Short Report

Enhancing the Pace of Recovery

Self-Distanced Analysis of Negative Experiences Reduces Blood Pressure Reactivity

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Recent work suggests that rumination plays a key role in mediating the relationship between stress and cardiovascular disease (Brosschot, Gerin, & Thayer, 2006). People engage in rumination because they believe that understanding their feelings will improve their mood. However, these attempts often backfire, instead maintaining negative affect (Nolen-Hoeksema, 1991) and delaying physiological recovery from negative events (Glynn, Christenfeld, & Gerin, 2002)—a key risk factor for cardiovascular disease (McEwen, 1998).

At first glance, these findings suggest that people should avoid focusing on their negative feelings. However, this prescription contradicts an alternative literature indicating that emotional processing facilitates coping (e.g., Pennebaker & Chung, 2007). Thus, a key question emerges: How can people analyze negative experiences without enhancing their vulnerability to cardiovascular disease?

According to a recent proposal (Kross, Ayduk, & Mischel, 2005), whether people's attempts to understand their negative feelings are adaptive depends on the type of self-perspective they adopt. Research results supported the prediction that analyzing feelings surrounding a negative experience from a *self-distanced* perspective (from an observer's vantage point) leads people to display lower levels of negative affect and rumination than does analyzing such feelings from a *self-immersed* perspective (from one's own vantage point; Kross et al., 2005; also see Kross & Ayduk, in press).

The current study extends these findings to cardiovascular reactivity. We predicted that participants who adopted a self-distanced perspective, compared with those who adopted a self-immersed perspective, would demonstrate smaller increases in blood pressure reactivity both when analyzing their feelings during the experiment and during a recovery period after the experiment was over.

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METHOD

Ninety undergraduates (54.55% women; mean age = 20.71, *SD* = 4.24) from diverse ethnic backgrounds were recruited for a study on mental imagery and physiological responses. They completed the study on a computer, which provided both written and oral instructions. Participants first sat quietly for 5 min for baseline measurements of blood pressure (i.e., baseline phase). Next, they were cued to recall an experience when they were angry and indicated that they had recalled an appropriate experience by pressing the space bar (i.e., recall phase); the computer recorded their recall times. Then they were told, "Go back to the time and place of the conflict and see the scene in your mind's eye." They were then randomly assigned to one of two perspective conditions. In the self-immersed condition, participants were told,

> Relive the situation as if it were happening to you all over again . . . Reexperience the interaction as it progresses in your mind's eye.

In the self-distanced condition, participants were told,

> Take a few steps back . . . . Move away from the situation to a point where you can now watch the conflict from a distance . . . . Watch the conflict unfold as if it were happening all over again to the distant you. Replay the interaction as it progresses in your mind's eye.

Participants were given as much time as they needed to adopt these perspectives and indicated they had done this successfully by pressing the space bar; the computer recorded this time. Next, they were directed to analyze their feelings for 60 s from the perspective they adopted:

> As you continue to relive this conflict, try to understand the emotions that you [your distant self] experienced as the conflict unfolded. Why did you [he/she] have those feelings? What were the underlying causes and reasons?

The perspective-taking and analysis instructions together constituted the manipulation phase of the study.

Finally, participants completed a series of questionnaires that included assessments of the study's dependent variables and covariates and then sat quietly for a 5-min recovery period. Blood pressure was recorded throughout the experiment.

Dependent Variables

Participants' ratings of the extent to which and the intensity with which they reexperienced their original feelings during the experiment were averaged to form an emotional-reactivity index ($r = .76$, $p < .001$; scale: 1–7, $M = 3.44$, $SD = 1.44$).

Blood pressure was recorded using a Medwave continual blood pressure machine (St. Paul, MN). Mean arterial blood pressure (MAP) was used as the main dependent variable.

Covariates

Because participants varied in how quickly they recalled an experience of anger (recall time), adopted a particular perspective (perspective time), and completed the questionnaires (questionnaire time), we included these response times as covariates. Because imagery vividness—the composite of self-reported imagination ability and vividness of the recalled memory, $r(88) = .50$, $p < .001$—and the self-reported resolution status of the recalled experience (69% resolved vs. 31% unresolved) might have affected reactivity during the experiment, we also controlled for these variables. We observed no group differences in any covariate except for perspective time (self-distanced: $M = 59.07$ s, $SD = 20.51$; self-immersed: $M = 45.94$ s, $SD = 22.95$), $t(88) = 2.84$, $p < .01$, $d = 0.60$. None of the covariates moderated the results reported in this article.

Exclusions

Six participants were excluded because they did not follow instructions. Additionally, six extreme or biologically implausible blood pressure reactivity scores were excluded from analyses. Exclusions were not related to experimental condition, $\chi^2(1, N = 90) = 0.14$, $p = .71$. Some data could not be scored because of faulty sensors or noisy signals, so sample sizes for blood pressure indices vary.

RESULTS

Baseline MAP did not differ significantly between the two conditions, $t(74) = 1.40$, $p = .17$. We therefore computed change scores by subtracting baseline MAP values from MAP values for each study phase (i.e., recall, manipulation, recovery). Separate one-way analyses of covariance (ANCOVAs) were conducted on emotional reactivity and MAP reactivity scores from each study phase. Condition was the between-subjects predictor, and relevant covariates were included.

The ANCOVA revealed that participants in the self-distanced group reported lower levels of emotional reactivity than participants in the self-immersed group. Because recall of the anger experience preceded the experimental manipulation, we expected and found no difference between the two groups in MAP reactivity during recall ($F < 1$). In contrast, participants in the self-distanced group showed lower MAP reactivity than those in the self-immersed group during both the manipulation and the recovery phases of the experiment (see Table 1 for significant results).

TABLE 1
Effect of Experimental Condition on the Dependent Variables

	Experimental condition						Difference between conditions	
	Self-immersed			Self-distanced				
Variable	*M*	*SE*	*n*	*M*	*SE*	*n*	*F*	*d*
Emotional reactivity	4.01	0.20	42	3.05	0.21	39	9.20**	0.70
MAP: manipulation	4.85	1.01	37	0.81	1.04	35	6.98**	0.65
MAP: recovery	4.72	1.03	36	1.39	1.08	33	4.37*	0.53

Note. Mean arterial blood pressure (MAP) was scored as the difference from baseline. All analyses controlled for imagery vividness (scale: 1–7, $M = 5.14$, $SD = 1.17$), resolution status (31% unresolved), recall time ($M = 66.48$ s, $SD = 13.90$ s), and perspective time ($M = 51.46$ s, $SD = 21.30$ s). Time to complete the questionnaire ($M = 22.41$ min, $SD = 7.18$ min) was included as an additional covariate in analyzing MAP during recovery.
*$p < .05$. **$p \leq .01$.

DISCUSSION

A hallmark feature of rumination is that it delays physiological recovery (Gerin, Davidson, Christenfeld, Goyal, & Schwartz, 2006), which may increase the risk of cardiovascular disease (McEwen, 1998). Thus, the fact that analyzing experiences of anger from a self-distanced rather than a self-immersed perspective led to lower reactivity may have important protective benefits for physical health.

This study, to our knowledge, is the first to examine how the negative physiological consequences associated with rumination can be reduced without relying on distraction. Our finding on distancing as an alternative strategy is important because distraction, although effective at reducing short-term arousal, may be less useful for long-term coping (Kross & Ayduk, in press).

A key challenge for future research will be to identify the boundary conditions that determine when distanced analysis is adaptive and when it is not. It is possible that under certain circumstances, alternative coping strategies (e.g., avoidance in the case of uncontrollable situations; emotional flooding and habituation in coping with fear and trauma) are more helpful than distancing.

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