

## Monitoring and Blunting: Validation of a Questionnaire to Assess Styles of Information Seeking Under Threat

Suzanne M. Miller  
Temple University

Subjects were divided into information seekers (high monitors)/information avoiders (low monitors) and distractors (high blunters)/nondistractors (low blunters) on the basis of their scores on a self-report scale to measure coping styles, the Miller Behavioral Style Scale (MBSS). In Experiment 1, subjects were faced with a physically aversive event (the prospect of electric shock). High monitors and low blunters chose to seek out information about its nature and onset whereas low monitors and high blunters chose to distract themselves. This effect was strongest with the blunting dimension. High monitoring and low blunting were also accompanied by sustained high anxiety and arousal. In contrast, low monitors and high blunters were able to relax themselves over time. In Experiment 2, subjects worked on a series of tests that presumably predicted success in college. They could attend as often as they wished to a light that signaled how well they were performing. Results showed that coping-style scores accurately predicted informational strategy, particularly with the monitoring dimension: High monitors tended to look at the light whereas low monitors tended to ignore it. Thus the MBSS measure of coping styles appears to be a valid instrument for predicting behavioral strategies in response to both physical and psychological stressors. The theoretical and practical implications of these findings are discussed.

When individuals are threatened with an aversive event, they differ in how they deal with information about it. Past work with the monitor/blunter paradigm has conceptualized monitoring/blunting as a coping dimension or style. This style supposedly categorizes individuals into monitors (information seekers) or blunters (distractors) on the basis of how they deal with threat-related cues (Miller, 1981, in press). Further conceptual and empirical analyses as data become available, however, raise questions about whether informational preferences under threat may consist of more than one dimension. To explore this possibility more adequately, it is necessary to treat monitoring and blunting as potentially divisible and separate dimensions and to scrutinize the meaning of each independently.

Attention to the uses of information in the coping process has preoccupied personality psychology throughout its history. A central but unresolved issue in this area is whether individuals actually exhibit consistent and stable differences in their abilities and inclinations to monitor and to distract themselves un-

der threat. To the extent that individuals characteristically opt for a given strategy, it seems reasonable to refer to an informational style and to explore its distinguishing features. This research focuses on the measurement and identification of individual dispositions in the tendency to seek and to distract oneself from threatening information and examines the behavioral and subjective correlates of these coping styles.

Recent research in the coping process bears out the primacy of these informational modes for dealing with impending threat. Although little is known about cognitive styles per se, the evidence indicates that the way in which individuals selectively attend to and process threat-relevant cues in a given situation determines how stressed and anxious they become in that situation. Those who are induced to engage in cognitive avoidance and blunting strategies generally show less stress and arousal than those who are induced to engage in cognitive scanning and monitoring (Holmes & Houston, 1974; Monat, Averill, & Lazarus, 1972; Neufeld, 1976). Although the majority of studies have focused on subjects' responses to physically aversive stressors, similar findings are obtained when studying threatening contexts that do not involve the possibility of physical harm. In an important series of studies, Lazarus and his coworkers (Lazarus & Alfert, 1964; Lazarus, Opton, Nomikos, & Rankin, 1965; Speisman, Lazarus, Mordkoff, & Davidson, 1964) found that the response to vicarious-stress-evoking films varies as a function of coping strategy. Overall, inducing subjects to engage in high-blunting/low-monitoring strategies reduces physiologic arousal; subjects who are induced to engage in low-blunting/high-monitoring strategies maintain higher arousal.

---

This research was partially supported by the Robert Wood Johnson Foundation, Temple University Grant in Aid of Research 700-055-69, and Temple University Biomedical Support Research Grant 01-902-19. I am indebted to A. Bandura and W. Mischel for their invaluable comments on an earlier draft of this article. I also thank A. Birnbaum, M. Green, D. LaPorte, C. Quinn, and J. Summerton for their assistance with data collection.

Correspondence concerning this article should be addressed to Suzanne M. Miller, Department of Psychology, Temple University, Weiss Hall, 13th and Columbia Streets, Philadelphia, Pennsylvania 19122.

Moreover, individual differences in informational preferences appear to interact with and temper the impact of situational variables (Mischel, 1973, 1979). One key situational property found to affect stress is whether the threatening event is predictable or unpredictable, that is, whether the individual has maximal information (predictability) or minimal information (unpredictability) about the event and its effects. Yet the effects of information are inconsistent: It is sometimes preferred and decreases stress and arousal, but it can also have the reverse effect (Bandura, 1977, 1981; Miller, 1980, 1981). This may be because individual differences in information-seeking styles moderate the impact of information, with high monitors/low blunterns choosing predictability over unpredictability and low monitors/high blunterns choosing unpredictability over predictability (Cohen & Lazarus, 1973).

A fine-grained analysis of the coping process therefore requires attention to individual dispositions, situational factors, and their interactive effects. This perspective dovetails with recent advances in personality theory that endorse the value of viewing self-regulatory processes generally in interactional terms (Mischel, 1973, 1979). It is important, then, to be able to identify independently and in advance those disposed to monitor or not monitor for information and those disposed to distract from or not distract from information. However, research in this area has been hampered by the lack of an easy-to-administer and well-validated self-report coping measure.

The main problem with earlier measures of individual differences has been too much converging validity and too little discriminant validity among them (Byrne, 1961, 1964; Goldstein, 1959; Goldstein, Jones, Clemens, Flagg, & Alexander, 1965). To circumvent these problems, a self-report scale was devised and designed to be more closely tailored to the kinds of informational choices that have been of theoretical and experimental interest. The Miller Behavioral Style Scale (MBSS) divides individuals into high and low monitors and high and low blunterns based on their self-reported preferences for information or distraction in a variety of naturalistic stress situations. In other research, the MBSS has been found to be unrelated to demographic variables and to trait measures such as repression-sensitization, depression, anxiety, and Type A (Miller & Brody, 1985; Miller, Lack, & Asroff, 1982; Miller & Mangan, 1983; Miller & Mischel, 1986).

A further problem of previous instruments, including the MBSS, is that they have generally collapsed across the monitoring/blunting dimensions and have therefore failed to distinguish between high and low information seekers on the one hand and high and low distractors on the other. Given that the coping process is best conceptualized as a complex, multidimensional phenomenon, it appears useful to explore the two dimensions separately as a means of determining whether there are unique or distinctive features associated with each (see Folkman & Lazarus, 1985). The primary aim of this research was to examine whether subjects' self-reports of their information-seeking/information-avoiding styles and distracting/nondistracting styles would differentially predict actual informational strategies under threat.<sup>1</sup>

To answer these questions, two experiments were conducted. In Experiment 1, subjects who had completed the MBSS were threatened with a physically aversive event (threat of electric shock) and allowed to choose whether to monitor for infor-

mation about the event or to distract themselves from threat-relevant cues. Experiment 2 explored subjects' informational strategies in response to a direct, nonphysical ego stressor (performance on an important cognitive task). The following sets of issues were addressed: (a) Do individual dispositions in coping style cohere with actual choice behavior under threat? (b) Do individuals identified as high monitors or low blunterns exhibit more stress before, during, and after a threatening experience than do individuals identified as low monitors or high blunterns?

## Experiment 1

### Method

#### Overview

The experiment consisted of two sessions. During the first session, subjects completed a coping-styles questionnaire. During the second session, subjects were threatened with an improbable electric shock and were allowed to choose whether they wanted information about the nature and onset of shock. This meant, in practice, that subjects could either listen to an auditory channel on which they heard a series of statements describing electric shock and its effects as well as a warning tone that signaled shock onset or, alternatively, they could listen to music on another channel with no preparatory statements and no warning signal. Thus, listening to the tone and statements embodied preference for information; listening to the music embodied preference for distraction (adapted from Miller, 1979).

#### Subjects

Subjects were 15 male and 15 female undergraduates of the University of Pennsylvania. Two subjects declined to participate and were replaced. Each subject received \$2.50 for participating in the study.

#### Shock Stimulus

Electric shock during the threshold test was generated by a 60-Hz constant current source delivered to the subject via concentric shock electrodes (Tursky, Watson, & O'Connell, 1965).

#### Auditory Stimuli

Auditory stimuli consisted of three recorded cassette tapes played on separate General Electric model 3-5105A cassette tape recorders. The music was a neutral, nonarousing variety obtained from Muzak Inc. The information tape consisted of approximately four statement units per trial, each unit lasting about 10 s. This information was designed to reduce any fear or uncertainty about the nature and effects of electric shock. Subjects heard such information as how the shocks would be delivered (e.g., "The concentric shock electrode is designed so that current passes on or across the surface of your skin and does not penetrate to tissues below the skin") and what they could expect to feel (e.g., "The shock feels like a burning, prickling sensation in the area of the electrode, and like a series of strong waves traveling up and down the arm. This sensation stops as soon as the shock stops"). The tone tape consisted of a low monotone indicating safety (450 Hz) and a high warning

<sup>1</sup> Preliminary analyses showed the monitoring and blunting dimensions to be negatively correlated,  $r(28) = -.41, p < .01$ , for Study 1 and,  $r(38) = -.49, p < .01$ , for Study 2. That is, the more monitoring options endorsed, the fewer blunting options endorsed. However, in other work the two dimensions have been found to be orthogonal (Miller & Brody, 1985; Miller, Leinbach, & Brody, 1985).

signal indicating danger (1000 Hz). On each trial, the low tone remained on for the first 50 s and was replaced by the high warning tone during the final 10 s.

### Procedure

On arrival at the laboratory, subjects were told that the experiment involved electric shock to the fingers. After signing the consent form, subjects were administered a shock-threshold test. This involved the administration of increasingly intense shocks (in increments of 0.1 mA) until the subject first felt a mild tingling sensation. This test was ostensibly performed to ascertain the subject's sensitivity level so that the appropriate intensity of shock could be set for the experiment proper. In fact, this was carried out to make the threat seem more real and to reduce any ambiguity surrounding the first receipt of shock.

After the sensitivity test, the shock apparatus was disconnected for the remainder of the session. No subject ever received a shock above the threshold level. Subjects were told, however, that the shock to be used during the experiment proper would feel "quite painful" in relation to the threshold shock.

Subjects were then instructed that there would be a series of experimental trials and that the probability of receiving a shock on any given trial was 1 in 5, or 20%. They then received the following instructions:

There are two auditory channels available for you to listen to. On one channel, you will hear a series of statements describing the shock and what you can expect to feel if a shock occurs. In the background, you will also hear a tone that will give you information about when the shock might occur. As long as you hear a low monotone, there is no chance of receiving shock. When the tone switches to a high pitch, it means that the one in five chance of shock is in force, and shock is now possible. . . . On the other channel, you will hear music. When you listen to the music, you will have no way of knowing when a shock is possible and you will hear none of the statements about shock.

Care was taken to emphasize that it was up to subjects to determine what they heard and that they could switch back and forth between the two channels as often as they liked. It was also emphasized that the probability of receiving a shock was the same, regardless of which channel subjects chose to listen to.

A short demonstration tape was played for the subject that included samples of the music, the tones, and the voice. The subject then completed the Multiple Affect Adjective Check List (MAACL; Zuckerman, Lubin, & Robins, 1965). There were four trials, each 1 min in length, with a 1-min intertrial interval. After each trial, subjects completed three self-report scales. The MAACL was readministered at the end of the fourth trial along with a scale assessing perception of control. At this point, the subject was informed that the experiment was over, asked to complete several self-report scales, and then debriefed.

### Dependent Measures

*Self-ratings.* After each trial, subjects retrospectively rated their level of tension during the trial, their expectation of shock, and how much they had been thinking about shock on separate 7-point scales (1 = *not at all* and 7 = *extremely*). A fourth scale was included to assess the degree of pain associated with any shock received, but this scale was never used because no shocks were administered. After the experiment was over, subjects indicated how much control they felt they had over the shocks on a scale of 1 to 7.

Subjects also rated themselves on a standardized mood questionnaire for anxiety, depression, and hostility (Zuckerman et al., 1965) just before the first trial (after the demonstration tape) and following the last trial.

*Behavioral measures.* Whether the subject was listening to the music

channel or the information/tone channel was recorded continuously by the experimenter.

*Learning measure.* In order to assess the degree to which subjects input, learned, and remembered the statements they had heard, subjects completed an information questionnaire at the end of the experiment. This consisted of a 10-item true-false questionnaire on the contents of the information tape (e.g., "When the shock occurs, a person's arm muscles may twitch involuntarily"). For each subject, the only questions scored were those that addressed statements that the subject had actually heard on the information channel. From among these scored items, subjects were given a score based on the percentage of questions that they answered correctly.

*Personality and coping-style measures.* To identify information seekers (high monitors)/information avoiders (low monitors) and distractors (high blunters)/nondistractors (low blunters), subjects were administered the MBSS. Specifically, this scale asks the individual to imagine four stress-evoking scenes that are similar in context to the present situation (e.g., "Imagine that you are afraid of flying and have to go somewhere by plane"). Each scene is followed by eight statements that represent different ways of dealing with the situation. Four of the statements are of a monitoring or information-seeking variety (e.g., "I would carefully read the information provided about safety features in the plane") and four are of a blunting or information-avoiding variety (e.g., "I would watch the in-flight film even if I had seen it before").

Two scores are derived from this scale: (a) the total monitoring score, which is obtained by summing the number of monitoring options endorsed across the four situations (higher score equals more monitoring) and (b) the total blunting score, which is obtained by summing the number of blunting options endorsed across the four situations (higher score equals more blunting).<sup>2</sup>

### Results

I explored the relation between dispositional coping styles and situational coping strategy. I also examined the emotional and cognitive correlates of the different coping styles. Preliminary analyses showed no significant differences between men and women in coping-style scores and generally revealed no main effects or interactions with sex on any of the dependent measures. Therefore the data were collapsed across sex.<sup>3</sup>

#### *Relation Between Dispositional Coping Styles and Situational Coping Strategy*

The question of primary interest was whether individuals identified as high monitors/low blunters or low monitors/high blunters on a self-report measure of coping styles would differ in their choices of coping strategy in an actual threat situation. For this purpose, subjects were divided into (a) high and low monitors on the basis of whether they scored above or below the mean (equivalent to dividing at the median) on the monitoring subscale and (b) high and low blunters on the basis of whether they scored above or below the mean (equivalent to dividing at the median) on the blunting subscale. Table 1 gives the means,

<sup>2</sup> Test-retest analyses with a sample of 110 subjects show the MBSS subscales to be highly stable over a 4-month period: for the monitoring subscale,  $r(98) = .72, p < .01$ ; for the blunting subscale,  $r(98) = .75, p < .01$  (Miller & Mischel, 1986).

<sup>3</sup> The few sex effects obtained are presented elsewhere (Miller & Mischel, 1986).

Table 1  
Means and Standard Deviations for Subscales  
of the Miller Behavioral Style Scale

Subscale	No. of high monitors/ low blunters	No. of low monitors/ high blunters	M	SD	$\alpha$
Experiment 1					
Monitoring	14	16	9.70	2.63	.79
Blunting	14	16	5.57	2.86	.69
Experiment 2					
Monitoring	19	21	11.10	2.46	.75
Blunting	17	23	4.55	2.09	.67

standard deviations, and alpha coefficients for the two MBSS subscales.

Two separate analyses of variance (ANOVAs) for repeated measures were then performed, testing for a significant effect of coping style on the amount of time spent listening to the information/tone channel on each trial. The results yielded a significant main effect for coping style on listening time. Overall, high monitors and low blunters spent significantly more time listening to the tone/information than low monitors and high blunters did. Interestingly, this effect was strongest using scores on the blunting subscale,  $F(1, 28) = 19.26, p < .001$ , and more marginal using scores on the monitoring subscale,  $F(1, 28) = 3.18, p < .08$ .

Figure 1 shows the relation between coping style and coping strategy by using scores on the blunting subscale. As can be seen, low blunters spent on average over twice as much time listening to the information/tone channel across the four trials as high blunters did (48.9 s, of a maximum of 60 s, for low blunters vs. 20.26 s for high blunters). So low blunters almost exclusively opted for an information-seeking mode, whereas high blunters generally preferred to distract themselves. There was no interaction of coping styles and time, nor was there a main effect for time.

A correlational analysis was also performed, showing a strong positive association between choice of monitoring strategy and scores on the monitoring subscale,  $r(28) = .55, p < .005$ , and a strong negative association with scores on the blunting subscale,  $r(28) = -.79, p < .005$ .

In sum, when faced with a threatening situation, individuals who differ in coping styles diverge in their choices of coping strategy: High monitors, who characteristically seek information, and low blunters, who characteristically avoid distraction, show a behavioral preference for cues about threat; low monitors, who characteristically avoid information, and high blunters, who characteristically distract themselves, prefer instead to listen to distracting music.

### Coping Styles: Emotional and Cognitive Correlates

**MAACL and posttrial ratings.** For the posttrial 7-point ratings of tension, an ANOVA for repeated measures showed a significant interaction of coping style and time for subjective reports of tension: for the blunting subscale,  $F(3, 84) = 2.66, p < .05$ ; for the monitoring subscale,  $F(3, 84) = 3.59, p < .02$ . As seen in Figure 2, all subjects (dividing on the basis of scores on the

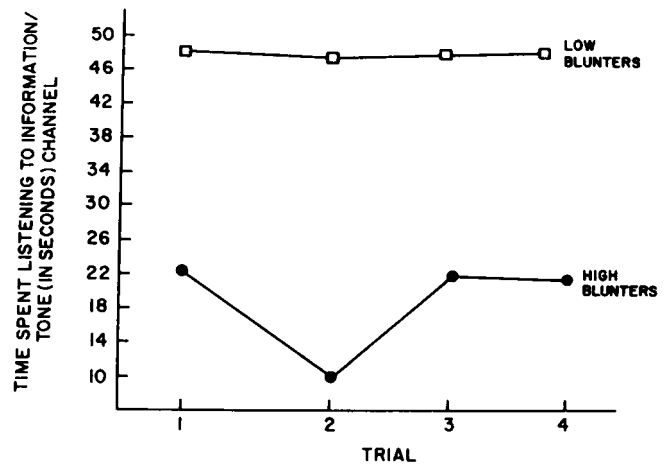


Figure 1. Amount of time spent listening to information/tone channel by coping-style groups as measured by using the blunting subscale.

blunting subscale) expressed similar levels of tension on Trial 1. However, high blunters showed a rapid reduction in tension ratings over the course of the four trials, whereas low blunters stayed more highly aroused.

For MAACL ratings, an ANOVA for repeated measures showed a significant main effect for coping style on anxiety: for the blunting subscale,  $F(1, 26) = 7.83, p < .01$ ; for the monitoring subscale,  $F(1, 26) = 7.32, p < .01$ . Overall, high monitors and low blunters remained more anxious in the situation than low monitors and high blunters did. Figure 3 shows this effect (dividing on the basis of the blunting subscale). All subjects showed fairly high levels of anxiety before the first trial, but high blunters showed a far greater decrease in anxiety by the end of the fourth trial than low blunters did.

There was no effect of coping styles on the remaining self-report or MAACL variables, although there was a main effect for time on all these measures. Over the course of the experiment, subjects generally decreased their level of arousal.

**Postexperimental ratings.** There was no effect of coping styles on posttrial ratings of control.

**True-false questionnaire.** Both high monitors/low blunters

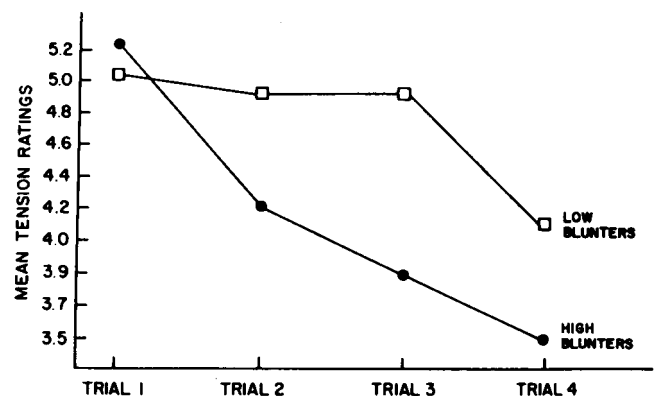


Figure 2. Mean tension ratings of coping-style groups (on a scale of 1 to 7, where 1 = not at all tense and 7 = I am extremely tense) obtained after each trial as measured by using the blunting subscale.

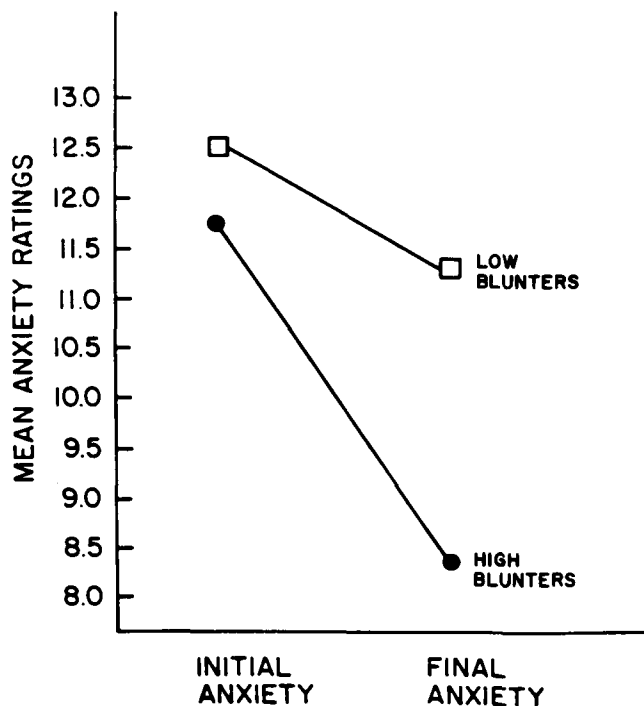


Figure 3. Mean anxiety ratings of coping-style groups (on a scale of 0 to 21, where 0 = no anxiety and 21 = extreme anxiety) obtained before and after the experiment as measured by using the blunting subscale.

and low monitors/high blunters correctly and accurately learned the material on the information/tone channel.

**Motivation for monitoring.** At the end of the experiment, subjects were asked to state which channel they had listened to most. As Table 2 shows, low blunters (dividing on the basis of the blunting subscale) said they listened primarily to the information/tone channel and high blunters said they listened primarily to the music channel,  $\chi^2(2, N = 30) = 15.82, p < .001$ . Similar results were obtained for the monitoring subscale,  $\chi^2(2, N = 30) = 13.61, p < .001$ . However, for all subjects, the main motivation for listening to the music was for distraction and relaxation purposes, whereas the main motivation for listening to the information/tone was to reduce uncertainty. About half of each coping group thought that most people would listen to the music and half thought most people would listen to the information/tone. Finally, all groups thought the information was more important than the tone, found the music relaxing, and found the information/tone to be a combination of relaxing and tension inducing.

In sum, although there were no initial differences between groups at the beginning of the experiment on any affective or cognitive dimensions, high monitors and low blunters expressed higher levels of tension and anxiety by the end of the experiment than low monitors and high blunters did.

## Experiment 2

### Method

#### Overview

The experiment consisted of two sessions. During the first session, subjects completed a coping-styles questionnaire and a trait-anxiety

scale. During the second session, subjects were presented with a series of ego-threatening cognitive tasks and allowed to choose whether they wanted information about the quality and speed of their performance. This meant, in practice, that subjects could attend as often as they wished to a light that signaled how well they were performing relative to previously established norms and to a clock that indicated how much time had passed. Thus, looking up at the light or the clock embodied preference for information; avoiding these signals embodied preference for distraction.

#### Subjects

Subjects were 20 male and 20 female undergraduates of the University of Pennsylvania. One subject declined to participate and was replaced. Each subject received \$2.50 for participating in the study.

#### Cognitive Task

The cognitive task consisted of a series of aptitude and achievement tasks drawn from the practice manual of the Graduate Record Examination (GRE). Subjects were tested for their ability in such areas as verbal and nonverbal analogies, mathematics, English, and science. The items chosen were those that subjects had found moderately difficult to unsolvable during pilot testing. Each subtest consisted of 10 multiple-choice items with five response options per question. The subject worked from a printed version of the test and held a box containing five switches (labeled 1 through 5) that corresponded to the numbered options on the test sheet. Subjects indicated their answer by pressing the appropriate button. When subjects did not know the answer, they had to press Button 5 (*cannot say*) before going on to the next question.

#### Visual Stimuli

A green light was used to signal that subjects were performing above the 75th percentile. A red light signaled that the subject's performance had fallen below this percentile. These lights were mounted on the wall behind the subject's right shoulder, outside of his or her peripheral vision. To see which light was illuminated, subjects had to raise their heads and turn to the right. A clock indicating how much time had passed was mounted on the wall behind the subject's left shoulder. This stimulus was also placed outside of subjects' peripheral vision so that they had to raise their heads and turn to the left if they wished to know the time.

#### Procedure

On arrival at the laboratory, subjects were told that the experiment involved an assessment of how various environmental variables affect performance on a test of cognitive ability and achievement. They were also told that these cognitive tasks were used to predict future success in college, graduate school, and business. After signing the consent form, subjects completed the MAACL. They were then informed about the number and type of questions included on the test. Subjects were led to

Table 2  
Main Channel Choice for Coping-Style Groups

Channel	Blunters		Monitors	
	High	Low	High	Low
Music	11	0	2	10
Information/tone	5	12	10	6
Both	0	2	2	0

believe that the amount of time available to complete the test was being varied from subject to subject and that they had 1 hr to do so. Actually, all subjects were stopped after 40 min.

The presence of the light and the clock were explained to subjects as follows:

If you look up on the wall you will find two colored lights: a red one and a green one. These lights are connected to our computer and give a general indication of how well you are doing relative to the average Penn student. The computer keeps a cumulative record of your score and compares your new score to the average every time you answer another question. It is how you are doing on the whole test so far that is being computed and not the correctness of your last answer. Essentially we want to know whether or not you are remaining in the top 25% of the Penn student population. Because a large number of students have taken this test over the year we can accurately predict the pattern of your own performance under these particular conditions. If you are interested, you can follow how well you are doing by looking at the lights. If the light is green it means that you are remaining in the top quarter. If the light is red, however, it means that you have fallen below. Remember that you should work as quickly as you can because failure to answer will be counted against you as one full error. The clock will tell you how much time you have left.

In fact, the green light was illuminated shortly after the subject began to work on the test and remained on throughout the experiment.

Before beginning the test, subjects completed a self-report scale assessing affect and attention. This scale was readministered after 40 min along with the MAACL. Subjects were then informed that the experiment was over, asked a series of postexperimental questions, and debriefed.

### Dependent Measures

*Self-ratings.* Self-report ratings of affect and attention were obtained just before beginning the tests and again after 40 min. Subjects rated themselves on four 7-point scales for level of tension and the extent to which they had thought about the test, their ability, and the time (from 1 = *not at all* to 7 = *extremely*).

Subjects also rated themselves on a standardized mood questionnaire for depression, anxiety, and hostility just after signing the consent form and after 40 min had passed (Zuckerman et al., 1965).

*Behavioral measures.* The number of times the subject looked up at the lights or the clock was recorded continuously by the experimenter, who sat behind a two-way mirror.

*Personality and coping-style measures.* To identify information seekers (high monitors)/information avoiders (low monitors) and distractors (high blunters)/nondistractors (low blunters), subjects were administered the MBSS as previously described. Subjects also completed Endler's Trait Anxiety Scale (Endler & Okada, 1975).

### Results

First I explored the relation between dispositional coping styles and situational coping strategy, and then I explored the emotional and cognitive correlates of the different coping styles. Preliminary analyses revealed no significant differences between men and women on any of the coping, emotional, or cognitive variables. Therefore the data were collapsed across sex.

#### Relation Between Dispositional Coping Styles and Situational Coping Strategy

The main question was whether dispositional differences in coping style would determine actual choice of coping strategy. To address this question, subjects were divided into (a) high and low monitors on the basis of whether they scored above or below

the mean (equivalent to dividing at the median) on the monitoring subscale and (b) high and low blunters on the basis of whether they scored above or below the mean (equivalent to dividing at the median) on the blunting subscale. Table 1 gives the means, standard deviations, and alpha coefficients for the two MBSS subscales.

Two separate ANOVAs for repeated measures were then performed, testing for a significant effect of coping style on the amount of times subjects attended to the information. The results yielded a significant main effect for coping style on how frequently subjects looked up at the lights. Overall, high monitors and low blunters looked up at the lights significantly more often than low monitors and high blunters did. Interestingly, this effect was strongest using scores on the monitoring subscale,  $F(1, 38) = 37.43, p < .001$ . Low monitors looked up at the lights on average only 1.5 times during the entire course of the experiment. High monitors, in contrast, looked up at the lights on average 11.2 times during the test. This is more than 5 times more frequently than low monitors did. There was no main effect on looking behavior for scores on the blunting subscale,  $F(1, 38) = 2.35, ns$ , although subjects scoring as low blunters on this subscale did attend to the lights more often than high blunters did ( $M = 8.18$  for monitors vs. 4.96 for blunters). So high monitors and low blunters generally chose to seek information, whereas low monitors and high blunters almost exclusively preferred to avoid such information.

Scores on the monitoring subscale also predicted the number of times subjects looked up at the clock,  $F(1, 38) = 4.87, p < .05$ , with high monitors attending somewhat more frequently than low monitors did. By far the majority of subjects (35 of 40) reported that the lights were a more important and preferred source of information than the clock. Consequently, few subjects attended to the clock. This was especially so for low monitors ( $M = 0.71$ ), but high monitors tended to look at the clock at least once ( $M = 1.4$ ). There was no main effect for scores on the blunting subscale.

To investigate further the coherences between coping styles and informational strategy, the data were submitted to a correlational analysis. The results showed that the higher the monitoring score, the greater the frequency of information seeking,  $r(38) = .68, p < .001$ . The trend was in the opposite direction for the blunting subscale,  $r(38) = -.23, p < .1$ .

To summarize, dispositional differences in coping styles predict opposing informational strategies under threat of an ego stressor. High monitors and low blunters, who are disposed to seek out cues about threat, attend to information about their performance. Conversely, low monitors and high blunters, who are disposed cognitively to avoid cues about threat, choose to ignore such information.

#### Coping Styles: Emotional and Cognitive Correlates

*MAACL and self-report ratings.* There was no effect of coping styles on any of the MAACL or self-report measures. An ANOVA for repeated measures showed only a significant main effect for time of measurement on the MAACL variables, with subjects becoming less aroused over time.

*Motivation for monitoring.* After they had finished the task, subjects were asked to state how frequently they had attended to the lights. Table 3 shows these results. As can be seen, using

Table 3  
Self-Evaluation of Information Seeking and Reactions to  
Information by Coping-Style Groups

Self-evaluation	Blunters		Monitors	
	High	Low	High	Low
Information seeking				
Frequently	3	6	9	0
Occasionally	15	11	10	16
Never	5	0	0	5
Reaction				
Comforted	12	14	16	10
Unable to concentrate	2	3	3	2
Tense	5	0	0	5
Tense/unable to concentrate	4	0	0	4

scores on the monitoring subscale, high monitors claimed to have looked up at the lights either very frequently or occasionally. In contrast, low monitors claimed to have looked at the lights only somewhat frequently or never to have looked at all,  $\chi^2(2, N = 40) = 15.32, p < .001$ . Identical results were obtained using the blunting subscale:  $\chi^2(2, N = 40) = 5.85, p < .05$ .

All subjects attended to the lights either to reduce uncertainty or to seek reassurance. However, they differed in their evaluations of how the lights did (or would) make them feel: for the monitoring subscale,  $\chi^2(3, N = 40) = 10.51, p < .05$ ; for the blunting subscale,  $\chi^2(3, N = 40) = 8.65, p < .05$ . High monitors and low blunters said they felt comforted by the lights; low monitors and high blunters said that the lights did or would make them feel tense or interfere with their concentration (see Table 3).

All groups thought that some people would seek out and be reassured by the lights and some would avoid and be aroused by the lights.

**Personality.** ANOVAS and correlational analyses showed that scores on the MBSS were unrelated to scores on the Endler Trait Anxiety Scale (for the monitoring subscale,  $r(38) = .00, ns$ ; for the blunting subscale,  $r(38) = -.11, ns$ ).

Overall, high monitors/low blunters and low monitors/high blunters evaluated their strategy choices somewhat differently, but all groups maintained equivalent levels of affective and attentional arousal.

### General Discussion

The results of these studies suggest that dispositional differences in coping style are an important moderator of actual coping strategy in aversive situations. When faced with the threat of electric shock, high monitors (those who typically scan for threat-relevant information) and low blunters (those who typically do not distract themselves from threat-relevant information) generally prefer to attend to information signaling the nature and onset of shock. In contrast, low monitors (those who typically do not scan for threat-relevant information) and high blunters (those who typically distract themselves from threat-relevant information) generally tend to avoid informational cues, preferring instead to listen to distracting music. Indeed, low blunters were found to spend on average over twice as much

time listening for information as high blunters did. Moreover, this difference in listening times was evident from the first trial on, reflecting a consistent divergence in strategy between the different coping-style groups. Experiment 2 extends these findings to a nonphysical, ego-threatening context, suggesting that the monitoring-blunting dimensions may represent rather generalized tendencies for coping with external threats. When faced with a series of ego-threatening cognitive tasks, those who are generally inclined to scan for threat-relevant cues (high monitors) or who do not distract from threat-relevant cues (low blunters) spent more time attending to information about their performance than did those who are generally inclined not to scan for threat-relevant cues (low monitors) or who distract themselves from threat-relevant cues (high blunters). Results showed that high monitors attended to the informational signal on average 5 times more frequently during the tasks than low monitors did.

One possible explanation of differential strategy is that subjects who chose information were simply more aroused or anxious at the prospect of the aversive event than were the subjects who chose distraction. However, the groups did not differ on measures of distress obtained at the beginning of the studies. Specifically, in Experiment 1, coping styles were unrelated to initial anxiety, tension, and expectations of and thoughts about shock. Similarly, in Experiment 2, the groups demonstrated equivalent levels of state and trait anxiety at the beginning of the experiment. In other work, this pattern has been replicated and extended to show that there is no relation between monitor-blunter scores on the MBSS and trait measures such as repression-sensitization, depression, and Type A (Miller & Brody, 1985; Miller et al., 1982; Miller & Mangan, 1983; Miller & Mischel, 1986; Steptoe, 1986; Steptoe & O'Sullivan, 1986). Thus, the MBSS appears to show good discriminative validity and to represent dimensions distinct from more traditional trait measures. Furthermore, its effects appear not simply to reflect heightened arousability in the specific situation on the part of high monitors and low blunters. Rather, high monitoring/low blunting and low monitoring/high blunting appear to represent different strategies for coping with aversive events of equivalent stress value.

Despite equally high levels of initial arousal, in Experiment 1 the different coping modes were accompanied by distinctive patterns of emotional responsivity over time. The posttrial ratings showed that there were no differences in self-reports of tension after the first trial. However, high monitors and low blunters showed sustained higher arousal and less habituation across trials than low monitors and high blunters, who eventually decreased in arousal. In contrast to the findings of Experiment 1, high and low monitoring and high and low blunting were not accompanied by differential patterns of arousal over time in Experiment 2. The results showed that all groups demonstrated equivalent levels of tension and anxiety reduction over the course of the experiment. This contradicts the results of other studies that show that high monitors/low blunters generally remain more anxious and aroused than low monitors/high blunters do, both physically and psychologically (Efran, Chorney, Ascher, & Lukens, 1981; Gard & Edwards, 1986; Lamping, Molinaro, & Stevensen, 1985; Miller & Brody, 1985; Miller, Leinbach, & Brody, 1985; Miller & Mangan, 1983; Phipps & Zinn, 1986). Perhaps the stressor used in this context was not

of sufficient intensity to inhibit arousal reduction on the part of high monitors and low blunterners.

An alternative possibility has to do with the type of information conveyed to subjects. A green light indicated that they were performing in the top quartile of students, whereas a red light indicated that they were performing below this level. Because the red light was never presented, subjects who monitored (or who failed to distract) remained in the presence of a reassuring safety signal. This information, in turn, may have helped them to relax and lower their anxiety (Miller, 1981). In future work, it will be important to explore differential arousal when subjects are exposed to both safety signals (the green light) and danger signals (the red light).

Unfortunately, because subjects selected for themselves which strategy they would use, it is unclear whether the differential arousal observed between groups in Experiment 1 was due to characteristics of the individuals or to the efficacy of the strategy. Increased arousal may have been the consequence of adopting a high-monitoring or low-distracting strategy and actually receiving more information; on the other hand high monitors/low blunterners may have been more anxious and arousable than low monitors/high blunterners, regardless of level of information. Alternatively, there may be interesting Person  $\times$  Situation interactions: High monitors/low blunterners may show greatest anxiety when information is not readily available or when external distractors are intrusive, whereas low monitors/high blunterners may increase in anxiety when information is supplied or when they cannot distract themselves. To untangle these effects systematically, arousal must be measured when individuals are exposed to both their preferred and nonpreferred strategies.

These interacting effects have been explored in several laboratory and field studies (Efran et al., 1981; Gard & Edwards, 1986; Miller & Mangan, 1983; Watkins, Weaver, & Odegaard, 1986). The results generally show that individual differences in coping style interact with and moderate the impact of threat-relevant information, with low monitors/high blunterners benefiting more from distraction and high monitors/low blunterners tending to benefit more from information. Furthermore, results to date suggest that high monitoring/low blunting in the face of short-term or acute stressors can produce greater increases in transient arousal and slower habituation than can low monitoring/high blunting (Efran et al., 1981; Gard & Edwards, 1986; Miller & Brody, 1985; Miller & Mangan, 1983; Phipps & Zinn, 1986). More recent work has also shown that individuals suffering from chronic disorders such as hypertension, which are characterized by prolonged high levels of arousal, are more prone to exhibit a monitoring style of coping (Miller et al., 1985). These findings may implicate extreme monitoring as a contributing factor in either the onset or maintenance of such chronic disorders.

One final result is worth some attention. In Experiment 1, subjects' scores on the blunting subscale proved to be a more reliable predictor of behavioral choice than subjects' scores on the monitoring subscale. In Experiment 2, subjects' scores on the monitoring subscale proved to be a more reliable predictor of behavioral choice than subjects' scores on the blunting subscale. Variations in the procedures used may account for this discrepancy.

In the first study, subjects were threatened with the possibility

of electric shock and allowed to choose whether they preferred to listen to information about shock or to distract themselves with music. In the second study, subjects were offered only the choice of monitoring for information or continuing with the task. That is, there was no condition that involved an explicit external distractor. Perhaps, then, the blunting subscale predicts best when subjects are explicitly offered the possibility of distracting themselves. Conversely, perhaps the monitoring subscale predicts best when subjects must simply decide whether or not to monitor for information. Future work should help to pin down when and under what conditions each subscale is a better behavioral predictor (see also Folkman & Lazarus, 1985). At any rate, both high monitors and low blunterners appear to represent vulnerable populations and may benefit from interventions designed to reduce the number of monitoring strategies in their repertoires and augment their blunting-strategy repertoires.

In summary, the results show that the MBSS is a useful instrument for predicting informational search under threat. In ongoing studies, parameters of the aversive event (e.g., its nature, intensity, controllability, etc.) are being varied to determine the generality of these findings (Miller & Brody, 1985; Miller et al., 1985).

## References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review*, 84, 191-215.
- Bandura, A. (1981). Self-referent thought: A development analysis of self-efficacy. In J. H. Flavell & L. D. Ross (Eds.), *Social cognitive development: Frontiers and possible futures* (pp. 200-239). London: Cambridge University Press.
- Byrne, D. (1961). The Repression-Sensitization Scale: Rationale, reliability, and validity. *Journal of Personality*, 29, 334-349.
- Byrne, D. (1964). Repression-sensitization as a dimension of personality. In B. A. Maher (Ed.), *Progress in experimental personality research* (Vol. 1, pp. 169-219). New York: Academic Press.
- Cohen, F., & Lazarus, R. S. (1973). Active coping processes, coping dispositions, and recovery from surgery. *Psychosomatic Medicine*, 35, 375-389.
- Efran, J., Chorney, R. L., Ascher, L. M., & Lukens, M.D. (1981, April). *Coping styles, paradox, and the cold pressor task*. Paper presented at the meeting of the Eastern Psychological Association, New York.
- Endler, N. S., & Okada, M. (1975). A multidimensional measure of trait anxiety: The S-R Inventory of general trait anxiousness. *Journal of Consulting and Clinical Psychology*, 43, 319-329.
- Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology*, 48, 150-170.
- Gard, D., & Edwards, P. W. (1986, March). *Pretreatment sensitization and chemotherapy-related nausea and vomiting*. Paper presented at the meeting of the Society of Behavioral Medicine, San Francisco.
- Goldstein, M. J. (1959). The relationship between coping and avoidance behavior and response to fear-arousing propaganda. *Journal of Abnormal and Social Psychology*, 58, 247-252.
- Goldstein, M. J., Jones, R. B., Clemens, T. L., Flagg, G. W., & Alexander, F. G. (1965). Coping style as a factor in psychophysiological response to a tension-arousing film. *Journal of Personality and Social Psychology*, 1, 290-302.
- Holmes, D. S., & Houston, B. K. (1974). Effectiveness of situation redefinition and affective isolation in coping with stress. *Journal of Personality and Social Psychology*, 29, 212-218.
- Lamping, D. L., Molinaro, V., & Stevensen, G. W. (1985, March). *The*



- effects of perceived control on cognitive appraisals during stressful medical procedures: A randomized, controlled trial. Paper presented at the meeting of the Eastern Psychological Association, Boston.
- Lazarus, R. S., & Alfert, E. (1964). Short-circuiting of threat by experimentally altering cognitive appraisal. *Journal of Abnormal and Social Psychology*, 69, 195-205.
- Lazarus, R. S., Opton, E. M., Nomikos, M. S., & Rankin, N. O. (1965). The principle of short-circuiting of threat: Further evidence. *Journal of Personality*, 33, 622-635.
- Miller, S. M. (1979). Coping with impending stress: Psychophysiological and cognitive correlates of choice. *Psychophysiology*, 16, 572-581.
- Miller, S. M. (1980). When is a little information a dangerous thing?: Coping with stressful life-events by monitoring vs. blunting. In S. Levine & H. Ursin (Eds.), *Coping and health* (pp. 145-169). New York: Plenum Press.
- Miller, S. M. (1981). Predictability and human stress: Towards a clarification of evidence and theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 14, pp. 203-256). New York: Academic Press.
- Miller, S. M. (in press). To see or not to see: Cognitive informational styles in the coping process. In M. Rosenbaum (Ed.), *Learned resourcefulness: On coping skills, self-regulation, and adaptive behavior*. New York: Springer Press.
- Miller, S. M., & Brody, D. S. (1985, August). *Styles of coping with threat: Implications for health*. Paper presented at the annual convention of the American Psychological Association, Los Angeles.
- Miller, S. M., Lack, E. R., & Asroff, S. (1982, November). *Preference for control and the Type A coronary-prone behavior pattern*. Paper presented at the meeting of the Association for the Advancement of Behavior Therapy, Toronto.
- Miller, S. M., Leinbach, A., & Brody, D. S. (1985, March). *Coping style in hypertensives: Implications for treatment*. Paper presented at the meeting of the Society of Behavioral Medicine, New Orleans, LA.
- Miller, S. M., & Mangan, C. E. (1983). The interacting effects of information and coping style in adapting to gynecologic stress: Should the doctor tell all? *Journal of Personality and Social Psychology*, 45, 223-236.
- Miller, S. M., & Mischel, W. (1986). *A cognitive social learning approach to information-seeking styles under threat*. Unpublished manuscript, Temple University, Philadelphia, PA.
- Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review*, 80, 252-283.
- Mischel, W. (1979). On the interface of cognition and personality. *American Psychologist*, 34, 740-754.
- Monat, A., Averill, J. R., & Lazarus, R. S. (1972). Anticipatory stress and coping reactions under various conditions of uncertainty. *Journal of Personality and Social Psychology*, 24, 237-253.
- Neufeld, R. W. J. (1976). Evidence of stress as a function of experimentally altered appraisal of stimulus aversiveness and coping adequacy. *Journal of Personality and Social Psychology*, 33, 632-646.
- Phipps, S., & Zinn, A. B. (1986). Psychological response to amniocentesis: II. Effects of coping style. *American Journal of Medical Genetics*, 25, 143-148.
- Speisman, J., Lazarus, R., Mordkoff, A., & Davison, L. (1964). Experimental reduction of stress based on ego-defense theory. *Journal of Abnormal and Social Psychology*, 68, 367-380.
- Steptoe, A. (1986). *Avoidant coping strategies: The relationship between repressive coping and preference for distraction*. Unpublished manuscript, St. George's Hospital, University of London.
- Steptoe, A., & O'Sullivan, J. (1986). Monitoring and blunting styles in women prior to surgery. *British Journal of Clinical Psychology*, 25, 143-144.
- Tursky, B., Watson, P. D., & O'Connell, P. M. (1965). A concentric shock electrode for pain stimulation. *Psychophysiology*, 1, 296-298.
- Watkins, L. O., Weaver, L., & Odegaard, V. (1986). Preparation for cardiac catheterization: Tailoring the content of instruction to coping style. *Heart and Lung*, 15, 382-389.
- Zuckerman, M., Lubin, B., & Robins, S. (1965). Validation of the Multiple Affect Adjective Check List in clinical situations. *Journal of Consulting and Clinical Psychology*, 29, 594.

Received May 28, 1985

Revision received October 18, 1985 ■