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Sociological Realms of Emotional Experience

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# Sociological Realms of Emotional Experience<sup>1</sup>

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The authors examine self-reported emotional experiences of individuals in a large probability sample of Americans, using two theories in the sociology of emotions as lenses to apprehend social order in emotional processes. Viewing emotions as indicators of individuals' positions in a three-dimensional affective space (e.g., Heise, Smith-Lovin, MacKinnon), the authors find emotional station correlates with a variety of social structural, circumstantial, and individual-level variables. Viewing emotions as the focus of emotion norms and emotion management efforts (e.g., Hochschild), the authors arrive at new postulates about how transformations of emotions can be achieved in social support groups and other types of social institutions. A further demonstration that emotions reflect multiple sociological realities develops through the examination of sex differences in emotional experience. The authors find that there are concrete though subtle sex differences in the experience, structure, transformation, and contextual significance of emotions. The analyses suggest complementarities between affect control and emotion management that may have been overlooked in other studies.

Concluding a review of societal evolution, Douglas Massey said, "Emotionality remains a strong and independent force in human affairs, influ-

<sup>1</sup> The authors would like to thank Peggy Thoits, Brian Powell, Robert Sokol, and the participants of the social psychology seminar at Indiana University, Bloomington, as well as the participants of the first annual conference on research agendas in affect control theory. The authors would also like to thank the sponsors of the GSS (1996) Emotions Module and the *AJS* reviewers. This project was funded, in part, by the National Institute of Mental Health's Training Program in Identity, Self, Role, and Mental Health (grant T32 MH14588) and by the Rockefeller Center at Dartmouth College.

encing perceptions, coloring memories, binding people together through attraction, keeping them apart through hatred, and regulating their behavior through guilt, shame, and pride” (Massey 2002, p. 20). Massey called for increasing attention to emotionality in sociological theory and research, especially through the use of scientific approaches based on proven facts. In this article we advance that kind of program by examining self-reports of emotional experiences from individuals in a probability sample from the 1996 General Social Survey (GSS). We provide sociologists with new ways of thinking about emotion and how emotion can inform studies of social stratification, social conditions, and social trends. We also provide insight into how organizations transform emotions to motivate the behavior of individual participants.

Two theories from the sociology of emotions guide our analyses. Affect control theory (Heise 1979, 2002; Smith-Lovin 1990; MacKinnon 1994) posits that sentiments about role identities, behaviors, settings, and individual attributes and emotions interrelate through three dimensions of affect. As individuals seek experiences confirming their sentiments, they construct behavioral expectations for role identities, label or attribute character traits to people in order to comprehend deviance, and experience emotions that reflect successes and failures of the confirmation process.

The second theory—Arlie Hochschild’s (1979, 1983) delineation of how emotions reflect status hierarchies—proposes that individuals work to bring their feelings in line with culturally shared emotion norms. Organizations use this capacity by hiring individuals to do emotion work in order to market emotional displays that confirm particular status relationships. Emotion management also occurs in social support groups and psychotherapy.

These two theories (elaborated below) do not exhaust the important theoretical contributions within the sociology of emotions. However, they are among the cornerstones of this subdiscipline, and they both focus on relations between social structure and emotionality, offering complementary perspectives for scrutinizing data on individuals’ emotional experiences. We conduct multiple analyses with the GSS data in order to strengthen each theory individually and to explore complementarities that may have been previously overlooked. We then suggest a broader framework that unifies the theories in part.

#### AFFECT CONTROL THEORY

Emotions—along with identities, behaviors, settings, and attributes—theoretically are distinguished in terms of three universal dimensions of affective meaning (Osgood, May, and Miron 1975). *Evaluation* assesses the

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individual's sense that something is good versus bad, *Activity* indexes whether an entity seems lively versus quiet, and *Potency* indexes whether something is powerful versus powerless. Evaluation and activity constitute a standard two-dimensional model of emotionality (pleasantness and activation). The potency dimension arguably becomes a dimension of dominance-vulnerability in matters of emotion—Kemper (1978), for example, proposes that *gains versus losses* in relational power trigger feelings of *security versus fear* or anxiety.

Morgan and Heise (1988, p. 29) analyze the affective meanings of emotion words, find three dimensions, and conclude that “the circumplex [two-dimensional] model provides a poor differentiation between anger and fear, offering no framework that accounts for the difference between the emotions of fight and flight. A three-dimensional model provides this differentiation and offers an immediate and sensible explanation of the difference: the emergence of fury as opposed to terror depends on one's sense of potency or dominance.” MacKinnon and Keating's (1989) replication using Canadian data confirms that a three-dimensional structure underlies the meanings of emotion words.

Fisher et al. (1985) ascertain that the evaluation and activity dimensions are bases for distinguishing emotions and moods that actually are experienced, but the importance of the potency dimension in experienced emotion still requires verification. We will examine this matter.

Affect control theory's empirically validated model of emotion (Heise and Weir 1999; Robinson 2002) posits that emotions reveal how an individual is faring in an interaction, both absolutely and relative to the individual's role identity. For example, someone who realizes he looks foolish in an interaction will experience an unpleasant emotion, but the emotion will be even more unpleasant if the person has an esteemed role. Recurrent emotions reflect an individual's station in life in terms of prevailing roles (like being a spouse) and ongoing processes (like getting a divorce).

Emotional stations might correlate with social structural variables and with circumstantial variables. For example, the pleasantness of predominant emotions might correlate with socioeconomic indicators that reflect individuals' customary status and power (Kemper and Collins 1990; MacKinnon and Langford 1994). We will examine this possibility.

### EMOTION MANAGEMENT THEORY

Demands to shape both the feeling and the expression of emotions operate in every kind of social venue. Hochschild's (1983) classic analysis revealed that the airlines industry establishes and enforces corporate feeling norms

that reify status and gender stratification in order to market the resulting emotion product. Hochschild pioneered the idea that service workers have to engage in emotion labor; in doing so, they must suppress their genuine emotions in order to display corporately mandated feelings that are sold for profit. Romantic partners also downgrade or upgrade each other's emotions in order to negotiate the structure of their relationship (Staske 1996, 1998, 1999). Specific kinds of transitions involved in emotion work have been studied: for example, changing contentment to happiness (Pierce 1995), calmness or embarrassment to anger (Sutton 1991), or shame to pride (Scheff 2001; Britt and Heise 2000).

Emotions can be managed by adjusting the emotion label, the situation in which the emotion occurs, the facial and gestural expressions associated with the emotion, or the emotion's visceral component (Thoits 1990). Francis (1997), Thoits (1996), and Lively (2000) each demonstrate that management strategies may turn collaborative when private management fails because emotions are too extreme or too enduring or too remote from norms. Scheff (2001) discussed the importance of instigating intervening emotions—in particular, of generating anger when transforming shame to pride.

Some emotions are close, allowing easy transitions, while other emotions are distant, so that a transition requires social support and guidance. The correlation of emotion experiences over a short period, like a week, provides an empirical indicator of how much work individuals must do to move between feelings. If experiences with two emotions correlate positively across individuals, then the two emotions must be relatively accessible to one another. On the other hand, zero or negative correlations imply an absence of natural segueing, so that transition from one emotion to another may require movement through intervening feelings and social support. We will analyze correlations between primary emotions in order to see how movement between distant, mutually inhibiting emotions can be expedited by passage through transitional emotions.<sup>2</sup>

#### DATA

The 1996 GSS (Davis and Smith 1996) employed a probability sample of 2,904 English-speaking adults residing freely in the United States. A random subset of 1,460 respondents was asked questions from an "emotions

<sup>2</sup> Inferring transitions over time from cross-sectional correlations is similar to making causal inferences from cross-sectional data (see Heise 1975). However, we are not proposing that emotions cause one another; it is rather our position that an emotion can facilitate the experience of some emotions and inhibit others and that because of this relation some strings of emotions should occur more frequently than others.

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module,” which consists of 90 questions regarding emotion, including experiences in the last week with 19 different emotion states, details of anger episodes, and methods of emotion management. We deal solely with the respondents who received the emotion module.

*Restless* was included as one of the 19 emotion states in the GSS questionnaire, but Ortony, Clore, and Foss (1987) categorize *restlessness* as a cognitive-behavioral state rather than as an emotion, so we removed that state from our analyses and focus on the 18 remaining emotions. These sample the populated regions of the three-dimensional emotion space ascertained by both Morgan and Heise (1988) and MacKinnon and Keating (1989), with the exception of the unpleasant-dominant-quiescent region containing emotions like bitter and disgusted. The 18 states also correspond to items in the Center for Epidemiological Studies Depression Scale (see Mirowsky and Ross 2003, 1995).

Respondents receiving the emotion module were given the following instruction for assessing recent emotional experiences:<sup>3</sup> “Now I’m going to read a list of different feelings that people sometimes have. After each one, I would like you to tell me on how many days you have felt this way during the past seven days.” Appendix A lists the 18 phrases for emotions in this study, in order of presentation to respondents, and also gives the mean reported frequencies of the emotions for males and females,<sup>4</sup> along with the standard deviations and skews of the distributions.

The table in appendix A (table A1) reveals that only positive emotions are reported to occur frequently.<sup>5</sup> The standard deviations around 2.0 suggest that an interval of about four days is required to account for the reports of two-thirds of the respondents. For example, even though the male and female means for feeling contented both are just over 4.5, one has to consider answers of four, five, six, or seven days in order to include two-thirds of the respondents. The less frequent emotions have smaller

<sup>3</sup> Some future surveys should try a shorter unit of time than a week for recalling emotions. The GSS 1996 data deal mainly with memorable emotions, because short flashes of feelings that respondents experienced six or seven days prior to being interviewed most likely were forgotten. Asking respondents to report on the emotions experienced in, say, the last 24 hours would reduce the recall problem, and the resulting data might yield somewhat different insights than those contained in the data on memorable emotions that we analyzed.

<sup>4</sup> Many social scientists have theorized about temperamental differences between sexes (e.g., Mirowsky and Ross 1995; Simon and Nath 2004) but not about temperamental differences between races or classes. Therefore, in keeping with the existing literature, we report sex differences throughout this article, but do not systematically examine emotion variations for other forms of social stratification.

<sup>5</sup> Respondents conceivably might be biased against admitting negative emotional experiences. Pending a methodological experiment to examine the issue, we assume the bias is small and proceed with our analyses.

standard deviations because answers of one day or no days were common with negative emotions. The skews indicate that nearly all of the distributions are asymmetrical, with distributions for frequent emotions compressed at the upper end because respondents could not report frequencies greater than once a day and distributions for infrequent emotions compressed at the lower end because respondents could not report frequencies with time units longer than a week.

Appendix B (table B1) provides the correlation matrix of the 18 emotions. Correlations for females are in the upper triangle and correlations for males in the lower triangle. Twenty-nine of the male-female differences in correlation are significant, which is about four times more than would be expected by chance.

## RESULTS

### Study 1: Affect Control Theory

We begin by examining the emotion items as elements distributed in a multidimensional emotion space in which individuals also have positions that are close to the emotions that they experience frequently and far from emotions that they experience infrequently. We use nonmetric multidimensional scaling (MDS; see Young and Hamer 1987) to unfold the emotion space, positioning the set of emotions in such a way as to best reproduce individuals' reports regarding relative frequencies of their experiences with various emotions. Subsequently we create indexes to translate individuals' reports about emotional experiences into measurements of the individuals' positions in the affective space in order to examine how the individuals' positions relate to social variables.

*Identifying the dimensions of emotions.*—MDS analysis finds the smallest space that can maintain the relative ordering of a set of distances between elements. We obtained Euclidean distances between emotions in a hyperspace where each respondent constitutes a separate dimension,<sup>6</sup> separately for 600 males and 766 females with complete data on emotions.<sup>7</sup> Then we computed MDS solutions for reductions to one, two, three, and

<sup>6</sup> Our Euclidean distances between emotions, computed with standardized scores, are inversely related to correlations between the emotions. In particular, for both sexes, the set of correlations among emotions correlates  $-0.995$  with the set of Euclidean distances, the slight difference between the two arising from curvilinearity in the relation.

<sup>7</sup> Seven percent of males and of females—those with some missing data concerning their emotion experiences—were not included in any of the distance computations; the included and excluded respondents do not differ notably in age, race, or kinds of emotions reported.



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four dimensional spaces. A two-dimension solution maintains the distances between emotions much better than a one-dimension solution, and a three-dimension solution is substantially better than a two-dimension solution. A four-dimension solution does not offer enough improvement to justify the additional complexity.<sup>8</sup>

We obtained an overall three-dimension solution by treating the male and female distances as data from two individuals in an individual difference multidimensional scaling analysis (INDSCAL; see Schiffman, Yaing, and Reynolds 1981).<sup>9</sup> The analysis produced a single solution applying to both sexes and functions under the assumption that any dimension might be expanded more for one sex than for the other.<sup>10</sup>

An important theoretical question is: Do these three dimensions correspond to the emotion structure emerging from measurements of emotion meanings—the evaluation, potency, and activity (EPA) values given on the right side of table 1? The answer could not be obtained by simply comparing the INDSCAL results with the right side of table 1 because the INDSCAL results might be rotated away from the meaning structure, and the metric of the INDSCAL structure could be different than the metric of the meaning structure.

We determined the extent to which the two numerical structures correspond through a canonical correlation analysis relating the EPA values on the right side of table 1 to the MDS coordinates from the INDSCAL analysis. The canonical analysis produced three variates from the EPA values and three from the MDS coordinates; correlations between the EPA and MDS canonical variates were 0.97, 0.90, and 0.61, and all three canonical correlations were significant ( $P < .05$ ). The canonical correlation analysis thereby indicates that the experiential dimensions of emotion are largely the same as the meaning dimensions of emotion.

We used the canonical analysis to rotate and rescale the MDS results so as to optimally match EPA ratings, and these results are shown in the first three numeric columns of table 1. Comparing these numbers with the EPA values on the right side of table 1 reveals how the experiential structure of emotions agrees with, and differs from, the meaning structure of emotions.

<sup>8</sup> Stress for one-, two-, three-, and four-dimensional solutions can be computed with Kruskal's formula 1: males = 0.128, 0.083, 0.055, 0.053; females = 0.100, 0.060, 0.046, 0.042.

<sup>9</sup> The male and female Euclidean distances correlate 0.967.

<sup>10</sup> All three dimensions are important for both sexes, but females emphasize the first MDS dimension more than males do. Male weights are 0.90, 0.32, 0.25, and female weights are 0.97, 0.18, 0.13 for dimensions 1, 2, and 3, respectively.

TABLE 1  
COORDINATES OF 18 EMOTIONS IN THREE DIMENSIONS

	1*	2*	3*	E <sup>†</sup>	P <sup>†</sup>	A <sup>†</sup>
Happy .....	3.92	2.31	1.17	3.17	2.53	2.79
Contented .....	3.58	1.76	.20	2.65	1.30	.31
At ease .....	3.45	1.49	-.19	2.33	1.37	-.29
Excited .....	2.86	2.47	2.91	2.74	2.38	2.88
Calm .....	2.81	.07	-1.48	2.32	.98	-.80
Overjoyed .....	2.28	2.41	2.58	3.13	2.85	2.83
Proud .....	1.95	2.75	2.19	3.30	3.17	2.66
Outraged .....	-.77	1.56	1.94	-2.58	1.40	2.17
Angry .....	-.96	1.10	1.63	-1.95	1.34	1.78
Embarrassed .....	-1.51	-2.72	-.76	-2.28	-2.63	-.29
Mad .....	-1.53	-.09	.68	-2.36	.95	1.66
Ashamed .....	-1.63	-3.46	-1.59	-2.90	-2.87	-1.25
Anxious-tense ...	-1.65	-.11	.52	-.03	-.03	2.16
Fearful .....	-1.86	-1.71	-.18	-1.86	-2.20	-.72
Worried .....	-2.05	-.15	-.69	-1.17	-.69	-.60
Sad .....	-2.51	-1.84	-1.66	-2.72	-2.29	-2.46
Lonely .....	-2.91	-2.43	-3.63	-3.07	-2.93	-2.65
Blues .....	-3.48	-3.42	-3.68	-2.28	-1.91	-2.09

\* Dimensions 1, 2, and 3 are INDSCAL dimensions rotated and rescaled to match EPA targets. Computed as  $\mathbf{X} \cdot \mathbf{C} \cdot \mathbf{D}^{-1}$  where  $\mathbf{X}$  is a matrix made of the three columns in the original INDSCAL analysis,  $\mathbf{C}$  is a  $3 \times 3$  matrix of canonical coefficients for converting  $\mathbf{X}$  to canonical variates, and  $\mathbf{D}$  is a  $3 \times 3$  matrix of canonical coefficients for converting the last three numeric columns above to canonical variates.

<sup>†</sup> Average EPA ratings. Values are means of the median ratings for each sex presented by Morgan and Heise (1988, table 1), who reported (p. 21) that men's and women's ratings of emotions correlate highly:  $E = 0.99$ ;  $P = 0.96$ ;  $A = 0.96$ . *Anxious-tense* is represented by the EPA values for *anxious*. *Worried* was not considered by Morgan and Heise, so EPA values for *worried* are taken from the database of EPA ratings described by Smith-Lovin (1987).

The points of agreement are major, when one compares dimensions 1, 2, and 3 of experienced emotions to the EPA values.

1. Pleasant and unpleasant emotions are separated by a gap, suggesting that emotionality intrinsically is valenced (as argued previously by Ortony et al. [1987], Morgan and Heise [1988], and MacKinnon and Keating [1989]).

2. Pleasant emotions are distinguished by differing levels of activation (e.g., calm vs. excited) and so are unpleasant emotions (blues vs. outraged), which replicates a previous finding that pleasantness and activation are important dimensions of experienced emotions (Fisher et al. 1985).

3. Pleasant emotions involve only small differences in domination (proud versus calm), and no pleasant emotion intimates vulnerability, the same as was found previously in studies of emotion semantics (Morgan and Heise 1988; MacKinnon and Keating 1989).

4. Unpleasant emotions include both dominant states (outraged, angry)

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and states of vulnerability (lonely, ashamed, fearful), as found previously in studies of emotion semantics (Morgan and Heise 1988; MacKinnon and Keating 1989).<sup>11</sup>

The largest difference between the experiential structure of emotions and the meaning structure of emotions relates to having the blues, which seems to be experienced as much more unpleasant, inactive, and vulnerable than suggested by EPA ratings of feeling blue.<sup>12</sup> Also, the experience of being outraged is substantially less unpleasant than ratings of the word “outraged” suggest (and a smaller difference of the same sort arises with regard to being angry), so experiencing rage may be less distasteful than thinking about the experience.

*Correlates of emotional station.*—The dimensions of emotional experience that are identified in table 1 can be used to distil an individual’s emotional station during the prior week by characterizing the individual’s overall emotionality as pleasant or unpleasant, activated or quiescent, dominating or vulnerable. Specifically, indices were created by converting an individual’s reported frequency with each emotion to a *Z* score and then summing or subtracting the *Z* scores in ways suggested by columns 1, 2, and 3 in table 1.

E = at-ease + contented + overjoyed + proud – worried – sad  
– outraged – angry,

P = outraged + angry + mad – fearful – sad – embarrassed  
– ashamed,

A = excited + overjoyed + outraged + angry – calm – at-ease  
– sad – lonely,

<sup>11</sup> While data from the 1996 General Social Survey was adequate for our scaling analysis, future surveys of emotion experience could be improved by including additional emotions that were missing in the 1996 survey. In particular, emotions that are unpleasant, quiescent, and dominant—like bitter or disgusted—need to be included in emotion surveys in order to better sample the range of potential emotions and to provide a counterpoint to the unpleasant, quiescent, and vulnerable emotion of distress.

<sup>12</sup> In reference to the term “the largest difference,” we should point out that some of the moderate differences between the experiential structure of emotions and the meaning structure of emotions may arise from problems in measuring emotion meanings. In particular, *anxious* is rated as more active and less unpleasant than the experience of anxiety seems to be, probably because some raters think of the sense conveyed in “she was anxious to go.” The word *mad* is rated as more unpleasant, livelier, and weaker than the experience of being mad seems to be, perhaps because some raters respond to senses of the word relating to insanity. *Feeling happy* is rated as more active than the emotion is experienced, perhaps because the word evokes connotations of pleasure when presented as a stimulus.

where E, P, and A refer to indices for Evaluation (experienced pleasantness versus unpleasantness), Potency (experienced dominance versus vulnerability), and Activity (experienced activation versus quiescence), respectively.<sup>13</sup>

Table 2 shows correlations of the emotionality indices with some other variables in the 1996 GSS, the computations being carried out across males and females combined.<sup>14</sup> Overall, nearly two-thirds of the displayed correlations are statistically significant. On the other hand, the correlations are modest in size, as is typical in social structure and personality research based on sample surveys.<sup>15</sup>

We expected age to relate to emotional quiescence because old and young are adjectives used sometimes to rate Activity connotations of concepts. As shown in table 2, age does indeed predict emotional quiescence, and the effect is substantial, with age accounting for more than 6% of the variance in emotional quiescence. Moreover, it turns out that not only do older people experience more quiescent emotions, they also experience more pleasant emotionality and more vulnerable emotionality. Age accounts for 4% of the variance in pleasantness of emotionality—a greater effect than from any other structural variable considered here. Age accounts for somewhat less than 1% of the variance in emotional dominance—a small effect but statistically significant.

We examined correlations of emotional station with socioeconomic variables to see if emotional station reflects general structural position.<sup>16</sup> Statistically significant correlations do occur. More education predicts greater

<sup>13</sup> Exclusion of emotions from each equation is methodical. For example, embarrassment is a valid indicator of unpleasant emotionality, but it is excluded from the E formula because it also is an indicator of vulnerable emotionality, with no pleasant vulnerable emotion to pair with it, so including it would build in a correlation between the pleasantness and dominance indices. Scores on the indices correlate significantly, notwithstanding our methodological precautions. For females E and P correlate  $-0.19$ ; E and A correlate  $-0.24$ ; and P and A correlate  $0.39$ . The corresponding correlations among males are  $-0.12$ ,  $-0.26$ , and  $0.45$ .

<sup>14</sup> We computed the correlations in table 3 separately by sex, and none of the male correlations was significantly different from the corresponding female correlation ( $P < .05$ ), when tested by Student's  $t$  after Fisher's  $r$  to  $z$  transformation (Winkler and Hays 1975, p. 653).

<sup>15</sup> Kessler's (1982) article on socioeconomic status and mental health, e.g., reports average bivariate  $R^2$ s of about  $.02$  for the associations of education, income, and occupation with measures of depression, with slightly higher values (closer to  $.03$ ) for homemakers.

<sup>16</sup> Past research suggests a relationship between roles and emotion (Heise 1979, 2002; Robinson, Smith-Lovin, and Tsoudis 1994; Smith-Lovin 1990) and between role occupancy and distress (Simon 2002; Thoits 1987, 1986). Examining the emotional entailments of particular roles is a complex problem, constituting another research study, and is beyond the scope of this article.

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TABLE 2  
CORRELATIONS OF EMOTIONAL STATION WITH SOME OTHER RESPONDENT  
CHARACTERISTICS

HIGH SCORING RESPONDENT	EMOTION MEASURE		
	E	P	A
Is older .....	.20**	-.09**	-.26**
Is more highly educated .....	.04	-.01	.09**
Is in more prestigious occupation .....	.07*	-.01	.02
Has higher family income .....	.05	.08**	.04
Is American Indian .....	.02	.07*	.01
Is unhealthy .....	-.14**	-.03	-.07*
Lives with many people .....	-.08**	.12**	.17**
Has frequent sex .....	.03	.08**	.14**
Prays frequently .....	.12**	-.11**	-.07*
Believes people are fair .....	.17**	-.13**	-.11**

NOTE.—The GSS 1996 respondent variables are, respectively: AGE, EDUC, PRESTG80, INCOME91, ETHNIC = 30, HEALTH, HOMPOP, SEXFREQ, PRAY (reflected), FAIR. With pairwise deletion of mission data, *N*s vary from 1,242 to 1,427, except for PRAY and FAIR where *N*s vary from 917 to 944.

\* *P* < .05, two-tailed tests.

\*\* *P* < .01.

emotional activation, higher occupational prestige predicts more emotional pleasantness, and larger family income predicts more emotional dominance. In all cases the variances accounted for are less than 1%.

Familiar race-ethnicity variables do not correlate with emotional station. For example, the correlations of the EPA variables with being white or being black all are within 0.03 of zero. However, being a Native American does predict emotional dominance to a small degree, as shown in table 2.

Poor health might be expected to result in unpleasant, vulnerable, and quiescent emotionality. Significant correlations of health with emotional unpleasantness and with emotional quiescence do appear. However, health is not related to emotional dominance.

The GSS includes a count of the number of people living in the same dwelling as the respondent, and we correlated this with emotional station because studies have shown that high social density has affective impacts (e.g., Lepore, Evans, and Palsane 1991), as do related factors such as marriage (Simon 2002) and active childrearing (Ross and Van Willigen 1996; Scheiman 2000). The correlations indicate that living with more people produces emotional activation, emotional domination, and emotional unpleasantness. Ignoring the possible diversity of feelings that these correlations might indicate, the central effect of household density seems to be increased anger (also see Scheiman 2000).

Finally we wanted to see if emotion station relates to behavior and

opinion variables. We were able to confirm that there are numerous such correlates by computing correlations between the emotion variables and large blocks of GSS variables. (Such “data dredging” is a poor way to build theory, but it served our more modest purpose of verifying the research usefulness of the emotion measures.) Table 2 presents three of the more intriguing findings. High sexual activity correlates with emotional activation and with emotional dominance. Praying is associated with pleasant emotionality and also with emotional vulnerability. Believing that people are fair (i.e., that they do not take advantage of you) is associated with pleasant, vulnerable, and quiescent emotionality.

*Sex differences.*—The INDSCAL analysis revealed that men weight the second and third unrotated MDS dimensions somewhat greater than women do, which means that emotions are separated on these dimensions more for men than for women. The implications are hard to divine from the coordinates of the emotions on the unrotated dimensions. However, we regressed distances between pairs of emotions entailed by women’s MDS solution on distances entailed by men’s MDS solution, and the residuals from predictions revealed a major sex difference in the solutions: women have less distance than men between the emotions angry-mad-outraged and the emotions blues-lonely-sad. Anticipating the results of study 2, it might be said that women move between anger and distress more easily than men do.

Sex is a structural correlate of emotional station,<sup>17</sup> and all three correlations ( $-0.09$ ,  $-0.06$ ,  $-0.06$  for E, P, and A, respectively) are significantly different from zero at the .05 levels. These figures indicate that being a woman involves a propensity to unpleasant, vulnerable, and quiescent emotionality. The correlations are small, however, such that sex accounts for less than 1% of the variance on any of these emotionality dimensions.

#### Study 2: Emotion Management

In the second study, we identify primary emotions through confirmatory factor analysis (Joreskog and Sorbom 1993). Our initial model derives from an especially systematic and inclusive classification of emotions proposed by psychologists Ortony, Clore, and Collins (1988),<sup>18</sup> who distinguish

<sup>17</sup> We withheld the variable *sex* from table 2 in order to focus on it here.

<sup>18</sup> The Ortony-Clore-Collins (1988) definition of distress focuses only on depression as reflected in the Center for Epidemiological Studies Depression Scale (Mirowsky and Ross 1995), without incorporating feelings associated with anxiety. While we realize that most sociologists and epidemiologists would disagree with Ortony, Clore, and Collins’s (1988) use of the term *distress*, we have nonetheless adopted this term in order to implement their classification system.

emotional reactions to events, agents, or objects, and propose that each kind of reaction might be characterized by different emotion tokens. For example, being pleased about a desirable event produces an affective condition (*joy*) that might be recognized as feeling contented, happy, cheerful, delighted, ecstatic, and so on. Since experiencing a primary emotion leads to correlated reports of specific emotions, the primary emotion can be revealed by subjecting the reports of specific emotions to factor analysis.

We allow that primary emotional states also may be interrelated, and we suppose that difficulties in moving between emotions are related to these correlations. We develop this idea by applying shortest-path analyses (Rosen 1988, pp. 401–10) to the correlations among factors.

*Identifying primary emotions.*—The emotion indicators available in GSS 1996 limit our analysis to Ortony et al.’s (1988) event-based emotional conditions (specifically *joy*, *hope*, *distress*, and *fear*) and agent-based conditions (specifically *pride*, *self-reproach*, and *anger*). Table 3 provides additional details concerning these primary emotional conditions, including our initial assignments of tokens from the GSS.

While the Ortony et al.’s (1988) scheme serves us as a theoretically principled starting point, we do not try to fulfill it exactly. So, for example, *hope* in the Ortony-Clore-Collins classification refers to “being happy about an *event*” while the GSS question that we use as an indicator of hope asks if one is excited “about *something*.” Additionally, Ortony et al. (1988) did not mention the tokens of *calm* and *at ease* that were included in the GSS and that were identified as emotions by Ortony et al. (1987), so we established a supplementary emotional condition, *tranquility*, to include these two tokens.<sup>19</sup>

Table 4 shows the specifications and results of our final confirmatory factor analysis.<sup>20</sup> This model is several steps removed from the initial model based on Ortony et al. (1988), which fit the data poorly ( $\chi^2$ :  $df = 4.57$ ). The final model achieves dramatic improvement in the ratio (2.57) by treating only *overjoyed* as an indicator of the *joy* factor, by

<sup>19</sup> Combining the tranquility factor and the joy factor into a single factor decreases the fit of the initial model:  $\chi^2/df = 4.72$  vs. 4.57.

<sup>20</sup> One item was used as the scale-defining item for each latent variable by setting its factor coefficient to 1.0, and the factor coefficients for other items were estimated from the data. Latent factors were allowed to covary freely. Errors for individual items were assumed to be uncorrelated. Given that all of our indicators were highly skewed, we estimated the model using asymptotically distribution free (ADF) estimation in AMOS 4.0. Unlike maximum-likelihood (ML) estimation, which assumes a normal distribution, ADF does not impose an assumption of normality and typically generates reliable estimates in large samples (Browne and Cudeck 1993). We also ran the model using ML estimation. While the latent variable correlations generated by the ML were just marginally different than those generated using ADF estimation, the overall fit of the model was reduced.

TABLE 3  
EMOTIONS IN THE ORTONY, CLORE, AND COLLINS CLASSIFICATION SYSTEM

Type	Specification	Tokens in GSS 1996
Anger .....	Disapproving of someone's blameworthy action and being displeased about the related undesirable event	angry, [mad], outraged
Distress .....	Displeased about an undesirable event	[blues], lonely, sad
Fear .....	Displeased about the prospect of an event	anxious-tense, fearful, worried
Hope .....	Pleased about the prospect of a desirable event	excited
Joy .....	Pleased about a desirable event	contented, happy, [overjoyed]
Pride .....	Approving of one's own praiseworthy action	proud
Self-reproach ....	Disapproving of one's own blameworthy action	embarrassed, ashamed

NOTE.—Bracketed tokens were not mentioned explicitly by Ortony et al. (1988), but we believe our assignments fit their classification system. Some of the tokens we list are slight modifications of the tokens explicitly mentioned by Ortony et al.—e.g., “excited” in place of “excitement.”

moving *contented* and *happy* to the *tranquility* factor, and by separating *outraged* into its own factor, called *rage*. Our analyses suggest that the Ortony et al.'s (1988) classificatory system may conceal some important distinctions in emotion, particularly with regard to levels of activation, which they treat merely as intensity variation.<sup>21</sup>

*Paths of transformation.*—Correlations among the emotion factors are presented in the lower triangle of table 5.<sup>22</sup> As one might expect, correlations within unpleasant emotions and correlations within pleasant emotions generally are higher than the correlations between pleasant and unpleasant emotions. However, correlations between pleasant and unpleasant emotions are not simply negative. *Joy* and *pride* correlate positively to a small degree with each of the unpleasant emotions, and *hope* also is positively correlated with some of the unpleasant emotions.

The positive correlations between pleasant and unpleasant emotions provide paths for segueing between unpleasant feelings and pleasant feelings according to the theoretical proposal that we offered earlier. Emotions correlating positively during a weeklong period may be relatively acces-

<sup>21</sup> Ortony et al. (1988) assert that factor analytic and multidimensional scaling studies of emotion are “uninformative” (p. 7). That reflects their commitment solely to theoretical considerations, as opposed to our commitment to improving classifications of emotion through empirical studies.

<sup>22</sup> AMOS yields correlations that are sometimes higher than zero-order correlations among indices, a standard result when creating latent-trait models. We used AMOS estimates for the correlations rather than computing actual scores and correlating them.



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TABLE 4  
FACTOR COEFFICIENTS OF EMOTION ITEMS IN FINAL MODEL

Emotion Item	Factor	Loading
Calm .....	Tranquility	1.00
At ease .....	Tranquility	1.20
Contented .....	Tranquility	1.20
Happy .....	Tranquility	1.06
Overjoyed .....	Joy	1.00
Excited .....	Hope	1.00
Proud .....	Pride	1.00
Embarrassed .....	Self-reproach	1.00
Ashamed .....	Self-reproach	1.21
Fearful .....	Fear	1.00
Worried .....	Fear	1.65
Anxious-tense .....	Fear	1.42
Sad .....	Distress	1.00
Blues .....	Distress	1.05
Lonely .....	Distress	.91
Angry .....	Angry	1.00
Mad .....	Angry	1.07
Outraged .....	Rage	1.00
Fit statistics:		
$\chi^2/df$ .....	2.57	
Incremental fit index .....	.91	
Comparative fit index .....	.91	
Root mean square error of approximation .....	.04	

NOTE.—*N* = 1,361 after listwise deletion of missing data cases.

sible from each other, and emotions correlating negatively may be relatively inaccessible from each other. Building upon this assumption, we offer an index of remoteness based on correlation coefficients to quantify this notion more exactly (see the note of table 5 for the formula). If two emotions correlate 1.0 then they have a remoteness of 0; if they correlate 0.0 then they have a remoteness of 10; and if they correlate  $-1.0$  then they have a remoteness of 20. In-between correlations are curvilinearly related to remotenesses; for example, a correlation of 0.5 gives a remoteness of 3. Our choice of transformation function is pragmatic in that it yields results corresponding to some observations in the sociology of emotions.

Qualitative studies of emotion management support the usefulness of our model. Thoits's (1996) field notes from a psychodrama group devoted to dealing with emotional problems contain a number of examples in which participants were led from one emotional state to another. Although each individual had his or her own set of issues (ranging from problematic

TABLE 5  
RELATIONS AMONG EMOTION FACTORS

	1	2	3	4	5	6	7	8	9
1. Tranquility .....	. . .	4	5	5	15 (11 via hope)	16 (11 via pride)	16 (12 via joy)	18 (10 via hope)	18 (11 via hope and fear)
2. Hope .....	.38	. . .	3	4	7	9 (8 via fear)	11 (9 via fear)	6	13 (7 via fear)
3. Joy .....	.23	.45	. . .	4	6	8	7	7	9 (8 via fear)
4. Pride .....	.21	.40	.37	. . .	7	6	7	6	8 (7 via fear)
5. Self-reproach .....	-.23	.08	.15	.10	. . .	6 (5 via fear)	6	3	4
6. Anger .....	-.35	.01	.05	.14	.19	. . .	2	2	3
7. Rage .....	-.32	-.01	.07	.10	.20	.68	. . .	3	3
8. Fear .....	-.64	.13	.10	.13	.48	.63	.52	. . .	1
9. Distress .....	-.69	-.12	.02	.03	.40	.49	.46	.82	. . .

NOTE.—Each remoteness is computed from its corresponding correlation ( $r$ ) by the formula  $10 \times (1 - \{\text{sign}(r) \times \sqrt{\text{abs}(r)}\})$ , where  $\text{sign}(r)$  is 1 if  $r$  is positive, -1 if  $r$  is negative, and 0 if  $r$  is zero. Shortest paths were determined with a Javascript program provided at *Dijkstra's Algorithm* (n.d.). Retrieved March 23, 2002 from [http://www.tutor.ms.unimelb.edu.au/dijkstra/dp\\_frame.html](http://www.tutor.ms.unimelb.edu.au/dijkstra/dp_frame.html). Lower triangle shows correlations; upper triangle shows remoteness plus shortest paths through intervening emotions.

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relationship with parents to fear of sex), the preferred outcome of such work was to replace distress, fear, or anger with some form of emotional well-being (e.g., contentment, happiness, or joy). The psychodrama group leaders often tried to move participants from more subdued to more heightened feeling states (e.g., from anger to rage or from fear to panic), and then to feelings of pride, which provided a relatively simple pathway to well-being.

Francis (1997) documented identity transformations that group leaders tried to create among participants in emotion management groups. For example, participants entered the Discovery Divorce Group because of feelings of distress, fear, anger, and self-reproach, and the leader made an effort to normalize their feelings by changing sentiments about three designated actors in divorce—self, others (mainly the ex-spouse), and God. While Francis focused on identity work, our complementary perspective emphasizes that scripted transactions among the specified actors offer emotional pathways between distress and tranquility. Moreover, remoteness indexes in table 5 suggest that a given script will be differentially successful: for example, achieving tranquility through hope works for those who are distressed, afraid, or guilty, while those who come into the group angry would be helped more by engendering pride.

Francis's (1997) study of the Rebirth Grief Group for surviving spouses found that many participants entered the group with a perception of the deceased as a good person who had been torn away involuntarily. The bereaved also tended to see themselves as having watched the death helplessly or having failed the deceased in some way. "From her therapeutic perspective, Lydia [the leader] attempts to move the bereaved out of this perception and into the more empowering (but problematic) stage of anger" (Francis 1997, p. 161). According to our remoteness indices, the pathway from distress to anger and then to tranquility is much shorter than the direct pathway from distress to tranquility, and that fact justifies the leader's strategy. The leader also attempted to transform the deceased from victim to abandoner, but this seemed a less successful strategy than getting participants to ameliorate guilt over having failed the deceased (Francis 1997, p. 162). This accords with remoteness indices showing that the direct pathways between self-reproach and tranquility are shorter than those between distress and tranquility.

Britt and Heise (2000), focusing on stigmatized social identities of being black and gay or lesbian, found that social movement organizations (SMOs) routinely generate intervening states of fear and anger in order to transform shame into pride. Our measures of remoteness suggest that the SMOs' strategy is superfluous since shame readily can be turned to pride without moving through fear and anger first. Thus Britt and Heise (2000) may have misinterpreted the significance of the shame-fear-anger-

pride sequence that they discovered. The sequence of emotions may be necessary to accomplish the collective social action that changes the cultural meaning of the stigmatized identity. It is anger that gets individuals into the streets. Then, marching en masse does engender pride. But additionally—and of equal importance to SMOs—collective demonstrations socially empower and legitimate the symbol that the marchers represent. Our remoteness index may also reveal why SMOs bother with the seemingly self-defeating creation of fear. The path from self-reproach to fear to anger is shorter (a remoteness of “5”), and easier to accomplish, than is the direct path from self-reproach to anger (a remoteness of “6”).

Although existing literature on emotion management concentrates on the creation of pleasant emotions, there is a small body of qualitative and experimental studies that suggest individuals may use similar strategies to invoke anger or rage in themselves (Hochschild 1983; Stenross and Kleinman 1989; Sutton 1991)—in other words to move purposely from pleasant emotional states to unpleasant ones. Moreover, Goffman’s studies of asylums (1961) revealed that institutional actors induce compliance in inmates by evoking anger, fear, and shame. Zimbardo’s Stanford Prison experiment (Haney and Zimbardo 1976) showed that college students merely pretending to be prison guards created anger, fear, and ultimately distress in their prisoners in order to engender docility.

Thus, emotional shortcuts between negative and positive emotions can be, should be, and in fact are utilized in individual, therapeutic, and institutional attempts at emotion management. Scheff’s (1979, 1988, 2001) detailed examination of the intertwining of pride and self-reproach (shame in particular) also is buttressed by our measure of remoteness—a value of 7—indicating that these two emotions are experientially close.

*Sex differences.*—We separated the sexes in a multiple-group confirmatory factor analysis and found a significant drop in chi-square ( $P < .001$ ), indicating that the factor loadings or factor correlations differ for men ( $N = 597$ ) and women ( $N = 764$ ). The structure of factor loadings is basically the same across sexes. The factor loadings for women in the multiple-group analysis are all within 0.10 of those shown in table 4, and the factor loadings for men are all within 0.20 with just one exception: the factor loading of ashamed on the *self-reproach* factor is 0.58 for men, as opposed to the loading for women of 1.21. Notwithstanding the difference, the structure is the same because shame is a substantial component of the self-reproach factor for both sexes.

The difference between the factor models for men and women comes predominately from correlations among factors. The self-reproach factor is especially interesting in this respect because of its more positive correlations with other emotion factors for men compared to women. For instance, the correlation of *self-reproach* with *anger* is 0.53 for men, and

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0.19 for women; and with *pride* the correlation is 0.19 for men, 0.04 for women. Some other sex differences in correlations of emotion factors also are notable. Pride correlates positively with distress for men (0.18) but there is zero correlation for women. Hope (measured by feeling excited) correlates positively with rage for men (0.08), but negatively for women ( $-0.06$ ).

These sex differences in emotion correlations suggest that emotional segueing differs for men and women—an idea that might have important implications for practitioners of social support and emotion therapy. For example, transformations between self-reproach and anger appear to be easier for men than for women; a direct path evidently exists from distress to pride for men, but not for women. And rage can turn into hope-excitement for men, though that is less likely for women. Such differences suggest that social support and emotion therapy must be sex specific, or at least gender conscious, in order to be effective.

### SUMMARY AND DISCUSSION

Three dimensions emerged in our multidimensional scaling of emotion experiences, interpretable as pleasantness versus unpleasantness, dominance versus vulnerability, and activation versus quiescence. These three experiential dimensions parallel the EPA dimensions of affective meaning that are foundational in affect control theory, and specific emotions have approximately the same relative positions in the experiential space as in the meaning space. This isomorphism favors a motif in affect control theory—and in symbolic interactionism generally—that symbolic processes index embodied performances. At least we know now that the meaning space underlying emotion norms corresponds to the experiential space for tracking actual emotionality.

We scored individuals' recent emotional experiences on the three dimensions to explore correlates of recurrent emotionality, or emotional station. As expected, all three dimensions of emotional station relate both to structural position—assessed in terms of age, sex, and socioeconomic status—and to variable circumstances such as illness or crowding. We also found that emotional station correlates with a variety of individualistic behaviors and opinions. The correlations are modest in size, but they support viewing emotionalities as observable phenomena that register social structure, social conditions, and social trends.

Our confirmatory factor analysis turned up nine primary kinds of experienced emotion—tranquility, hope, joy, pride, self-reproach, anger, rage, fear, distress—and varying levels of correlation among these emotions. For example, tranquility correlates positively with joy, hope, and

pride, and correlates negatively with the unpleasant emotions of distress, fear, anger, rage, and self-reproach, a finding that is consistent with the notion that negative and positive emotions are associated with different regions of the brain (Davidson and Irwin 2000; Davidson et al. 2000; Schaefer et al. 2002). Some opposite emotions, however, correlate positively—for example, self-reproach with pride—and we construe these seemingly anomalous correlations as identifying shortcuts from negative to positive emotionality.<sup>23</sup> Our segueing index, based on the correlations, allows optimal paths for emotion change to be identified—sequences of emotion that are easier to accomplish than going directly from the beginning emotion to the end emotion.

Reviewing some qualitative studies revealed that therapists routinely use optimal paths in their interpersonal emotion management efforts, even to the point of instigating negative emotions in order to push clients through the shortest transitional paths. Identity transformations instigated by social support groups and social movement organizations parallel emotion pathways that are relatively easy to achieve. Authorities in custodial institutions and in resocialization programs (like military basic training) also use optimal paths for emotion management, such as from pride to shame, in order to hasten their charges' progression toward docility.

Our analyses contribute both to affect control theory and to emotion management theory using the same data and in the process raise a new question. Are the analyses, the results, and the theories somehow interrelated?

The two methodologies employed—multidimensional scaling and confirmatory factor analysis—have an important parallelism in our analyses. Both methods analyze the correlations between the emotion variables,<sup>24</sup> with each method providing its own tactic for dealing with knots of particularly large correlations. Multidimensional scaling loosens such knots by taking account of just the relative magnitudes of correlations in order to infer distances within a multidimensional space. Confirmatory factor analysis aggregates knotted variables into new latent variables whose correlations with other variables are relatively low. Understanding the methodologies thusly implies that their results must be comparable to some degree.

To check for comparability, we regressed the segueing indices in table 5 (which are mathematical transformations of the factor-analysis results)

<sup>23</sup> In the burgeoning field of brain science, scholars have begun exploring the neural pathways implicated in emotion regulation; to date, these studies have focused primarily on *reducing* negative affect in laboratory settings (Gross 1999; Ochsner et al. 2002).

<sup>24</sup> See n. 5 above.

on distances between primary emotions in the three-dimensional space defined by the first three numerical columns of table 1.<sup>25</sup> Allowing for curvilinearity, the regressions reveal very strong relationships, with  $R^2 = 0.88$  for the regression of segueing indices on male emotion distances, and  $R^2 = 0.90$  for the regression on female emotion distances.<sup>26</sup> The implications are that the three-dimensions of affect control theory can be used to derive segueing indices for emotion management theory and that emotion management processes must be accountable in affect control theory, even though affect control theory currently does not deal with emotion management. Thus these two important theories in the sociology of emotions evidently can be integrated.

Hochschild's analyses focus on the relationship between emotion and social position as a function of adherence to social norms regarding emotion. Integration with affect control theory suggests that emotion norms relate to identity processes, perhaps as described by Heise and Calhan (1995). Affect control theorists argue that individuals occupy identities, participate in events, and experience consequent emotions. Integration with emotion management theory suggests that emotion whirlpools sometimes arise in these processes, and that emerging from the whirlpools often is a difficult task that has to be achieved by focusing on emotions rather than identities. Elaboration of such prospects for theoretical integration must be deferred to future work.

Sex differences exist in the degree to which pairs of emotions are experienced concurrently,<sup>27</sup> and these differences influenced our scaling and factor analyses, with the two different methods providing somewhat different emphases. Our scaling analyses revealed that distress and anger are closer for women than for men, while our factor analyses indicated that men can move between self-reproach and anger more easily than women can. Thus optimal paths of emotion transition evidently differ for men and women, and optimal strategies of emotion management might be somewhat different for the sexes, too.

Substantial theoretical developments occurred in the sociology of emotions over the past few decades, and in this article we employed two of the resulting theories as sociological lenses for analyzing survey data on

<sup>25</sup> The highest loading indicator of each primary emotion in the last column of table 5 served as the marker of each primary emotion in the three-dimensional space. For example, the distance between *tranquility* and *fear* was measured as the distance between *at-ease* and *worried*.

<sup>26</sup> The transformation equations are  $S = 3.47 - 2.43D + 2.64D^2$  for men,  $S = 2.52 - 0.64D + 2.36D^2$  for women, where  $S$  represents segueing indices and  $D$  represents emotion distances.

<sup>27</sup> Also app. A shows that females are prone to significantly lower frequencies of pleasant emotional experiences than males.

emotion experiences. By approaching the data repeatedly, each time from a different theoretical perspective, we showed that a single body of data on emotions tells multiple stories about social life—for example, about the correlation of emotional station with a variety of structural, circumstantial, and personal variables and about ways to provide social support to individuals in emotional traps. Additionally, we provide insight into the strategies that organizations use in order to facilitate member behavior; specifically, our analysis illustrates that social movement organizations may purposefully instill the seemingly self-defeating emotion of fear in individual members so that they may more easily reap the collective made possible through anger and pride. Finally, this article has developed multiple measures for survey data on emotions that can help advance other research agendas within the sociology of emotions, as well as research focusing on the integration of micro- and macrosociological processes more broadly.



APPENDIX A

TABLE A1  
 NUMBER OF DAYS IN THE LAST WEEK THAT SPECIFIC EMOTIONS WERE FELT BY  
 RESPONDENTS

	<i>N</i>	Mean	SD	Skew*
Felt that you couldn't shake the <i>blues</i> ? <sup>†</sup>				
Men .....	631	1.06	1.77	1.95
Women .....	813	1.33	1.89	1.66
Felt <i>calm</i> ? <sup>†</sup>				
Men .....	632	4.80	2.31	-.66
Women .....	817	4.39	2.37	-.41
Felt <i>outraged</i> at something somebody had done?				
Men .....	633	1.48	1.85	1.59
Women .....	815	1.52	1.89	1.50
Felt <i>happy</i> ?				
Men .....	636	5.34	2.02	-1.03
Women .....	815	5.21	2.07	-.94
Felt <i>sad</i> <sup>†</sup>				
Men .....	633	1.42	1.83	1.56
Women .....	816	1.81	1.98	1.29
Felt <i>ashamed</i> of something you'd done?				
Men .....	634	0.47	1.11	3.83
Women .....	816	0.47	1.17	3.63
Felt <i>excited</i> about or interested in something? <sup>†</sup>				
Men .....	636	3.80	2.25	.05
Women .....	813	3.45	2.36	.19
Felt <i>lonely</i> ? <sup>†</sup>				
Men .....	634	1.28	2.06	1.69
Women .....	816	1.67	2.30	1.30
Felt <i>fearful</i> about something that might happen to you?				
Men .....	632	1.06	1.80	2.07
Women .....	815	1.26	2.05	1.77
Felt <i>overjoyed</i> about something?				
Men .....	631	1.91	2.28	1.07
Women .....	813	1.68	2.02	1.30
<i>Worried</i> a lot about little things? <sup>†</sup>				
Men .....	634	2.43	2.59	.69
Women .....	816	3.12	2.78	.32
Felt <i>contented</i> ?				
Men .....	629	4.51	2.54	-.56
Women .....	809	4.59	2.40	-.62
Felt <i>anxious</i> and <i>tense</i> ?				
Men .....	631	2.20	2.22	.90
Women .....	809	2.30	2.29	.83
Felt <i>mad</i> at something or someone?				
Men .....	633	1.76	1.99	1.31
Women .....	816	1.60	1.87	1.41

TABLE A1 (Continued)

	<i>N</i>	Mean	SD	Skew*
Felt at <i>ease</i> ?				
Men .....	634	4.67	2.37	-.58
Women .....	809	4.46	2.37	-.48
Felt <i>angry</i> at someone?				
Men .....	634	1.52	1.82	1.56
Women .....	817	1.46	1.77	1.59
Felt <i>embarrassed</i> about something?				
Men .....	635	.63	1.28	3.12
Women .....	815	.57	1.17	3.35
Felt <i>proud</i> of something you'd done? <sup>†</sup>				
Men .....	633	3.21	2.35	.32
Women .....	809	2.81	2.34	.58

\* All absolute values of skew are double their SEs, except for the skew of *excited* for men.

<sup>†</sup> Probability that men's and women's means are equal is less than .05 in the Mann-Whitney U test.

APPENDIX B

TABLE B1  
CORRELATIONS AMONG FREQUENCIES OF EMOTIONAL EXPERIENCES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Calm	. . .	.49	.45	.43	.10	.15	.11	-.09	-.08	-.16	-.38*	-.45*	-.31*	-.32	-.24*	-.24*	-.29*	-.26*
2. At ease	.48	. . .	.58	.50	.19	.31	.15	-.13	-.09	-.19	-.32	-.36	-.25	-.39	-.29*	-.24	-.25	-.23
3. Contented	.37	.53	. . .	.54	.19	.26	.19	-.11	-.10	-.18	-.33	-.31	-.32	-.39	-.31*	-.26*	-.27	-.23
4. Happy	.44	.52	.48	. . .	.20	.36	.20	-.05	-.07	-.20	-.28	-.25	-.39	-.52	-.35*	-.25*	-.22	-.21
5. Overjoyed	.17	.16	.15	.26	. . .	.43	.36	.10	.14	.13	.01	.06	.02	-.02	-.01	.07	.02	.06
6. Excited	.21	.24	.25	.32	.45	. . .	.35*	.05	.07	.06	-.06	.00	-.02	-.15	-.04	-.01	-.04*	-.01*
7. Proud	.07	.14	.15	.20	.39	.44*	. . .	.06	.08	.14	.02*	.07	.01	-.01	.00	.11	.11	.08
8. Embarrassed	-.16	-.12	-.08	-.13	.11	.10	.11	. . .	.48	.21	.16	.23	.18*	.22	.17	.20*	.21*	.12*
9. Ashamed	-.03	-.12	-.15	-.10	.09	.06	.03	.45	. . .	.26	.13	.20	.21*	.19	.11	.13	.17*	.13
10. Fearful	-.26	-.25	-.23	-.24	.06	-.01	.09	.28	.26	. . .	.31	.35	.26	.33	.29	.23	.26	.27*
11. Worried	-.22*	-.27	-.30	-.23	.10	.00	.13*	.23	.19	.33	. . .	.52*	.35	.40	.28	.37	.38	.32
12. Anxious-tense	-.31*	-.31	-.29	-.25	.10	.10	.15	.26	.24	.42	.42*	. . .	.36	.41	.28	.39	.41	.34
13. Sad	-.17*	-.26	-.28	-.32	.08	.01	.05	.33*	.32*	.34	.31	.41	. . .	.54	.46	.42*	.36	.37
14. Blues	-.26	-.35	-.37	-.50	-.06	-.21	.00	.24	.25	.38	.36	.36	.52	. . .	.48	.34*	.35	.31
15. Lonely	-.09*	-.15*	-.15*	-.20*	.02	-.04	.08	.23	.20	.22	.21	.26	.41	.44	. . .	.28	.28	.22
16. Angry	-.12*	-.17	-.13*	-.11*	.11	.09	.16	.32*	.18	.29	.30	.39	.33*	.19*	.18	. . .	.81*	.57*
17. Mad	-.18*	-.26	-.21	-.17	.06	.10*	.12	.32*	.28*	.32	.35	.46	.35	.27	.21	.74*	. . .	.57*
18. Outraged	-.15*	-.16	-.16	-.13	.16	.12*	.16	.23*	.14	.38*	.26	.39	.30	.21	.21	.68*	.66*	. . .

NOTE.—Correlations are significantly different from zero at the .05 level if the absolute value is 0.07 or more for women and 0.08 for men. Men are in lower triangle ( $N = 600$ ); women, in upper triangle ( $N = 766$ ).

\* Differ significantly by sex at the .05 level in a two-tail test based on Student's  $t$  after Fisher's  $r$  to  $z$  transformation (Winkler and Hays 1975, p. 653).

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