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Nonverbal Display of Emotion in Public and in Private: Self-Monitoring, Personality, and Expressive Cues

Howard S. Friedman and Terry Miller-Herringer
University of California, Riverside

Individual differences in the expression and regulation of emotion are important components of social skill. The present study focused on the concealing of spontaneous expressions of happiness after winning in a competitive situation against peers. In a repeated measures design, spontaneous expressive behaviors in response to triumph were secretly videotaped when Ss ($N = 38$) were alone in a room and when they were with 2 fellow competitors (confederates). Edited tapes were analyzed by naive raters and trained coders. As predicted, the social context strongly influenced the expressive behaviors of Ss, providing support for a social inhibition effect. More important, the self-monitoring construct (Snyder, 1987) was helpful in explaining individual differences in expressive regulation, with high self-monitors being successful at hiding their happiness when appropriate; and they did so in particular ways. Low self-monitors did not conceal their emotions. Other findings with regard to personality and sex differences were also uncovered.

Emotional expression is more than an observable correlate of internal affective states; it also serves important functions in social comparison and social influence processes. Deficiencies in proper emotional expression can have detrimental effects on social interaction—unexpressive people may be seen by others as less likable (Riggio & Friedman, 1986), and unexpressiveness within a couple is associated with marital dissatisfaction (Noller, 1984). On the other hand, inappropriate expressiveness can also be socially problematic (Goffman, 1959).

Infants are born with the necessary physiological equipment to express emotion (Ekman & Oster, 1979; Field, Woodson, Greenberg, & Cohen, 1982), but because they lack (a) voluntary muscular control, (b) awareness of the effect that their expressions have on others, and (c) the desire to intentionally create a certain managed impression on others, their emotional expression is qualitatively different from that of adults. Although there are individual expressiveness differences among infants and young children, their affective expression largely reflects an unregulated readout of the internal feeling state (and likely has feedback functions; Buck, 1981). But, in adults, the *regulation* of emotional expression is just as important as expression itself to social interaction. Socialization heavily proscribes the unregulated expression of emotion by adults in society.

The presence of other people serves generally to inhibit expression (Buck, 1984; Hamilton, 1973; Izard, 1971; Kleck et al., 1976; Yarczower, Kilbride, & Hill, 1979). Some studies, though, have shown that certain emotional expression (especially of positive emotions) may be facilitated in social settings (Chapman & Wright, 1976; Kraut & Johnston, 1979). It is likely that degree of inhibition of emotional expression depends on the social consequences of the expression. Unfortunately, many studies of expression, in an attempt to simplify a complex phenomenon, have tried to avoid the "contamination" of spontaneous nonverbal expression by social factors.

The concept of cultural display rules (cf. Ekman, 1972; Ekman, Friesen, & Ellsworth, 1972) holds that the expression of one's internal feeling state may be controlled and modified in a variety of ways—by presenting an expression that *minimizes, exaggerates,* or *masks* the feeling state to suit the particular demands of the social situation. Cultural display rules govern how much emotion is appropriate to be shown to whom and under what circumstances. Social conventions about expressive behavior differ from culture to culture but are thought to be learned in childhood to such a degree that they come to "govern facial behavior on a habitual basis" (Ekman, 1972, p. 226). Thus, one might think of cultural display rules as the "emotional etiquette" of a culture.

Little controlled research has been done to investigate cultural display rules. The specific display rules of even one culture are unknown (Ekman & Oster, 1979) and are suggested only by anecdotal evidence. Some research has focused on the socialization of emotion in infants (Malatesta & Haviland, 1982; Malatesta, Grigoryev, Lamb, Albin, & Culver, 1986) and on the acquisition of display rule knowledge in young children (Saarni, 1979, 1982, 1984; see Cole, 1985, for a review). Display rule use by adults in social contexts remains a potentially fruitful, although for the most part unexplored, area. The ability and manner of expressive regulation is likely to vary considerably. The present study addresses this issue.

We began with the framework that exists with regard to individual differences in other areas of nonverbal communication

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Correspondence concerning this article should be addressed to Howard S. Friedman, Department of Psychology, University of California, Riverside, California 92521.

and nonverbal skill (Riggio, 1986; Rosenthal, 1979; Snyder, 1987). Our understanding of the social interaction process has been facilitated by a shift from a traditional trait approach to a direct consideration of nonverbal communication skills (Friedman, 1979). For example, physicians' nonverbal sensitivity skills and their abilities to communicate emotion through nonverbal channels have been found to affect the quality of interactions with patients and hence to be related to the patient's satisfaction with medical care (DiMatteo, Taranta, Friedman, & Prince, 1980; Friedman & DiMatteo, 1989). Research attention is focused on task-relevant nonverbal abilities rather than on global traits only.

Individuals differ markedly in the extent to which they regulate their behavior in social contexts. Snyder's self-report Self-Monitoring Scale (SMS; 1974) apparently taps a combination of relevant skills, including responsiveness to social and interpersonal cues regarding appropriate behavior and the ability to monitor and control one's verbal and nonverbal emotional displays to present oneself in a socially approved manner. Individuals with high self-monitoring endorse such items as "When I am uncertain how to act in a social situation, I look to the behavior of others for cues," and "Even if I am not enjoying myself, I often pretend to be having a good time." Not surprisingly, many SMS items seem to relate to cultural display rules. We examined the extent to which self-monitoring affects expression in real social interaction.

Factor analytic studies of the SMS (Briggs, Cheek, & Buss, 1980; Gabrenya & Arkin, 1980; Riggio & Friedman, 1982) have indicated that the scale is composed of several separate dimensions and may represent a combination of three types of social skills. The three factors can be labeled *acting ability* (SMS–A), *extraversion* (SMS–E), and *other-directedness* (SMS–O). (See also Lennox and Wolfe, 1984, and Snyder and Gangestad, 1986). We included the three subscales for these factors and the total score (SMS–T) in our research. Subsequently, Snyder (1987) has reduced his scale from 25 to 18 items; results using the total score from this revised scale are noted when significant. We expected high self-monitors to be the most skillful at hiding their emotions in a situation that called for this response.

The Affective Communication Test (ACT) was developed to measure individual differences in spontaneous emotional expressiveness (Friedman, Prince, Riggio, & DiMatteo, 1980). People who score high on this 13-item self-report measure tend to be animated, dramatic, and outgoing. Such individuals tend to be able to influence and emotionally arouse others (Friedman & Riggio, 1981; Friedman, Riggio, & Casella, 1988), but they may lack emotional control (Riggio, 1986). We thought that subjects with high scores on the ACT would be less able to dissemble and hence that observers would be more easily able to detect their true emotions.

Research on the relationship of more traditional aspects of personality with the nonverbal expression of emotion has revealed several consistent results (Buck, 1984). Extraversion, dominance, and impulsivity have all been found to correlate positively with spontaneous sending abilities (Buck, 1975, 1977; Friedman et al., 1980). It seems that spontaneous expressiveness is based on temperamental predispositions that are reinforced by social learning (Buck, 1984). Therefore, several relevant subscales from Jackson's (1974) Personality Research Form (PRF) that we thought might relate to individual differences in expressive regulation were those for dominance (PRF–D), exhibition (PRF–E), impulsivity (PRF–I), affiliation (PRF–A), and social recognition (PRF–S). Respectively, these scales assess the extent to which the subject (a) attempts to influence or direct other people, (b) enjoys being the center of attention, (c) spontaneously expresses feelings, (d) enjoys being with other people, and (e) attempts to gain the approval and recognition of other people.

One other dimension that might relate to expressive regulation, given the different gender display rules in American culture, is sex role orientation. We thought that it might be more masculine to express negative and dominant emotions but more feminine to express positive and submissive emotions. To measure this construct, we used the short form of the Personal Attributes Questionnaire (PAQ; Spence & Helmreich, 1978; Spence, Helmreich, & Stapp, 1974, 1975). This self-report instrument is composed of 24 bipolar items that are descriptive of personal characteristics. The PAQ is divided into separate scales for masculinity (PAQ–M), femininity (PAQ–F), and masculinity–femininity (PAQ–MF).

The particular display rule situation that was devised was that of winning in a competitive situation among peers. We chose this situation because social convention in our society holds that in adult competition, "the loser is supposed to appear good-natured about the loss and the winner is expected to be modest and self-effacing" (Mayo & LaFrance, 1978, p. 221) and to "deintensify expressions of happiness" (Ekman, 1972, p. 226). In our pilot testing, many subjects spontaneously mentioned this type of situation when they were asked to list situations in their own lives that necessitate regulated positive expressions. Reasons that pilot subjects gave for dissembling their happiness included the desire to avoid appearing "bigheaded" and to avoid injuring the losers' feelings.

The choice to induce positive affect (from winning) was made for two reasons. The first reason concerned ethical considerations—inducing happiness by enhancing subjects' beliefs about their own abilities would be less harmful than experimentally inducing negative emotion. The second reason concerned results from developmental laboratory studies that indicate that it is more difficult to fake a negative expression when the genuine feeling is positive (than vice versa), even in children (Morency & Krauss, 1982; Shennum & Bugental, 1982). Perhaps there are few display rules that prescribe concealing positive affect; certainly there are many more dictates about hiding negative emotions. In fact, there may be a ceiling effect in adults for masking negative emotion, such that few adults would be detected when hiding certain negative emotions. Thus, examining the more difficult task of hiding positive affect may be more revealing of emotion regulation ability.

Our predictions were as follows:

Consistent with past research (Friesen, 1972; Yarczower et al., 1979), we believed that the presence of others would have an inhibitory effect on expressive behavior in this situation. Specifically, spontaneous expressions of happiness in response to individual success should be more evident when people were alone in a room than when others were present.

Although we believed that most subjects would make some attempt to cover or hide their expressions of happiness when

with others, we thought that the extent to which subjects were able to do so, and the particular strategy that subjects adopted to achieve this aim, would differ in interesting ways, as a function of personality and social skill. In particular, we expected that high self-monitors would be the most successful in concealing their true emotions in response to situational demands. Furthermore, we thought that highly expressive subjects (i.e., subjects with high ACT scores) would be generally less successful in concealing their happiness. Dominance, exhibition, and impulsivity were similarly expected to show positive relationships with spontaneous expressiveness and so be related to less control. The other individual difference measures (PAQ, PRF–A, and PRF–S) were more exploratory in nature.

Method

Subjects

Forty undergraduates (11 men and 29 women) volunteered to participate in two 1-hr sessions for course credit. Five female and 5 male confederates participated in the experimental sessions on a rotating basis.

Apparatus

Computers were used to administer individual difference measures, present problems to be solved, collect subjects' answers to these problems, and provide performance feedback. Each subject received identical feedback information. We set up three computers that faced each other on a large table in the center of the room; the subject was always seated at one particular computer, so that his or her expressions were clearly visible through a concealed window to a video camera with a zoom lens hidden in an adjoining darkened room. It was essential in a study of this type that the subjects (a) believed they really were alone in the alone condition and (b) were not aware that their expressive behavior was of interest in this study.

As performance feedback appeared on the subject's screen, a beep (not audible in the large room) was transmitted by the computer to the videotape room to tonally mark the tape. This allowed us, when viewing the tapes later, to know the precise moment the subject had received the positive feedback.

Procedure

Subjects signed up to participate in two 1-hr sessions for a study entitled *Personality Differences and Group Versus Individual Performance on Decision-Making Tasks.* The experimenter contacted subjects to arrange "mutually convenient times for each group's three participants." In reality, only 1 real subject per session participated, although each was joined by 2 confederates participating as "fellow subjects." When subjects arrived at the laboratory, the experimenter read a standardized introduction explaining what they would be doing. They then completed on the computers a short demographic questionnaire, the PAQ, and the PRF subscales.

Subjects were told that their performance on decision-making tasks was to be tested and that they would be working on problems both individually (the *alone* condition) and as a group (the *social* condition). ("Some individuals perform better when they are in small groups, while others tend to perform better when they work on their own. So, today you will be performing tasks individually and in a small group.") The orders of these conditions and of the problems were randomized and counterbalanced. Half the subjects had the alone condition first, and half had the social condition first. In both the social and alone conditions, subjects were given 1 min to decide on their answer to each of four problems (two problems in each condition, counterbalanced). All subjects in the group worked on the same problems, which included the horse-trading problem (Maier & Solem, 1952) and several probability problems from the research of Tversky and Kahneman (Kahneman & Tversky, 1973; Tversky & Kahneman, 1980), which have been used to demonstrate a variety of cognitive biases (e.g., neglect of base rate). For example, one problem subjects were given to solve read as follows:

> A cab was involved in a hit-and-run accident at night. Two cab companies, the Green and the Blue, operate in the city. Eighty-five percent of the cabs in the city are Green and 15% are Blue. A witness identified the cab as a Blue cab. The court tested his ability to identify cabs under the appropriate visibility conditions. When presented with a sample of cabs (half of which were Blue and half of which were Green) the witness made correct identifications in 80% of the cases and erred in 20% of the cases. What is the probability that the cab involved in the accident was Blue rather than Green? (Tversky & Kahneman, 1980, p. 62).

Subjects were instructed that although the problems would be difficult, they should try their best to answer them correctly. It was explained that for each problem, three answer alternatives (in a multiple-choice format) would be given and that one of the three alternatives was, in fact, the correct answer and would earn 100 points (full credit). A second answer alternative, although not the correct answer, involved a certain amount of complex reasoning and would earn 50 points (half credit). Finally, a third answer alternative, which was "clearly incorrect," would earn 0 points (no credit). Subjects were instructed that each computer screen would show all three participants' cumulative scores under their names after each problem had been solved, so they would know how well they were doing on the problems, both individually and in comparison with each other.

In reality, the performance feedback was fixed, such that the subject solved the problem correctly and the confederates either scored 50 or 0 points. Accompanying the subject's cumulative score each time was one of four short messages ("Right! Fewer than 10% of college students typically answer this question correctly"; the fourth and last feedback message read "Impressive! You answered all of the questions correctly!"). The feedback appeared on the computer screens and remained visible to the subject for 25 s. Pilot subjects reported that this feedback had been both believable to them and successful in evoking happiness over their performance.

A set of manipulation check questions followed each of the two conditions, asking subjects to rate on a Likert scale from *not very* (1) to *very* (9) how difficult the problems had been, how well they had performed, how pleased they were with their performance, how happy (in general) they felt, and how angry (in general) they felt.

In the *alone* condition, we explained to the group that computers were set up in nearby rooms, and the group was separated into these rooms to work individually on the problems to avoid the communication of subtle problem-solving cues to each other. It was emphasized that all three participants would be solving the same two problems under the same time constraint, with the experimenter going between rooms to tell them when to enter their answers. We carefully arranged that the subject was left alone and uninterrupted during the feedback display on the computer.

In the *social* condition, the group was instructed to discuss each of two problems for 1 min ("group problem solving") and then to enter whatever answer they individually believed to be the correct one.

Confederates

Confederates (undergraduate research assistants) were trained to be able to argue in favor of any of the three answer alternatives, and their task in the social condition during the 1-min discussion period was to

convincingly arrive at answers that were different from each other's and from the subject's, so that the subsequent scores would be believable. Confederates were also trained to maintain a neutral facial expression during the time that everyone's performance feedback was displayed on the computers. (This was easy because they knew the feedback was false and because the task was somewhat boring for them.)

At the end of the session, the experimenter asked the subjects questions regarding the session. This offered an opportunity for them to express any suspicions, to spontaneously mention their successful performance, and to be warned against talking about the experiment.

To reduce demand characteristics, subjects returned to the lab at a later date (2–3 weeks later) to complete the SMS and ACT. These measures have been found to be quite reliable over time (Friedman et al., 1980; Snyder, 1974, 1987). The subjects were asked again not to discuss the experiment with anyone. At all times during the study, the experimenter and the confederates were blind to the subjects' answers on the personality measures.

Debriefing

As soon as all the data had been collected (from all the subjects), the subjects were extensively, and individually, debriefed. All showed surprise on learning that they had been videotaped. After a full explanation of how the videotaped segments would be used, their permission was requested. There was no hesitation by any subject in granting permission to use their videotape in this way. Two male subjects were dropped from the study because they were suspicious that the confederates had also received positive feedback. However, none of the subjects expressed any suspicions regarding the confederates' participation. Indeed, most found the task quite involving and very believable.

Preparation of Video Samples for Judges (Raters)

The four segments from each subject were edited onto two master stimulus tapes, such that each segment consisted of 5 s before and 15 s after feedback appeared (as indicated by the tonal marker). There were 38 subjects in two social and two alone conditions, but because of a technical problem, three segments were lost (from different subjects, in different conditions), resulting in a total of 149 segments. These segments were arranged in a random order on the two master tapes, with the following restrictions: (a) each master tape began with three staged practice trials to familiarize raters with the task; (b) each tape included one social and one alone condition per subject; (c) equal numbers of the social and alone conditions appeared on the first and last half of each master tape; and (d) each segment for each stimulus person was separated by a minimum of four other segments.

Judging Procedures

For ethical reasons and to avoid potential response biasing, we recruited 38 undergraduate students from a different local university to eliminate the possibility that they would know the stimulus subjects. The raters were told that they would see

> a videotape of some college students as they receive feedback on their performance on problem-solving tasks. The feedback presented to the students is accompanied by a beep that you will hear. Please watch the segments closely because each segment is quite short. Each segment is followed by a pause during which you will answer several questions about the segment.

The raters observed the master videotapes and completed one of two rating packets. One form asked raters to rate on a 9-point Likert scale (a) the kind of performance feedback (on a positive–negative dimension) that the person in the segment received at the beep, (b) how much the person was trying to hide his or her true feelings, and (c) how likable the person was. A second form asked different raters to indicate which of seven listed basic emotions were expressed, allowing for more than one emotion per segment. Emotion scores were derived from the summation of frequency of emotion category nominations for a given segment summed across all raters. In addition, this second form asked for ratings on a 9-point Likert scale regarding (a) how extreme the person's change in expression was after the beep, (b) how intense the person's expression was overall, and (c) how physically attractive the person was. Judgments were averaged to form scores for each stimulus person.

Two important bits of contextual information were not disclosed until all the rating forms had been completed: (a) that the subjects had been in alone or social conditions as they received the feedback and (b) that the feedback that subjects received had always been positive. This latter bit of information was surprising to the raters, and many commented on the fact that the subjects frequently had shown expressions of disgust and sadness.

Coding Procedures

Two trained coders (1 male, 1 female) who were blind to the study's hypotheses and to subjects' scores on the personality measures independently coded the master videotapes for the following behaviors. Regarding the mouth region, they coded type of smile (range of openness), duration of smile (in ms), smile intensity (rating from 0–9), and mouth distortions (including frequency of lip biting and pulling lips inward, mouth twists, lip licking, and frowns). Regarding the eye region, coders rated the intensity of brow raises and eye widening and counted the frequency of social comparison (sideways) glances. Finally, coders counted the frequency of head nods, head shakes, hand-to-face contacts, hand-to-head contacts, and victory gestures (e.g., thumbs-up, arms raised in victory, clapping, punching the air). Victory gestures were expected to be an especially interesting variable because of the competitive nature of the social situation. Results involving head shakes closely paralleled head nods and are not considered further.

Although coders were never aware of whether the subject was alone or with others in the segments they analyzed, they did know that subjects had experienced both alone and social conditions and that the feedback had always been positive. Intercoder reliabilities (correlation coefficients) ranged from .72 to .94, with a mean of .83. In subsequent analyses, these coded behavioral indices were aggregated across the two coders, yielding variables with substantial reliabilities (average estimated reliability = .91 from the Spearman–Brown formula).

Results

Manipulation Checks

To confirm that the participants were happy after the positive emotion induction, a dependent groups t test of self-reports of general happiness versus general anger was performed. The means across the two conditions were 8.0 for general happiness and 1.4 for general anger, $t(1, 37) = 31.88$, $p < .0001$, indicating that participants were indeed very happy.

One-way (alone vs. social) repeated measures analyses of variance (ANOVAs) were performed on each of the five manipulation check questions. Interestingly, subjects rated the problems as being more difficult in the social condition ($M = 5.71$) than in the alone condition ($M = 4.74$), $F(1, 37) = 10.18$, $p < .01$. As the problems that were used were counterbalanced across conditions, this may indicate that the presence of others made the task seem more stressful. The ratings on the other four manipulation check questions (i.e., happy, angry, successful, pleased

with performance) did not differ significantly by condition, indicating that subjects felt the same in the alone and social conditions.

The problems themselves were challenging: 28 subjects (74%), in reality, answered either none or only one of the four problems correctly; no subject got all four problems correct. But subjects rated themselves as having performed quite well ($M = 8.24$ on a 9-point scale) and were very pleased with their own performance ($M = 8.53$ on a 9-point scale).

Aggregated Dependent Variables

In the analyses that follow, three types of dependent measures were used: rated expressive intensity, rated emotions, and coded behavioral (nonverbal) indices. The intercorrelations of all rated expressive intensity variables were highly significant and in the expected directions. Expressive change and expressive intensity were positively correlated ($r = .96$, $p < .0001$), and both of these variables were negatively related to perceived hiding of emotion (for expressive change and hiding, $r = -.72$; for expressive intensity and hiding, $r = -.73$; both $ps < .0001$). The conceptual congruence and highly significant intercorrelations of these three variables allowed us to aggregate them (once the direction of the hiding variable had been reversed) for a more reliable "supervariable" that was called *expressive change.* The more positive the feedback was perceived by raters to have been, the more likable the subject was rated ($r = .85$, $p < .0001$). These two variables, feedback perception and likability, were combined to produce a supervariable called *positivity.* (The correlations between expressive change and positivity were .72 in the alone condition and .77 in the social condition.) Rated emotions (happy, angry, neutral, sad, disgusted, fearful, and surprised) were retained as separate variables.

With regard to the intercorrelations of coded behavioral indices, smile intensity and type of smile were positively correlated with each other ($r = .96$, $p < .0001$) and were aggregated to produce a variable called *smiling.* Because the variable *smile duration* did not correlate with any other variable and did not differ between conditions, it was dropped from further analyses. Hand-to-face and hand-to-head contact ($r = .90$, $p < .0001$) were combined for an aggregated *hand contact* variable. And, finally, a supervariable called *mouth distortions* was created from the four original variables called *lip biting, lip licking, mouth twisting,* and *frowning,* because these were all interrelated. Head nods, glances, and victory gestures were retained as separate variables. Because these sets of variables were conceptually distinct, multivariate analyses of variance (MANOVAs) were not computed.

A 2 × 2 ANOVA on order of condition (alone–social vs. social–alone) and order of problems (AB–CD vs. CD–AB) that subjects solved was performed for each dependent variable, and no significant main effects or interactions were indicated (all $Fs < 3.0$). Within condition, each subject's two segments were aggregated to produce more stable scores (Rushton, Brainerd, & Pressley, 1983) in the analyses that follow.

Effects of Experimental Condition and Sex

A series of 2 × 2 (Condition × Sex) repeated measures ANOVAs were performed on the key dependent variables. As predicted, subjects were judged to show significantly more expressive change, $F(1, 36) = 6.60$, $p < .01$, and more positivity, $F(1, 36) = 4.69$, $p < .03$, at the feedback beep in the alone condition than in the social condition. In addition, when subjects were alone, they expressed more happiness, $F(1, 36) = 5.20$, $p < .02$, and showed more signs of animation—more smiling and more hand-to-head contact, $Fs(1, 36) = 6.05$ and 5.69, respectively, $ps < .03$. Thus, the presence of rival peers inhibited emotional expression of the happiness of success.

Men showed more expressive change, $F(1, 36) = 4.44$, $p < .05$, in response to the feedback than their female counterparts did. This finding may seem somewhat surprising, given that women tend to be more nonverbally expressive than men (Hall, 1984). However, it is possible that men responded more than women to the competitive nature of the situation (discussed further below). There were no significant interactions between sex and condition.

Victory gestures, glances, nods, and mouth distortions were not significantly different overall between the social and alone conditions; we believe that these particular expressive behaviors represent more subtle stylistic differences between individuals. The powerful manipulation of condition and the type of analysis used to test our first hypothesis (i.e., ANOVAs that compare group means) would tend to average out individual differences on these kinds of variables. Finally, there was no significant difference in how physically attractive the subject was judged to be in the two conditions.

Correlations Among Key Rated and Coded Cues

To provide a better idea of what the raters and coders were seeing on the videotapes, we present the correlations of the variables with perceived facial emotions in Table 1. In both conditions, rated happiness had highly significant correlations with smiling, hand contact, expressive change, and positivity (all $ps < .001$). Expressions rated as neutral showed highly significant, but negative, correlations with these same variables, as well as with mouth distortions and rated attractiveness. So, when neutral expressions were displayed, there was a corresponding decrease in smiling and other indicators of happiness, attractiveness, and expressive activity. Finally, rated expressions of surprise were positively related to mouth distortions and positivity in both conditions, and with smiling, eye widening/brow raising, and expressive change when others were present in the room. In many cases, this seemed to be an attempt to mask happiness with surprise ("Who me?!").

Correlations between coded behavioral indices and rated expressive intensity variables are presented in Table 2. In both conditions, smiling and hand contact were both positively correlated with expressive change and positivity. In addition, when subjects were by themselves, mouth distortions and head nodding were positively associated with expressive change, positivity, and attractiveness. These findings suggest that judgments of likability are, in part, affected by how nonverbally expressive people are. This finding replicates a similar finding by Riggio and Friedman (1986) that very expressive people make more favorable impressions and are rated as more likable than people low on expressiveness (see also Sabatelli & Rubin, 1986). But when competing peers are present, the meaning of animation and expressed happiness changes dramatically.

Table 1
Correlations Between Emotions and Coder Variables, and Emotions and Rater Variables, Separately by Condition

Variable	Condition	Fear	Happiness	Neutral	Sadness	Surprise
Coder						
Smiling	A	−.27	.62***	−.60***	−.28	.15
	S	−.16	.59***	−.64***	−.20	.35*
Hand contact	A	−.29	.80***	−.77***	−.29	.21
	S	−.14	.83***	−.67***	−.23	.20
Mouth distortions	A	.04	.23	−.49**	.17	.50**
	S	.14	.09	−.33*	−.17	.42**
Eye widening and	A	.18	−.12	.03	.20	−.09
brow raising	S	.45**	−.14	−.12	−.02	.36*
Head nodding	A	−.12	.30	−.33*	.03	.01
	S	−.17	−.01	.13	.08	−.14
Rater						
Expressive change	A	.23	.65***	−.85***	−.25	.29
	S	.08	.73***	−.83***	−.25	.46**
Positivity	A	.35*	.88***	−.76***	−.39*	.43**
	S	.10	.88***	−.79***	−.29	.70***
Rated	A	.01	.38*	−.62***	.22	.17
attractiveness	S	.06	.23	−.32*	.33*	.23

Note. The rated emotions anger and disgust and the coded behavioral indexes victory gestures and glancing were omitted because they had no significant correlations with the other variables shown. A = alone condition; S = social condition. $N = 38$.
* $p < .05$ ** $p < .01$. *** $p < .001$.

Intercorrelations of Personality and Skill Predictors

A number of personality measures showed significant intercorrelations. As expected, the ACT was positively related to SMS–A, SMS–E, SMS–T, dominance, exhibition, and impulsivity (rs = .52, .64, .39, .38, .58, and .37, respectively; all ps < .001). Whereas the SMS–T score and two of the SMS factors (Acting and Extraversion) were positively correlated with several of the PRF scales (e.g., high positive correlations with dominance, exhibition, and impulsivity; all ps < .001), the third SMS factor (Other-Directedness) did not show the same pattern of correlations, indicating, as expected, that this factor is apparently tapping a different type of behavior than the rest of the SMS scale does. These findings confirm that ACT, SMS, dominance, and so on share some variance but are worth including as separate constructs. (Note: Mean scores and standard deviations in this sample are near norm group values. For example, the means for SMS, ACT, PAQ–M, and PRF–E are, respectively, 13.8, 76.5, 20.6, and 11.3.)

Table 2
Correlations Between Key Coder and Rater Variables, Separately by Condition

Variable	Expressive change	Positivity	Rated attractiveness
Smiling			
A	.47**	.63***	.23
S	.46**	.61***	.11
Hand contact			
A	.82***	.82***	.48**
S	.79***	.71***	.29
Mouth distortions			
A	.49**	.44**	.34*
S	.19	.28	−.02
Head nodding			
A	.33*	.28	.44**
S	−.10	−.08	−.29
Rated attractiveness			
A	.49	.34	
S	.42	.29	

Note. The coded behavioral indexes victory gestures, eye widening, and glancing were omitted from the table because they had no significant correlations with the rater variables shown. A = alone condition; S = social condition. $N = 38$.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Individual Differences as Predictors of Expressive Behavior

We examined relationships between the individual difference measures and the dependent variables by using both bivariate correlations and multiple regressions. Because there were 38 subjects, in a repeated measures design, simultaneous multiple regressions using all predictors were deemed inappropriate. Instead, we used a multistep analysis procedure, and predictor–criterion relationships that were not significant at a given step were not retained for later analyses (see below). This analytic strategy reduced the probability of Type I errors and permitted us to achieve a good understanding of certain robust nonverbal behaviors but is not a substitute for further studies of larger samples. Analyses were performed separately on each condition and on difference scores (between the conditions).

First, bivariate correlations were computed between the predictor variables (e.g., self-monitoring) and the criterion measures (e.g., victory gestures). Only those predictors that showed significant bivariate correlations with criterion variables were

further analyzed. The next step was to determine whether the bivariate relationship was an artifact of the unequal number of men and women in the study; this was done by controlling for sex of subject. In almost every case, statistical significance was maintained, indicating that the bivariate correlation observed was independent of sex of subject. However, in those few cases in which the predictor became nonsignificant when sex of subject was controlled for, we analyzed further to investigate whether this was the result of an interaction between sex and the predictor variable. If the interaction did not obtain significance, the predictor–criterion relationship was not discussed further. Finally, predictors that (a) related to the same criterion variable and (b) had maintained significance when sex was controlled were entered together in a stepwise multiple regression (forward selection technique, .05 criterion for entry into or staying in the model).

Alone condition. Several cue variables showed significant relationships to individual difference measures as shown in Table 3. As expected, victory gestures had significant bivariate correlations with exhibition, dominance, SMS–A, SMS–E, and, marginally, the ACT. All of these except ACT remained significant predictors of victory gestures when sex was partialed out. In the stepwise analysis, exhibition was the only variable to maintain significance. (Exhibition, dominance, SMS–A, and SMS–E shared a high degree of variance.) The distribution of victory gestures was examined and found to be nonskewed. These results mean that when they were alone in the room, very expressive, extraverted people were more likely than unexpressive people to show their feelings of victory.

Anger (not shown) was found to be positively correlated with the ACT, PAQ–MF ($rs = .37$ and .35, respectively; both $ps < .05$), and exhibition ($r = .50$, $p < .01$). Only PAQ–MF was not significant with sex partialed out, and further analysis showed that it did not interact with sex. The correlations of ACT with anger and exhibition with anger were both much stronger for men ($rs = .72$ and .69, respectively) than for women ($rs = .32$ and .45, respectively). This means that when they were alone, men who scored high on expressiveness or exhibition were more likely to display angry expressions at the positive feedback than were women who scored high on either of these two predictors. Only exhibition was significant in the stepwise analysis. Because we attempted to induce happiness (not anger) with our manipulation, finding that these expressive male subjects displayed anger when they were alone in the room may seem surprising; however, we will offer an explanation for this finding shortly.

Social condition. Several important correlations emerged between coded behavioral indexes and personality measures in the social condition (see Table 3). As predicted, high self-monitors modified their expressive behaviors in several interesting ways when they were with other people. For example, mouth distortions (e.g., twisting the mouth to one side, biting one's lip) were positively associated with SMS–T (this was maintained when sex was partialed out). This interesting finding suggests that these were strategies that high self-monitors used to hide their happiness when they were with others.

On the other hand, expressions rated as sadness were negatively correlated with SMS–A ($r = -.38$, $p < .02$), SMS–O ($r = -.33$, $p < .05$), and SMS–T ($r = -.43$, $p < .01$; not shown), suggesting that high self-monitors were significantly less likely to adopt a strategy of substituting another emotion (i.e., sadness) to cover their feelings of happiness in the social condition. These predictors remained significant when sex was partialed out; stepwise regression analysis showed the effect was well captured by total self-monitoring (SMS–T). (The value of r went from −.43 to −.45 when SMS–18 was used.)

In addition, head nodding was negatively correlated with SMS–E and PAQ–F and positively correlated with affiliation; all remained significant when sex was partialed out, but the stepwise analysis entered only SMS–E. Nodding the head at one's own success in the presence of other people, especially fellow competitors, although affiliative, seems to be a self-congratulatory gesture, something that a high self-monitor would certainly avoid.

As predicted, victory gestures in the presence of other people were negatively correlated with SMS–O, SMS–T, and social rec-

Table 3
Correlations Between Personality Variables and Coded Cues of Expressiveness, Separately by Condition

Coder variable	Condition	ACT	SMS–A	SMS–E	SMS–O	SMS–T	PAQ–M	PAQ–F	PRF–A	PRF–D	PRF–E	PRF–S
Smiling	A	.14	.12	.10	−.01	.10	.04	−.13	−.03	−.11	.02	.08
	S	.34*	.26	.28	−.12	.20	−.02	−.04	−.22	.04	.20	−.05
Mouth distortions	A	.18	.09	.16	−.11	.03	.24	.13	−.22	−.19	−.13	−.01
	S	.07	.28	.18	.21	.35*[a]	.26	.11	.01	.05	−.03	−.06
Victory gestures	A	.27	.35*[a]	.34*[a]	−.19	.07	.21	−.06	−.14	.37*[a]	.43**[a]	−.07
	S	−.04	−.23	−.30	−.46**[a]	−.56***[a]	.05	−.07	.26	−.26	−.20	−.46**[a]
Head nodding	A	.18	.13	−.15	−.15	−.15	.04	−.11	.06	.16	.15	.00
	S	−.19	−.16	−.48**[a]	.03	−.23	−.13	−.32*[a]	.36*[a]	−.16	−.28	−.23

Note. Personality variables Masculinity–Femininity on the Personality Attributes Questionnaire and introversion on the Personality Research Form, and coded behavioral indexes hand contact, eye widening, and glancing were omitted from the table because they had no significant correlations with the other indicated variables. ACT = Affective Communication Test; SMS = Self-Monitoring Scale; SMS–A = SMS acting ability; SMS–E = SMS extraversion; SMS–O = SMS other-directedness; SMS–T = SMS total score; PAQ = Personal Attributes Questionnaire; PAQ–M = PAQ masculinity; PAQ–F = PAQ femininity; PRF = Personality Research Form; PRF–A = PRF affiliation; PRF–D = PRF dominance; PRF–E = PRF exhibition; PRF–S = PRF social recognition. A = alone condition; S = social condition. $N = 38$.
[a] Indicates correlation was independent of sex of subject.
* $p < .05$. ** $p < .01$. *** $p < .001$.

ognition (all remained significant with sex partialed out); SMS–T and social recognition were both significant in the stepwise analysis (ps = .0031 and .0045, respectively, at the last step). (The value of r went from −.56 to −.46 when SMS–18 was used.) In other words, high self-monitoring and socially concerned subjects were less likely than low self-monitors to exhibit their feelings of victory when they were with others.

As expected, smiling and ACT were positively correlated, but this was not significant when sex was partialed out, nor did it interact with sex. Women with high ACT scores smiled more, but relevant interaction effects could not be detected in this study.

Difference scores. These scores represent the difference between social and alone conditions on the various dependent measures and were obtained by subtracting subjects' social scores from their alone scores. Positive correlations indicate higher scores in the alone condition, and negative correlations indicate higher scores in the social condition.

Exhibition, dominance, SMS–A, SMS–E, and SMS–T scores were all positively associated with *comparatively* more victory gestures in the alone condition than in the social condition (rs = .46, .47, .43, .47, and .43 [.52 when SMS–18 was used], respectively; all $ps < .01$); all remained significant when sex was partialed out. In other words, comparing reactions in the two conditions, subjects high on exhibition, dominance, and self-monitoring showed a relatively greater display of triumphant behaviors when they were alone as opposed to when they were with others. This indicates that such individuals were strongly influenced by, and able to respond to, situational cues regarding appropriate behavior in the presence of others.

Because of the importance of this finding—that high self-monitors would show relatively fewer victory gestures in the social condition than in the alone condition (as compared with low self-monitors)—further analyses were conducted. These analyses help eliminate various possible data artifacts. First, victory gestures was converted to a dichotomous variable—subjects either did or did not show this gesture. Then, the self-monitoring variable was split into two clear groups—the 12 subjects with middle scores on the SMS were dropped, leaving an N of 26. Two analyses were conducted. First, a 2 × 2 ANOVA (Condition × SMS Group) was done; it showed the predicted interaction, $F(1, 24) = 5.16$, $p < .04$). Second, the related chi-square analyses on victory gesture frequency and SMS, separately by condition, showed nonsignificance for the alone condition but a significant effect for the social condition, $\chi^2(1) = 7.49$, $p < .01$. When alone, high and low self-monitors made about the same numbers of victory gestures; but when they were with others, the high self-monitors made almost no such gestures, whereas low self-monitors made many. In short, in all our analyses, low self-monitors were clearly more likely than the high self-monitors to show (socially inappropriate) gestures of victory when they were triumphing over others who were present.

An independent but also interesting finding concerned need for social recognition. In the social condition (compared with the alone condition), subjects with higher social recognition (PRF–S) scores engaged in more glancing at others than subjects with low PRF–S scores ($r = -.45$, $p < .01$; still significant with sex partialed out). That is, individuals with a high need for social recognition looked around more frequently when they were with others, seemingly in an attempt to gauge their competitors' reactions to their own successful performance.

Finally, high scores on PAQ–M were associated with expressions rated as anger in the alone condition ($p < .01$), and, paradoxically, with higher ratings of attractiveness in the alone condition. Both of these relationships maintained significance when sex was partialed out.

Overall, it is interesting to note that the experimental manipulation (alone vs. social conditions) and the individual difference variables (such as self-monitoring) tended to have their effects on different sorts of dependent measures. A Spontaneous Happiness factor emerged (smiling, expressive change, and positivity) that was affected by the experimental condition; there was a social inhibition of happiness that holds for both high and low self-monitors. However, the individual difference measures had their relationships primarily with the more subtle movements and gestural cues (victory gestures, mouth distortions, and head nodding). High self-monitors are motivated to and can create a good impression through their total performance, but low self-monitors cannot or do not.

Discussion

Our first hypothesis, that subjects would show more happiness, and in general, more expressive activity when triumphing while alone in the room than when others were present, received strong support from several types of dependent variables. When subjects were alone, they showed more expressive change, more intense expressions of happiness, less hiding, and more expressive behavior revealing the positive nature of the feedback in this situation than when they were with other people. Thus, as predicted, the presence of peers served to dampen subjects' expressive reactions to the feedback, in conformity with social expectations of the particular situation. The manipulation of being alone or with others had a strong effect on general reactions and expressions of happiness.

We expected more subtle and interesting effects as a function of individual differences. Our hypotheses addressed the question of who shows this suppression and how they do it. Analyses of the measures of social skills and personality uncovered several important relationships. As predicted, the self-monitoring construct was helpful in explaining individual differences between conditions. In the social condition, high self-monitors were less likely than low self-monitors to reveal their happiness by victory gestures or nods.

High self-monitors in the social condition were also less likely to express sadness. It appears that they are more able to conceal their true emotion without masking with a substitute emotion (sadness). Instead, the strategy that high self-monitors seemed to use to dissemble when they were with the other people included a variety of mouth distortions (biting, twisting, or pulling in their lips) to avoid smiling.

In the alone condition, individuals who scored high on exhibition (PRF–E) and dominance (PRF–D) were more likely to make victory gestures. In general, individuals with a personality oriented toward being dramatic and the center of attention showed more nonverbal gestures when alone, but showed fewer

expressions when with others. They were generally good "performers."

It was noted previously that one interesting pattern of results was the positive relationship between exhibition (a personality variable) and expressions of anger (a rated variable), especially in the alone condition and especially among men. This seemed surprising in the light of (a) the manipulation check questions regarding self-reported emotion (mean reported anger was 1.4 on a 9-point scale) and (b) the positive relationship between exhibition and victory gestures (a coded variable). However, in rechecking the videotapes, we found that many of the subjects who gave victory "punches" (especially men) and verbally exclaimed "Yeah!" or "All right!" did not in fact show expressions of happiness. Instead, their expressions were more indicative of aggressiveness (perhaps from being in a competitive situation), which may share some similarities with expressions of anger. The victors were acting not angry but triumphant.

In support of this line of thinking, several interesting interactions with sex were discovered; specifically, the correlations of ACT, exhibition, and masculinity (PAQ–M) with facial expressions of anger were all higher for men than for women. This explanation thus is consistent with the correlation of exhibition with victory gestures in the alone condition. Furthermore, this explanation makes sense in terms of the stereotype that men tend to be less expressive than women, with the exception of expressing anger. Although men in this study showed more expressive change than did women, this was probably due to the competitive nature of the situation.

Subjects who scored high on need for social recognition (PRF–S) glanced more frequently at the other participants, seemingly less to try to read situational cues, as a high self-monitor might, than to detect any indication that their own superior performance had been noticed by their competitors. They were also less likely to show victory gestures when with others, however. The need for social recognition seems to be a relevant factor in emotional control that is not included in self-monitoring.

Overall, the full self-monitoring scale performed as well as or better than its subcomponents. This suggests that such a complex construct, which includes motivation and several abilities, may indeed be suitable for capturing some of the complexity of face-to-face social interaction, as Snyder (1987; Snyder & Gangestad, 1986) has argued. Analyses using the newer 18-item self-monitoring scale obtained virtually the same pattern of results, which is not surprising, given the very high correlation between the two SMS versions ($r = .93$; Snyder, 1987).

The situation itself was a powerful determinent of expressive behavior overall, but individual personality and social skill characteristics accounted for differences in the ability, and strategies used, to conceal positive emotion—a phenomenon not previously demonstrated. In particular, high self-monitors demonstrated their social skill in responding to situational demands by being quite successful at hiding their happiness in social presence. In contrast, low self-monitors were quite "leaky" when they were with others, such that their feelings of joy and triumph were detectable through a variety of nonverbal cues.

Goffman (1959) argued that when we interact with others, we engage in extensive social acting via both verbal and nonverbal channels, managing the impressions that others form of us. We see the "nonverbal social skill" variables examined in the present study as the operationalization of Goffman's impression management concept. When people are placed in a situation with strong prescriptions for them to act the part of the modest winner, individuals vary considerably in their success at putting forth this impression to their "audience."

This approach, which focuses attention on the nonverbal expressive cues used in social interaction, has implications for many important phenomena in social life (Friedman, 1979). Wherever a social reality must be created, people look to others to gather information about the emotional milieu. For example, in the classic studies of bystander intervention (Latané & Darley, 1970), the lack of communication among bystanders was a major factor in the development of a paralyzing "pluralistic ignorance." Yet there has been very little research on the inhibitory and facilitative forces affecting emotional expression.

The present results indicate that notions of social skill such as self-monitoring, expressiveness, and other-directedness can take us quite far in understanding who will reveal certain emotional signs and who will conceal them. Although all the cues and expressions do not always relate strongly in the predicted ways, we should not expect overwhelming effects. Perhaps some of our participants simply reacted liked members of many triumphant sports teams, gloating over their vanquished opponents. There is, however, sufficient consistency to encourage further individual difference analyses and microlevel cue analyses of the actual nonverbal abilities and nonverbal expressions that comprise a social "face."

Brian Boitano won the gold medal in men's figure skating for the United States in the 1988 Winter Olympics. On finishing his wildly successful skating, the skillful and disciplined skater burst into tears of joy. Boitano was universally hailed by the press as a "grand and classy champion." Why was this young competitor so well liked? Here is an insight: At the awards ceremony, Boitano stood, *stonefaced*, next to the runner-up—longtime rival Brian Orser of Canada. Why stonefaced? "I almost felt guilty," Boitano said. "I had to hold back. My facial expression could only make him [Orser] feel worse. I was not going to gloat" ("Brian Boitano," 1988, p. 3).

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