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FACETS OF EMOTIONAL EXPRESSIVITY: THREE SELF-REPORT FACTORS AND THEIR CORRELATES

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Summary—Using an explicit model of emotion, we developed the Berkeley Expressivity Questionnaire. This measure of emotional expressivity has three facets: impulse strength, negative expressivity, and positive expressivity. After evaluating its factor structure and psychometric properties, we tested propositions derived from an analysis of display rules. As predicted, women were more expressive than men; Asian-Americans less expressive than other ethnic groups; and Democrats more expressive than Republicans. Expressivity also was related to two mood dimensions and to four of the Big Five personality dimensions. The pattern of findings for the subscales showed convergent and discriminant validity. Positive mood, Extraversion, and Agreeableness were most strongly related to the Positive Expressivity subscale. Negative mood, Neuroticism, and somatic complaints were most strongly related to the Impulse Strength and Negative Expressivity subscales.

INTRODUCTION

Emotions have evolved to help us respond adaptively to crucial environmental challenges and opportunities (Arnold, 1960; Frijda, 1988). Unlike other biologically-based response tendencies such as reflexes, however, emotions only *suggest* that we act. They do not compel us to do so. This means that we may deny expression to some impulses, while expressing others freely (Freud, 1961). Unmistakable individual differences in expressivity suggest that people differ in the emotional tendencies they have, and how they express these impulses as they arise. Such differences are important to understand because they influence a wide range of intra- and interpersonal processes (Friedman, Riggio & Casella, 1988; Snyder, 1987). In this article, we use self-report methodology to clarify the domain of emotional expressivity, bringing an explicitly emotion-focused perspective to bear on individual differences in this important domain.

EMOTIONAL EXPRESSIVITY

By emotional expressivity, we mean the behavioral (e.g. facial, vocal, postural) changes associated with the experience of emotion, such as smiling, laughing, frowning, storming out of a room, or crying. This definition emphasizes observable behavioral reactions, and considers someone to be emotionally expressive to the extent that he or she manifests emotional impulses behaviorally. Such a definition is compatible with *discrete* emotion approaches, which hold that a finite number of distinct emotions represent biologically-based reactions that organize the individual's response to important environmental events (Ekman, 1972; Frijda, 1986; Levenson, 1988; Plutchik, 1980). It is also compatible with *dimensional* emotion approaches, which hold that emotions represent points located on dimensions such as positive affectivity and negative affectivity (Watson & Tellegen, 1985).

A MODEL OF EMOTIONAL EXPRESSIVITY

To provide a framework for understanding individual differences in emotional expressive behavior, we present a model of emotion (see Gross & Munoz, 1995) that we have adapted from similar

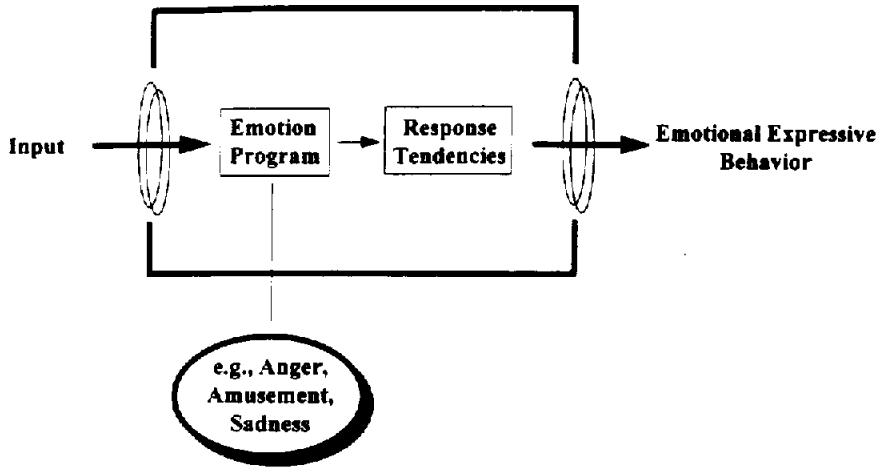

Fig. 1. A general model of emotion generation and expression (adapted from Gross & Munoz, 1995; see also Ekman, 1972; Levenson, 1994; Plutchik, 1990).

models developed by others (Ekman, 1972; Levenson, 1994; Plutchik, 1990). According to this model, which we present in Fig. 1, emotion occurs when external or internal 'input' is appraised in such a way that it triggers an 'emotion program' (e.g. anger, amusement, sadness). Once the emotion program has been activated, it prepares the organism for action by generating a variety of response tendencies (including subjective feelings, physiological changes, and behavioral tendencies) that then may or may not be expressed as visible emotional expressive behavior.

In the present research, we conceptualized emotional expressivity as a trait, and developed a self-report measure of this trait. We explicitly focused on the two aspects of emotion generation and expression that the model in Fig. 1 suggests are of particular theoretical importance for understanding stable individual differences in emotional expressivity: (a) the strength of the individual's emotional response tendencies, and (b) the degree to which these emotional impulses are expressed as overt expressive behavior. We aimed to develop a measure that would assess both the strength of emotional response tendencies and the degree to which these behavioral impulses are expressed. We included *positive* and *negative* feelings, as well as specific emotions such as *amusement, happiness, anger, fear,* and *sadness*. In so doing, our aim was to begin to understand the domain of emotional expressivity, and to clarify the relationship between emotional response tendencies on the one hand, and manifest expressive behavior on the other.

STUDY 1: FACTOR ANALYSIS AND SCALE CONSTRUCTION

Because the model in Fig. 1 suggests that emotional expressive behavior reflects the joint influence of the *inner emotional impulse* and factors governing the *expression of certain emotions*, both aspects of the emotional response were represented in the initial item pool. In all, we wrote 22 items to tap theoretically important aspects of emotional expressivity, thus allowing us to examine the underlying structure of that domain of individual differences. The logic of our approach was to first ask whether there is in fact a general dimension of emotional expressivity along which individuals differ. If so, we further wondered whether it is possible to make finer distinctions within this general dimension by distinguishing facets of emotional expressivity.

Items representing the *strength* of the emotional impulse included statements such as "I have strong emotions." Items representing *overt expression* of the emotional impulse included items that were written to assess the expression of discrete emotions including amusement, happiness, anger, fear, and sadness (e.g. "When I'm happy, my feelings show") as well as two items that were written as general markers of positive and negative emotionality (e.g. "Whenever I feel negative emotions, people can easily see exactly what I am feeling").

Method

Subjects

Three large samples were used for factor analysis and scale construction. Sample A served as the derivation sample, and Samples B and C as replication samples. Sample A consisted of 470 undergraduate students (204 men, 266 women) from the University of California, Berkeley, who participated in this study to fulfill a course requirement for an introductory psychology course. *Ss* ranged in age from 17 to 29 yr (mean age = 19.0, SD = 1.3). The ethnic composition of this sample approximated that of the general student population at the university (7% African-American, 33% Asian-American, 34% Caucasian, 16% Hispanic, and 10% Other). Although *Ss* were drawn from introductory psychology courses, the vast majority (more than 80%) were majoring in fields other than psychology. The other two samples were similar to Sample A in terms of age and ethnicity. Sample B consisted of 394 students (181 men, 213 women; mean age = 19.2 yr) and Sample C consisted of 528 students (246 men, 282 women; mean age = 19.2 yr).

Measures and procedures

Ss completed the preliminary version of the Berkeley Expressivity Questionnaire (described below), with 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 completing this scale, *Ss* completed several other instruments (see Study 2 below). *Ss* completed the measures in small groups at their own pace, and were assured that their responses were confidential.

Results and Discussion

Our analyses were designed to address two questions. The first was whether we could identify a general, internally consistent dimension of emotional expressivity. The second was whether, within the domain of emotional expressivity, we could identify distinct facets or components.

Is there a general expressivity factor?

We first tested whether the 22 preliminary items formed an internally consistent scale. Because six of the original 22 items had low item-total correlations (Cronbach, 1951), we deleted these items, leaving 16 items. The remaining 16 items were all positively intercorrelated (mean interitem $r = 0.27$), and the coefficient α-reliability of the total scale was 0.85 in this derivation sample.

To test whether a general expressivity factor can be said to underlie the responses to all 16 items, we subjected the 16×16 interitem correlation matrix to a principal-component analysis and examined the first unrotated factor. Initially, analyses were conducted separately for men and women; however, the factor solutions were virtually identical and therefore we collapsed across sex.

The scree test (Cattell, 1966) suggested three factors which accounted for 51% of the total variance. However, the eigenvalue of the first unrotated factor was substantial, suggesting a general factor. It accounted for 33% of the total variance, substantially more than the second factor (10%) and third (9%) factor combined. Moreover, as shown in Table 1, all items had substantial positive loadings on that first factor, with a mean loading of 0.56. The three items with the highest loadings were "What I'm feeling is written all over my face," "I am an emotionally expressive person," and "I experience my emotions very strongly." None of these items mentions specific emotions, suggesting that the unrotated first component captures a general dimension of emotional expressivity. This interpretation is further supported by the findings for the items included to mark negative and positive emotional expression; these items (13 and 1) had substantial and approximately equal loadings (0.63 and 0.60, respectively). Overall, then, in this derivation sample the 16-item total scale seems to capture a general and internally consistent dimension of emotional expressivity that includes both negative and positive emotions.

The findings in the two replication samples were quite similar. In Sample B, the mean interitem correlation was 0.24 and the α-reliability coefficient of the 16-item total scale was 0.82. In Sample C, the mean interitem correlation was 0.27, with an α of 0.85. These coefficients are very similar to those obtained for Sample A. Moreover, the general expressivity factor we had found in Sample A

Table 1. Items in the final version of the Berkeley Expressivity Questionnaire

Item		Loading on First Unrotated Factor	*M*	SD
16.	What I'm feeling is written all over my face	0.77	3.8	1.6
10.	I am an emotionally expressive person	0.74	4.5	1.7
15.	I experience my emotions very strongly	0.66	5.1	1.5
13.	Whenever I feel negative emotions, people can easily see exactly what I am feeling	0.63	4.0	1.6
11.	I have strong emotions	0.61	5.5	1.4
1.	Whenever I feel positive emotions, people can easily see exactly what I am feeling	0.60	5.4	1.4
12.	I am sometimes unable to hide my feelings even though I would like to	0.59	4.8	1.7
14.	There have been times when I have not been able to stop crying even though I tried to stop	0.57	4.0	2.1
6.	When I'm happy, my feelings show	0.57	5.9	1.1
7.	My body reacts very strongly to emotional situations	0.57	4.6	1.7
2.	I sometimes cry during sad movies	0.53	4.6	2.1
5.	It is difficult for me to hide my fear	0.52	3.7	1.6
9.	No matter how nervous or upset I am, I tend to keep a calm exterior (R)	0.51	4.5	1.7
3.	People often do not know what I am feeling (R)	0.49	4.6	1.7
4.	I laugh out loud when someone tells me a joke that I think is funny	0.31	6.0	1.2
8.	I've learned it is better to suppress my anger than to show it (R)	0.30	4.0	1.7

Note: Item numbers reflect the order in which items were administered. Each item was rated on a scale ranging from 1 (strongly disagree) to 7 (strongly agree). (R) indicates that the item is reverse scored. The instructions are given in the text.

was replicated in both samples, as shown by the strong positive loadings of all items on the first unrotated component.

Within the emotional expressivity domain, are there distinct facets?

To assess whether distinct facets can be identified within the general expressivity domain, we rotated the three substantial factors indicated by the scree test. Because the rotated factors are facets of a general expressivity dimension and expected to be correlated, we conducted not only the standard VARIMAX rotation but also an oblique rotation using OBLIMIN. However, the two factor solutions were virtually identical; thus, only the VARIMAX solution is reported here. The items and their loadings appear in Table 2 as Sample A.

Impulse Strength. The first factor was defined by six items. These items refer to strong emotional reactions that are accompanied by the experience of physical and behavioral changes that *S*s find difficult to stop or hide. The three items loading most highly in this study (0.75, 0.70, and 0.70) all concern the strength of the individual's reactions to their emotions; we labeled this factor *Impulse Strength*. In addition to pure strength of the impulse, this factor also captures difficulties individuals experience in dealing with their strong emotional impulses, especially when they are socially undesirable or embarrassing (e.g. crying). Thus, the composition of this factor suggests that high impulse strength is characterized by coping responses that are strained by overwhelming negative impulses.

Negative Expressivity. The second factor was defined by six items. Our general marker item about the expression of negative emotions loaded uniquely on this factor, suggesting the label *Negative Expressivity*. Most of the other items defining this factor involve the expression of specific negative emotions, including anger, fear, nervousness and upset. The negative-emotion content is not stated explicitly in two of the items (3 and 16), but seems implied; the loadings suggest that *S*s interpret these items as indicating socially inappropriate leakage of negative emotions, such as shame or guilt.

Positive Expressivity. The third factor included the general marker item concerning the expression of positive emotions, as well as items referring to the expression of specific positive emotions such as happiness and amusement. Thus, we labeled this factor *Positive Expressivity*. It is interesting to note that item 10 ("I am an emotionally expressive person") had its highest loading on this factor. This relatively nonspecific item had been an excellent definer of the general expressiveness factor (see Table 1) and it loaded positively on all three rotated factors. Nonetheless, in the three-factor space it most strongly implies the expression of positive affect, such as warmth and friendliness.

Table 2. Varimax rotated loadings for the three expressivity factors replicated across three samples

	Sample			
	A	B	C	Mean
Impulse Strength Factor				
15. I experience my emotions very strongly	0.75	0.55	0.74	0.69
11. I have strong emotions	0.70	0.53	0.79	0.68
14. There have been times when I have not been able to stop crying even though I tried to stop	0.66	0.71	0.60	0.66
2. I sometimes cry during sad movies	0.59	0.65	0.61	0.62
7. My body reacts very strongly to emotional situations	0.70	0.56	0.53	0.60
12. I am sometimes unable to hide my feelings, even though I would like to	0.50	0.55	0.54	0.53
Negative Expressivity Factor				
3. People often do not know what I am feeling (R)	0.71	0.70	0.62	0.68
13. Whenever I feel negative emotions, people can easily see exactly what I am feeling	0.63	0.63	0.71	0.66
16. What I'm feeling is written all over my face	0.58	0.62	0.69	0.63
9. No matter how nervous or upset I am, I tend to keep a calm exterior (R)	0.71	0.59	0.38	0.58
5. It is difficult for me to hide my fear	0.41	0.49	0.67	0.53
8. I've learned it is better to suppress my anger than to show it (R)	0.43	0.47	0.05	0.37
Positive Expressivity Factor				
6. When I'm happy, my feelings show	0.81	0.80	0.78	0.80
1. Whenever I feel positive emotions, people can easily see exactly what I am feeling	0.74	0.74	0.75	0.74
4. I laugh out loud when someone tells me a joke that I think is funny	0.61	0.63	0.63	0.62
10. I am an emotionally expressive person	0.49	0.44	0.40	0.44

Alpha reliability and subscale intercorrelations

The three subscales formed on the basis of these rotated factors had coefficient alpha reliabilities ranging from 0.71 to 0.76 in this derivation sample (see Table 3). As one would expect for facets of a general expressivity dimension, the three subscales were all positively related to each other. Impulse Strength correlated 0.52 with Negative Expressivity and 0.50 with Positive Expressivity, and Negative Expressivity correlated 0.51 with Positive Expressivity.

Replication of factor analyses and subscales

The VARIMAX-rotated factor analyses in Samples B and C replicated the structure identified in Sample A. As shown in Table 2, three factors emerged in each analysis, and these factors were clearly interpretable as Impulse Strength, Negative Expressivity, and Positive Expressivity. As in Sample A, these three factors accounted for 51% of the total variance in both Samples B and C. We also checked that each of the three subscales formed a homogeneous item cluster; we found that all interitem correlations were positive for all three subscales and for both samples. The coefficient αs for the three subscales (see Table 3) were roughly of the same size as the alphas in Study 1. Finally, the intercorrelations among the subscales were again similar in size. In Samples B and C, Impulse Strength

Table 3. Psychometric characteristics of the BEQ and its subscales: number of items, coefficient α reliabilities, and retest reliabilities

	No. of items	Alpha reliability			Retest reliability[a]
		Sample A	Sample B	Sample C	
Total scale	16	0.85	0.82	0.85	0.86
Subscales					
Impulse Strength	6	0.76	0.73	0.78	0.82
Negative Expressivity	6	0.72	0.68	0.68	0.78
Positive Expressivity	4	0.71	0.65	0.68	0.71
Number of *Ss*		470	394	528	68

[a] After a retest interval of 2–3 months in Sample A.

correlated 0.50 and 0.56 with Negative Expressivity and 0.62 and 0.56 with Positive Expressivity, and Negative Expressivity correlated 0.50 and 0.53 with Positive Expressivity, respectively.

Test–retest reliability

We recontacted a subsample of 68 male and female *Ss* from Sample A about two months after the initial administration and readministered the Berkeley Expressivity Questionnaire. As shown in Table 3, the test–retest reliability for the full scale was substantial ($r = 0.86$). The values for the subscales were satisfactory, ranging from 0.71 to 0.82.

Summary

In summary, the Berkeley Expressivity Questionnaire and the three subscales had acceptable coefficient α-reliability, a clear and interpretable factor structure, and good test–retest reliability. Moreover, these findings were replicated in two large replication samples. Thus, our findings show that three facets can be reliably differentiated in self-reports of emotional expressivity. Interestingly, two of our facets replicate two expressivity factors described by King and Emmons (1990). Their positive factor was defined by items such as "I laugh a lot," and their negative factor was defined by items such as "I always express disappointment when things don't go as I'd like them to." Moreover, our Impulse Strength facet seems similar to Larsen and Diener's (1987) construct of affective intensity. The items on their measure emphasize the strength of both positive emotional impulses (e.g. When someone compliments me, I get so happy I could 'burst') and negative impulses (e.g. Seeing a picture of some violent car accident in a newspaper makes me feel sick to my stomach). Like our Impulse Strength items, these items clearly tap an important aspect of emotional responding, but do not specify the observable expressive consequences of such impulses (which may or may not be expressed overtly).

These convergences between our findings and those in other research programs on emotion and expressivity are encouraging. They suggest that the tripartite distinction between Impulse Strength, Negative Expressivity, and Positive Expressivity is indeed generalizable and useful for a psychological understanding of expressivity. To explore this distinction further, and to illustrate the differential implications of each of the subscales, Study 2 investigated the relations of the total scale and the subscales to demographic variables as well as measures of mood and personality.

STUDY 2: CORRELATES OF EMOTIONAL EXPRESSIVITY

According to the emotion model in Fig. 1, individual differences in emotional expressivity represent the joint influence of several individual differences: in environmental circumstances, appraisal patterns, response tendencies, and display rules that govern the behavioral expression of response tendencies. In everyday life, these factors interact in determining emotional expressivity. We therefore adopted the strategy of examining the effects of these factors as they vary in different naturally-occurring groups of *Ss*.

To simplify our analysis, we emphasize the role of two sources of individual differences in emotional expressivity. One focuses on display rules and involves the modulation of the initial emotional response tendency according to socialization history and group memberships of the individual. The other concerns the emotional response tendencies generated by the individual's appraisal of the environment; that is, stable individual differences in how people feel subjectively and how they are inclined to respond behaviorally and physiologically.

Effects Associated With Display Rules

Display rules (Ekman, 1972) represent cultural and group norms governing how and when one should express particular emotions. The notion of display rules is useful in understanding differences in emotional expressivity between cultures (e.g. one culture may be less expressive than another), between groups within a culture (e.g. there are different display rules for men and women in most cultures) and even within groups (e.g. individuals may differ in the degree to which they have internalized display rules).

In many cultures, display rules favor the expression of positive over negative emotions (Wallbott & Scherer, 1989), perhaps because the expression of positive emotions is more likely to enhance and

support the social structures. Thus, we expected that we would find higher mean levels on the Positive Expressivity subscale than on the Negative Expressivity subscale.

Other display rules have differential applicability to various groups of individuals. One of the most striking examples involves the display rules governing the emotional expressive behavior of the two sexes. Boys and girls are socialized very differently when it comes to the display of emotion (Maccoby & Jacklin, 1974). By adulthood, display rules give women far greater license to express their emotions than men (Hall, 1979; LaFrance & Banaji, 1992; Shields, 1987). For this reason, we expected that mean Expressivity scale scores would be greater in women than in men.

Since display rules are culturally transmitted, we expected that individuals' cultural and ethnic backgrounds would influence the display rules they have learned, and hence, their typical patterns of emotional expressivity. There are numerous stereotypes regarding the typical level of emotional expressivity in various ethnic groups (e.g. Rothbart & John, 1993). Few of these expectations have been subjected to careful scrutiny, but there is a fairly good clinical consensus that Asian Americans express emotions to a lesser degree than other ethnic groups in the United States (Chung, 1992; Sue & Sue, 1990). We tested this hypothesis empirically.

There also are reasons to expect that core values such as political orientation are associated with emotional expressivity. For example, Costantini and Craik (1980) found that Republicans tend to be higher in self-control and need for order, whereas Democrats show a tendency toward immediate responsiveness and greater lability. These findings led us to test the hypothesis that Democrats would be more expressive than Republicans.

Finally, individual differences in the tendency to control emotions, particularly negative emotions, should be associated with expressivity. In terms of convergent validity, we hypothesized that all three expressivity subscales would be negatively correlated with Watson and Greer's (1983) emotional control scale. However, in terms of discriminant validity, we predicted that the Negative Expressivity subscale would be more highly correlated with the emotional control scale (which assesses only the control of negative emotions) than would the Positive Expressivity subscale.

Effects Associated with Emotional Response Tendencies

A second class of determinants of emotional expressivity involves the emotional impulses the individual typically experiences. Because we were concerned with emotional expressivity in general, we focus on the individual's general inclination to experience certain feelings, as determined by prevailing mood and general personality characteristics.

Postive and negative affectivity are two major dimensions of mood (Tellegen, 1985; Watson, Clark & Tellegen, 1988). We expected that the Positive Expressivity subscale would be related to positive mood, and the Negative Expressivity subscale to negative mood. However, given the modest correlations between the subjective experience of emotion and the other components of an emotional response (e.g. expressive behavior, see Lang, 1979), we expected the correlations between short-term mood states and our expressivity trait measure to be of moderate size.

Since many personality traits have both affective and expressive-behavioral components (Eysenck, 1967; Eysenck & Eysenck, 1985; Tellegen, 1985; Watson & Clark, 1992), personality traits should influence emotional expression. In this study, we used the two temperamentally based trait dimensions, Neuroticism and Extraversion (Eysenck & Eysenck, 1985), as well as three other dimensions suggested by the Big Five approach (John, 1990). *Neuroticism* contrasts emotional stability with a broad range of negative affects, including anxiety, sadness, irritability, and nervous tension; *Extraversion* and *Agreeableness* summarize traits of an interpersonal nature; *Openness to Experience* describes the breadth, depth, and complexity of an individual's mental and experiential life; and *Conscientiousness* describes task and goal-directed behavior and socially-prescribed impulse control. These dimensions have been found in a wide range of data sources, instruments, samples, and languages, and all five have been shown to possess convergent and discriminant validity (for a review, see John, 1990; but also Eysenck, 1992a, b).

In terms of the Total Expressivity scale, we tested the hypothesis that the affectively based dimensions of Neuroticism and Extraversion are most highly related to emotional expressivity. Considerable evidence also suggests that the experience of positive affect is linked to Extraversion (e.g. enthusiastic) and, to a lesser degree, Agreeableness (e.g. affectionate) and Openness (e.g.

curious), whereas negative affect seems linked primarily to Neuroticism (e.g. moody, self-pitying) (Larsen & Ketelaar, 1991; Tellegen, 1985; Waller, in press; Watson & Clark, 1992). Therefore, with respect to the expressiveness subscales, we hypothesized that Extraversion, Agreeableness, and Openness would be related to Positive Expressivity, and Neuroticism to Negative Expressivity. In each case, we expected the correlations to be of moderate size, for although expressivity should be meaningfully related to the Big Five dimensions, we expected it to capture specific individual differences that cannot be reduced to the broad personality dimensions captured by the Big Five.

Finally, some previous research suggests that the report of somatic symptoms represents an alternative way of expressing problematic emotional impulses (c.f. Watson & Pennebaker, 1989). If symptom reporting is thought of as expressive behavior, then we would expect an association between somatic complaints and our expressivity scales. More specifically, given that somatic complaints have been linked to Neuroticism (Costa & McCrae, 1987; Watson & Pennebaker, 1989), we hypothesized that somatic complaints would be related primarily to our Negative Expressivity and Impulse Strength subscales.

Method

Subjects

Ss were drawn from Samples A, B, and C described in Study 1. The total sample size was 1392 (631 men, 761 women).

Measures

In addition to the Berkeley Expressivity Questionnaire (described above), *Ss* provided demographic information about sex, ethnic-group membership, socioeconomic status, and political affiliation. To assess emotional control, *Ss* completed the 21-item Courtauld Emotional Control Scale (Watson & Greer, 1983). This scale measures the degree to which *Ss* inhibit their expression of three negative emotions: anger, anxiety, and unhappiness (e.g. "When I feel angry, I bottle it up"). Positive mood (feeling energetic and cheerful) and negative mood (feeling anxious and worried) were assessed with two global rating sales; *Ss* rated how they had been feeling 'this week' using scales ranging from 0 (not at all) to 8 (extremely) (cf. Tellegen, 1985; Watson *et al.*, 1988). To measure somatic complaints, *Ss* were asked several questions concerning their health, including how frequently they (a) get colds, flus; (b) have aches/pains; and (c) worry about their health. Because these items were all positively intercorrelated ($\alpha = 0.54$), we combined them into an overall index of somatic complaints. The five broad personality dimensions of Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness were measured with the Big Five Inventory [BFI (John, Donahue & Kentle, 1991)]. The BFI scales were derived from the prototypical factor definitions described in John (1990) and range in length from 8 to 10 items. The scales have good psychometric properties and convergent validity with other self-report measures of the Big Five and with peer ratings.

Results and Discussion

Relations with display rules

Difference between positive and negative expressivity. As predicted, *Ss* reported expressing positive emotions ($M = 5.5$, SD = 0.98) to a substantially greater degree than negative emotions ($M = 3.7$, SD = 1.0), $t(1368) = 63.9$, $P < 0.001$, $D = 1.8$. This finding suggests that across a wide range of emotions, the expression of positive emotions is sanctioned by society to a far greater degree than the expression of negative emotions.

Sex. To test whether women were more emotionally expressive than men, we conducted a 2×3 ANOVA, with Sex as a between-*Ss* factor and Scale (Impulse Strength, Negative Expressivity, Positive Expressivity) as a within-*Ss* factor. This analysis revealed a main effect for Sex, $F(1, 1356) = 334.2$, $P < 0.001$, and an interaction of Sex and Scale, $F(2, 1355) = 55.09$, $P < 0.001$. As presented in Fig. 2, women ($M = 5.0$, SD = 0.78) were more expressive than men ($M = 4.2$,

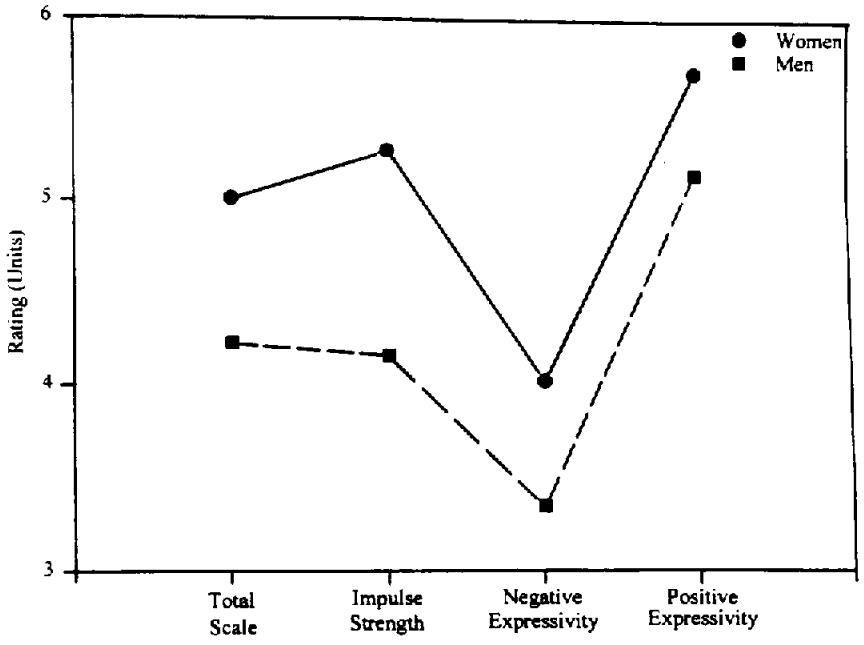

Fig. 2. Mean expressivity ratings (total scale and three subscales) by sex.

SD = 0.79) by a full standard deviation ($D = 1.0$). The interaction effect indicates that this sex difference was most pronounced for Impulse Strength ($D = 1.07$), although the effects for Negative Expressivity ($D = 0.68$) and Positive Expressivity ($D = 0.60$) were also substantial.

Further analyses showed that the accentuated sex difference for Impulse Strength was due to the two items related to crying. Sex was positively correlated with each of the items on the full scale, but the correlations exceeded 0.30 only for the crying items. These findings are consistent with the fact that women cry substantially more than men (e.g. Gross, Fredrickson & Levenson, 1994). Overall, our findings are consistent with previous research on sex differences, thus providing construct validation for our questionnaire and its subscales. Given the effects of sex on emotional expressivity, we initially conducted all subsequent ANOVAs using sex as an additional factor. However, sex did not interact with the effects of interest.

Ethnicity. To assess the effects of ethnicity on emotional expressivity, we conducted a 4×3 ANOVA, with Ethnicity (Asian, African-American, Caucasian, Hispanic) as a between-*Ss* factor, and Scale (Impulse Strength, Negative Expressivity, Positive Expressivity) as a within-*Ss* factor. This analysis revealed a main effect for Ethnicity, $F(3, 1274) = 4.0$, $P < 0.01$, but no interactions. As predicted, follow-up t tests ($P < 0.05$) using the Total Scale scores indicated that this Ethnicity effect was due to Asian-Americans ($M = 4.5$, SD = 0.85) being less expressive than African-Americans ($M = 4.8$, SD = 1.0; $D = 0.27$), Caucasians ($M = 4.7$, SD = 0.87; $D = 0.18$), and Hispanics ($M = 4.7$, SD = 0.85; $D = 0.18$). There were no other differences in expressivity between ethnic groups.

These findings support the hypothesis that Asian-Americans are generally less emotionally expressive than other ethnic groups, thus providing construct validation for our expressivity questionnaire. Note, however, that the effect sizes were small, and that future research should address differences among Asian-American groups and assess the effects of cultural assimilation.

Socioeconomic status. We also examined the effects of socioeconomic status; there were no differences among *Ss* of various SES groups on any of the expressivity scales (correlations ranged from -0.04 to 0.03). This suggests that differences among *Ss* of various ethnicities in terms of emotional expressivity cannot be accounted for by differences in SES.

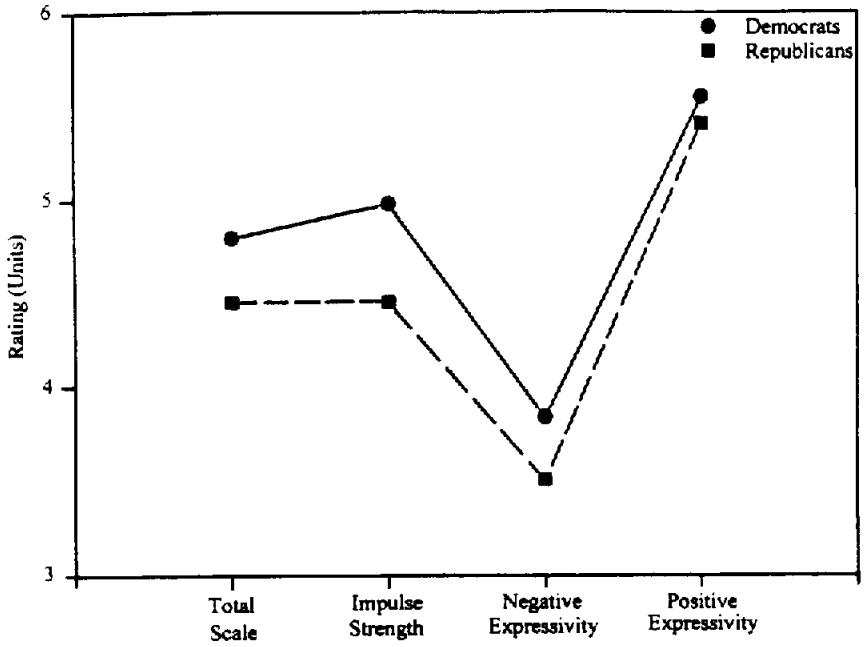

Fig. 3. Mean expressivity ratings (total scale and three subscales) by political affiliation.

Political affiliation. To test whether Democrats would report greater levels of emotional expressivity than Republicans, we conducted a 2 × 3 ANOVA, with Political Affiliation (Democrat, Republican) as a between-*S*s factor, and Scale (Impulse Strength, Negative Expressivity, Positive Expressivity) as a within-*S*s factor. This analysis revealed an effect for Politics, $F(1, 500) = 18.7$, $P < 0.001$, and an interaction of Politics and Scale, $F(2, 499) = 7.3$, $P < 0.01$. This interaction effect indicates that, as presented in Fig. 3, Republicans had significantly lower scores on Total Expressivity ($D = 0.39$), Impulse Strength ($D = 0.43$), and Negative Expressivity ($D = 0.33$) than Democrats, but did not differ in terms of Positive Expressivity.

Whereas political orientation has typically been studied in terms of goals and values, these results illustrate the importance of emotion and its regulation. Our findings point to two emotional bases of the higher levels of habitual self-control found in Republicans (e.g. Costantini & Craik, 1980): weaker emotional impulses and lesser expression of negative emotions. These findings raise the possibility that individual differences in the experience and expression of emotional impulses may play a role in the formation of political preferences and ideology.

Relations with emotional control. As presented in Table 4, the Total Expressivity scale as well as each of its subscales showed the expected correlations with the Courtauld Emotional Control (CEC) Scale. As we had expected, the correlation between the CEC and Negative Expressivity ($r = -0.54$) was significantly greater than the correlation between the CEC and Positive Expressivity ($r - 0.41$), as shown by the test for the difference between dependent correlations $t(1299) = 5.6$, $P < 0.001$. This finding provides further evidence for the discriminant validity of our subscales despite their substantial positive intercorrelation.

Relations with emotional response tendencies

Positive and negative mood. Positive and negative mood during the past week were both modestly related to the overall expressivity scale (both rs $= 0.12$, $P < 0.05$). However, this overall finding masked important differential relations. Whereas positive mood was related only to Positive Expressivity ($r = 0.24$, $P < 0.01$), but not to the other two subscales, negative mood was related to

Table 4. Correlations between Expressivity Scales and the Courtauld Emotional Control Scale (CEC) and its subscales

	Total CEC	CEC subscales		
		Anxiety	Unhappiness	Anger
Whole scale	−0.51*	−0.48*	−0.39*	−0.34*
Subscales				
Impulse Strength	−0.32*	−0.33*	−0.23*	−0.18*
Negative Expressivity	−0.54*	−0.47*	−0.45*	−0.40*
Positive Expressivity	−0.41*	−0.38*	−0.31*	−0.28*

Note: $N = 1299$.
* Significant at $P < 0.05$.

Impulse Strength ($r = 0.18$, $P < 0.01$) and Negative Expressivity ($r = 0.08$, $P < 0.05$), but not Positive Expressivity. These findings show that although the expressivity subscales are all positively correlated, they have differential validity; a high *overall* expressivity score may result from rather different types of expressivity. Thus, it is important to examine the underlying pattern of expressivity by examining the subscale effects.

Somatic complaints. As predicted, the degree to which *Ss* reported symptoms and complained about their health was related to the Total Expressivity scale ($r = 0.22$, $P < 0.01$). However this overall relation masked differential relations with the subscales. In terms of the subscales, health complaints were primarily related to Impulse Strength ($r = 0.29$, $P < 0.01$), secondarily related to Negative Expressivity ($r = 0.15$, $P < 0.05$), and not at all related to Positive Expressivity. These findings suggest that it is primarily the experience of negative emotional impulses that the individual struggles to control that are expressed in terms of somatic complaints.

Relations with the Big Five personality dimensions. The correlations with the Big Five personality dimensions are presented in Table 5. As we had expected, the Total Expressivity scale showed the strongest correlations with the two clearly affective Big Five dimensions, Neuroticism and Extraversion. The correlations for Agreeableness and Openness, though significant, were quite small, with no effect for Conscientiousness. A multiple regression analysis predicting the Total Expressivity scale score from all Big Five dimensions confirmed this pattern of findings and showed that the four significant effects were mutually independent. The multiple R of 0.55 suggests that although the relation between individual differences in expressivity and the Big Five is substantial in size, emotional expressivity cannot be reduced to a linear combination of these five dimensions.

Because the three expressivity subscales are all positively correlated, Table 5 presents both their zero-order correlations with the Big Five and their second-order partial correlations, with the effect of the other two subscales statistically controlled. These partial correlations eliminate the variance overlap among the subscales, and thus represent the unique relations of each subscale with the Big Five dimensions. Overall, the correlations shown in Table 5 confirmed our general prediction of differential relations with the Big Five. Neuroticism was strongly related to Impulse Strength and Negative Expressivity, but not to Positive Expressivity. Extraversion, on the other hand, was strongly

Table 5. Correlations between Expressivity Scales and the Big Five dimensions

	N	E	O	A	C
Total scale	0.29*	0.32*	0.14*	0.11*	−0.02
Subscales					
Impulse Strength					
Zero order	0.38*	0.18*	0.17*	0.08*	−0.02
Second order partial	0.35*	−0.06	0.12*	0.01	−0.02
Negative Expressivity					
Zero order	0.26*	0.21*	−0.01	−0.01	−0.04
Second order partial	0.16*	0.04	−0.13*	−0.11*	−0.05
Positive Expressivity					
Zero order	0.04	0.41*	0.18*	0.20*	0.02
Second order partial	−0.21*	0.37*	0.16*	0.21*	0.02

Note: N, Neuroticism; E, Extraversion; O, Openness; A, Agreeableness; C, Conscientiousness. $N = 800$. Second order partials are presented for each of the three subscales in which the effects of the other two subscales are held constant.
* Significant at $P < 0.05$.

related to Positive Expressivity, but as shown by the partial correlations, not to the other two subscales. Openness and Agreeableness had weaker relations with the Expressivity subscales, but both were consistently related to Positive Expressivity. Moreover, the second-order partial correlations suggest that relative to their overall level of expressivity, individuals high in Openness and Agreeableness are less likely to express negative emotions, and individuals high in Neuroticism are less likely to express positive emotions. Finally, as expected, Conscientiousness was not related to any of the three Expressivity subscales.

GENERAL DISCUSSION

In this article, we developed a short questionnaire measure of emotional expressivity and its three facets. At the most general level, our exploration of the structure of self-reported emotional expressivity revealed a broad but internally consistent dimension of overall expressivity, indicating that individuals who report expressing one emotion tend to report expressing other emotions as well. The Total Expressivity scale, which represents this general dimension, is relatively balanced with respect to positive and negative emotions, as demonstrated by its relations to mood and personality: Expressivity was positively correlated with both positive and negative mood, and with both Extraversion and Neuroticism from the Big Five personality dimensions. The total scale also showed the expected strong negative correlation with a measure of emotional control that reflects how closely an individual adheres to display rules. Moreover, as was expected from an analysis of group-specific display rules, men were less expressive than women, Republicans less expressive than Democrats, and Asian-Americans less expressive than other ethnic groups. The composition and correlates of our Total Expressivity scale suggest that it should converge well with the general expressivity scales developed by King and Emmons (1990) and Kring, Smith and Neale (1994).

In addition to the overall expressivity factor, we also identified three distinct facets: (a) impulse strength, (b) negative expressivity, and (c) positive expressivity. We take the *Impulse Strength* facet to represent individual differences in the strength of emotional response tendencies generated by an emotion program. For this reason, the Impulse Strength subscale has conceptual relations with the Affect Intensity Measure (AIM) developed by Larsen (see Larsen & Diener, 1987, for a review). Like Impulse Strength, the item content on the AIM emphasizes the strength of *Ss*' emotions (e.g. My emotions tend to be more intense than those of most people). Moreover, both scales have similar empirical correlates, for the AIM, like our Impulse Strength subscale, (a) is strongly correlated to a measure of overall expressivity (see King & Emmons, 1990, Table 5), (b) shows substantial sex differences (even though it does not include item content related to crying), and (c) predicts negative emotionality and somatic complaints (Larsen & Diener, 1987). However, there are some differences between Impulse Strength and the AIM that might limit empirical relations between these scales. For example, our Impulse Strength scale includes primarily impulses that are experienced as negative and difficult to control. In contrast, the AIM contains roughly equal numbers of items specifying positive and negative impulses.

The relations between Impulse Strength on the one hand and Neuroticism and somatic complaints on the other hand are theoretically important. As Larsen and Diener (1987) noted, strong emotional impulses affect "the ability to control one's thoughts and actions" (p. 9). Many of these impulses on our Impulse Strength scale are negatively-valenced ones (e.g. tears of sadness) that the individual finds difficult to manage. However, this does not mean that our Impulse Strength scale overrepresents negative emotional impulses. The Impulse Strength subscale was correlated equally with Negative and Positive Expressivity in all three samples.

The correlations among Impulse Strength, Neuroticism, negative mood, and health complaints are consistent with Watson and Pennebaker's (1989) symptom perception hypothesis: Individuals who habitually experience strong emotional impulses that strain their coping capacity have greater 'somatopsychic' distress (Watson & Pennebaker, 1989, p. 248). For these individuals, somatic complaints may provide an alternative form of 'emotional expression' that is relatively independent of the direct expression of either positive or negative emotions.

The *Negative Expressivity* facet concerns the expression of negative feelings, such as anger, fear, and nervousness. As predicted, the Negative Expressivity subscale was strongly negatively related

to the tendency to control negative emotions, thus providing evidence for convergent validity. Moreover, the finding that the Negative Expressivity subscale was equally correlated with the control of anxiety, unhappiness, and anger suggests that our subscale offers a balanced representation of these three important negative emotions. These findings also provide discriminant validation, as the emotional control measure correlated more strongly with Negative Expressivity than with Positive Expressivity.

The *Positive Expressivity* facet captures the expression of positive emotions such as happiness and amusement. Note that the substantial correlation ($r = 0.5$) between this subscale and Negative Expressivity suggests that *Ss* who are expressive of positive emotions are typically also more expressive of negative emotions, a finding consistent with our general-factor conception of expressivity. Despite this substantial correlation, however, we also found important differences between Positive Expressivity and the other subscales. Positive Expressivity was the only subscale correlated with positive mood, and it was not related to either negative mood or somatic complaints. Moreover, with respect to personality, Positive Expressivity was related to Extraversion, but also predicted Agreeableness and Openness, highlighting the importance of positive affect expression in both interpersonal settings (i.e. Extraversion and Agreeableness) and in creative and artistic pursuits (i.e. Openness). In general then, the Positive Expressivity subscale measures aspects of emotion expression quite different from those measured by the Negative Expressivity subscale.

Together, these findings suggest that although there appears to be a general dimension of emotional expressivity, relations between measures of that general dimension and other constructs may depend crucially on the relative balance of items from the three facets included in the general measure. Thus, in future work, it will be important to establish empirical relations among the existing measures of various aspects of expressivity. Such efforts will clarify the domain of individual differences in emotional expressivity, and relate key dimensions of expressivity to other important personality variables.

A second direction for future research concerns the use of self-report methodology for assessing expressivity. We believe this approach is justified on several counts. First, people can accurately report on their own traits that are easily observable (e.g. John & Robins, 1993), and we have defined expressivity explicitly with reference to observable characteristics. Second, self-reports of expressiveness correlate substantially with independent peer rating criteria (e.g. King & Emmons, 1990; Snyder, 1987). Third, laboratory research has shown that various aspects of self-reported expressiveness validly predict numerous specific behavioral measures (e.g. Friedman & Miller-Herringer, 1991; Kring *et al.*, 1994; Snyder, 1987). Thus, we have reasons to be optimistic about the criterion validity of our scales. Nonetheless, future work should examine the validity of the scales with respect to emotional expressive behavior elicited under laboratory conditions (e.g. Gross & Levenson, 1993).

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REFERENCES

Arnold, M. (1960). *Emotion and personality*. New York: Columbia University Press.
Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research, 1*, 245–276.
Chung, D. K. (1992). Asian cultural commonalities: A comparison with mainstream American culture. In Furuto, S. M., Biswas, R., Chung, D. K., Murase, K. & Ross-Sheriff, F. (Eds), *Social work practice with Asian Americans* (pp. 27–44). Newbury Park: Sage.
Costa, P. T. & McCrae, R. R. (1987). Neuroticism, somatic complaints, and disease: Is the bark worse than the bite? *Journal of Personality, 65*, 299–316.
Costantini, E. & Craik, K. H. (1980). Personality and politicians: California party leaders, 1960–1976. *Journal of Personality and Social Psychology, 38*, 641–661.
Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*, 297–334.
Ekman, P. (1972). Universals and cultural differences in facial expression of emotion. In Cole, J. (Ed.), *Nebraska Symposium on Motivation, 1971* (pp. 207–283). Lincoln: University of Nebraska Press.
Eysenck, H. J. (1967). *The biological basis of personality*. Springfield, IL: Charles C. Thomas.
Eysenck, H. J. (1992a). Four ways five factors are not basic. *Personality and Individual Differences, 13*, 667–673.
Eysenck, H. J. (1992b). A reply to Costa and McCrae: P or A and C—the role of theory. *Personality and Individual Differences, 13*, 867–868.

Eysenck, H. J. & Eysenck, M. W. (1985). *Personality and individual differences: A natural science approach*. New York: Plenum.
Freud, S. (1961). *Civilization and its discontents*, (Strachey, J., Trans.). New York: W. W. Norton.
Friedman, H. S. & Miller-Herringer, T. (1991). Nonverbal display of emotion in public and in private: Self-monitoring, personality, and expressive cues. *Journal of Personality and Social Psychology, 61*, 766–775.
Friedman, H. S., Riggio, R. E. & Casella, D. (1988). Nonverbal skill, personal charisma, and initial attraction. *Personality and Social Psychology Bulletin, 14*, 203–211.
Frijda, N. H. (1986). *The emotions*. New York: Cambridge University Press.
Frijda, N. H. (1988). The laws of emotion. *American Psychologist, 43*, 349–358.
Gross, J. J., Fredrickson, B. F. & Levenson, R. W. (1994). The psychophysiology of crying. *Psychophysiology, 31*, 460–468.
Gross, J. J. & Levenson, R. W. (1993). Emotional suppression: Physiology, self-report, and expressive behavior. *Journal of Personality and Social Psychology, 64*, 970–986.
Gross, J. J. & Munoz, R. F. (1995). Emotion regulation and mental health. *Clinical Psychology: Science and Practice, 2*, 151–164.
Hall, J. A. (1979). Gender, gender roles, and nonverbal communication. In Rosenthal, R. (Ed.), *Skill in nonverbal communication* (pp. 32–67). Cambridge, MA: Oelgeschlager, Gunn & Hain.
John, O. P. (1990). The "Big Five" factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In Pervin, L. A. (Ed.), *Handbook of personality: Theory and research* (pp. 66–100). New York: Guilford.
John, O. P., Donahue, E. M. & Kentle, R. L. (1991). *The "Big Five" Inventory: Versions 4a and 54*. Technical Report, Institute of Personality and Social Research, University of California, Berkeley, U.S.A.
John, O. P. & Robins, R. W. (1993). Determinants of interjudge agreement on personality traits: The Big Five domains, observability, evaluativeness, and the unique perspective of the self. *Journal of Personality, 61*, 521–551.
King, L. A. & Emmons, R. A. (1990). Conflict over emotional expression: Psychological and physical correlates. *Journal of Personality and Social Psychology, 58*, 864–877.
Kring, A. M., Smith, D. A. & Neale, J. M. (1994). Individual differences in dispositional expressiveness: Development and validation of the Emotional Expressivity Scale. *Journal of Personality and Social Psychology, 66*, 934–949.
LaFrance, M. & Banaji, M. (1992). Toward a reconsideration of the gender-emotion relationship. In Clarke, M. (Ed.), *Review of personality and social psychology* (pp. 178–201). Beverly Hills, CA: Sage.
Lang, P. J. (1979). A bio-informational theory of emotional imagery. *Psychophysiology, 16*, 495–512.
Larsen, R. J. & Diener, E. (1987). Affect intensity as an individual difference characteristic: A review. *Journal of Research in Personality, 21*, 1–39.
Larsen, R. J. & Ketelaar, T. (1991). Personality and susceptibility to positive and negative emotional states. *Journal of Personality and Social Psychology, 61*, 132–140.
Levenson, R. W. (1988). Emotion and the autonomic nervous system: A prospectus for research on autonomic specificity. In Wagner, H. L. (Ed.), *Social psychophysiology and emotion: Theory and clinical applications* (pp. 17–42). London: Wiley.
Levenson, R. W. (1994). Human emotion: A functional view. In Ekman, P. & Davidson, R. J. (Eds), *The nature of emotion* (pp. 123–126). New York: Oxford University Press.
Maccoby, E. E. & Jacklin, C. N. (1974). *The psychology of sex differences*. Stanford, CA: Stanford University Press.
Plutchik, R. (1980). A general psychoevolutionary theory of emotion. In Plutchik, R. & Kellerman, H. (Eds), *Emotion: Theory, research, and experience* (Vol. 1, pp. 3–33). New York: Academic Press.
Plutchik, R. (1990). Emotions and psychotherapy: A psychoevolutionary perspective. In Plutchik, R. & Kellerman, H. (Eds), *Emotion: Theory, research, and experience* (Vol. 5, pp. 3–41). New York: Academic Press.
Rothbart, M. & John, O. P. (1993). Intergroup relations and stereotype change: A social-cognitive analysis and some longitudinal findings. In Sniderman, P. M., Tetlock, P. E. & Carmides, E. G. (Eds), *Prejudice, politics, and the American dilemma* (pp. 32–59). Stanford, CA: Stanford University Press.
Shields, S. A. (1987). Women, men, and the dilemma of emotion. In Shaver, P. & Hendrick, C. (Eds), *Review of personality and social psychology* (Vol. 7, pp. 229–250). Beverly Hills, CA: Sage.
Snyder, M. (1987). *Public appearance, private realities*. New York: Freeman.
Sue, D. & Sue, D. (1990). *Counseling the culturally different: Theory and practice*. New York: Wiley.
Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In Tuma, A. H. & Maser, J. D. (Eds), *Anxiety and the anxiety disorders* (pp. 681–706). Hillsdale, NJ: Erlbaum.
Wallbott, H. G. & Scherer, K. R. (1989). Assessing emotion by questionnaire. In Plutchik, R. & Kellerman, H. (Eds), *Emotion: Theory, research, and experience* (Vol. 4, pp. 55–82). Academic Press: New York.
Waller, N. G. (in press). Evaluating the structure of personality. In Cloninger, C. R. (Ed.), *Personality and psychopathology*. Washington, DC: American Psychiatric Press.
Watson, D. & Clark, L. A. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the five-factor model. *Journal of Personality, 60*, 441–476.
Watson, D., Clark, L. A. & Tellegen, A. (1988). Development and validation of a brief measure of positive and negative affect. *Journal of Personality and Social Psychology, 51*, 1063–1070.
Watson, D. & Pennebaker, J. W. (1989). Health complaints, stress, and distress: Exploring the central role of negative affectivity. *Psychological Review, 96*, 234–251.
Watson, D. & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98*, 219–235.
Watson, M. & Greer, S. (1983). Development of a questionnaire measure of emotional control. *Journal of Psychosomatic Research, 27*, 299–305.