EFFECTS OF IMPOSED MONITORING AND BLUNTING STRATEGIES ON EMOTIONAL REACTIVITY

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The present study examined the effects of imposed monitoring and blunting coping strategies on emotional reactivity in 40 subjects who prepared themselves for upcoming neutral and aversive slides. Besides subjective indices, electrodermal measures and eye blink startle responses were used to evaluate the effect of preparatory strategies. In order to investigate whether effects of strategies are modulated by individual differences in coping style, habitual monitoring was assessed with the Miller Behavioral Style Scale (MBSS; Miller, 1987). It was found that monitoring instructions resulted in higher levels of subjective anxiety during the anticipation of aversive slides than blunting instructions. In addition, when confronted with the frightening and neutral stimuli, monitoring instruction subjects showed smaller electrodermal reactivity than blunting instruction subjects. These effects were not found to be modulated by habitual coping style. Overall, the startle measure yielded no meaningful effects. Taken together, the results seem to indicate that emotional reactivity under threatening conditions is more affected by imposed coping strategies than by habitual coping styles as indexed by the MBSS.

KEY WORDS: Monitoring, blunting, imposed coping strategies, emotional reactivity.

In the last two decades, a number of studies have analyzed the way in which patients can be prepared for a threatening, diagnostic or surgical intervention. The purpose of preparation is to decrease the patient’s anxiety and pain, thereby enhancing adjustment and recovery. The most commonly investigated preparatory strategies are the provision of information and coping instructions (i.e., teaching the patient how to cope with the threatening procedure).

In general, studies on the effectiveness of these strategies have yielded mixed results: Whereas reports can be found to support the efficacy of such strategies,
weak effects in other studies lead reviewers to question their utility (Ludwick-Rosenthal & Neufeld, 1988; Miller, Combs, & Stoddard, 1989; Schultheis, Peterson, & Selby, 1987). To account for these inconsistencies, it has been suggested that "coping styles might be potent predictors of a patient’s amenability to different preparatory strategies" (Ludwick-Rosenthal & Neufeld, 1988; p. 338). In line with this reasoning, Miller (1980, 1988) proposed that it is useful to determine whether a patient is either a "monitor", i.e., a person who is predominantly alert for threatening information, or a "blunter", i.e., someone who distracts him/herself from threat-related information. Furthermore, Miller argued that by adapting a preparatory strategy to habitual coping style, the patient would profit optimally from such intervention (for a review, see Miller, Combs, & Kruus, 1993).

Several studies have investigated the interaction between monitoring and blunting coping styles and the provision of information (Gattuso, Litt, & Fitzgerald, 1992; Miller & Mangan, 1983; Sparks, 1989; Watkins, Weaver, & Odegaard, 1986). Most of them found that individual differences in coping style tend to affect the impact of provided information. Monitors generally fare better when a high level of information is available, whereas blunners fare better with a low level of information.

Still, little is known about the influence of monitoring/blunting on the effectiveness of coping instructions. Results of an explorative study by Muris, van Zuuren, and Merckelbach (1993) tentatively suggest that imposed monitoring and blunting strategies do affect psychophysiological and subjective responses to a frightening stimulus (i.e., an aversive slide of two dogs fighting). In addition, their results seem to indicate that these effects are even stronger when habitual coping style is taken into account. That is, it was found that during anticipation of the stimulus, monitors given instructions to monitor ("matched monitors") reported higher anxiety levels and showed more skin conductance fluctuations than blunners given instructions to blunt ("matched blunners"). Yet, during confrontation, matched monitors exhibited less arousal than matched blunners.

To investigate further the effectiveness of coping instructions and its possible interaction with habitual coping style, the present study extends on the experiment of Muris, van Zuuren, and Merckelbach (1993). It was tested whether, compared to a blunting strategy, a monitoring strategy is associated with relatively high levels of arousal and anxiety during anticipation of an aversive event, but with relatively low levels during the actual exposure. In addition, it was examined whether these effects, indeed, become stronger when habitual coping styles are taken into account. As in the study of Muris, van Zuuren, and Merckelbach (1993), subjects were threatened with an upcoming presentation of an aversive slide (i.e., a slide of a burned boy), and instructed to prepared themselves either by "monitoring", i.e., imagining what the slide would look like, or by "blunting", i.e., thinking about pleasant things instead of the upcoming slide. A trial with a control slide (i.e., a picture of flowers) was added to the experiment to study reactions under neutral conditions. Furthermore, in an attempt to explore the effects of repeated exposure, subjects were threatened twice with the frightening picture. Habitual monitoring and blunting coping styles were assessed with a questionnaire. Besides subjective indices, three physiological measures were used to evaluate the effect of the preparatory strategies. First, skin conductance responses were assessed to examine autonomic reactivity to the frightening picture. Second, skin conductance level was used as a measured of autonomic arousal during anticipation of the frightening
slide. Third, eye blink startle responses (elicited by acoustic probes) were used as an index of affect, during both anticipation and confrontation. Recent studies have shown that the eye blink startle is potentiated during confrontation of aversive stimuli (e.g., de Jong, Arntz, & Merckelbach, 1993; Vrana, Spence, & Lang, 1988) as well as during imagery of feared scenes (Cook, Davis, Hawk, Spence, & Gautier, 1992; Vrana & Lang, 1990).

METHOD

Subjects

The subjects were 40 undergraduate students (30 women and 10 men) who participated in the experiment in return for a small financial compensation. Their mean age was 21.1 years (range: 18–28 years). Subjects were told that the experiment was about the measurement of physiological activity while looking at pictures.

Physiological Assessment and Apparatus

Skin conductance measures were recorded using the constant voltage (.5V) technique. Two Beckman silver/silverchloride electrodes (8 mm) were placed on the subject’s second and third finger of the dominant hand. The electrodes were filled with isotonic paste and connected to a Beckman Skin Conductance coupler (type 9844). Two skin conductance measures were obtained: (a) skin conductance level (SCL) was determined at the beginning and at the end of each anticipation period (a difference score for each anticipation period was calculated by subtracting the SCL-end values from the SCL-onset values); (b) the skin conductance response (SCR) to slide onset was measured. SCRs were defined as the maximal deflections occurring within a time window of 4 seconds after slide onset.

Respiration was measured with a respiration belt fastened around the subject’s waist. The belt was connected to a Beckman Voltage/Pulse/Pressure coupler. Respiration was measured to check whether skin conductance responses were caused by respiratory artifacts.

Eye blink startle responses were measured by recording EMG activity from the m. orbicularis oculi beneath the right eye, using miniature Beckman silver/silverchloride electrodes filled with Hewlett Packard Redux creme. The EMG signal was fed to a Beckman EMG coupler (type 9852A). Frequencies were filtered 60 Hz by-pass (48 dB/octave), using a Krohne Hite filter. The EMG signal was then rectified and integrated by a contour-following integrator of the type recommended by Fridlund (1979). In order to optimize the sensitivity for momentary fluctuations of EMG activity, a short integration time constant was chosen (1/16 sec). The transformed signals were fed to a Beckman polygraph using three different channels. To maintain optimal sensitivity for both incubating and habituating responses, each channel used a different amplification factor (0.5, 2 and 5, respectively). The eye blink startles were scored in arbitrary A/C units. For each subject, magnitudes of three pre-experimental eye blink startle responses were used to calibrate the pre-amplifier of the EMG coupler (so that the full range of the polygraph could be used). Startle responses were induced by means of 50
msec, 105 dB white-noise probes (instantaneous rise time) delivered by head-
phones. During each of the three trials (see below), eight probes were delivered. 
During the anticipation period two computer-controlled probes per minute were 
given. To prevent predictability of probe occurrence, the interprobe interval was 
varied, with a minimal interval of 30 seconds. During slide presentation, two 
probes were delivered.

All physiological signals were continuously recorded on paper (5 mm/sec) by a 
Beckman polygraph (type R711).

A Kodak carousel was used for the presentation of the slides on a white screen 
approximately three meters in front of the subjects.

Questionnaires

Subjects were asked to complete several questionnaires. First, the Miller Behav-
ioral Style Scale (MBSS; Miller, 1987) was used to assess information seeking 
coping styles. The MBSS consists of four hypothetical threatening situations 
(dentist, hostage, dismissal, and aeroplane). Each situation is followed by four 
monitoring (information seeking) and four blunting (information avoiding) op-
tions. Subjects are asked to indicate on a 5-point scale to what extent each item is 
applicable to him/her (1 = not at all; 5 = very much). A total monitoring and a total 
blunting score (range 16–80) can be derived by summing the scores on the relevant 
items.

Furthermore, subjects filled in the blood-injury scale of the Fear Questionnaire 
(FQ; Marks & Mathews, 1979). This scale was used in order to control for 
pre-experimental differences in blood-injury anxiety. This might be of importance 
because subjects were exposed to a slide of a mutilated body.

Design

A 2 × 2 (Coping Instruction × Coping Style) factorial design was used, with both 
factors being between-subjects factors. The coping instruction factor refers to the 
fact that one group of subjects was instructed to use a monitoring strategy during 
anticipation of the slides, whereas the other group was instructed to follow a 
blunting strategy (see below). The coping style factor pertains to habitual coping 
style as determined by the MBSS: On basis of the mean score on the monitoring 
subscale, each instruction group was divided in high monitors and low monitors. 
Monitoring scores were preferred because previous research has shown that the 
monitoring subscale is more reliable than the blunting subscale (Miller et al., 
1992; van Zuuren & Wolfs, 1991). In line with this, the internal consistency 
(Cronbach’s alpha) in the present study was found to be .80 for monitoring and 
.69 for blunting.

In passing, it should be noted that the mean monitoring scores for both 
instruction groups were highly comparable: $M = 53.7$ ($SD = 5.2$) for the monitor-
ing instruction group and $M = 52.9$ ($SD = 4.8$) for the blunting instruction group 
($t[38] < 1$). Thus, there were four groups: A monitoring/high monitor group 
($n = 10$; 1 man), a monitoring/low monitor group ($n = 10$; 3 men), a blunting/high 
monitor group ($n = 10$; 3 men), and a blunting/low monitor group ($n = 10$; 3 men).
Procedure

Each subject was tested individually. Upon arrival, subjects completed the questionnaires and were then escorted into a soundproof, dimly lit laboratory chamber. They were seated in a comfortable chair in front of a projection screen. Physiological recording apparatus and slide projector were in an adjacent room. Next, electrodermal recording sites were cleaned with distilled water, and EMG and skin conductance electrodes and the respiration belt were attached. Then subjects were instructed about the general outline of the experiment.

Before the experiment proper started, subjects received three acoustic startle probes and they were assured that these probes were identical to those they would receive during the further course of the experiment. The experimenter left the room, dimmed the light, and the experiment began.

The experiment consisted of three trials. Each trial was composed of a three minute anticipation period (during which subjects prepared themselves for the upcoming picture) followed by a slide. Slide duration was one minute. The first two trials involved an aversive picture depicting the corpse of a completely burned boy and a neutral control slide depicting flowers. The order of these two slides was balanced across the two conditions (i.e., either flower-corpse or corpse-flower). This was done to cancel out order effects. During the third trial the corpse slide was presented again, to explore the effects of repeated exposure to the aversive stimulus.

Instructions concerning the coping strategies were audiotaped. Before each trial, instructions were presented. Subjects were randomly assigned to one of the two conditions. Half of the subjects received monitoring instructions: “After exactly three minutes, a picture of a burned corpse/a colourful picture of flowers will be presented on the screen in front of you. Please, prepare yourself for the picture in the following way: Try to imagine what the picture will look like. Use images and thoughts from your memory to do so...” The other half of the subjects were given blunting instructions: “After exactly three minutes, a picture of a burned corpse/a colourful picture of flowers will be presented on the screen in front of you. Please, prepare yourself for the picture in the following way: Do not think about it any more. Try to distract yourself by thinking of other things. For example think about your next holiday...”. Additional instructions were identical for both conditions: “When the picture appears, do not turn away, but take a good look at it. After one minute it will disappear and you will receive further instructions. The anticipation period starts now...”

Following each trial, the light was shortly switched on and subjects were instructed to fill in the self-report scales which were lying turned down and consecutively numbered on a table in front of them. Subjects rated subjective anxiety during the anticipation period and the frightfulness of the picture on 100 mm Visual Analogue Scales (VASs). The VASs ranged from 0 (not at all anxious/frightening) to 100 (very anxious/frightening). After the third (i.e., final) trial, subjects completed a monitoring-blunting checklist (see Muris, van Zuuren, & Merckelbach, 1993) which intends to measure (retrospectively) to what extent a subject was actually monitoring or blunting during the anticipation periods. Data thus obtained served as a manipulation check. The checklist consists of five monitoring (e.g., “I tried to imagine what the picture would look like”) and five blunting (e.g., “Trying not to think about the picture, I avoided to look at the
projection screen’’) items. Subjects indicated to what extent each item was applicable to him/her (1 = not at all applicable; 5 = very much applicable).

Then, subjects were asked to rate the aversiveness of the acoustic probes on a 10-point scale (1 = not at all aversive; 10 = very aversive). Following this, the experimenter informed the subjects about the design of the experiment and asked them which of the two conditions (i.e., monitoring or blunting) they would have preferred if they would have had the possibility of choice. Finally, subjects were paid and debriefed.

RESULTS

Coping Style and Preferences for Preparation

MBSS scores of the total sample for the monitoring and blunting subscale were 53.3 (SD = 5.0) and 47.8 (SD = 6.6), respectively. These scores come close to those found in previous studies with the five-point version of the MBSS (e.g., Muris, van Zuuren, & Merckelbach, 1993; van Zuuren & Wolfs, 1991).

During the short post-experimental interview, 22 subjects indicated a preference for the monitoring strategy, 15 subjects preferred the blunting strategy, whereas 3 subjects had no clear preference. Preferences were not related to habitual coping style as determined by the MBSS. For example, subjects who preferred the monitoring strategy had a MBSS monitoring score of 53.7 (SD = 4.7), whereas for subjects who preferred the blunting instruction this score was 52.2 (SD = 5.6) (t < 1).

Manipulation Check and Pre-Experimental Differences

Scores on the monitoring/blunting checklist indicated that the manipulation had been successful. That is, subjects in the monitoring instruction group had significantly higher scores on the monitoring items than subjects in the blunting instruction group (16.4 [SD = 3.4] versus 11.9 [SD = 3.1]; t[38] = 4.4, p < .001). Scores on the blunting items were in the predicted direction, but did not reach statistical significance (11.9 [SD = 3.9] for the monitoring instruction group versus 13.5 [SD = 3.7] for the blunting instruction group; t[38] = -1.3, p > .10).

One-way analyses of variance (ANOVAs) revealed that there were no pre-experimental differences between the four groups with respect to blood-injury fear as indexed by the FQ, unpleasantness of the acoustic probes, and initial skin conductance level (all Fs < 1).

Effects of Coping Instruction and Coping Style

For each variable (i.e., subjective measure, SCL/SCR, startle magnitude), anticipation and confrontation data were analyzed separately. The following analyses were conducted: (a) a 2 x 2 x 2 x 2 (Coping Instruction x Coping Style x Slide: Corpse 1/Flower x Order) ANOVA, with the third factor being a repeated measure, and (b) to explore the effects of repeated exposure, a 2 x 2 x 2 x 2 (Coping Instruction x Coping Style x Time: Corpse 1/Corpse 2 x Order) ANOVA, with the third factor being a repeated measured.
Subjective measure: Anticipation

The 2 (Coping Instruction) x 2 (Coping Style) x 2 (Slide: Corpse1/Flower) x 2 (Order) ANOVA revealed that subjects were more anxious during anticipation of the corpse slide than during anticipation of the flower slide ($F[1,32] = 8.7, p < .01$). Furthermore, a main effect of instruction ($F[1,32] = 5.1, p < .05$) and an interaction of instruction with slide ($F[1,32] = 6.2, p < .02$) were found. As can be seen in Table 1, these effects were due to the fact that subjects in the monitoring instruction group had higher anxiety ratings in anticipation of both slides, but especially during anticipation of the corpse slide. Finally, a significant interaction of order with slide was found ($F[1,32] = 26.2, p < .001$): Subjective anxiety during anticipation of the first slide appeared to be enlarged irrespective of slide content. This phenomenon resulted in a relatively small difference in reaction between the two slides in case the flower slide was presented first, and in an inflated difference in reaction in case the corpse stimulus was shown first.

The 2 (Coping Instruction) x 2 (Coping Style) x 2 (Time: Corpse1/Corpse2) x 2 (Order) ANOVA showed, again, a main effect of coping instruction ($F[1,32] = 9.7, p = .005$), indicating that subjects in the monitoring instruction group had higher anxiety ratings during both anticipation periods of the corpse slide. Furthermore, a significant time effect emerged ($F[1,32] = 29.8, p < .0001$), indicating that the first anticipation period of the frightening slide was more anxiety arousing than the second anticipation period.

No further effects attained significance. Most importantly, both analyses revealed no convincing main effect of habitual coping style nor an interaction of instruction with habitual coping style.

Subjective Measure: Confrontation

As expected, the 2 (Coping Instruction) x 2 (Coping Style) x 2 (Slide: Corpse1/Flower) x 2 (Order) ANOVA showed that subjects rated the (first) slide of the corpse as more frightening than the slide of the flower, the means being 42.3 ($SD = 22.5$) and 3.2 ($SD = 2.7$), respectively ($F[1,32] = 123.3, p < .0001$). No further effects reached significance.

Table 1  Mean anxiety ratings of the three anticipation periods and mean ratings of the frightfulness of the three slides for monitoring/high monitors, monitoring/low monitors, blunting/high monitors, and blunting/low monitors (standard deviations are given between parentheses)

<table>
<thead>
<tr>
<th></th>
<th>Monitoring/High Monitors ($n = 10$)</th>
<th>Monitoring/Low Monitors ($n = 10$)</th>
<th>Blunting/High monitors ($n = 10$)</th>
<th>Blunting/Low monitors ($n = 10$)</th>
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</thead>
<tbody>
<tr>
<td><strong>Anticipation</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Flower</td>
<td>26.9 (21.7)</td>
<td>34.2 (22.5)</td>
<td>19.0 (17.9)</td>
<td>23.9 (21.2)</td>
</tr>
<tr>
<td>Corpse 1</td>
<td>47.7 (25.1)</td>
<td>48.1 (17.1)</td>
<td>20.5 (18.7)</td>
<td>35.3 (20.8)</td>
</tr>
<tr>
<td>Corpse 2</td>
<td>22.5 (20.7)</td>
<td>35.3 (20.6)</td>
<td>8.4 (10.3)</td>
<td>18.1 (13.9)</td>
</tr>
<tr>
<td><strong>Confrontation</strong></td>
<td></td>
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<tr>
<td>Flower</td>
<td>3.2 (3.3)</td>
<td>4.4 (3.2)</td>
<td>2.4 (1.6)</td>
<td>2.9 (2.4)</td>
</tr>
<tr>
<td>Corpse 1</td>
<td>41.4 (28.8)</td>
<td>52.2 (12.7)</td>
<td>32.6 (23.3)</td>
<td>43.0 (21.0)</td>
</tr>
<tr>
<td>Corpse 2</td>
<td>32.8 (27.1)</td>
<td>37.6 (19.4)</td>
<td>24.4 (20.8)</td>
<td>38.2 (20.5)</td>
</tr>
</tbody>
</table>
The 2 (Coping Instruction) × 2 (Coping Style) × 2 (Time: Corpse1/Corpse2) × 2 (Order) ANOVA only revealed a significant time effect ($F[1,32] = 12.6, p < .005$): Subjects rated the second corpse slide ($M = 33.3, SD = 22.0$) as less frightening than the first corpse slide. No main effects of coping instruction or habitual coping style, or interaction effects were found.

**Electrodermal Measures: Anticipation**

During anticipation, only SCL data were obtained (SCRs refer, by definition, to stimulus-evoked responses). The 2 (Coping Instruction) × 2 (Coping Style) × 2 (Slide: Corpse1/Flower) × 2 (Order) ANOVA and the 2 (Coping Instruction) × 2 (Coping Style) × 2 (Time: Corpse1/Corpse2) × 2 (Order) ANOVA yielded no significant effects.

**Electrodermal Measure: Confrontation**

Due to respiratory irregularities, the SCRs of two subjects (one in the monitoring/high monitor group and one in the monitoring/low monitor group) were unscorable. The SCR to the corpse stimulus was significantly larger than that to the flower stimulus ($F[1,30] = 45.9, p < .0001$). Furthermore, the 2 (Coping Instruction) × 2 (Coping Style) × 2 (Slide: Corpse1/Flower) × 2 (Order) ANOVA revealed a significant effect of instruction: Subjects in the monitoring instruction group reacted with smaller SCRs to both the corpse and the flower slide compared to subjects in the blunting instruction group ($F[1,30] = 6.2, p < .02$).

The 2 (Coping Instruction) × 2 (Coping Style) × 2 (Time: Corpse1/Corpse2) × 2 (Order) ANOVA showed that the SCR to the first corpse slide was larger than that to the second corpse slide ($F[1,30] = 13.1, p < .005$). Furthermore, a marginal interaction of instruction with time ($F[1,30] = 2.9, p < .11$) emerged. This was caused by the larger SCR of subjects in the blunting instruction group on appearance of the first corpse slide (see Table 2). No further effects reached statistical significance.

**Startle Measure: Anticipation**

Due to apparatus failure, startle data of two subjects for both the anticipation and the confrontation period were missing. In the final analyses, listwise deletion of these missing data was preferred.

<table>
<thead>
<tr>
<th></th>
<th>Monitoring/ High Monitors ($n = 9$)</th>
<th>Monitoring/ Low Monitors ($n = 9$)</th>
<th>Blunting/ High Monitors ($n = 10$)</th>
<th>Blunting/ Low Monitors ($n = 10$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flower</td>
<td>0.17 (0.17)</td>
<td>0.09 (0.08)</td>
<td>0.28 (0.23)</td>
<td>0.26 (0.20)</td>
</tr>
<tr>
<td>Corpse 1</td>
<td>0.50 (0.36)</td>
<td>0.44 (0.28)</td>
<td>0.64 (0.44)</td>
<td>0.71 (0.30)</td>
</tr>
<tr>
<td>Corpse 2</td>
<td>0.26 (0.32)</td>
<td>0.44 (0.45)</td>
<td>0.33 (0.26)</td>
<td>0.34 (0.23)</td>
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</table>
In contrast to what was expected, the 2 (Coping Instruction) × 2 (Coping Style) × 2 (Slide: Corpse/Flower) × 2 (Order) ANOVA on the startle data of the anticipation period revealed no main effect of slide. In addition, no main effects of coping instruction, coping style, or interaction effects were found. The 2 (Coping Instruction) × 2 (Coping Style) × 2 (Time: Corpse1/Corpse2) × 2 (Order) ANOVA revealed a significant time effect (F[1, 30] = 37.0, p < .0001), indicating that the startle responses were larger during anticipation of the first corpse slide in comparison to those during anticipation of the second corpse slide. Furthermore, a significant interaction of instruction with coping style emerged (F[1, 3] = 5.5, p < .05), and a marginal significant interaction of instruction with time (F[1, 30] = 3.7, p < .07). These results were predominantly due to the fact that subjects in the blunting/low monitor group had larger startle responses than subjects in the other three groups, in particular during anticipation of the second corpse slide (see Table 3).

**Startle Measure: Confrontation**

The 2 (Coping Instruction) × 2 (Coping Style) × 2 (Slide: Corpse1/Flower) × 2 (Order) and the 2 (Coping Instruction) × 2 (Coping Style) × 2 (Time: Corpse1/Corpse2) × 2 (Order) ANOVAs revealed no significant main or interaction effects.

Table 3: Mean magnitudes of the eye blink startle responses (in arbitrary A/C units) of the three anticipation and confrontation periods for monitoring/high monitors, monitoring/low monitors, blunting/high monitors, and blunting/low monitors (standard deviations are given between parentheses).

<table>
<thead>
<tr>
<th></th>
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<th>Blunting/High Monitors</th>
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<tr>
<td><strong>Anticipation</strong></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Flower</td>
<td>(n = 10)</td>
<td>(n = 9)</td>
<td>(n = 10)</td>
<td>(n = 9)</td>
</tr>
<tr>
<td></td>
<td>0.46 (0.20)</td>
<td>0.49 (0.17)</td>
<td>0.47 (0.14)</td>
<td>0.50 (0.19)</td>
</tr>
<tr>
<td>Corpse 1</td>
<td>0.54 (0.13)</td>
<td>0.47 (0.10)</td>
<td>0.48 (0.19)</td>
<td>0.57 (0.17)</td>
</tr>
<tr>
<td>Corpse 2</td>
<td>0.34 (0.17)</td>
<td>0.28 (0.14)</td>
<td>0.33 (0.19)</td>
<td>0.50 (0.15)</td>
</tr>
<tr>
<td><strong>Confrontation</strong></td>
<td>(n = 9)</td>
<td>(n = 10)</td>
<td>(n = 10)</td>
<td>(n = 9)</td>
</tr>
<tr>
<td>Flower</td>
<td>0.30 (0.16)</td>
<td>0.35 (0.20)</td>
<td>0.25 (0.15)</td>
<td>0.36 (0.22)</td>
</tr>
<tr>
<td>Corpse 1</td>
<td>0.28 (0.23)</td>
<td>0.36 (0.28)</td>
<td>0.22 (0.17)</td>
<td>0.40 (0.27)</td>
</tr>
<tr>
<td>Corpse 2</td>
<td>0.25 (0.21)</td>
<td>0.31 (0.24)</td>
<td>0.17 (0.13)</td>
<td>0.35 (0.22)</td>
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**DISCUSSION**

The present study examined the effects of imposed coping strategies in relation to habitual coping style on emotional reactivity during anticipation of and exposure to an aversive event. Subjects were instructed to employ either a monitoring or a blunting coping strategy in order to prepare themselves for upcoming aversive and neutral slides. The main results can be summarized as follows: First, monitoring instructions resulted in higher levels of subjective anxiety during the anticipation of aversive slides than blunting instructions. Second, when confronted with the
frightening stimuli monitoring instruction subjects reacted with smaller SCRs than the blunting instruction subjects. Finally, these effects of coping instruction were not found to be modulated by habitual coping style.

In a previous study, Muris, van Zuuren, and Merckelbach (1993) found tentative evidence to suggest that compared to blunting instructions, monitoring instructions result in higher arousal and anxiety during anticipation, but less during confrontation with a frightening stimulus. Furthermore, these results appeared to be most pronounced when coping instructions were matched with habitual coping style. Yet, the present study only partly sustained these findings. In line with Muris, van Zuuren, and Merckelbach (1993), it was found that monitoring instruction subjects reported higher level of subjective anxiety during anticipation than blunting instruction subjects. This was not only the case during anticipation of the first corpse slide, but also during the anticipation of the second frightening slide. In addition, when confronted with the frightening stimulus, monitoring instruction subjects reacted with smaller electrodermal responses than blunting instruction subjects. However, in contrast to what was expected, coping instructions did not affect autonomic arousal during anticipation nor self-reported anxiety during confrontation with aversive slides. The suggestion that habitual coping style modulates the effectiveness of preparatory coping instructions (e.g., Miller, 1988) was not sustained. That is, no convincing interactions of coping instruction and habitual coping style emerged. Furthermore, no main effects of coping style were found. Thus, the present results suggest that emotional reactivity under threatening conditions is affected by imposed coping strategies but not by habitual coping style as assessed by the MBSS.

To account for the different effects of monitoring and blunting strategies on emotional reactivity, Muris, Merckelbach, and van Zuuren (1993) reasoned as follows. During anticipation, monitoring instructions will evoke imaginary exposure (i.e., exposure in vitro) to the aversive stimulus. This results in an initial increase in anxious arousal, but eventually “habituation” takes place which is reflected in lower SCRs to the actual occurrence of the aversive stimulus. The phenomenon that imaginary exposure to aversive stimuli leads to a reduction in fear levels or if one likes “habituation” has been extensively described in studies concerned with behavioral therapy techniques (see e.g., Emmelkamp, 1982; Marks, 1987). In contrast, blunting instructions will result in subjects keeping the aversive stimulus out of their consciousness (i.e., cognitive avoidance). This leads to a relatively low fear level during anticipation, and, because imaginary exposure to threatening stimuli has not taken place, a large reaction to the actual aversive stimulus. An alternative explanation is that the employment of a monitoring strategy enhances subjects to overestimate the aversiveness of the stimulus. Under the condition that the stimulus is probably less aversive than expected, monitoring subjects are able to relax rapidly during confrontation with the threatening stimulus. The fact that overestimation of aversive events promotes habituation of fear responses has been extensively described by Rachman and Lopatka (1986). In the blunting subjects, such overestimation does not occur: They avoid to think about the upcoming stimulus and start processing at the moment of confrontation.

Three unexpected findings emerged which warrant some discussion. To begin with, compared to the blunting instruction subjects, the monitoring instruction subjects also reported higher anxiety levels during anticipation of the flower slide. This can best be explained by assuming that the monitoring instructions were
somehow difficult to reconcile with the information that a neutral stimulus would appear. This inconsistency may have given rise to doubts as to the neutral character of the oncoming stimulus. A second unexpected result was that imposed strategies were also found to modulate the electrodermal responses to the flower slide. That is, monitoring instruction subjects showed smaller SCRs to the flower slide than blunting instruction subjects. This finding also fits with the assumption that monitoring instructions promote imaginary exposure and eventually "habituation", even with neutral material. A third unexpected finding was that subjects with the instruction to blunt and with a low monitor coping style showed relatively large startle responses during anticipation of the second frightening slide. Yet, the meaning of this finding is far from clear. Note that in the present study no differential startle responding could be detected between neutral and aversive trials, neither during anticipation nor during confrontation. Because of the small number of probes (eight for each trial: six during anticipation and only two during confrontation), the present procedure might have lacked sufficient sensitivity to detect emotion-related modulation of the startle magnitude.

An important conclusion that can be drawn from the present results is that it is possible to impose a strategy on subjects, irrespective of their habitual coping styles. Furthermore, the results indicate that individual preferences for either a monitoring or a blunting strategy (as determined in the post-experimental interview) are unrelated to habitual coping styles as assessed with the MBSS. Although Miller (1987) has proposed that monitoring and blunting can be regarded as trait variables, Muris, de Jongh, van Zuuren, ter Horst, Kokosky Deforchaux, and Somers (1993) showed that specific situational factors play a crucial role in the way subjects prefer to cope with a threat. In that study, it was found that, in dental patients, preferences for either a monitoring or a blunting strategy were predicted most accurately by the monitoring and blunting scores on the specific dentist-situation of the MBSS rather than by the overall MBSS scores.

One apparent limitation of the present study is that it relied on a moderate frightening and artificial stimulus. A different pattern of results might emerge when a real-life stressor is used. Another possible point of critique pertains to the use of startle probes. Since 105 dB probes of 50 msec are definitively unpleasant (subjects in the present study gave a mean rating of 6.2 on a 10-point scale of aversiveness), one could argue that the experiment primarily deals with coping with unpredictable aversive noise. Nevertheless, the present findings are largely in line with the results of the previous Muris, Merckelbach and van Zuuren (1993) study and with those of other studies in which was found that monitoring and blunting strategies both have their advantages in the adaptation to threatening events. In a recent review, Miller (in press) concludes that there is probably no royal road to the management of anxiety-arousing situations and that situational factors determine which strategy is most effective. The present data suggest that whereas imposed blunting may have positive consequences during anticipation, imposed monitoring may have positive adaptational consequences during exposure to the stressor. Therefore, in situations where the threat is minor and/or short-lived, blunting may be the most adaptive strategy, since it prevents unnecessary high anxiety and arousal during anticipation of such threat. However, when the threat is more severe and/or long-lasting, monitoring may be more adaptive. The high arousal during anticipation will be succeeded by a relatively low reactivity during confrontation.
Author's Notes

This reported research is partly based upon the senior author's Ph.D. thesis at the University of Amsterdam, 1993.

REFERENCES


