upper-body movement were recorded unobtrusively by a remote control high-resolution color video camera, placed behind darkened glass in a bookshelf. After the experimental session, participants' behavioral expressions during the sadness, neutral, and amusement films were coded from videotape by four coders (two male and two female), who were blind to the films participants were watching. Coders used a global behavioral coding system (Gross & Levenson, 1993), derived from Ekman and Friesen's (1975) description of specific behavioral expressions of discrete emotions. For this study, five variables were used: (a) overall sadness expression, (b) crying, (c) overall intensity of expressive behavior, (d) overall amusement expression, and (e) smiling. The first four measures were global ratings whose values were determined by the intensity, duration, and frequency of response; smiling was measured as smiles per minute. Reliabilities were derived by considering the average correlations among all possible comparisons among the four coders, appropriately weighted by the number of coding periods that each coder contributed. Mean interjudge agreement correlations were .91 for amusement expression,

[5] Female participants were selected because women are more likely to be expressive than men (Gross & John, 1995), and we wished to minimize variability in expressive behavior due to sex.

.96 for smiling, .79 for expressive intensity, .64 for sadness expression, and .83 for crying. Final values for each of the codes were determined by averaging the coders' ratings for a given participant's expressive behavior.

Control variables: Subjective experience and physiological response. After viewing each 3.5-min film, participants rated how they had felt during the film, on a self-report emotion inventory. Seven emotion terms were used for this study: *amusement, contentment, anger, disgust, fear, sadness,* and *surprise.* For each emotion, participants rated the greatest amount they felt, on a 9-point scale ranging from 0 (*none*) to 8 (*most in my life*); this scale had been adapted from Ekman, Friesen, and Ancoli (1980). Participants' ratings of sadness in the sadness film and amusement during the amusement film were used in our analyses, controlling for the subjective experience of emotion.

To obtain continuous physiological recordings, a 12-channel Grass Model 7 polygraph was used. Interbeat interval (from which heart rate may be derived) and skin conductance (an index of electrodermal responding) were selected for the present study because of their known relations with negative and positive emotional responding (Fowles, 1980; Levenson, Ekman, & Friesen, 1990; Winton, Putnam, & Krauss, 1984). To measure cardiac interbeat interval, Beckman miniature electrodes with Redux paste were placed in a bipolar configuration on opposite sides of the participant's chest. Interbeat interval was calculated as the interval (in milliseconds) between successive R-waves. To measure skin conductance level, a constant-voltage device was used to pass a small voltage between Beckman regular electrodes (using an electrolyte of sodium chloride in Unibase), attached to the palmar surface of the middle phalanges of the first and third fingers of the nondominant hand. During the experimental sessions, laboratory software computed second-by-second averages for each of the physiological measures, throughout each baseline and film period. These second-by-second physiological values were used to compute scores for each participant, representing the averages of the physiological variables for the baseline and film periods. Using these period averages, change scores were created by subtracting baseline scores from film period scores for each variable. We used change in interbeat interval and change in skin conductance level during the sadness and amusement films to control for participants' physiological responses during these films.

Efficacy of the stimulus films. Before turning to our primary analyses, we examined the efficacy of our films, both in terms of emotion self-reports and expressive behavior. As shown in Figure 3, during the sadness film, participants reported experiencing more sadness than any of the other emotions. Behavioral ratings indicated that during the sadness film, participants exhibited clear signs of sadness expressive behavior ($M = 2.0$, $SD = 1.8$) but only slight amounts of amusement expressive behavior ($M = 0.6$, $SD = 1.10$), $t(73) = 6.0$, $p < .01$. Conversely, during the amusement film, participants reported experiencing more amusement than any other emotion. Behavioral data indicated that during the amusement film, participants showed substantial amusement expressive behavior ($M = 4.6$, $SD = 1.0$) but only traces of sadness expressive behavior ($M = 0.1$, $SD = 0.3$), $t(73) = 37.1$, $p < .01$. Together, these findings suggest that the films elicited the desired target emotions.

Results and Discussion

Our analyses were designed to address three general questions: (a) What is the structure of negative and positive emotion-expressive behavior? (b) Do the BEQ scales differentially predict behavioral expressions of sadness and amusement in a specific situation? (c) Do the relations between BEQ scales and behavior hold even after controlling for emotion-response tendencies, as indexed by subjective emotional experience and physiological responding?

Structure of negative and positive emotion-expressive behavior. In an initial set of analyses, we examined the relations among our indicators of emotion-expressive behavior: the three behavioral variables expected to be responsive to the sadness film manipulation (sadness expression, crying, and expressive intensity) and the three variables expected to be responsive to the amusement film manipulation (amusement expression,

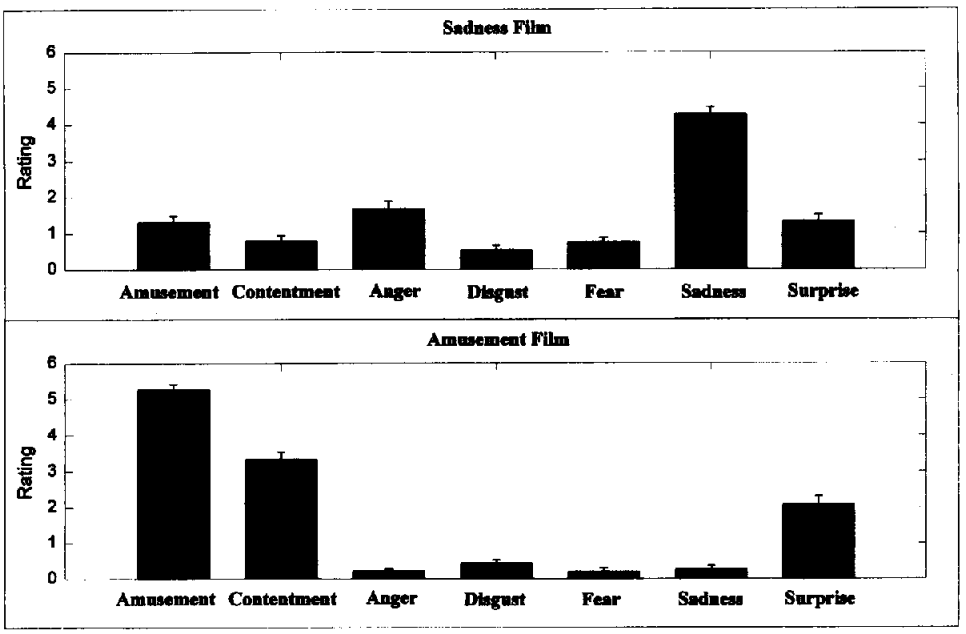

Figure 3. Subjective emotion experience for sadness and amusement films in Study 3.

Table 4
Correlations of BEQ Scales With Expressive Behavior During Sadness and Amusement Films in Study 3

Expressive behavior	BEQ subscales			BEQ total
	Negative Expressivity	Positive Expressivity	Impulse Strength	
Sadness film				
Sadness expression	**.41***	.10	**.23***	**.32***
Crying	**.33***	−.02	**.16**	**.20**
Expressive intensity	**.32***	.12	**.21**	**.28***
Amusement expression	−.10	.02	−.05	−.06
Smiling	−.16	−.05	−.01	−.09
Amusement film				
Amusement expression	.09	**.36***	**.24***	**.29***
Smiling	.14	**.28***	**.12**	**.22**
Expressive intensity	.07	**.33***	**.14**	**.22**
Sadness expression	−.11	.01	.09	.00
Crying[a]	—	—	—	—

Note. Predicted correlations are set in bold. BEQ = Berkeley Expressivity Questionnaire.
[a] Because no one cried during the amusement film, there was no variance, and no correlations could be computed.
* $p < .05$.

smiling, and expressive intensity). In a factor analysis, all six variables had loadings exceeding .67 on the first unrotated component (which accounted for 54% of the variance), suggesting a general factor of Behavioral Expressivity. Moreover, the scree test and an OBLIMIN rotation showed that this general factor consisted of two factors, which were positively correlated (r = .33) and together accounted for 81% of the total variance. The first rotated factor was defined by the three variables measuring behavioral expressions of sadness, whereas the second rotated factor was defined by the three variables measuring behavioral expressions of amusement. When unit-weighted composites were created, using the three sadness and the three amusement variables, they formed internally consistent scales, with alphas of .89 for the Sadness Expression composite and .86 for the Amusement Expression composite. The positive correlation (r = .34, $p < .05$) between these two composites shows that participants who expressed much sadness during the sadness film were also more likely to express much amusement during the amusement film. Thus, there was significant cross-situational consistency in level of emotional expressivity across differently valenced films. At the same time, however, the moderate size of the correlation shows that the expression of sadness and of amusement are clearly distinct. This pattern of findings, including a general factor as well as a negative and a positive facet, resembles the structure we found for our BEQ trait measure of expressivity in both self-reports (Study 1) and peer ratings (Study 2).

Predicting expressive behavior from Negative and Positive Expressivity scales. Our main hypothesis was that the Negative and Positive Expressivity subscales would differentially predict participants' expressive behavior during the sadness and amusement films, respectively. The relevant correlations are presented in Tables 4 and 5. During the sadness film, Negative Expressivity predicted sadness expression, crying, and expressive intensity, as well as the composite of these three variables. These validity correlations were all significant, and all exceeded .30. During the amusement film, Positive Expressivity predicted participants' amusement expression, smiling, and expressive intensity, as well as the composite of all three variables, with significant validity correlations ranging from .28 to .36. With respect to discriminant validity, Negative Expressivity had no relations with any of the behavioral variables during the amusement film, and Positive Expressivity had no relations with expressive behavior during the sadness film. In addition (although not listed in Table 4), none of the expressivity scales correlated significantly with participants' expressive behavior during the neutral film, with correlations ranging from −.09 to .21. Thus, the BEQ scales predicted expressive behavior only when an emotional response tendency had been elicited.

Predicting expressive behavior from the Impulse Strength Scale. Our emotion-elicitation procedure used film stimuli that triggered strong emotion-response tendencies in most participants. This served to reduce individual differences in the degree to which emotion-response tendencies were aroused. Thus, we expected the Impulse Strength subscale to have positive but modest relations with expressive behavior in both films. Indeed, Tables 4 and 5 show that the Impulse Strength subscale had weak positive relations with participants' expressive behavior during the sadness film (predicting only the overall variable of sadness expression significantly) and during the amusement film (predicting only overall amusement expression). Note that the nature of the Impulse Strength effects differed from those for the Negative and Positive Expressivity subscales: It was related positively to the expression of both sadness and amusement, a finding consistent with the general, nonvalenced nature of this BEQ subscale. To assess the relative contributions of emotion-response tendencies (as measured by the Impulse Strength subscale) and emotion modulation (as measured by the Negative

Table 5
Correlations of BEQ Scales With Expressive Behavior During Sadness and Amusement Films in Study 3 (Partialing Self-Reported Subjective Experience and Physiological Responses)

Expressive behavior	BEQ subscales			
	Negative Expressivity	Positive Expressivity	Impulse Strength	BEQ total
Composite sadness expression[a]				
Zero-order correlation	**.39***	.08	.22	**.29***
Partialing sadness experience	**.37***	.08	.22	**.29***
Partialing physiological response	**.31***	.03	.22	**.24***
Partialing both	**.30***	.03	.22	**.24***
Composite amusement expression[b]				
Zero-order correlation	.11	**.37***	.19	**.27***
Partialing amusement experience	.13	**.33***	.14	**.24***
Partialing physiological response	.08	**.35***	.14	**.23***
Partialing both	.10	**.32***	.11	**.22***

Note. Predicted correlations are set in bold. BEQ = Berkeley Expressivity Questionnaire.
[a] Composite of sadness expression, crying, and expressive intensity, measured during the sadness film. [b] Composite of amusement expression, smiling, and expressive intensity, measured during the amusement film.
* $p < .05$.

and Positive Expressivity subscales), we conducted a series of partial correlation analyses. These analyses showed that even after the effects of the Impulse Strength subscale were controlled, Negative and Positive Expressivity still predicted differential emotion expression.

Total BEQ versus its three facets. As expected, our measure of the general Expressivity factor also predicted emotion expression, as shown in the fourth column of Table 4. Two aspects of these findings are noteworthy. First, total BEQ was positively related to expressive behavior in both films, whereas the Negative Expressivity subscale predicted only for the sadness film and the Positive Expressivity subscale predicted only for the amusement film. Thus, the total scale showed broader predictive bandwidth than either of these subscales. Second, the predictive correlations for the total scale were generally weaker than those of the relevant subscale; they ranged from .20 to .32, and only one exceeded .30. Thus, the general measure showed greater bandwidth but lesser fidelity across predictive contexts, whereas the subscales showed lesser bandwidth but greater fidelity.

Controlling for emotional response tendencies. Next, we tested the degree to which the relations between the BEQ scales and expressive behavior were mediated by participants' momentary emotion-response tendencies. We conducted three partial-correlation analyses, testing whether the correlation between the BEQ scales and expressive behavior still held after controlling for subjective emotion experience, for physiological responding, and for both. The pattern of differential relations of the BEQ scales emerged intact, both for sadness-expressive behavior in the sadness film and for amusement-expressive behavior in the amusement film, and the findings were similar for the individual expression variables. Therefore, Table 5 summarizes the partial-correlation findings using the composite variables of sadness expression and amusement expression. When the effects of subjective experience of the target emotion were partialed out, the correlations were reduced only slightly. Similarly, the drop in correlations was small when both physiological indexes (heart rate and skin conductance) were partialed out. Finally, even when both subjective experience and physiological responding were partialed, the effects remained above .30 for both the Negative and the Positive Expressivity subscales. These findings provide strong evidence that our expressivity trait measure successfully predicts individual differences in the degree to which an emotional response tendency, once elicited, is expressed as visible expressive behavior.[6]

Conclusion and Implications

The findings from our three studies suggest several general conclusions. First, individual differences in emotional expressivity are best described by a hierarchical model consisting of a superordinate dimension with three distinct facets. Second, further refinements in the measurement of these three facets will be necessary. Third, emotion-expressive behavior is a function of the person, the situation, and their interaction.

Emotional Expressivity: General or Multifaceted?

Throughout this article, we have emphasized three facets of emotion-expressive behavior. This emphasis on facets contrasts with other conceptions that define emotional expressivity as a unidimensional construct (Friedman et al., 1980; Kring,

[6] Zero-order correlations between the BEQ scales and self-reported subjective experience of the target emotion were all nonsignificant and ranged from −.01 to .17. Change in heart rate during the amusement film correlated with Impulse Strength ($r = .26$) and no other subscales; change in skin conductance during the sadness film correlated with Negative Expressivity ($r = .32$) and no other subscales.

Smith, & Neale, 1994).[7] In many ways, our approach may be compared most profitably with the construct measured by the Emotional Expressivity Scale (EES) recently developed by Kring et al. The two conceptions are similar in that both emphasize the behavioral expression of emotion. In addition, Kring et al.'s EES and our BEQ are of comparable length, both yield an overall expressivity score, and both have been tested against ratings by others and against emotion-expressive behavior elicited during film viewing. Not surprisingly, then, at the level of the general factor of Emotional Expressivity, the two approaches show substantial convergence; the impressive correlation of .78 between the EES and the BEQ (Gross & John, 1997) provides reciprocal validation for these two independent efforts at defining the overall construct. On the definition of the general Expressivity domain, then, we agree with Kring et al.

The two approaches are distinguished, however, by Kring et al.'s (1994) emphasis on developing "a unidimensional, generalized measure of individual differences in emotional expressivity" (p. 936). The replicated factor analytic results presented here show that a unidimensional model does not fit our data; a hierarchical conception provides a significantly better fit. The limitations of a unidimensional strategy are most apparent in the context of predictive validity, where bandwidth is achieved at the expense of fidelity. When used to predict expressive behavior elicited during negatively and positively valenced films, Kring et al.'s general-factor measure predicted the expression of positive but not of negative emotion. In contrast, our Negative and Positive Expressivity facet scales showed excellent fidelity and differentially predicted sadness- and amusement-expressive behavior, even when both subjective and physiological responses to the films were partialed.

Kring et al. (1994) anticipated that "it may well be the case that important differences exist, for example, in the expression of positive versus negative emotions" (p. 934) but noted that at the time of their writing there was "no currently available validity evidence for these factors" (p. 936). We submit that such validity evidence now exists. Across multiple sources of data, our findings demonstrate the robustness of distinctions among three facets: the strength of emotion-response tendencies, the modulation of negative-response tendencies, and the modulation of positive-response tendencies.

Measuring Individual Differences in Emotional Expressivity

How should individual differences in emotional expressivity be measured? At present, several different measures relevant to emotional expressivity are available (e.g., Friedman et al., 1980; Gross & John, 1995; King & Emmons, 1990; Kring et al., 1994; Larsen & Diener, 1987; Snyder, 1987). These measures appear to assess somewhat different aspects of expressivity, and future research needs to compare these measures with each other and test their convergent and discriminant validity against criterion data.

In the present article, we have suggested that our 16-item BEQ provides one operationalization of three major facets of emotional expressivity. Clearly, this version of the BEQ is not perfect. For example, the facet scales are short (the Positive Expressivity scale has only four items), and this constrains the number of negative and positive emotions that are sampled. In addition, the Impulse Strength scale has no explicit positive emotion content. These limitations notwithstanding, the BEQ relates in sensible ways to other constructs (e.g., emotion experience, emotion inhibition), does a good job of predicting peer-rated expressivity, and shows impressive relations with observed expressive behavior (even when personality and behavior are assessed several months apart).

One can imagine more refined measures of the three expressivity facets than those offered by the current BEQ scales. Thus, one future direction in the measurement of emotional expressivity would be to further differentiate the Positive, Negative, and Impulse Strength scales into specific emotion categories such as joy, amusement, sadness, and anger (see also Spielberger, Johnson, Russell, Crane, & Worden, 1985). We are currently developing such a measure, which includes individual facet scales for a wide range of negative and positive emotions.[8] Ultimately, we believe that a complete hierarchical model of individual differences in emotional expressivity must be specified at multiple levels of abstraction, ranging from the general to the specific, so that investigators may select the level of analysis most appropriate for their experimental and predictive goals (John, Hampson, & Goldberg, 1991).

Personality Traits, States, and Situations

The present studies emphasize that emotion-expressive behavior has multiple determinants. First, personality traits, as measured by self-report, can predict expressive behavior. People know what they show and can apparently make generalizations about their expressiveness across time and situations (Barr & Kleck, 1995). In Studies 1 and 2, this evidence was indirect and took the form of a General Expressivity factor in self-reports and peer ratings, suggesting cross-situational consistencies in expressive behavior. Study 3, however, provided a direct estimate of behavioral consistency. We found that individual differences in expressive behavior were consistent from a negatively valenced to a positively valenced film context and that this consistency exceeded the often-invoked .30 barrier (Mischel & Peake, 1982).

Second, the immediate situation also shapes emotion-expressive behavior. When participants watched the sad film in Study 3, most appeared sad and many cried; when they watched the amusement film, most smiled and many laughed. Our model (see Figure 1) provides one way of conceptualizing how the situation influences emotion-expressive behavior. According to this model, situations are evaluated in terms of their emotional significance, and this evaluation triggers an emotion program. This program generates a coordinated set of emotion-response tendencies (including physiological, subjective, and behavioral

[7] King and Emmons's (1990) general measure of emotional expressivity, the Emotional Expressiveness Questionnaire, has several factors, two of which closely match our constructs of Negative and Positive Expressivity. However, in the context of their research program on emotional ambivalence, King and Emmons have used their general expressivity score rather than the factors.

[8] Researchers may contact James J. Gross for the latest version of this measure.

tendencies), which may, in turn, give rise to manifest emotion-expressive behavior. If momentary emotional states provide one (albeit imperfect) index of emotion-response tendencies, this model suggests one way of thinking about the relation between emotion experience and expression. Other researchers (e.g., Zajonc, 1985) have advanced different conceptions of the experience–expression link. In research currently under way, we are examining the relations among situation, experience, and expression, to test these alternative conceptions.

Third, the interaction of person and situation also is important: Negative Expressivity was related to expressive behavior only during the sad film, whereas Positive Expressivity was related only during the amusing film. That is, individual differences in expressivity remained latent until activated in each of the two experimental contexts (for a broader theoretical analysis, see Mischel & Shoda, 1995). One caveat, of course, is that the experimental situation in Study 3 provided a single, rather limited, social context. Some reassurance about the generalizability of our findings comes from the peer ratings in Study 2, which represent expressive behavior over time and across a wide range of situations in the participants' lives. Nonetheless, future research needs to take into account the social communicative functions of emotion expression in more complex social settings (e.g., Hesse, Banse, & Kappas, 1995; Keltner & Heerey, 1995). Eventually, we hope, the three expressivity facets proposed here will help us move toward a more complete analysis of emotion expression that considers the joint effects of state, trait, and situation.

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Received October 30, 1995
Revision received March 26, 1996
Accepted March 28, 1996 ■