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INDIVIDUAL DIFFERENCES IN EMOTION EXPRESSION: HIERARCHICAL STRUCTURE AND RELATIONS WITH PSYCHOLOGICAL DISTRESS

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Several constructs reflecting individual differences in emotion expression have been described in the literature, yet their structural organization is unknown. The present study provided a taxonomy of these individual differences and determined their relations to depression and anxiety symptoms. Exploratory factor analyses suggested seven emotion-expression factors—Affect Intensity, Ambivalence About Expression, Disclosure of Negative Emotion, Disclosure of Emotion, Disclosure of Lack of Affect, Expression of Positive Emotion, and Secret Keeping—are explained by two second-order factors: Emotional Constraint and Emotional Expression. Multiple regression and canonical correlation analyses suggested that a reluctance to express emotions is related to heightened psychological symptoms. These findings bridge constructs from disparate literatures, and they provide support for emotion dysregulation models of affective disorders.

In the past couple of decades there has been an upsurge of research on individual differences related to the expression of emotion. Advances in theories of emotion regulation (Gross, 1998a, 1998b) and the health benefits of disclosure (Kennedy-Moore & Watson, 2001;

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Lepore & Smyth, 2002; Pennebaker, 1995) have led emotion researchers to identify several individual difference variables that are relevant to the process of expressing and recovering from emotions. The explication of these constructs, coupled with the development of self-report measures to assess them, has aided the development of a substantial literature on the psychological and physiological benefits of expressing emotion and the detrimental consequences of concealing one's emotions.

The proliferation of constructs within the umbrella of emotion expression has facilitated the development of micro-theories of expression (e.g., Farber, Berano, & Capobianco, 2006), but the identification of constructs has arguably outpaced the development of more integrative theories of how these constructs operate within the broader emotion process. Integrative theories delineating the role of individual differences in emotion expression would be enriched by an understanding of the interrelations among varied emotion-expression constructs. For example, do these diverse constructs characterize similar processes that involve different modalities of expression? Do some constructs reflect behavioral processes whereas others reflect cognitive processes? Is there evidence of a hierarchical model of emotion expression? Developing a taxonomy of emotion expression would shed light on the organization of these individual-difference variables and subsequently guide future theory development. Our first goal of this study was to find the common factors underlying individual differences in emotion expression and to develop a taxonomy as a way to integrate diverse constructs in the literature.

Clinical theory dating back to Freud suggests that expressing emotions can alleviate psychological distress (Kennedy-Moore & Watson, 2001), but the relationship between expression and distress is complex. As Stiles (1987) explained, individuals experiencing psychological distress are motivated to disclose that distress to others (suggesting a positive relationship between expression and distress), but expression is also believed to reduce psychological distress. Moreover, the degree to which one expresses emotions may not be as relevant to psychological distress as is one's comfort with emotional expression (King & Emmons, 1990). It therefore seems that the key to understanding the relations between emotion expression and distress is to examine multiple conceptualizations of expression. Thus, our second goal was to connect the emotion-ex-

pression taxonomy with measures of psychological distress, namely, symptoms of anxiety and depression.

INDIVIDUAL DIFFERENCES RELATED TO EMOTION EXPRESSION

Numerous conceptualizations of emotion expression exist in the literature. For example, Gross, John, and Richards (2000) defined emotional expression as "behavioral changes that usually accompany emotion, including the face, voice, gestures, posture, and body movement" (p. 712). In other words, emotional expression may be construed as occurring primarily through nonverbal channels. Other perspectives indicate that emotional expression comprises both verbal and nonverbal elements (Berry & Pennebaker, 1998; Halberstadt, Cassidy, Stifter, Parke, & Fox, 1995; Kennedy-Moore & Watson, 2001). For example, Kennedy-Moore and Watson define emotional expression as "observable verbal and nonverbal behaviors that communicate or symbolize emotional experience" (p. 187). Accordingly, individual differences in the degree to which one expresses emotion have typically addressed either nonverbal/behavioral or verbal modalities of expression.

Important individual differences also exist with respect to one's comfort with emotion expression (Kennedy-Moore & Watson, 2001). Specifically, research has addressed how one's ambivalence about expressing emotions (King & Emmons, 1990) and one's apprehension about revealing secrets (Larson & Chastain, 1990) are associated with poor health outcomes. Below we describe theory and research on these individual difference variables rationally organized into three categories: (a) behavioral expressivity, (b) verbal disclosure of emotions, and (c) comfort with expression.

Behavioral Expressivity. Individual differences in the tendency to express emotions behaviorally (e.g., through facial expressions, body posture) has been referred to simply as *emotional expressivity* in the literature (Gross & John, 1998), but we will use the more descriptive label *behavioral expressivity*. Behavioral expressivity has been conceptualized in slightly different ways by different research teams. Kring, Smith, and Neale (1994) suggest that one's emotional expressivity is independent of the valence of the emotion or the mode of

expression. According to King and Emmons (1990), the degree to which one expresses emotions can be separated into the expression of positive emotions, expression of negative emotions, and expression of intimacy. Gross and John (1995, 1997) conceptualize emotional expressivity as essentially hierarchical, such that emotional expressivity comprises (a) the general strength of emotion response tendencies, (b) the modulation of positive emotion-expressive behavior, and (c) the modulation of negative emotion-expressive behavior. Despite these different conceptualizations, measures of behavioral expressivity that reflect these three definitions show empirical overlap (Gross & John, 1998).

Verbal Disclosure. Research and theory on individual differences in the verbal expression of emotion has emerged from the self-disclosure literature. Dating back to the early work by Jourard and Lasakow (1958), the examination of individual differences in self-disclosure has not focused exclusively on the disclosure of emotion. The verbal expression of emotions, or "the process of translating the [emotional] message into words, whether in the written or spoken channel" (Berry & Pennebaker, 1998, p. 70), however, has great relevance to health and well-being (Lepore & Smyth, 2002; Pennebaker, 1995). Nevertheless, only two lines of research have attempted to measure individual differences in one's tendency to disclose emotions verbally.

Snell, Miller, and Belk (1988) developed the Emotional Self-Disclosure Scale (ESDS) to measure intentions to talk with different people about various emotions: depression, happiness, jealousy, anxiety, anger, calmness, apathy, and fear. Their interest was in gender differences in one's willingness to express emotions verbally to others. Based on the ESDS, they found that women are more likely than men to disclose their emotions, yet this difference depends on the disclosure recipient and type of emotion (Snell et al., 1988; Snell, Miller, Belk, Garcia-Falcone, & Hernandez-Sanchez, 1989).

Whereas the ESDS measures both pleasant and unpleasant emotions, a separate line of research has focused exclusively on the verbal expression of unpleasant emotions (Kahn & Hessling, 2001). *Distress disclosure* is one's tendency to express (versus conceal) distressing information verbally. Although the processes involved in disclosing and concealing distress are different, when abstracted across time an individual can be viewed as more disclosing or more

concealing. Thus, distress disclosure may be viewed as the verbal expression (versus active concealment) of unpleasant emotions. Research supports the unidimensionality of distress disclosure (Kahn & Hessling, 2001) as well as distress disclosure's relations with observable measures of verbal expression of negative emotion (Kahn, Lamb, Champion, Eberle, & Schoen, 2002).

Comfort with Expression. Individual differences in behavioral and verbal expressivity may be partly explained by people's comfort with expressing emotions. King and Emmons (1990) suggested that understanding the relations between emotion expression and health requires understanding one's degree of ambivalence about expressing emotions. An individual who is not expressive because of ambivalence might have worse health outcomes than an individual who simply has no desire to express emotions. King and Emmons defined *ambivalence over emotional expression* as the conflict surrounding wanting to express emotions yet being concerned about negative consequences. King and Emmons found that individuals with greater ambivalence about expression are indeed less likely than those with less ambivalence to express their emotions despite having the same strength of emotion experience.

Conflict surrounding the expression of emotions is also partly reflected by one's level of *self-concealment*, or the active concealment of negative or distressing information (Larson & Chastain, 1990). Larson and Chastain argued that self-concealment is not merely the opposite of disclosure because different cognitive processes are involved. Larson and Chastain's Self-Concealment Scale (SCS) taps into three dimensions of self-concealment: the predisposition to keep personal information private, the experience of personally distressing secrets, and having reservations regarding disclosing personally distressing information. This latter dimension parallels the idea of ambivalence over expression, although self-concealment exclusively concerns verbal inhibition.

INDIVIDUAL DIFFERENCES IN EMOTION EXPRESSION AND PSYCHOLOGICAL DISTRESS

Research has supported associations between individual differences in behavioral expressivity and psychological distress, although

in general these associations are modest in strength. King and Emmons (1990) found that their EEQ is at best modestly positively related to measures of anxiety and depression, but a subsequent study failed to find any significant correlations with psychological symptoms (King & Emmons, 1991). Gross and John (1998) found that most dimensions of behavioral expressivity are not strongly related to depressive affect, but the degree to which one masks emotions was positively correlated with depressive affect. A recent pair of studies indicated that high impulse strength and negative expressivity (as measured by the BEQ) were associated with symptoms of Generalized Anxiety Disorder (Mennin, Heimberg, Turk, & Fresco, 2005), whereas low positive expressivity was associated with social anxiety (Turk, Heimberg, Luterek, Mennin, & Fresco, 2005).

Some evidence supports a negative relation between verbal disclosure and distress. Based on the ESDS, Rude and McCarthy (2003) found that currently depressed college students reported being less likely to disclose unpleasant emotions to others than nondepressed students. Distress disclosure has negative but weak correlations with measures of depression and anxiety (Kahn, Achter, & Shambaugh, 2001; Kahn & Hessling, 2001). Thus, there is empirical evidence to suggest that individual differences in verbally expressing emotions is associated with distress, but these relations are not uniformly strong across studies.

Whereas behavioral expressivity and verbal disclosure are not strongly related to psychological distress, constructs related to comfort with emotion expression are. Ambivalence over emotional expression is associated with lower life satisfaction, positive affect, and self-esteem, and with greater daily negative affect, depression, anxiety, and an assortment of other psychological symptoms (King & Emmons, 1990, 1991; Mongrain & Vettese, 2003). Likewise, individuals with higher levels of self-concealment are more likely to experience depression, anxiety, low self-esteem, and shyness (Ichiyama et al., 1993; Larson & Chastain, 1990).

THE PRESENT STUDY

Given the variety of individual differences in emotion expression, our first purpose was to develop a taxonomy of constructs related to emotion expression. Ideally, a good taxonomy of emotion expres-

sivity should simultaneously avoid the “jingle fallacy” (Thorndike, 1903), in which distinct constructs are given the same name and treated as if they were alike, and the “jangle fallacy” (Kelley, 1927), in which the same construct is given many names and treated as if each name referred to something different. In an attempt to clarify the relations among the various constructs assessed in emotional-expression research, we subjected items from representative measures of behavioral expressivity, verbal disclosure, and comfort with expression to an exploratory factor analysis (EFA). We validated the factors vis-à-vis the Big Five and measures of social desirability to determine (a) the factors’ location within the space of broad personality traits and (b) the degree to which response biases might be associated with the factors. We then determined whether the resulting taxonomy has a hierarchical structure by performing a second-order EFA. Finding support for a hierarchical structure would help provide conceptual organization among emotion-expression constructs, thereby guiding future research and the development of integrative theory.

Our second purpose was to examine the associations between the structural model of emotion expression and psychological distress. We focused on depression and anxiety given that these are syndromes with large affective components (Watson et al., 1995a). As noted, comfort with expression is strongly related to psychological distress, behavioral expressivity shows mixed findings regarding its association with distress, and verbal disclosure is only weakly related to distress. These diverse findings highlight the importance of examining multiple factors of individual differences in emotion expression.

METHOD

PARTICIPANTS

A sample of 552 college students (295 women, 257 men) participated in this study in exchange for extra course credit. Participants ranged in age from 18 to 35 years ($M = 19.50$, $SD = 1.85$). There were 192 freshmen (35%), 197 sophomores (36%), 108 juniors (19%), 53 seniors (10%), and 2 graduate students (less than 1%) in the sample.

The majority of the participants were Caucasian (88%); 5% were African American, 2% were Latino/Latina, 2% were Asian-American or of Asian descent, 1% identified themselves as biracial or multiracial, and the remaining 2% were from other ethnic or racial groups.

MEASURES

Behavioral Expressivity. The Berkeley Expressivity Questionnaire (BEQ; Gross & John, 1997) is a 16-item self-report measure of the strength of emotional response tendencies and the extent to which emotions are expressed as observable behavior. Three subscales, Negative Expressivity, Positive Expressivity, and Impulse Strength, are typically computed. BEQ scores relate to other self-report and peer-report measures of emotional expressivity (Gross & John, 1997). Coefficients alpha among the present data for Negative Expressivity, Positive Expressivity, and Impulse Strength scores were .69, .71, and .82, respectively.

The Emotional Expressivity Scale (EES; Kring et al., 1994) is a 17-item self-report measure designed to measure individual differences in the outward display of emotions, regardless of the type of emotion or the mode of expression. Coefficient alpha among the present data was .92.

The Emotional Expressiveness Questionnaire (EEQ; King & Emmons, 1990) is a 16-item self-report measure of one's inclination to express emotions, verbally or nonverbally. Correlations between the EEQ and EES suggest strong convergent validity (Kring et al., 1994). The coefficient alpha among the present data was .77.

Verbal Disclosure. The Distress Disclosure Index (DDI; Kahn & Hessling, 2001) is a 12-item self-report measure of one's general tendency over time to disclose (versus conceal) personally distressing information. Kahn and Hessling also found the DDI to be positively correlated with measures of self-disclosure, social support, and extraversion. Coefficient alpha among the present data was .94.

The Emotional Self-Disclosure Scale (ESDS; Snell et al., 1988) is a 40-item self-report measure designed to assess one's willingness to discuss specific emotions with different people. The ESDS subscales for specific emotions are Depression, Happiness, Jealousy, Anxiety, Anger, Calmness, Apathy, and Fear. Instructions asked respondents to rate "the extent to which you have discussed these feelings and

emotions with other people." Coefficient alpha among the present data for each of the subscales ranged from .70 to .89.

Comfort with Expression. The Ambivalence Over Emotional Expressiveness Questionnaire (AEQ; King & Emmons, 1990) is a 28-item self-report measure of an individual's conflict between the desire to express (versus withhold) emotion and what is actually expressed. Support for the validity of the AEQ has been shown by a positive correlation between the AEQ and a measure of general ambivalence (King & Emmons, 1990). Coefficient alpha among the present data was .90.

The Self-Concealment Scale (SCS; Larson & Chastain, 1990) is a 10-item self-report measure that assesses one's inclination to keep personally distressing or private information to oneself and one's apprehension about disclosure. Validity was supported by a negative correlation with self-disclosure (Larson & Chastain, 1990). Coefficient alpha among the present data was .86.

Psychological Distress. The Mood and Anxiety Symptom Questionnaire (MASQ; Watson et al., 1995a) is a 90-item self-report measure that assesses symptoms of depression and anxiety that have been experienced within the past week. Although Watson et al. (1995a) rationally grouped the MASQ items into five scales (Anhedonic Depression, Anxious Arousal, and three General Distress scales), multi-sample factor analyses of the MASQ items (Watson et al., 1995b) suggest that the items from the three General Distress scales load on a single factor. Thus, we summed the 38 items from the three General Distress scales to form a General Distress composite score. Coefficient alpha among the present data for the General Distress composite scores was .93; alphas for Anxious Arousal and Anhedonic Depression scores were .84 and .89, respectively.

The Big Five. The Big Five Inventory (BFI; John & Srivastava, 1999) comprises 44 items that measure individual differences in the Big Five factors of personality. The BFI has five subscales: Extraversion, Neuroticism, Agreeableness, Conscientiousness, and Openness to Experience. Coefficients alpha from the present data are as follows: Extraversion = .84, Neuroticism = .72, Agreeableness = .77, Conscientiousness = .78, and Openness to Experience = .78.

Social Desirability. The Balanced Inventory of Desirable Responding (BIDR) Version 7 (Paulhus, 1991) comprises 40 items that measure

two constructs, Self-Deceptive Enhancement (SDE) and Impression Management (IM). Although a dichotomous scoring system exists, we used the continuous scoring system (i.e., summing responses to the 7-point scale) because this system yields scores with more desirable psychometric properties (Stöber, Dette, & Musch, 2002). Validity was supported by strong correlations with other measures of social desirability (Paulhus, 1991). Alphas among the present data were .61 for the SDE and .76 for the IM scores.

PROCEDURE

Participants signed up for one of several group testing sessions. After providing informed consent, participants completed a questionnaire booklet consisting of the study measures. The measures were counterbalanced such that half of the participants received the measures in a reverse order from that of the other half of participants. Following completion of the questionnaire packet the students were read a debriefing statement that provided contact information for the student counseling center at the university should any adverse effects be experienced. Participants were then given an extra-credit voucher and dismissed.

RESULTS

Means and standard deviations for the measures of emotion expression are presented in Table 1. Several significant gender differences in means were observed. Women reported being more expressive than did men in terms of behavioral expressivity, (low) self-concealment, distress disclosure, and several aspects of emotional self-disclosure. Correlations among the measures indicated a high degree of overlap among the emotion-expression constructs (see Table 2). The three measures of behavioral expressivity (BEQ, EEQ, and EES) were highly correlated with one another as well as with distress disclosure and emotional self-disclosure. Ambivalence over expression and self-concealment were positively correlated with each other but negatively correlated with most of the other measures.

TABLE 1. Means and Standard Deviations Among Study Measures

Measure	Total (N = 552)		Women (n = 295)		Men (n = 257)	
	M	SD	M	SD	M	SD
BEQ-Positive Expressivity*	21.84	4.27	23.45	3.57	19.99	4.27
BEQ-Negative Expressivity*	24.06	6.24	26.23	5.78	21.56	5.81
BEQ-Impulse Strength*	26.53	8.09	30.90	6.61	21.51	6.59
EES*	67.38	15.26	73.02	14.70	60.91	13.22
EEQ*	77.83	12.46	82.08	11.53	72.96	11.70
AEQ	79.86	17.92	78.88	18.24	80.97	17.52
SCS*	25.62	9.09	24.52	8.75	26.89	9.33
DDI*	41.60	10.81	45.10	9.80	37.57	10.51
ESDS-Depression*	14.86	4.24	15.90	4.18	13.67	4.00
ESDS-Happiness*	19.86	3.95	20.74	3.83	18.85	3.85
ESDS-Jealousy	13.61	3.99	13.71	4.14	13.51	3.82
ESDS-Anxiety*	15.67	3.94	16.55	3.90	14.66	3.74
ESDS-Anger*	15.91	4.77	16.29	4.82	15.47	4.67
ESDS-Calmness	13.01	4.59	12.95	4.91	13.07	4.21
ESDS-Apathy	11.63	3.68	11.89	3.98	11.32	3.27
ESDS-Fear*	14.72	5.04	16.48	4.84	12.69	4.49
MASQ-General Distress*	86.71	23.59	88.72	23.54	84.41	23.48
MASQ-Anxious Arousal*	27.36	8.95	26.60	8.61	28.24	9.26
MASQ-Anhedonic Depression	54.05	13.27	54.25	13.66	53.82	12.82
BFI-Extraversion*	28.29	5.65	29.21	5.68	27.23	5.43
BFI-Neuroticism*	23.03	5.86	27.23	5.43	24.81	5.79
BFI-Agreeableness*	34.28	5.27	35.24	5.25	33.19	5.09
BFI-Conscientiousness*	32.26	5.48	33.06	5.60	31.35	5.20
BFI-Openness to Experience*	33.91	6.23	33.34	6.21	34.58	6.21
BIDR-Self-Deceptive Enhancement*	85.91	13.72	82.96	14.32	89.30	12.17
BIDR-Impression Management	75.73	17.71	77.07	17.30	74.19	18.07

Note. BEQ = Berkeley Expressivity Questionnaire; EES = Emotional Expressivity Scale; EEQ = Emotional Expressiveness Questionnaire; AEQ = Ambivalence Over Emotional Expressiveness Questionnaire; SCS = Self-Concealment Scale; DDI = Distress Disclosure Index; ESDS = Emotional Self-Disclosure Scale; MASQ = Mood and Anxiety Symptom Questionnaire; BFI = Big Five Inventory; BIDR = Balanced Inventory of Desirable Responding. *Mean gender differences are significant, $p < .05$.

TABLE 2. Correlations Among Measures of Emotion Expression (N = 552)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. BEQ-PE	—															
2. BEQ-NE	.46	—														
3. BEQ-IS	.59	.58	—													
4. EEQ	.62	.42	.47	—												
5. EES	.61	.65	.57	.60	—											
6. AEFQ	-.12	-.20	.09	-.24	-.35	—										
7. SCS	-.16	-.16	.04	-.18	-.34	.56	—									
8. DDI	.47	.45	.42	.47	.71	-.33	-.38	—								
9. ESDS-Depression	.28	.31	.40	.31	.40	-.09	-.15	.49	—							
10. ESDS-Happiness	.33	.14	.22	.39	.31	-.08	-.16	.32	.27	—						
11. ESDS-jealousy	.19	.19	.19	.26	.25	-.04	-.03	.30	.57	.31	—					
12. ESDS-Anxiety	.31	.29	.34	.33	.34	-.05	-.08	.42	.72	.36	.62	—				
13. ESDS-Anger	.19	.27	.23	.32	.27	-.10	-.06	.31	.59	.28	.56	.63	—			
14. ESDS-Calmness	.07	-.08	.01	.05	.01	-.03	-.04	.04	.14	.42	.28	.25	.06	—		
15. ESDS-Apathy	.13	.04	.16	.08	.11	.00	-.03	.13	.40	.32	.42	.46	.24	.67	—	
16. ESDS-Fear	.38	.35	.42	.33	.41	-.08	-.14	.42	.68	.36	.54	.70	.50	.21	.42	—

Note. BEQ-PE = Berkeley Expressivity Questionnaire-Positive Expressivity; BEQ-NE = Berkeley Expressivity Questionnaire-Negative Expressivity; BEQ-IS = Berkeley Expressivity Questionnaire-Impulse Strength; EEQ = Emotional Expressiveness Questionnaire; EES = Emotional Expressivity Scale; AEFQ = Ambivalence Over Emotional Expressiveness Questionnaire; SCS = Self-Concealment Scale; DDI = Distress Disclosure Index; ESDS = Emotional Self-Disclosure Scale. Correlations of |.09| or greater are significant at $p < .05$; correlations of |.11| or greater are significant at $p < .01$; correlations of |.14| or greater are significant at $p < .001$.

FACTOR ANALYSIS OF EMOTION-EXPRESSION MEASURES

Scale-level factor analyses with a relatively small number of scales can result in too few factors being extracted, especially when there are not multiple indicators of each construct. Item-level factor analyses with a large number of items can result in too many narrow factors of little theoretical importance. A compromise between these extremes is using item parcels instead of items or scales. We used radial parceling (Cattell & Burdsal, 1975), in which pairs of items with the highest correlations are successively chosen to create 2-item parcels, to create 69 item parcels from 139 items from the BEQ, EEQ, EES, AEQ, SCS, DDI, and ESDS (the last item was the 69th "item parcel"). It is noteworthy that only 4 item parcels contained items from differing scales (2 BEQ-EEQ hybrids and 2 BEQ-EES hybrids with similar content).

The adequacy of a sample size in a factor-analytic study should be determined by the degree to which factors are overdetermined (i.e., factors are measured by an adequate number of variables) and the strength of the communalities (MacCallum, Widaman, Zhang, & Hong, 1999). The parcels-to-factors ratio that emerged from our analyses (which we describe below) was nearly 10-to-1 with all factors having between 3 and 12 parcels with a structure coefficient of at least .60 (thus indicating good overdetermination), and the mean communality was .47. Under these conditions, MacCallum et al.'s Monte Carlo research suggests that a sample of between 100 and 200 would reflect the population factors. Our sample size of 552 therefore greatly exceeded the empirically based sample-size recommendations.

We used the principal-axis factoring (PAF) method of extraction to identify the factors that offer the best description of the data. PAF analyzes the common variance among variables, and it is preferable to principal components analysis when the goal is to find common factors (Kahn, 2006). Factor retention was based on a combination of examining the scree plot and conducting a parallel analysis. Both methods suggested that seven factors explaining a total of 47% of the variance should be extracted. To create meaningful and interpretable results, a Promax rotation was applied. Extractions of fewer than seven and greater than seven factors were not readily interpretable.

TABLE 3. Item Parcels with Highest Pattern Coefficients within Each Factor from Exploratory Factor Analysis of Emotion Expression/Disclosure Parcels

Factor	Items in Parcel	Pattern Coefficient
Affect Intensity	BEQ 16: What I'm feeling is written all over my face.	.87
	BEQ 13: Whenever I feel negative emotions, people can easily see exactly what I am feeling.	
	BEQ 15: I experience my emotions very strongly.	.80
	BEQ 14: There have been times when I have not been able to stop crying even though I tried to stop.	
	EES 14: Other people believe me to be very emotional.	.77
	EES 13: I can't hide the way I'm feeling.	
Ambivalence about Expression	AEQ 8: Often I'd like to show others how I feel, but something seems to be holding me back.	.70
	AEQ 6: I would like to express my affection more physically but I am afraid others will get the wrong impression.	
	AEQ 25: I worry that if I express negative emotions such as fear and anger, other people will not approve of me.	.68
	AEQ 1: I want to express my emotions honestly but I am afraid that it may cause me embarrassment or hurt.	
	AEQ 12: When someone bothers me, I try to appear indifferent even though I'd like to tell them how I feel.	.66
	AEQ 5: When I am really proud of something I accomplish I want to tell someone, but I fear I will be thought of as conceited.	
Disclosure of Negative Emotions	ESDS 37: How much have you discussed with others times when you felt enraged?	.83
	ESDS 13: How much have you discussed with others times when you felt infuriated?	
	ESDS 21: How much have you discussed with others times when you felt irritated?	.79
	ESDS 5: How much have you discussed with others times when you felt angry?	
	ESDS 20: How much have you discussed with others times when you felt worried?	.70
Disclosure of Emotion	ESDS 12: How much have you discussed with others times when you felt troubled?	
	DDI 8: If I have a bad day, the last thing I want to do is talk about it. (reversed)	.90
	DDI 5: When I feel depressed or sad, I tend to keep those feelings to myself. (reversed)	

	DDI 6: I try to find people to talk with about my problems.	.88
	DDI 3: When something unpleasant happens to me, I often look for someone to talk to.	
	DDI 12: I am willing to tell others my distressing thoughts.	.84
	DDI 1: When I feel upset, I usually confide in my friends.	
	ESDS 38: How much have you discussed with others times when you felt relaxed?	.79
	ESDS 6: How much have you discussed with others times when you felt calm?	
	ESDS 30: How much have you discussed with others times when you felt tranquil?	.76
	ESDS 22: How much have you discussed with others times when you felt serene?	
	ESDS 15: How much have you discussed with others times when you felt indifferent?	.73
	ESDS 14: How much have you discussed with others times when you felt quiet?	
	EEQ 11: I often laugh so hard that my eyes water or my sides ache.	.74
	EEQ 4: I laugh a lot.	
	EEQ 13: When I am alone, I can make myself laugh by remembering something from my past.	.64
	EEQ 9: Watching television or reading a book can make me laugh out loud.	
	BEQ 4: I laugh out loud when someone tells me a joke that I think is funny.	.61
	EEQ 15: My laugh is soft and subdued. (reversed)	
	SCS 9: My secrets are too embarrassing to share with others.	.64
	SCS 8: I have a secret that is so private I would lie if anybody asked me about it.	
	SCS 2: If I shared all my secrets with my friends, they'd like me less.	.60
	SCS 1: I have an important secret that I haven't shared with anyone.	
	SCS 6: I'm often afraid I'll reveal something I don't want to.	.53
	SCS 4: Some of my secrets have really tormented me.	
Disclosure of Lack of Affect		
Expression of Positive Emotion		
Secret Keeping		

Table 3 shows the 3 highest item parcels within each factor (based on pattern coefficients). Each of the seven factors had at least 3 parcels with a pattern coefficient of .50 or greater, and 51 of the 69 parcels (74%) had a pattern coefficient of at least .50 on one of the factors. No cross-loading pattern coefficient was higher than .40. Although not reported here, we used the factor structure coefficients to label the factors. As a way to assess the validity of our factor labels, we created factor scores for each individual based on the pattern coefficients and correlated those factors scores with the measures of the Big Five and social desirability. These correlations are presented in Table 4.

Factor Labels and Descriptions. Factor I comprised a mixture of items from the BEQ, EES, and EEQ all related to experiencing and expressing emotions intensely. We labeled this factor *Affect Intensity*, which mirrors the construct measured by the Impulse Strength subscale of the BEQ (Gross & John, 1998) as well as the construct with the same name described by Larsen and Diener (1987). Sixteen parcels had their primary loading on Factor I, and Factor I explained 20% of the extracted variance after rotation. As seen in Table 4, this factor has medium-sized correlations (based on Cohen's, 1988, effect-size conventions) with extraversion and neuroticism, suggesting that Affective Intensity is a true general expressivity factor and not aligned with either positive or negative affect.

The second factor was composed almost entirely of AEQ items related to being unable to express emotions or being reluctant to express emotions because of negative consequences. This factor was labeled *Ambivalence About Expression*, and it largely reflects the construct described by King and Emmons (1990). Fifteen parcels had their primary loading on Factor II, and Factor II explained 14% of the extracted variance after rotation. Ambivalence About Expression was negatively correlated with extraversion and positively correlated with neuroticism. Moreover, Ambivalence About Expression had a negative correlation with self-deceptive enhancement, suggesting that indicating low ambivalence may be a form of self-deception bias.

Factor III consisted of 12 item parcels, all of which comprised ESDS items. These items related to talking with other people about negative emotions such as anger, sadness, and anxiety. Because the items that loaded on this factor measured verbal disclosure as op-

TABLE 4. Correlations Between Emotion-Expression Factor Scores and the Big Five and Social Desirability (N = 552)

Correlate	Emotion Expression Factor						
	I	II	III	IV	V	VI	VII
Extraversion	.34	-.25	.20	.40	.06	.53	-.16
Neuroticism	.38	.31	.27	.06	-.11	-.08	.09
Agreeableness	.08	-.07	.01	.22	.16	.26	-.39
Conscientiousness	.17	-.13	.08	.24	.09	.18	-.20
Openness to Experience	.02	.05	.13	.05	.17	.15	-.02
Self-deceptive Enhancement	-.11	-.44	-.03	.15	.10	.14	-.19
Impression Management	-.01	-.12	-.13	.08	.08	-.04	-.31

Note. Factor I = Affect Intensity, Factor II = Ambivalence about Expression, Factor III = Disclosure of Negative Emotion, Factor IV = Disclosure of Emotion, Factor V = Disclosure of Lack of Affect, Factor VI = Expression of Positive Emotion, and Factor VII = Secret Keeping. Correlations of $|\cdot09|$ or greater are significant at $p < .05$; correlations of $|\cdot11|$ or greater are significant at $p < .01$; correlations of $|\cdot14|$ or greater are significant at $p < .001$.

posed to nonverbal expression, we labeled this factor *Disclosure of Negative Emotions*. Disclosure of Negative Emotions explained 16% of the extracted variance after rotation. Disclosure of Negative Emotions was positively related to both extraversion and neuroticism, which suggests that individuals who disclose negative emotions experience unpleasant mood but also have social resources.

Factor IV comprised all 6 of the DDI parcels (reflecting disclosing emotions), 3 EES parcels that indicate concealing feelings from others (reverse scored), and a single negatively loading SCS parcel concerning keeping information to oneself. We therefore labeled this factor *Disclosure of Emotion*, and we viewed this factor as a continuum ranging from disclosing emotion (in a general sense) to concealing emotion. This factor accounted for 22% of the extracted variance after rotation. This factor explained the most variance of any factor, indicating that it was the most prevalent factor across the item parcels. Disclosure of Emotion was positively correlated with extraversion, agreeableness, and conscientiousness.

The fifth factor consisted of ESDS items related to disclosing a lack of strong emotion (e.g., apathy, numb, unfeeling, boredom, and detachment) or to the absence of affective arousal (e.g., tranquility, calm, quiet, and serenity). This factor was therefore labeled *Disclosure of Lack of Affect*. This factor was the least prevalent across the item parcels, explaining only 7% of the extracted variance after rota-

tion. This factor did not have strong correlations with any personality factor or social desirability.

Factor VI was a mixture of 5 parcels comprising BEQ, EEQ, and ESDS items related to the expression of laughter, joy, and other positive emotions. This factor was referred to as *Expression of Positive Emotion*. We chose the term "expression" deliberately because the items assessed nonverbal expression (e.g., laughter) as opposed to verbal disclosure. Expression of Positive Emotion explained 12% of the extracted variance after rotation. As would be expected, Expression of Positive Emotion was strongly associated with extraversion, and it was also moderately associated with agreeableness.

The final factor consisted of 4 SCS parcels related to preferring not to disclose awful secrets as well as 1 weak-loading EEQ parcel. Because the parcels most strongly associated with this factor related to secret keeping as opposed to general concealment, we labeled Factor VII *Secret Keeping*. Secret Keeping explained 9% of the extracted variance after rotation. Secret Keeping was negatively correlated with agreeableness and conscientiousness; this is consistent with the idea that secret keeping involves constraint (versus disinhibition; Clark & Watson, 1999). Secret keeping was also negatively correlated with impression management, suggesting that keeping secrets is viewed as socially undesirable.

Stability of Factor Structure. Because factor analyses are influenced by sample characteristics, we took additional steps to ensure that our results were stable. We created two subsamples of $n = 276$ and repeated the EFA run above. The same seven factors emerged for both subsamples, thus indicating stability of this factor structure. Correlation coefficients between the array of pattern coefficients within a given factor for one subsample with the array of pattern coefficients for the same conceptual factor in the second subsample ranged from .79 to .93 ($Mdn = .91$), which indicates strong consistency between samples. To provide a comparison, the absolute values of correlation coefficients between different factors ranged from .01 to .39 ($Mdn = .14$).

Generalizability Across Gender. Given the potential for gender differences in emotion expression, we explored whether the factor structure was similar for both women and men. The seven-factor solution explained 48% of the variance for women and 44% of the variance for men. After a Promax rotation, five of the seven factors

TABLE 5. Pattern and Structure Coefficients from Second-Order Exploratory Factor Analysis

First-order factor	Pattern Coefficient		Structure Coefficient	
	Emotional Constraint	Emotional Expression	Emotional Constraint	Emotional Expression
Affect Intensity	-.25	.53	-.55	.67
Ambivalence about Expression	.86	.38	.64	-.11
Disclosure of Negative Emotion	.11	.77	-.33	.71
Disclosure of Emotion	-.73	.28	-.89	.70
Disclosure of Lack of Affect	.19	.49	-.09	.39
Expression of Positive Emotion	-.30	.41	-.53	.58
Secret Keeping	.54	-.03	.56	-.34

Note. Coefficients for Emotional Constraint have been reflected to be consistent with the factor label.

described above—Affect Intensity, Disclosure of Negative Emotions, Disclosure of Emotion, Disclosure of Lack of Affect, and Expression of Positive Emotion—emerged as interpretable factors for both women and men. The only substantial difference in the factor solutions was that Ambivalence About Expression and Secret Keeping formed a single factor for men, whereas they formed two correlated factors for women. For men, the seventh factor comprised a few ESDS items related to the disclosure of anger that were not associated with Disclosure of Negative Emotions. Thus, although some potentially meaningful gender differences emerged, there was substantial overlap in the factors solutions.

Hierarchical Model of Emotion Expression. In the total-sample analysis, absolute values of correlations among the seven factors ranged from .05 to .66, thus suggesting both uniqueness and overlap among the factors. We conducted a second-order factor analysis based on correlations among the seven factor scores derived from the EFA results described above. This second-order factor analysis assessed the possibility that the factors of emotion expression that we found in the EFA could form a hierarchical structure with second-order factors being superordinate to the seven factors described above. We used PAF extraction and a Promax rotation to assess this possibility.

A two-factor solution explaining 46% of the variance provided the most interpretable results (see Table 5). One second-order factor was associated with (low) Disclosure of Emotion, Ambivalence About Expression, and Secret Keeping. This factor seems to be a construct reflecting emotional constraint versus disinhibition. We therefore labeled this second-order factor *Emotional Constraint*. The other second-order factor was associated with Affect Intensity, Disclosure of Negative Emotion, Disclosure of Lack of Affect, Positive Expressivity, and Disclosure of Emotion. (Note that Disclosure of Emotion loaded on both second-order factors.) We labeled this second factor *Emotional Expression*. Emotional Constraint and Emotional Expression were negatively correlated ($r = -.57$).

The structure of emotion expression and disclosure, therefore, could best be described as a hierarchical one. Emotional Constraint and Emotional Expression are negatively correlated but empirically distinct higher-order factors. On one hand, Emotional Constraint involves being ambivalent about expressing, keeping specific secrets, and concealing what one is feeling. Emotional Expression, on the other hand, involves verbally disclosing what one is feeling, expressing positive emotion nonverbally, and experiencing and expressing emotions intensely.

EMOTION-EXPRESSION FACTORS PREDICTING ANXIETY AND DEPRESSION SYMPTOMS

To test whether the seven factors of emotion expression predict symptoms of depression and anxiety, we conducted three hierarchical multiple regression analyses, one for each scale of the MASQ. In the first block we entered the Big Five and social desirability scores. This allowed us to control for general personality factors that are known to be associated with mood (e.g., neuroticism) as well as potential sources of bias in self-reports. In the second block we entered the seven empirically derived factor scores from the EFA. Gender did not interact with any of the seven emotion-expression factors, so all analyses reported collapse across gender.

The Big Five and measures of social desirability combined to predict 32% of the variance in general distress, $F(7, 543) = 37.23, p < .001$. The addition of the seven expression factors combined to explain an additional 9% of the variance in the criterion, $F(7, 536) = 11.13, p <$

TABLE 6. Beta Weights from Step 2 of Hierarchical Multiple Regression Analyses Predicting Anxiety and Depression Symptoms (Zero-Order Correlations in Parentheses)

Step 2 Predictor	General Distress	Anxious Arousal	Anhedonic Depression
Extraversion	.04 (-.10)	.09 (-.04)	-0.19*** (-0.41)
Neuroticism	.32*** (.49)	.16** (.21)	0.26*** (0.41)
Agreeableness	-.01 (-.23)	-.05 (-.22)	-0.02 (-0.29)
Conscientiousness	-.23*** (-.29)	-.17*** (-.25)	-0.21*** (-0.34)
Openness to experience	.04 (.01)	.08* (.09)	0.01 (-0.13)
Self-deceptive enhancement	-.01 (-.37)	.05 (-.11)	-0.13** (-0.36)
Impression management	.01 (-.20)	-.05 (-.22)	0.10** (-0.15)
Affect Intensity	.10 (.13)	-.03 (-.04)	0.08 (-0.10)
Ambivalence about Expression	.28*** (.45)	.19*** (.30)	0.02 (0.33)
Disclosure of Negative Emotion	.04 (.12)	-.01 (.04)	0.00 (-0.12)
Disclosure of Emotion	.02 (-.14)	.11 (-.15)	-0.09 (-0.34)
Disclosure of Lack of Affect	.00 (-.04)	.10* (.02)	-0.14*** (-0.30)
Secret Keeping	.13** (.29)	.18*** (.30)	0.12** (0.37)
Expression of Positive Emotion	-.06 (-.14)	-.12* (-.14)	-0.17*** (-0.44)

* $p < .05$; ** $p < .01$; *** $p < .001$.

.001. As Table 6 illustrates, greater Ambivalence About Expression and Secret Keeping were associated with greater general distress. Neuroticism (positively) and conscientiousness (negatively) were also related to general distress.

The analysis of anxious arousal revealed that the seven covariates were significant predictors, $R^2 = .13$, $F(7, 543) = 11.75$, $p < .001$. The addition of the seven emotion-expression factors explained a significant increase in variance, $\Delta R^2 = .08$, $F(7, 536) = 7.42$, $p < .001$. As before, Ambivalence About Expression and Secret Keeping were positively related to anxious arousal. Disclosure of Lack of Affect and (low) Expression of Positive Emotion were also significantly predictive of anxious arousal. Neuroticism, (low) conscientiousness, and openness to experience were additional significant predictors of anxious arousal.

Finally, the Big Five and the two measures of social desirability combined to predict 40% of the variance in anhedonic depression, $F(7, 543) = 51.92$, $p < .001$. The addition of the seven expression factors combined to explain an additional 8% of the variance in the criterion, $F(7, 536) = 11.76$, $p < .001$. Disclosure of Lack of Affect and

Expression of Positive Emotion were both negatively related to anhedonic depression, whereas Secret Keeping was positively related to this criterion. Low extraversion, high neuroticism, and low conscientiousness were associated with greater anhedonic depression, as were low self-deceptive enhancement and (curiously) high impression management.

Canonical Correlation Analysis. We conducted a canonical correlation analysis to obtain a concise summary of the relations between the seven emotional expression factors and the three measures of depression and anxiety. The full model (using all three functions) explained 51% of the variance shared between the two variable sets, Wilks's $\lambda = .49$, $F(21, 1554) = 20.98$, $p < .001$. All three canonical correlations were statistically significant, although the third function explained a relatively small amount of variance ($R^2_c = .05$).

An examination of the function and structure coefficients in Table 7 for the first function suggests that there is a strong relationship ($R^2_c = .36$) between the three MASQ subscales (primarily anhedonic depression) and the emotion-expression factors associated with what we have called Emotional Constraint (Ambivalence about Expression, Secret Keeping, and low Disclosure of Emotion) and low Expression of Positive Emotion. Thus, it appears that a reluctance to express positive and negative emotions is related to symptoms of depression primarily and, to a lesser extent, to symptoms of anxiety.

The second function suggests that the variables related to Emotional Expression (Affect Intensity, Expression of Positive Emotion, and Disclosure of Negative Emotion) are related ($R^2_c = .20$) to general distress (i.e., symptoms that are shared between anxiety and depression, such as negative affect). The fact that the structure coefficients for Expression of Positive Emotion and Disclosure of Negative Emotion have the same sign suggests that this second function reflects the idea that all these variables are partly influenced by the intensity of one's emotional experience. That is, a person with high affect intensity would likely express/disclose positive and negative emotion and also experience heightened emotions associated with distress.

The third function is interpreted with caution because it explains relatively little variance ($R^2_c = .05$). If it is to be interpreted at all, it appears that the variance that is mostly unique to anxious arousal is related to greater Secret Keeping, greater Disclosure of Lack of Affect

TABLE 7. Canonical Correlation Analyses Relating Emotion-Expression Factors to Anxiety and Depression Symptoms

Variable	Function I			Function II			Function III			h^2
	β	r_s	r^2_s	β	r_s	r^2_s	β	r_s	r^2_s	
Affect Intensity	.42	-.09	.01	-.30	-.66	.44	.74	.45	.20	.65
Ambivalence about Expression	.43	.71	.50	-.66	-.41	.17	-.06	-.20	.04	.71
Disclosure of Negative Emotion	.15	-.10	.01	-.24	-.60	.36	.08	.01	.00	.37
Disclosure of Emotion	-.25	-.54	.29	-.18	-.39	.15	-.75	.16	.03	.47
Disclosure of Lack of Affect	-.26	-.36	.13	-.10	-.39	.15	-.68	-.49	.24	.52
Expression of Positive Emotion	-.53	-.67	.45	-.46	-.61	.37	.01	.08	.01	.83
Secret Keeping	.27	.64	.41	-.04	.06	.00	-.83	-.54	.29	.70
R^2_c			.36			.20			.05	
General Distress	.23	.77	.59	-.39	-.63	.40	.56	-.10	.01	1.00
Somatic Anxiety	.20	.51	.26	.43	-.24	.06	-.122	-.82	.67	1.00
Anhedonic Depression	.77	.94	.88	.91	.26	.07	.21	.24	.06	1.00

Note. Structure coefficients (r_s) and communality coefficients (h^2) greater than $|\cdot40|$ are underlined. β = Standardized canonical function coefficient; r^2_s = Squared structure coefficient; R^2_c = Squared canonical correlation.

(i.e., being calm and/or bored), and heightened Affect Intensity. Perhaps this function supports the idea that warding off negative affect by not thinking about worrisome aspects of one's life (i.e., suppression) takes its toll by increasing the somatic symptoms of anxiety.

DISCUSSION

We pursued two goals in the present study. First, we wanted to develop a taxonomy of individual differences related to emotion expression. Our analyses of items from seven emotion-expression instruments suggest that a hierarchical taxonomy exists with two higher-order factors, Emotional Constraint and Emotional Expression, explaining covariation among seven first-order factors. Our second goal was to examine the relations between individual differences in emotion expression and symptoms of depression and anxiety. Our analyses suggest that individual differences related to emotional constraint have the strongest relations with symptoms, although other individual differences played predictive roles as well. We expand on these findings below and attempt to integrate them with existing theories of emotion.

A TAXONOMY OF EMOTION EXPRESSION

Based on a literature review, we initially suspected that individual differences in emotion expression would fall under three categories: behavioral expression, verbal disclosure, and comfort with expression. The results of our factor analysis did not support such a tidy organization. To some degree the factor analysis separated the constructs measured by the instruments we analyzed. However, our analysis also helped to sharpen the focus of what these instruments collectively measure, and it shed light on what these constructs have in common with one another.

Individual differences in behavioral expressivity (i.e., nonverbal expressions of emotions) were tapped by two factors: Expression of Positive Emotion and Affect Intensity. These two factors share conceptual overlap but appear to be distinguished by the former's focus on observable expressions of positive emotion (e.g., laughing) versus the latter's focus on having intense emotions that are not ex-

plicitly positive. The presence of the Affect Intensity factor in a taxonomy of emotion expression suggests that the distinction between emotional experience and emotional expression is not absolute; this is consistent with the idea of emotion response system coherence (Matsumoto, Nezlek, & Koopmann, 2007). This overlap between expression and experience is also consistent with Gross and John's (1997) conceptualization of general expressivity comprising both the activation of emotion response tendencies and the subsequent modulation of those tendencies.

Individual differences in the verbal disclosure of emotion were present in several factors: Disclosure of Negative Emotions, Disclosure of Lack of Affect, Disclosure of Emotion, and, for women, (a lack of) Secret Keeping. This spreading of a rationally derived category across many empirically derived factors suggests that individual differences in verbal emotional disclosure are more complex than meets the eye. For example, individual differences in emotional disclosure appear to be valence-dependent, and verbal disclosure can be distinguished from the inhibition of verbal disclosure (e.g., secret keeping). Given that there are many ways in which individuals might talk about (or conceal) the emotions they experience, a focus on just one of these dimensions would potentially ignore important emotion-related individual differences.

The third rationally derived category, comfort with expression, was primarily captured by Ambivalence Over Expression, a factor that essentially represented the same construct described by King and Emmons (1990). Secret Keeping (which was comprised of self-concealment items) also seemed to capture this notion of (dis)comfort with expression, especially for men. This was somewhat expected because self-concealment is a broad construct measuring both the propensity to keep secrets and fears about disclosing secrets. Thus, perhaps more than the other two rationally derived categories, comfort with expression was most clearly borne out in the factor analyses.

Perhaps the most noteworthy aspect of our analyses was that the seven factors were associated with two higher-order factors: Emotional Constraint and Emotional Expression. The implications of this finding are twofold. First, it suggests that divergent constructs related to emotion expression share core features. That is, at the coarsest level of organization, individual differences in emotion expression either reflect processes surrounding the expression of emotion, or they reflect inhibitory processes that result in diminished

expressivity. The second implication is that, because expression and inhibition emerged as separate factors, inhibiting emotions is not simply low expression. In other words, these are not opposite processes. This is consistent with psychophysiological data that suggest emotional suppression increases sympathetic activation (Gross & Levenson, 1993, 1997).

Our taxonomy fits nicely within other taxonomies of emotion-related variables. Gohm and Clore (2000, 2002) created a taxonomy of measures of emotional experience that yielded four clusters: intensity, attention, clarity, and expression. Our taxonomy appears to focus exclusively on their expression cluster, although the Affect Intensity factor would suggest that there is some spillover into other categories. In terms of the higher-order factors we found, it would appear that emotion expression must account for emotional constraint as well. This aspect of our results fits with King, Emmons, and Woodley's (1992) factor-analytic work on inhibition. After factor analyzing several measures of inhibition constructs, King et al. found that behavioral control and emotional control emerged as common factors. We therefore believe that our taxonomy can be applied to measures of emotion experience as well as inhibition. Whereas our analysis was at the subordinate level of the Gohm and Clore and the King et al. analyses, it was at the superordinate level of Gross and John's (1998) taxonomic study of measures of behavioral expressivity in which they found five factors: impulse strength, positive expressivity, negative expressivity, expressive confidence, and masking. Gross and John's taxonomy was largely focused on measures of behavioral expressivity, whereas we examined individual differences in verbal disclosure and comfort with disclosure as well. Thus, our research paralleled these other taxonomic efforts yet did so at a level that has not been examined (i.e., emotion expression, broadly defined).

ADDRESSING THEORIES OF EMOTION EXPRESSION AND PSYCHOLOGICAL DISTRESS

Our regression analyses determined that some emotion-expression factors were more closely associated with psychological distress than others. Secret Keeping appeared to be the factor with the most relevance to depressive and anxiety symptoms, as this factor was

positively related to all three symptom measures. At first glance this finding appears to be at odds with Kelly and Yip's (2006) finding that keeping a major secret was *not* associated with psychological symptoms but that self-concealment was. We suggest that our Secret Keeping factor is not so much an indicator of *having* a secret but is more an indicator of one's *discomfort* with disclosing a secret. Given this view of Secret Keeping as being in line with the idea of self-concealment, our results are in fact consistent with Kelly and Yip's research.

Ambivalence About Expression was expected to be related to symptomatology given past findings (e.g., King & Emmons, 1990). Indeed, this factor was positively related to general distress and anxious arousal but not to anhedonic depression. Expression of Positive Emotion was the only other factor that had consistent relations with more than one measure of symptoms; expressing positive emotions was associated with less anhedonic depression and less anxious arousal. From a distress-prevention perspective it is tempting to conclude that one may ward off distress simply by expressing positive emotions, but the more reasonable explanation is that individuals who experience more distress find it harder to express positive emotions because of the challenges brought on by their symptoms.

Our regression analyses and canonical correlation analysis help to address theoretical issues surrounding emotion expression and distress. Factors related to emotional constraint were associated with heightened depressive symptoms primarily but also symptoms of anxiety. This connection between constraint and negative affect suggests that the inhibition of emotions is the result of an active behavioral inhibition system (Gray, 1987). This pattern of findings is also consistent with emotion dysregulation models of emotional disorders (Campbell-Sills & Barlow, 2007). Recent laboratory research suggests that individuals with mood or anxiety disorders find negative emotions less acceptable, and engage in more suppression, than do nondisordered individuals (Campbell-Sills, Barlow, Brown, & Hofmann, 2006). In accord with this theory, individuals in our study who experienced more symptoms of anxiety and mood disorders reported inhibiting their emotional expression.

Our findings provide less convincing support for the emotion context-insensitivity hypothesis. Rottenberg (2007) suggested that individuals with major depressive disorder have deficits in emo-

tional reactivity. We would have expected that higher levels of distress would be associated with lower levels of affect intensity; however, Affect Intensity was not predictive of any of the symptom measures. We suspect that individuals in our sample were not experiencing a significant enough degree of depressive symptoms to become emotion context-insensitive. Thus, our findings suggest that emotion context-insensitivity might be a characteristic of more extreme levels of depression.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Our analyses were based on a large, gender-balanced sample with a reasonably comprehensive set of measures of emotional expressivity. Still, there are important limitations to our work that bear mentioning. Like any factor-analytic endeavors, our analyses were subject to the "garbage in, garbage out" adage of factor analysis. In our case, constructs related to emotion expression that were not included in our analyses would not be represented in the resulting taxonomy. Including measures of constructs such as self-monitoring (Snyder, 1987) and emotion communication skills (Riggio & Zimmerman, 1991), for example, would have broadened the content domain of emotion expression, but we were concerned about too much bandwidth at the expense of fidelity. Related to this issue is that our hierarchical factor analysis was limited by the analysis of only seven first-order factors. If more than two second-order factors existed they would have been difficult to identify in such a small analysis. It would therefore be important to broaden future taxonomic work to provide a more complete picture of how our emotion-expression model fits within the nomological network of personality and emotion.

A second limitation is that our taxonomy also could not disentangle the confound between constructs and instruments. That is, we could not distinguish substantive factors from method factors. It was not surprising that some factors (e.g., Apprehension About Expression) were comprised of items from a single instrument (the AEQ) given that in many cases only one instrument exists to measure a given construct. We also note, however, that where multiple

instruments exist to measure essentially the same construct (such as behavioral expressivity), factors did comprise item parcels from multiple scales (e.g., Affect Intensity was measured by parcels from the BEQ and EES, Expression of Positive Emotion was measured by parcels from the EEQ and BEQ). Subsequent investigations might use confirmatory factor analysis (CFA) to model possible method effects. Such an analysis could also compare different taxonomic models of emotion expression. For example, our three-factor rational categorization could be empirically compared to our seven-factor taxonomy.

We also note that the questionnaires relied on participant self-report. Although many of our measures have been validated with observer reports in past research (e.g., Gross & John, 1997; Kring et al., 1994), monomethod bias associated with self-reports might have affected our results. We believe that our accounting for the Big Five factors and social desirability helped to minimize problems with an exclusive reliance on self-reports. Nevertheless, it would be important to examine additional methods of measuring emotion expression. For example, behavioral expression can be reliably coded from videotape (Gross & Levenson, 1993), and verbal disclosure of emotions can be measured with linguistic analysis software (Kahn, Tobin, Massey, & Anderson, 2007). It would be valuable to broadening the study of individual differences in emotion expression to methods other than self-report in future research.

Finally, future research would benefit from an examination of how these findings might apply cross-culturally. Although individual differences are perhaps more relevant to emotion than cultural differences (Matsumoto et al., 2007), culture certainly does have a role in emotion expression (Matsumoto, 1993). For example, members of Asian cultures experience heightened shame regarding expressing unpleasant emotions. Perhaps factors related to comfort with expression are most salient for Asian individuals. In essence, given differences in the expression of emotion across cultures, it would be important to test our taxonomy with diverse cultural groups. By exploring individual differences in emotion experience both within and across diverse cultures, it will be possible to determine whether the taxonomy we found has universal application.

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