Repressive Coping and Verbal–Autonomic Response Dissociation: The Influence of Social Context

Tamara L. Newton and Richard J. Contrada
Rutgers—The State University of New Jersey

This study examined whether verbal–autonomic response dissociation in repressive copers is potentiated by conditions that enhance social evaluative concerns. Women classified as repressive, low-anxious, or high-anxious gave a self-disclosing speech in either a private condition (a single researcher observed) or a public condition (3 researchers ostensibly observed). Repressors exhibited heart rate elevations that were greater in magnitude than their self-reports of negative affect, but only in the public condition. High-anxious Ss in both conditions showed an opposite pattern of verbal–autonomic dissociation in which self-reported negative affect exceeded cardiac response. Low-anxious Ss in both conditions showed little responsivity in either channel. Results are interpreted within a self-regulatory framework in which differences in self-concept in the domain of emotionality predispose repressive and high-anxious individuals to engage in contrasting, emotion-focused coping styles.

There is general agreement that emotion is manifested in multiple response domains, including physiological, subjective, and expressive–behavioral reactions (Buck, 1984; Izard, 1977; Leventhal, 1984). It seems equally clear that response indicators in different domains are frequently dissociated. For example, following an emotionally provocative event, an individual may show a pronounced elevation in physiological activity that is not accompanied by changes in verbal reports of affect or in overt behavior (e.g., Lang, Levin, Miller, & Kozak, 1983). Dissociations of this sort are believed to reflect processes of significance in diverse research areas, including personality, stress and coping, emotion socialization, anxiety and psychophysiological disorders, and physical health (Gannon & Haynes, 1986; Jones, 1950; Lang et al., 1983; Notarius, Wempe, Ingraham, Burns, & Kollar, 1982; Temoshok, 1987). However, the determinants of emotion response dissociation are poorly understood.

Instances of reported dissociation between different indexes of emotion often may reflect methodological factors. For example, unless reliability approaches unity, measurement error may significantly attenuate relationships between emotion indicators (Nunnally, 1967). Another source of error is variation in the operating characteristics of different response-generating systems. These include differences in response latency, response thresholds, decay times, and refractory periods (Campos, 1988). Unless such parameters are taken into account in data acquisition, they may further reduce associations among emotion measures.

More substantive explanations of emotion response dissociation involve theoretical assumptions regarding higher level mechanisms involved in the generation and regulation of experiential, behavioral, and physiological concomitants of emotion. For example, the activity of emotion response systems may reflect the operation of separate (though interacting) control mechanisms that serve different adaptive functions (Buck, 1984; Leventhal, in press; Schwartz, 1986). Consequently, it may be argued that tightly coordinated response patterns are not to be expected even under ideal measurement conditions. Moreover, in the case of negative emotion, systematic patterns of response dissociation may reflect coping processes activated by the cognitive appraisal of threat and associated negative affect. Coping entails problem-focused activity directed at stress-inducing situations and emotion-focused activity involved in the regulation of subjective states (Lazarus & Folkman, 1984). Indeed, because the coping process is often covert, it frequently has been inferred from the patterning of emotional responses (Lazarus, 1966).

A study conducted by Weinberger, Schwartz, and Davidson (1979) has given considerable impetus to the notion that verbal–autonomic dissociation may reflect the operation of repressive coping, that is, an avoidant style of coping with negative affect. Previous work had generated findings that were consistent with this notion (e.g., Weinstein, Averill, Opton, & Lazarus, 1968) but had made use of coping style measures of question-
able validity. For example, the frequently used Repression–Sen-
sitization Scale (Byrne, 1964) shows a substantial correlation
with trait anxiety (e.g., Golin, Herron, Lakota, & Reineck,
1967), which casts doubt on its ability to distinguish subjects
with a repressive style of coping with negative affect from those
who are truly low in anxiety. To circumvent this problem, Wein-
berger et al. (1979) made use of the Marlowe–Crowne Social
Desirability Scale (MCSDS; Crowne & Marlowe, 1964), which
has only a modest association with trait anxiety.

Weinberger et al. (1979) identified repressors as individuals
with high scores on the MCSDS and low scores on the Taylor
Manifest Anxiety Scale (TMAS; Taylor, 1953). Low- and high-
anxious subjects were defined as such on the basis of a combina-
tion of low or high TMAS scores and low MCSDS scores. Wein-
berger et al. had their subjects perform a phrase-association
task in which they completed sentence stubs containing sexual
and aggressive content. Despite equivalently low scores on the
TMAS, repressors showed significantly higher elevations than
low-anxious subjects on three physiological measures. They
also displayed greater evidence of speech disruption, which was
interpreted as a behavioral manifestation of emotional arousal.
These findings strongly suggest that the MCSDS distinguishes
individuals whose low self-reports of trait anxiety reflect an
avoidant coping style from individuals who are simply low in
trait anxiety.

Using similar procedures, Asendorpf and Scherer (1983) ex-
tended the Weinberger et al. (1979) findings by measuring self-
reports of state affect and facial expression of emotion. Repres-
sors showed greater increases in heart rate and expressed more
anxiety in their facial movements compared with low-anxious
subjects. Furthermore, the heightened facial and physiological
responses of repressors were discrepant with their low levels of
self-reported state anxiety. Other studies have also documented
elevated physiological responses, decreased self-reports of nega-
tive affect, or both, in repressors relative to nondefensive
groups (e.g., Gudjonsson, 1981; Jamner & Schwartz, 1986;
Weinstein et al., 1968). Thus, there would appear to be an associ-
ation between a specific pattern of verbal–autonomic dissocia-
tion and measures believed to reflect an avoidant, emotion-foc-
cused coping style.

Repressive coping is thought to modulate the conscious expe-
rience of negative affect following the appraisal of threat. A
range of explanatory mechanisms, including cognitive, affective,
and neurophysiological processes, have been used to ac-
count for this hypothesized feature of repression (Davidson,
1984; Galin, 1974; Jamner, Schwartz, & Leigh, 1988; Wein-
berger, 1990). However, less attention has been devoted to so-
cial psychological factors that may activate repressive coping in
predisposed individuals. Identification of the social psychologi-
cal factors that regulate the manifestation of verbal–autonomic
dissociation in repressors should facilitate the development of
conceptual models describing the processes underlying repress-
ive coping.

One approach to the social psychology of repressive coping is
suggested by factor analytic research indicating that socially
desirable responding, as reflected in high scores on the
MCSDS, can be partitioned into two components, namely, self-
decision and other-deception. These two constructs have
been distinguished in terms of access to conscious awareness
(Paulhus, 1986). Self-deception has been defined as an uncon-
scious process that serves to protect or maintain self-esteem
and bears a resemblance to the classic psychoanalytic concep-
tion of repression. By contrast, other-deception has been de-

The logic of differentiating self- and other-deception in
terms of a conscious-unconscious distinction has been ques-
tioned, however. Tetlock and Manstead (1985) argued that
impression management strategies such as other-deception need
not be conscious. For example, other-deception may represent
overlearned behavior, which, though conscious and deliberate
at one time, has become automatic and habitual, thus operating
outside of awareness. Moreover, claims about the accessibility
to conscious awareness of other-deception are typically based on
evidence that it is displayed in public rather than private situations
(Tetlock & Manstead, 1985). This argument rests on the ques-
tionable assumption that behavior that is selectively exhibited
in social situations is necessarily conscious and deliberate.

As an alternative to the conscious–unconscious dichotomy,
self- and other-deception may be conceptualized in terms of
the kinds of standards that are involved in self-regulation of
behavior (Tetlock & Manstead, 1985). One example of this ap-
proach may be found in the distinction between private and
public self-awareness (Duval & Wicklund, 1972; Scheier &
Carver, 1988). Private self-awareness is a state in which atten-
tion is directed to covert aspects of the self, whereas public
self-awareness involves attention to overt self-aspects. Accord-
ing to this framework, heightened self-awareness initiates a self-
evaluative process in which the person's current state is ap-
praised with reference to a salient standard that is relevant to
that state. Private self-awareness is assumed to involve evalua-
tive standards that are personal, whereas public self-awareness
is thought to involve "social" standards, that is, what the person
believes to be the standards of others.

Certain cues, such as the presence of microphones, cameras,
and observers, appear to heighten public self-awareness and to
increase the accessibility of relevant, social evaluative stan-
dards (Carver & Scheier, 1981; Paulhus, 1984). Cues such as
these are often present in the laboratory setting (see Rosenberg,
1969) and may have influenced the results of previous studies
of repressive coping. For example, in both the Weinberger et al.
(1979) and Asendorpf and Scherer (1983) studies, subjects per-
formed the sentence completion task while their behavior and
physiological responses were being monitored, recorded, and
evaluated as part of a psychological research project. Moreover,
in the Asendorpf and Scherer study, subjects worked on the task
while viewing a laboratory assistant on a television monitor, a
procedure designed to create a "high level of 'objective self-
awareness' " (p. 1338). Since neither of these studies entailed an
explicit manipulation of social context, it is difficult to isolate
task-specific effects from those stemming from heightened
public self-awareness and consequent activation of social evalu-
ative standards. The potential importance of this problem was
recently underscored in a study by Cacioppo, Rourke, Mar-
shall-Goodell, Tassinary, and Baron (1990), who demonstrated
that physiologic responses even to quite innocuous stimuli can
be augmented by the mere presence of an observer.

Accordingly, we conducted a psychophysiological study in
which repressive, high-anxious, and low-anxious subjects gave a self-disclosing speech under conditions in which social evaluative concerns were minimized (private condition) or maximized by leading subjects to believe they were being observed by three individuals of higher status (public condition). The presence of an evaluative audience has been shown to heighten public self-awareness and thereby to increase the salience of social standards (Carver & Scheier, 1981). Therefore, to the extent that repressive coping is activated by an appraisal process that involves social evaluative standards, emotion–response dissociation in repressive copers should be potentiated in the public condition. If, on the other hand, the emotional behavior of repressors does not reflect social evaluative standards, it should not be differentially affected by the audience manipulation. Based on the findings of Weinberger et al. (1979) and Asendorpf and Scherer (1983), low-anxious and high-anxious subjects were expected to exhibit relatively concordant responses in both audience conditions, with high-anxious subjects showing greater responses in all channels relative to their low-anxious counterparts.

Method

Subjects

Subjects were recruited from the introductory psychology subject pool at Rutgers University and received course credit for participation. An initial sample of 597 students attended group testing sessions in which they completed a questionnaire battery including the MCSDS and TMAS. Ninety-five subjects were selected for participation in the experiment proper on the basis of extreme scores on the MCSDS and the TMAS (see below). Only women were included because their greater prevalence in the initial sample made it easier to secure a sufficient number of subjects. Also, because previous studies linking repressive coping to emotion response dissociation were limited to male subjects, we thought it useful to examine this relationship in women. Experimental subjects ranged in age from 16 to 37 years, with a mean of 19.1 years.

Coping Style Classification

The experimental design called for assigning approximately equal numbers of repressive, low-anxious, and high-anxious subjects to each of two audience conditions, public and private.1 Following both Weinberger et al. (1979) and Asendorpf and Scherer (1983), we selected subjects from the extremes of the MCSDS and TMAS distributions, with the goal of recruiting about 32 subjects within each coping style group. The rationale for following this strategy was to maximize the distinction between coping style groups; the specific cutoffs have no additional (e.g., clinical) significance, so far as we are aware. Results were as follows (corresponding percentiles are given in parentheses): Repressors had MCSDS scores greater than or equal to 19 (87%) and TMAS scores less than or equal to 18 (40%); low-anxious subjects had MCSDS scores less than or equal to 11 (36%) and TMAS scores less than or equal to 18 (40%); high-anxious subjects had MCSDS scores less than or equal to 11 (36%) and TMAS scores greater than or equal to 29 (80%). These cutoffs are similar to those used by Weinberger et al. (1979) and Asendorpf and Scherer (1983). Mean MCSDS and TMAS scores for each group are presented in Table 1. Random assignment yielded 16 repressor, 15 low-anxious, and 15 high-anxious subjects in the public condition, with corresponding ns of 15, 16, and 18 in the private condition.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Low-anxious</th>
<th>High-anxious</th>
<th>Repressor</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMAS M</td>
<td>14.7</td>
<td>34.4</td>
<td>12.2</td>
</tr>
<tr>
<td>SD</td>
<td>3.8</td>
<td>4.2</td>
<td>3.9</td>
</tr>
<tr>
<td>MCSDS M</td>
<td>8.6</td>
<td>7.9</td>
<td>21.7</td>
</tr>
<tr>
<td>SD</td>
<td>2.6</td>
<td>2.5</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Note. TMAS = Taylor Manifest Anxiety Scale; MCSDS = Marlowe-Crowne Social Desirability Scale.

Procedure

Overview. Four to 8 weeks following the questionnaire session, subjects were contacted by telephone to participate individually in the laboratory session. The session began with a rest period to permit collection of baseline data for affective and physiological measures. This was followed by a 3-min speech preparation phase, a 3-min speech delivery phase, and a "peak emotional experience" phase. Subjects then underwent a thorough postexperimental interview and debriefing.

Baseline. Subjects were told that the purpose of the study was to examine the relationship between feelings and physical reactions. After subjects were seated facing a tripod-mounted camera approximately 2 m away, physiologic sensors were attached. Subjects were told that the picture transmitted by the camera would enable the experimenter to check intermittently for bodily movement or postural changes that could affect physiological readings. The baseline lasted a minimum of 5 min and was terminated when two consecutive systolic blood pressure readings agreed to within ±5 mmHg.

Private condition. To minimize social evaluative concerns in the private condition, no identifying information was obtained from this group of subjects; we simply verified that the subject had arrived to participate in a psychology experiment. Prior to speech preparation, subjects in the private condition received the following instructions:

What I'm going to have you do now is to give a short speech. In the other room, I can see a picture of you on the monitor just as if you were appearing on television. When you give your speech, try to

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1 It should be noted that this classification scheme excludes "defensive/high-anxious" subjects, i.e., those with high scores on both the MCSDS and TMAS. Thus, strictly speaking, some of the differences observed between the three groups we did include may reflect main effects of either the MCSDS or TMAS, rather than MCSDS × TMAS interactions (see Warrenburg et al., 1989). Nonetheless, we chose to omit this group, as did Weinberger et al. (1979), because verbal-autonomic dissociation was expected to emerge in the comparison of repressive and low-anxious subjects, with repressors showing greater autonomic reactivity despite equivalently low TMAS scores and state affect responses. Also, in the Asendorpf and Scherer (1983) study, defensive/high-anxious subjects were included and found to show intermediate levels of emotional response and no evidence of response dissociation. It therefore seemed appropriate to focus on the three groups originally studied by Weinberger et al. to determine whether verbal-autonomic dissociation in repressors is regulated by social evaluative processes. However, given the Warrenburg et al. (1989) results, further research including all four groups would appear warranted (see also Footnote 5).
imagine that you're talking to me, rather than just to the camera, okay?

The experimenter then noted that she was working alone and thus slight delays could be expected. This was intended to emphasize the relatively private nature of the condition.

Public condition. When greeted by the experimenter, subjects in the public condition were asked for identifying information in order to increase social evaluative concerns. The public condition was introduced with instructions identical to those of the private condition. In addition, subjects were told: "While you're speaking I'll be observing, along with a clinical psychologist on my research committee and a doctoral student collaborating with me. Before we start I want to verify that everything's ready." At this point, the experimenter communicated through the intercom with a research assistant, ostensibly to verify that the physiologic sensors and television monitor were operating correctly. In actuality, this communication was intended to emphasize the public nature of the condition.

Speech preparation. After the manipulation, all subjects received instructions to take a few minutes and to prepare mentally a speech about the most undesirable aspect of their personality. They were asked to be completely honest and to avoid limiting the speech to superficial habits.

Speech delivery. Following the 3-min speech preparation, all subjects received instructions over the intercom to recite their speeches aloud. The experimenter signaled the end of the 3-min delivery phase. During the speech, the following prompt was used as necessary: "Please keep talking until I beep the intercom. Try to be as detailed as possible. Switch to another topic if necessary."

Peak emotional episode. On completion of the speech, all subjects described aloud the emotions they felt while talking about themselves. This procedure is designed to provide a brief, condensed episode of emotion (Malatesta & Izard, 1984). Data from this phase of the session are described in a separate report.

Dependent Measures

Self-report. Self-report of state affect was measured using a revised version of the Differential Emotions Scale (DES, Izard, 1972). The DES contains items for each of nine emotions: joy, interest, surprise, sadness, anger, disgust, fear, shame, and contempt. Additional items were included to obtain ratings for anxiety, frustration, and guilt. Subjects indicated the intensity with which they experienced each affective state by checking the appropriate point on an 8-point scale (0 = low intensity, 7 = high intensity). Subjects completed the DES on arrival at the laboratory and immediately following the baseline and peak emotional episode.

Physiological measures. A Grass Model 7D polygraph was used to record the electrocardiogram (EKG) from silver/silver-chloride electrodes arranged in a Lead I configuration. The EKG was recorded continuously throughout the session. Heart rate (HR) was hand-scored by counting R-waves in artifact-free 30-s epochs of the EKG that were time-locked to blood pressure readings as indicated by an event recorder.

Systolic and diastolic blood pressure (SBP and DBP) were sampled automatically at 1-min intervals using a Spacelabs Model 2600 noninvasive monitor. The occluding cuff and microphone were placed over the brachial artery of the nondominant arm.

Verbal and content measures. Speeches were transcribed for later quantification of response latency (s elapsed between end of instructions and beginning of speech), speech rate (number of words spoken/speech duration), silence quotient (s of silence/speech duration), pause quotient (number of pauses ≥ 3 s/speech duration), and frequency of prompts (number of prompts/speech duration). Time was measured using the digital chronometer superimposed upon the video image.

In addition, first-person pronouns (I, me, mine, and myself) were tallied as a measure of self-referencing. Self-referencing has been shown to reflect degree of self-awareness (Carver & Scheier, 1981).

Finally, the sentence in which the subject stated the undesirable characteristic that formed the speech topic was excerpted and assessed independently by two judges who used 5-point scales to rate the degree to which it was undesirable (I = not undesirable, 5 = extremely undesirable), unusual (I = not unusual, 5 = extremely unusual), and private (I = not private, 5 = extremely private).

Data Reduction and Statistical Analysis

Baseline values were computed for each of the cardiovascular measures by averaging the last two readings taken during the rest period. Change scores reflecting cardiovascular responses to speech preparation and speech delivery were computed by subtracting baseline values from the three readings taken during each of these phases. Ratings on the DES were summed to construct positive (joy, interest, and surprise) and negative (sadness, anger, disgust, fear, shame, contempt, anxiety, frustration, and guilt) affect scores (Watson & Clark, 1984). Change scores reflecting positive and negative affective responses were then computed by subtracting baseline ratings from those obtained following the peak emotional phase.

The general mode of analysis was a 3 × 2 (Coping Classification × Audience Condition) analysis of variance (ANOVA). For physiologic data, repeated measures terms were added to represent task phase (preparation or delivery) and time (min of phase). Results were unaffected by corrections for heterogeneity of covariance (Greenhouse & Geisser, 1959).

In analyses involving change scores, baselines were entered as a covariate where the assumptions of analysis of covariance (ANCOVA) were met (i.e., significant relationship between covariate and dependent measure, homogeneous slopes across conditions, and no significant relationship between independent variables and covariate). In the event that these assumptions were not met, data were subjected to ANOVA. Because quantification of verbal production and speech content yielded numerous variables of a largely exploratory nature, these data were submitted to multivariate analysis of variance (MANOVA) before univariate analysis. Minor variations in degrees of freedom associated with different analyses reflect data lost as a result of technical difficulties.

Results

Baseline

Self-reported affect. Positive and negative affect scores obtained following the baseline period were submitted to ANOVAs. Results for negative affect indicated a significant main effect for coping classification, \( F(2, 89) = 13.09, p < .0001 \). Neither the audience main effect nor the Coping × Audience interaction approached significance, \( ps > .10 \). Tukey honestly significant difference (HSD) post hoc tests (\( p < .05 \)) indicated that high-anxious subjects reported significantly greater baseline negative affect (\( M = 13.4 \)) than either low-anxious subjects (\( M = 6.8 \)) or repressors (\( M = 5.2 \)), with the latter two groups not differing significantly. Data for positive affect revealed no significant effects (\( ps > .25 \)).

Physiological measures. A series of ANOVAs for resting cardiovascular measures revealed no significant effects, \( ps > .25 \).
The magnitude of baseline values, (HR: 74.5 beats per min [bpm]; SBP: 107.1 mmHg; and DBP: 62.4 mmHg), indicated that subjects had adapted physiologically to the experimental setting.

**Responses to the Speech**

*Self-reported affect.* ANCOVA for positive affect change scores yielded no significant effects involving coping classification or audience condition (ps > .20). By contrast, the ANOVA for negative affect change scores yielded a significant main effect for coping, $F(2, 89) = 11.76, p < .0001$. Neither the audience main effect nor the Coping $\times$ Audience interaction approached significance, $ps > .20$. Tukey HSD post hoc tests ($p < .05$) indicated that high-anxious subjects reported a greater increase in negative affect following speech delivery ($M = 9.4$) than did low-anxious subjects ($M = 3.0$) or repressors ($M = 2.6$), with the latter two groups not differing significantly. These data accord with previous findings indicating that repressors, like low-anxious subjects, show little increase in reports of negative affect following stressful experimental tasks (Asendorpf & Scherer, 1983).

*Cardiovascular measures.* ANOVA for HR change scores indicated significant main effects for coping classification, audience condition, and task phase (ps < .02) that were qualified by the following significant interactions: Coping Classification $\times$ Condition, $F(2, 87) = 5.54, p < .01$; Condition $\times$ Phase, $F(1, 88) = 5.20, p < .03$; and Coping Classification $\times$ Condition $\times$ Phase $F(2, 88) = 3.44, p < .04$.

The three-way interaction is of greatest interest because it qualifies all lower order effects and tests the main hypothesis regarding the differential effects of the audience manipulation in subjects with different coping styles. As illustrated in Figure 1, HR elevations were greatest for repressors in the public condition during speech delivery ($M = 30.7$ bpm), as compared with the same repressors during speech preparation ($M = 15.1$ bpm), and as compared with all other subjects in either condition ($Ms$ from 4.9 to 15.9 bpm). Thus, only repressors showed enhanced HR in response to the audience manipulation, and the HR responses of repressors exceeded those of other subjects to a significantly greater degree in the public compared with the private condition.

In contrast to HR, blood pressure responses did not differentiate coping groups, although they were responsive to the audience manipulation and speech task. Analysis of SBP change scores yielded a significant effect of condition, $F(1, 82) = 6.99, p < .01$, indicating that SBP elevations were greater in the public ($M = 17.4$ mmHg) as compared with the private condition ($M = 13.2$ mmHg). A significant effect of phase, $F(1, 82) = 218.37, p < .0001$, indicated that SBP elevations were greater during speech delivery ($M = 20.1$ mmHg) than during speech preparation ($M = 10.2$ mmHg). All other effects for SBP were nonsignificant ($ps > .15$).

Similarly, analysis of DBP change scores revealed a near-significant condition main effect, $F(1, 88) = 3.91, p < .06$, indicating a tendency for DBP elevations to be higher in the public condition ($M = 13.6$ mmHg) as compared with the private condition ($M = 10.9$ mmHg). Also paralleling the SBP results was a significant effect of phase, $F(1, 88) = 149.31, p < .0001$, indicating that DBP elevations were greater during speech delivery ($M = 16.4$ mmHg) than during speech preparation ($M = 8.1$ mmHg). All other effects for DBP were nonsignificant ($ps > .20$).²

*Verbal–Physiological Discrepancy Scores*

Comparison of self-report and HR data suggests that, at the group level, repressors exhibited the expected verbal–auto-
nomic dissociation in the public condition, but not in the private condition. To determine whether this pattern of results occurred at the individual level, we adapted a procedure used by Asendorpf and Scherer (1983). Negative affect and HR change scores for the speech delivery phase were used to create a discrepancy score for each subject. Each set of change scores was standardized, and the difference between the two was taken as an index of verbal–autonomic dissociation. Positive discrepancy scores reflect instances where standardized HR change is greater than standardized change in self-reported negative affect, whereas negative discrepancy scores indicate the reverse.4

Discrepancy scores were submitted to a 3 × 2 (Coping Classification × Public–Private Condition) ANOVA that yielded a main effect of coping classification (p < .0001) and a Coping × Condition interaction, F(2, 87) = 3.30, p < .05. The interaction is illustrated in Figure 2. Simple effects tests of the interaction at the .01 level of significance indicated that the audience manipulation influenced verbal–autonomic dissociation only among repressors. Specifically, one-sample t tests indicated that repressors in the public condition showed discrepancy scores significantly greater than zero, indicating that their HR responses were greater than their reports of negative affect, t(15) = 4.33, p < .0006. By contrast, repressors in the private condition showed no significant discrepancy (p > .21). Because verbal–autonomic dissociation in high- and low-anxious subjects was unaffected by the public–private manipulation, discrepancy scores for these subjects were pooled across conditions. One-sample t tests indicated that low-anxious individuals were not significantly discrepant (p > .39). By contrast, high-anxious subjects showed discrepancy scores significantly less than zero, indicating that their reports of negative affect were greater than their HR responses regardless of experimental condition, t(32) = −3.23, p < .003.

**Verbal Productivity**

Measures of verbal productivity (response latency, speech rate, silence quotient, pause quotient, and frequency of prompts) were submitted to a 3 × 2 (Coping Classification × Public–Private Condition) MANOVA. All multivariate effects were nonsignificant (ps > .10).

Density of self-referencing (i.e., frequency of first-person pronouns corrected for total number of words spoken) was analyzed in a 3 × 2 (Coping Classification × Public–Private Condition) ANOVA. The interaction effect approached significance (p < .06). Repressors and low-anxious subjects tended to exhibit more self-referencing in the public condition (repressor M = 0.14; low-anxious M = 0.14) as compared with the private condition (repressor M = 0.12; low-anxious M = 0.12). High-anxious subjects, by contrast, tended to show more self-referencing in the private condition (M = 0.14) as compared with the public condition (M = 0.13).

**Speech Topic Ratings**

Interjudge reliability of speech topic ratings, assessed by Pearson product–moment correlation coefficients, was .62 for desirability, .64 for unusualness, and .64 for privacy. Ratings were averaged across the two judges and submitted to a 3 × 2 (Coping Classification × Public–Private Condition) MANOVA. There was a significant Coping × Condition interaction, F(6, 168) = 2.16, p < .05. Univariate analyses for desirability ratings revealed a significant main effect of coping classification (p < .004), which was qualified by a Coping × Condition interaction, F(2, 85) = 6.77, p < .002. Analysis of simple effects indicated that the speech topics of low-anxious subjects were rated as more undesirable in the public condition (M = 2.7), as compared with the private condition (M = 2.3; p < .05). By contrast, topic desirability of high-anxious subjects (M = 2.9) and repressors (M = 2.8) did not significantly differ by condition. No other univariate effects approached significance (ps > .10).

**Discussion**

This study replicates and extends previous findings documenting a specific pattern of verbal–autonomic dissociation in repressive copers. As in earlier work involving male subjects, female repressors showed heightened physiological activity that was not accompanied by a similar elevation in their self-reports of negative affect. More importantly, the present study demonstrates that it may be possible to bring this phenomenon under experimental control by manipulating certain features of the social context: The discrepant emotional response pattern previously linked to repressive coping was observed only in the implied presence of an evaluative audience. By contrast, high-

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4 Standardized discrepancy scores provide a convenient description of the relative magnitudes of two emotional response measures, at an individual level, using sample data as a reference. They also permit tentative comparisons with previous studies (i.e., Asendorpf & Scherer, 1983). The zero point should not be interpreted as representing an appropriate or desirable response, pending further research linking verbal–autonomic dissociation to specific adaptive outcomes. Note, also, that statistical analyses of standardized discrepancy scores are not independent of analyses of their constituent, raw scores.
anxious subjects in both experimental conditions displayed an opposite emotional response pattern, with elevations in reported negative affect that were not accompanied by commensurate increases in physiologic activity. Low-anxious subjects were relatively nonresponsive in both verbal and autonomic channels.

These results suggest that repressive coping may be conceptualized in terms of an emotion-focused coping style in which emotional responses are regulated by self-appraisals involving social evaluative standards. It would appear that this coping response may be activated in predisposed individuals by psychologically threatening situations in which attention is directed to the self. The effects of increased self-attention may be mediated by an increase in the salience of a discrepancy between two cognitive-affective elements: (a) the initial perception of threat and associated negative affect and (b) social evaluative standards that are relevant to the threat or to the ensuing emotional response.

Previous research provides only a limited means of characterizing environmental elicitors of repressive coping. This is because it is difficult to determine the degree to which effects attributed to task performance reflect social psychological features of the experimental situation. The present study explicitly manipulated social context by comparing a public condition to a relatively less public condition. Evidently, this manipulation increased the emotional impact of the experimental task among rep ressors, but not among other subjects. This suggests that being required to disclose undesirable attributes was differentially threatening to repressive subjects only when they appraised that self-disclosure from the point of view of an evaluative audience. In repressors, this point of view presumably enhanced the salience of social standards that were relevant to the self-disclosure.

There are two general ways that the public self-awareness notion might account for the present results. One possibility is that, compared with other subjects, repressors may have responded with a greater increase in public self-awareness. If so, they may have become more acutely aware of discrepancies between public self-attributes and evaluative standards that might have been activated in other subjects had they shown an equivalent increase in self-awareness. This interpretation would be consistent with the marginal interaction effect indicating that repressors tended to exhibit more self-referencing in the public condition as compared with the private condition. However, because self-referencing data for repressors and low-anxious subjects were virtually identical, enhanced self-awareness alone cannot account for the more pronounced HR responses of repressors.

It may be more plausible to assume that repressors differed from other subjects, not in the degree of enhanced self-awareness they experienced in the public condition, but in the nature or magnitude of the self-discrepancy that became salient to them as a consequence of enhanced self-awareness. This could be taken to suggest that repressors' speeches would reveal more undesirable self-perceptions than those of other subjects. On the other hand, one might not expect repressors to disclose negative self-evaluations. Such disclosures would be tantamount to acknowledging emotional distress, and repeated opportunities to document reports of negative affect in repressors have met with virtually no success (Weinberger, 1990). In any event, content analysis of speech transcripts did not indicate that repressors in the public condition gave self-descriptions that were distinctive in any way.

Dependent measures used in this study clearly do not provide a direct means of characterizing the self-evaluative process in which repressors may have engaged. However, the rationale underlying the audience manipulation suggests a possibility that appears plausible when considered in the light of previous findings: Enhanced self-awareness experienced by repressors in the public condition may have produced a discrepancy between their emotional responses to the speech task and an evaluative standard of *stoicism*, that is, a desired view of the self as emotionally unperturbable. The notion that repressors possess a standard of stoicism is consistent with evidence suggesting that repressors are strongly motivated to "remain restrained and unreactive under aversive circumstances. . . ." (Weinberger, 1990, p. 371). For example, repressors are more likely than other subjects to stress the value of a logical, nonemotional life-style when asked to describe their most important characteristics (Weinberger et al., 1979).

On the basis of the nature of the audience manipulation and the effects of similar maneuvers in previous research, it might further be argued that this standard of stoicism pertains specifically to the overt (i.e., public) expression of affect (Carver & Scheier, 1981). However, it is also possible that the audience manipulation activated in repressors a self-evaluative process involving private (i.e., subjective) aspects of emotionality. In this view, the stoical self-concept of repressive copers involves an evaluative standard that takes the perspective of others, or what Higgins (1987) refers to as the "other standpoint" on the self, and that may be discrepant with both the private experience and public expression of emotion. That repressors are psychologically reactive would further suggest that stoicism represents what Higgins (1987) describes as an "ought-self" domain rather than a "desired-self" domain. Ought-self discrepancies have been linked to physiologic activation, whereas desired-self discrepancies have been linked to physiologic deactivation.

In contrast to repressors, high- and low-anxious subjects were unaffected by the audience manipulation. In both experimental conditions, high-anxious subjects differed from their low-anxious and repressive counterparts in reporting greater elevations in negative affect. However, high- and low-anxious subjects did not differ with respect to HR reactivity. As a consequence, the high-anxious group showed a discrepant response pattern in both the public and private conditions, such that their reports of increased negative affect appear disproportionate to their cardiac activity. Previous findings concerning the nature of response patterning in high-anxious individuals have been mixed, with some studies reporting concordance among emotion response channels (Asendorpf & Scherer, 1983; Weinberger et al., 1979) and others reporting a response dissociation similar to the one found in the present investigation (Gudjonsson, 1981; Kohlmann, Singer, & Krohne, 1989).

High-anxious individuals have been equated with the sensitizers in Byrne's (1964) original repression-sensitization classification (Gudjonsson, 1981; Kohlmann, Singer, & Krohne, 1989).
In support of this assumption, Weinstein et al. (1968) observed an emotion response pattern similar to that of our high-anxious group among subjects they identified as "sensitizers" on the basis of psychometric testing. Traditional descriptions of the high-anxious/sensitizing individual involve a coping strategy that contrasts with that of repressors in that it involves attending to and acknowledging, rather than avoiding, negative affect (Byrne, 1964). We suggest that this process reflects, in part, the operation of an emotional self-concept. The high-anxious/sensitizing person recognizes that he or she is prone to experiencing distress. Enhanced public self-awareness produces no further increment in emotional responding because the appraisal of threat and associated negative affect are self-confirming, rather than being discrepant with a social evaluative standard requiring stoicism.

Assuming that repressive and sensitizing coping styles reflect self-appraisal processes involving stoical and emotional self-concepts, why are they manifested in directionally opposite patterns of verbal-autonomic dissociation? A tentative means of addressing this issue is suggested by one of the major premises underlying this study, which is that emotion response indicators reflect the operation of separate but interacting control mechanisms. From this perspective, it may be argued that self-report indicators of negative affect largely reflect verbal-conceptual emotional processes (Leventhal, in press) or reflective emotional experience (Mayer & Gaschke, 1988). Self-reports and the conceptual level of emotional responding they reflect may therefore be more susceptible to other indicators to regulation by highly conceptual cognitive structures such as emotion-related self-concepts. Consequently, ratings of negative affect are attenuated by the stoical self-concept of repressors and amplified by the emotional self-concept of the highly anxious. These ratings represent readouts of emotional experience as biased or transformed by self-concept (see Swann, 1987). By contrast, cardiac activity is less susceptible to regulation by conceptual emotional processes, being more directly coupled to a behavioral activating system recruited automatically by cognitive appraisal (Fowles, 1980; Leventhal, in press). Physiologic activation is greater in repressors because initial threat appraisal is compounded by the subsequent appraisal of a discrepancy between the negative emotional response and the stoical self-concept.

In conclusion, this study demonstrates the utility of examining social psychological determinants of emotion-focused coping. The results provide preliminary support for the notion that repressive coping may reflect a self-evaluative process initiated by psychological threats occurring under conditions of heightened self-awareness. The result is a discrepancy between the perception of emotionality and a stoical self-concept, which is manifested in a pattern of verbal-autonomic dissociation consisting of heightened physiologic activity in the absence of corresponding increases in reported distress. High-anxious subjects display an opposite pattern of verbal-autonomic dissociation that may reflect the operation of a sensitizing coping style in which threat appraisal and consequent negative affect confirm an emotional self-concept. These findings encourage further efforts to integrate the study of emotion-focused coping with behavioral self-regulation theory and multicomponent views of emotion.

References


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