Preparation for a Frightening Picture: Effects of an Imposed Monitoring and Blunting Strategy in Relation to Habitual Coping Style

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Abstract — When threatened with an aversive event, there are two main strategies one can adopt: Either one can seek out knowledge about the threat (monitoring) or one can try to distract oneself from threat-relevant information (blunting). Thirty students were instructed to engage in an information seeking (monitoring) or an information avoiding (blunting) strategy to prepare themselves for a frightening picture. Subjects indicated that they had succeeded in adopting a monitoring or blunting strategy, even when this strategy was not in agreement with their habitual coping style. However, the physiological and subjective impact of these imposed strategies was rather small. This state of affairs changed when the subjects’ habitual coping style (as indexed by subjects’ scores on the Miller Behavioral Style Scale) was taken into account. During anticipation, the congruent monitor group (monitoring strategy and high monitoring coping style) had relatively more nonspecific skin conductance responses and had higher anxiety ratings than the congruent blunter group (blunting strategy and low monitoring coping style). Interestingly, both the imposed monitors and the congruent monitors reacted with a smaller electrodermal response to the frightening picture than the imposed blunners and congruent blunners. Furthermore, during presentation of the frightening picture congruent monitors had less nonspecific skin conductance responses than the congruent blunners. These findings suggest that blunting seems to have advantages during anticipation, while monitoring might show its benefit at the moment of confrontation with the stressor.

Theories concerned with coping have focussed basically on two cognitive strategies to deal with threatening events: “repression,” which reflects an orientation away from the threatening event, and “sensitization,” which refers to

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an orientation towards it (Byrne, 1964). Based on this distinction, Miller (1987) devised a self-report scale, the Miller Behavioral Style Scale (MBSS), to assess styles of information seeking under threat. With this scale, it is possible to assess level of ‘monitoring’ (i.e., the tendency to seek out knowledge about the threat), and level of ‘blunting’, distracting oneself from threat relevant information. The MBSS has proven to be a valid instrument for predicting behavioral strategies in response to physical (shock) and psychological (cognitive task) stressful events (Miller, 1987).

The scale has been used to study the influence of coping style on psychological and physiological reactions of people anticipating stressful situations (Miller, 1980, 1989; Miller & Mangan, 1983; Steptoe & O’Sullivan, 1986; Miller et al., 1988). Overall, high blunting/low monitoring coping styles are associated with low subjective and physiological arousal, whereas low blunting/high monitoring are related to high arousal (for a review, see Miller et al., 1989). However, most of these studies concern the period preceding the frightening event (the anticipation period). Less is known about what happens during and after confrontation with the stressor. The most supported idea is that, again, blunting is a more adaptive style than monitoring. For example, Miller (1980) found that blunting was associated with lower (self/observer) ratings of distress during, and in the days following a stressful medical examination than was monitoring.

If it is true that one of either coping mode is the more adaptive, it seems important to find out whether it is possible to teach people to use the beneficial strategy. To explore this issue, an experiment was conducted. More specifically, the following issues were addressed: (a) Is it possible to instruct persons to engage in a monitoring or blunting strategy? (b) What are the psychological and physiological effects of these imposed coping strategies before and during a threatening event? (c) Does habitual coping style have an influence on the psychological and physiological impact of imposed strategies?

**METHOD**

**Subjects**

The subjects were 30 healthy undergraduate students (23 women and 7 men). Their mean age was 21.7 years (range: 18–27 years). They participated in the experiment in return for a small financial compensation. Subjects were told that the experiment was about sweat gland activity while looking at a picture.

**Measurements**

Skin conductance responses were measured with two Beckman Ag/AgCl electrodes (8 mm diameter) placed on the medial phalanges of the subject's second and third finger (non-dominant hand) by means of adhesive collars. The electrodes were filled with isotonic paste and connected to a Beckman Skin Conductance Coupler (type 9844). Skin conductance responses to an aversive slide as well as nonspecific skin conductance responses were recorded using a constant voltage (.5V) technique. Although somewhat misleading,
the term “nonspecific (spontaneous) skin conductance response” (NSCR) is widely used to refer to electrodermal deflections occurring in the absence of external stimulation (Stern et al., 1980). There are reasons to assume that NSCRs originate from internal stimulation (i.e., from salient, emotion-loaded cognitions) (Nikula, 1987; Merckelbach et al., 1991). Spontaneous fluctuations were measured because they are easily measurable and can index arousal induced by threat (e.g., Geer et al., 1970; Fowles, 1980).

Respiration was measured with a respiration belt fastened around the subject’s chest. The respiration belt was connected to a Beckman Voltage/Pulse/Pressure Coupler. Respiration was used to help identify electrodermal deflections due to respiratory artifacts. NSCRs and respiration were continuously recorded on paper (5 mm/sec) by a Beckman polygraph (type R711).

A Kodak slide projector was used to present a fear-relevant slide (i.e., the picture of two fighting pitbull-dogs, on a white screen approximately 2 meters in front of the subject).

Procedure

Upon arrival in the laboratory, the subject was asked to sit down in a chair, which was placed in a sound-isolated and dimly lit chamber. The recording apparatus, as well as the slide projector, were placed in an adjacent room. Before the experiment proper, subjects completed a five-point version of the MBSS (van Zuuren & Wolfs, 1991; range monitoring and blunting subscales 16–80). Next, electrodermal recording sites were cleaned with distilled water, and electrodes and respiration belt were attached. The subject was then asked to relax for the next three minutes (baseline period). The experimenter left the room and calibrated the recording apparatus.

After three minutes, the experimenter re-entered the room and instructed the subject. Half of the subjects were given blunting instructions (blunting strategy group; N = 15; 4 men) which ran as follows: “After exactly three minutes you will be confronted with a frightening picture of two fighting pitbull-dogs. Please, prepare yourself for this picture in the following way: Do not think about it any more. Try to distract yourself by thinking of other things. For example, you could make an imaginary calculation...” The other half of the subjects received monitoring instructions (monitoring strategy group; N = 15; 3 men): “After exactly three minutes you will be confronted with a frightening picture of two fighting pitbull-dogs. Please, prepare yourself for this picture in the following way: Try to imagine what this picture will look like. Use images and thoughts from your memory to do so...”. Additional instructions were identical for both groups: “When the picture appears, do not turn away, but take a good look at it. After one minute it will disappear and the experiment is over...”.

After presentation of the stimulus (duration: 60 seconds), subjects rated subjective anxiety during the anticipation period and the frightfulness of the picture on a 10 cm Visual Analogue Scale (VAS), which ranged from 0 (“not at all anxious”/”not at all frightening”) to 10 (“extremely anxious”/”extremely frightening”). They also filled in a monitoring-blunting checklist intended to determine to what extent a subject was actually monitoring and blunting dur-
ing the anticipation period. The checklist consisted of five monitoring (e.g., “I looked at the clock to see whether the three minutes were already over”) and five blunting items (e.g., “Trying not to think of the picture, I avoided looking at the projection screen as well”). The items were based on the descriptions of monitoring and blunting provided by van Zuuren and Wolfs (1991, pp. 143–144). The subjects had to indicate to what extent the items had been applicable to them (1, “not at all applicable”; 5, “very much applicable”). Finally, subjects were debriefed and paid.

**Response Definition and Analysis**

Electrodermal data were scored by hand. Two types of electrodermal activity were measured. First, the number of NSCRs during anticipation and during stimulus presentation was counted. An electrodermal deflection was regarded as an NSCR when it exceeded the value of 0.05 micromho within 2 seconds, when it was not due to respiratory irregularities (Stern et al., 1980), and when it was not linked to the onset of the slide. Second, the magnitude of the electrodermal response to the picture was measured in micromho and later submitted to a square root transformation to normalize the data. A deflection was regarded as a response to the slide if it began within four seconds after slide onset.

Differences between the two strategy groups with respect to the NSCRs were evaluated with a 2 (group: monitors vs blunners) × 2 (period: anticipation vs slide presentation) analysis of variance (ANOVA) with the last factor being a repeated measure. All the other data (the baseline data, electrodermal responses, subjective ratings and scores on the monitoring-blunting checklist, and on the MBSS) were analysed with t-tests.

To examine whether there was an interaction between habitual coping style and imposed strategy, the monitoring subscale of the MBSS was used to select the ten highest monitoring-scorers in the monitoring strategy group and the ten lowest monitoring-scorers in the blunting strategy group. The monitoring subscale was preferred because previous investigations with the five-point version of the MBSS have indicated that the monitoring subscale is considerably more reliable than the blunting subscale (e.g., van Zuuren & Wolfs, 1991; De Boer & van Zuuren, 1989). Accordingly, two new groups were created (*post hoc*): (a) a congruent monitor group (N = 10; imposed monitoring strategy and high monitoring coping style; two men), and (b) a group that could be best named a congruent blunting group (N = 10; imposed blunting strategy and low monitoring coping style; three men). The same statistical analyses as mentioned above were used to evaluate differences between these groups.

**RESULTS**

**Imposed Monitoring and Blunting Strategy**

**Checklist and MBSS scores.** The scores on the monitoring-blunting checklist indicated that the experimental manipulation had been successful; subjects in
the blunting strategy group showed higher scores on blunting items ($M = 14.9$ ($SD = 2.7$) versus $M = 8.6$ ($SD = 3.0$)) and lower scores on monitoring items ($M = 10.1$ ($SD = 4.5$) versus $M = 16.9$ ($SD = 3.9$)) than subjects in the monitoring strategy group. Both differences were significant ($t(28) = 5.9$, $p < 0.001$, one-tailed, for blunting items; $t(28) = -4.4$, $p < 0.001$, one-tailed, for monitoring items).

The MBSS-scores in the sample resembled those found in other student populations (see, for example, De Boer & van Zuuren, 1989; mean blunting subscale: 42.2; mean monitoring subscale: 56.4).

Both strategy groups did not differ with respect to their scores on the MBSS. The means of the blunting and monitoring strategy group on the blunting subscale were, respectively, 49.7 ($SD = 7.6$) and 45.9 ($SD = 5.6$) [$t(28) = 1.5$, $p = 0.13$, two-tailed] and 52.7 ($SD = 8.8$) versus 54.6 ($SD = 9.2$) [$t(28) = -0.56$, $p = 0.57$, two-tailed] on the monitoring subscale.

Electrodermal data. The two imposed strategy groups had comparable NSCRs during the baseline period [$t(28) = -0.64$, $p = 0.52$, two-tailed]. Table 1 shows the mean number of NSCRs during the baseline, the anticipation, and while looking at the frightening picture.

A 2 (group) × 2 (period: anticipation; picture) ANOVA revealed neither a significant main effect of group [$F(1, 28) = 0.12$, $p = 0.70$] nor a significant interaction of group with period [$F(1, 28) = 1.90$, $p = 0.17$].

The only result reaching statistical significance was the height of the electrodermal response on appearance of the frightening picture. The mean response for the blunting strategy group was 0.80 ($SD = 0.26$) microcmho versus 0.58 ($SD = 0.29$) microcmho for the monitoring strategy group [$t(28) = 2.22$, $p = 0.03$, two-tailed].

Subjective data. Although subjects with a monitoring strategy rated themselves as somewhat more anxious during the anticipation period [mean VAS scores of 4.3 ($SD = 2.5$) versus 3.3 ($SD = 1.8$)] and scored the picture as more frightening and emotional [means were 4.5 ($SD = 2.0$) and 3.5 ($SD = 2.4$)] than bluters, none of these results reached significance [respectively $t(28) = -1.17$, $p = 0.25$, two-tailed, and $t(28) = -1.15$, $p = 0.26$, two-tailed].

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>THE MEAN NUMBER OF NSCRs DURING BASELINE-, ANTICIPATION-, AND PICTURE-PERIOD IN BOTH STRATEGY GROUPS (STANDARD DEVIATIONS ARE GIVEN BETWEEN PARENTHESES)</th>
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<tr>
<td></td>
<td>Blunting Strategy</td>
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<tr>
<td>Baseline</td>
<td>2.3 (1.3)</td>
</tr>
<tr>
<td>Anticipation</td>
<td>3.2 (3.6)</td>
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<tr>
<td>Picture</td>
<td>2.7 (2.2)</td>
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</table>
Imposed Strategy in Relation to Habitual Coping Style

**MBSS scores.** After the two new groups, a congruent monitor group (n = 10) and a congruent blunter group (n = 10) had been created, their MBSS scores were compared in order to find out whether these newly formed groups indeed differed in degree of habitual coping style. The mean scores on the monitoring subscale were 59.5 (SD = 5.9) for the congruent monitor group versus 48.2 (SD = 6.9) for the congruent blunting group [t(18) = -3.9, p < 0.001, two-tailed], a difference that is highly significant.

**Electrodermal data.** Congruent monitors and congruent blun ters had comparable NSCRs during the baseline period [t(18) = -0.8, p = 0.44, two-tailed]. However, the groups showed a different pattern of NSCRs during the anticipation phase and slide presentation phase of the experiment (see Table 2). An ANOVA yielded a significant interaction of group with period [F(1, 18) = 4.6, p = 0.04] although separate *t*-tests revealed that the number of NSCRs within each phase did not differ significantly between the two groups [t < 1]: Congruent monitors showed relatively more NSCRs during anticipation, but their arousal dropped considerably while they looked at the picture. Congruent blun ters, however, maintained the same level of arousal throughout the experiment.

Differences in the magnitude of the electrodermal response to the slide also reached statistical significance: Congruent blun ters had a response of 0.84 (SD = 0.26) micromho versus 0.55 (SD = 0.35) micromho for the congruent monitors [t(18) = 2.1, p = 0.05, two-tailed].

**Subjective data.** Congruent blun ters and congruent monitors did not differ significantly on their ratings of the frightening picture: 3.8 (SD = 2.3) and 4.6 (SD = 2.2), respectively [t(18) = -0.8, p = 0.40, two-tailed].

During anticipation, however, congruent monitors felt more uncomfortable and anxious than congruent blun ters, the means on the VAS-scores being, respectively, 4.9 (SD = 2.6) and 2.7 (SD = 1.7) [t(18) = -2.2, p = 0.03, two-tailed].

**TABLE 2**

<table>
<thead>
<tr>
<th></th>
<th>Congruent Blun ters</th>
<th>Congruent Monit ons</th>
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<tbody>
<tr>
<td>Baseline</td>
<td>2.3 (1.4)</td>
<td>2.8 (1.4)</td>
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<tr>
<td>Anticipation</td>
<td>3.4 (4.1)</td>
<td>4.8 (3.4)</td>
</tr>
<tr>
<td>Picture</td>
<td>3.2 (3.7)</td>
<td>2.5 (3.1)</td>
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</table>
DISCUSSION

The present data show that it is possible to instruct subjects to engage in a blunting or monitoring strategy. However, the physiological and subjective impact of these imposed strategies was found to be rather small, as none of the results (NSCRs and subjective anxiety) reached statistical significance (except for the electrodermal response on appearance of the frightening picture; see below). This changed when the subject's habitual coping style was taken into account. The congruent monitor group (monitoring strategy combined with high monitoring coping style) had relatively more nonspecific skin conductance responses and higher anxiety ratings during anticipation than the congruent blunter group (blunting strategy combined with low monitoring coping style).

The most important finding of the present study is the fact that imposed monitors as well as congruent monitors showed a smaller electrodermal response to the frightening picture than the imposed bluters and congruent bluters. Also, congruent monitors became physiologically more calm at confrontation with the picture (compared to the anticipation period) than the congruent bluters. These findings were not related to differences in judgment of the emotionality and frightfulness of the picture.

Consequently, although blunting does, indeed, seem to have advantages, in particular during anticipation, monitors, congruent monitors in particular, seem to benefit from their strategy and coping style during exposure to the stressor. A possible explanation for this finding comes from Epstein (1973). He noted that people who scan their environment for threat-relevant cues (like the monitors in the present study), expose themselves to the stressor in imagination and so already react strongly during the anticipation of the threat. Under the condition that the situation is probably less aversive than expected, they are able to relax rapidly and remain relatively calm during confrontation with the threatening stimulus. The fact that overestimation of aversive events promotes habituation of fear responses to these events has been extensively described by Rachman (Rachman & Lopatka, 1986). On the other hand, those who protect themselves from exposure (like bluters), fail to attend to cues signalling the threatening event. On appearance of the aversive stimulus, cognitive avoidance becomes almost impossible, resulting in increased processing evidenced by higher arousal. Another explanation, which is in line with the formulation of Epstein but nevertheless different, could be that monitors engaging in imaginary exposure already habituate to the threatening stimulus, whereas bluters keep the threat out of their minds and are first confronted with it at the moment of actual appearance (e.g., Shipley et al., 1978).

It should be borne in mind that the present study relied on normal subjects and a mild frightening stimulus. Thus, the possibility cannot be ruled out that a different pattern of results emerges when fearful subjects and/or intense threatening stimuli are used. A second potential weakness in the present study was the fact that imposed monitoring and blunting strategies were validated with a post hoc checklist. Although the checklist data seemed to indicate that the manipulation of strategies had been successful, it is still possible that they reflect demand characteristics rather than veridical strategies used during the
experiment. Nevertheless, the present results are in accordance with more recent studies in this field, in which it was found that monitoring and blunting coping styles/strategies both have their advantages and disadvantages for health (see Miller, 1991). Taken together, the findings on the beneficial and/or detrimental effects of monitoring and blunting present a rather complex picture. Miller (1991, p. 7) lists a number of variables that might moderate the effects of attentional strategies: (a) the nature and type of the stressful event; (b) the nature and type of information made available to individuals; (c) the nature and type of alternative strategies available; (d) personal factors, such as an individual’s dispositional tendency to monitor or to blunt threat-relevant cues; and (e) the nature and type of outcome under consideration. Additionally, aspects of time (e.g., time left to prepare oneself for the stressful event) also might play an important role. More controlled studies are necessary in which these variables are systematically manipulated. Knowledge thus achieved might play an important role in, for example, optimizing exposure techniques as practiced by behavior therapists. Germane to this issue is a study of Foa and Kozak (1986), in which it is argued that distraction during exposure therapy interferes with fear habituation, whereas attention to the phobic stimulus promotes processing of corrective information and consequently leads to fear habituation. Empirical evidence for this line of reasoning has been provided by Grayson et al. (1982) and Sartory et al. (1982). Thus, monitoring and blunting might play a role in attentional processes during exposure therapy (see also Steketee et al., 1989), and further studies are needed to examine this possibility.

REFERENCES


