

The self-control of emotional reactions to a stressful film¹

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The control of emotion—its reduction and enhancement—is a central theme in personality and in psychopathology, but there has been relatively little empirical research on the problem. One series of experiments emanating from this laboratory (e.g., Spiesman, Lazarus, Mordkoff, & Davison, 1964, Lazarus & Alfert, 1964; Lazarus, Opton, Nomikos, & Rankin, 1965, Folkins, Lawson, Opton, & Lazarus, 1968) has focussed on the way emotional reactions can be manipulated by altering the person's appraisal of a potentially stressful film event. Two features of this and related research limit somewhat the extent to which it can serve as a laboratory analogue of the control of emotion in real life. First, most existing theory and research have been directed at the way people *reduce* or inhibit painful emotions or psychological stress reactions. However, there are times when the reduction of emotion may have undesirable consequences, either for the individual (see Janis, 1958) or for the society. As to societal harms, the human capacity to achieve detachment from a disturbing event made it easier for Germans to ignore, or to tolerate without protest, knowledge of the Nazi treatment of European Jewry during World War II. Opton (1971) has recently presented interview data indicating that large numbers of Americans have done the same with respect to the My Lai massacre in Vietnam. Thus, while being one of the chief means by which individuals cope with potentially stressful inputs, emotional detachment may sometimes lead to negative personal and social consequences.

1 The research reported in this article was made possible by a research grant (MH-2136) from the National Institute of Mental Health. It was also facilitated by a Miller Institute Professorship at U C Berkeley to the last named author during the academic year 1970-1971.

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Moreover, emotional *involvement* is probably one of the major features of a rich and healthy psychological life. To fall in love, to commit oneself to other persons, to become more than a casual participant in professional, social or political affairs, to choose to raise a family, to be legitimately frightened of danger or angry at injustice, to grieve at the loss of a loved one, to feel shame and guilt over one's moral transgressions or ineptitudes—these are as important for a “healthy adjustment” as is the capacity to turn off emotional reactions which interfere with adaptive functioning. Moreover, the matter of involvement in a more action oriented sense is currently very much alive in the research literature of social psychology, as is illustrated by efforts to explore the phenomenon of bystanders failing to go to the aid of a victim of assault (cf Latane & Darley, 1970).

A second limitation of most laboratory research on emotional control is that the appraisals and reappraisals antecedent to emotion typically have been imposed by the experimenter. In the study by Lazarus and Alfert (1964), for example, subjects were offered a denial-like orientation passage prior to viewing a threatening accident film, this orientation short-circuited, so to speak, the stressfulness of the experience. In life, however, emotional appraisals are largely self-generated; the person subjected to the threat of harm must, through his own cognitive efforts, find a way of managing the situation and/or the emotional reaction it generates.

Some field studies do exist in which this limitation, i.e., imposing a means of mastery through the stimulus context as opposed to allowing the person to generate his own defenses, is not a factor—for example, studies by Hamburg, Hamburg and deGoza (1953) on severely burned patients, Visotsky, Hamburg, Goss and Lebovitz (1961) on polio victims, and Wolff, Friedman, Hofer and Mason (1964) on parents of children dying of leukemia. In these studies, the persons observed created their own forms of defense against the harm or threat of harm without evident influence from the researchers. Still, most laboratory research has ignored the self-generated cognitive processes by which a person manages an emotional situation.

What are the methods or strategies by means of which a per-

son can achieve emotional detachment, and how are these related to strategies for involvement? Does the cultivation of detachment lead to the withering of involvement, and vice versa, or can both types of orientation coexist in the same "flexible" person? What are situational antecedents of involvement and detachment? Questions such as these are of great moment for personality psychology, and yet remarkably little research on them has been attempted.

The experiment reported here dealt with some of these questions, it is, however, only a small beginning. Briefly, subjects were asked to become detached from or involved in a disturbing motion picture. Their success in these efforts was assessed by means of psychophysiological reactions and self-reports of distress, and these in turn were related to the coping strategies employed. In the absence of tightly organized theory and empirical observation, the approach adopted was exploratory. The present report is centered about three main issues: (a) the extent to which experimental subjects, on request, can either detach themselves from or involve themselves more intensely in an emotional situation, (b) the manner in which having first adopted the posture of, say, detachment, influences subsequent efforts to achieve involvement, and vice versa, and (c) the types of strategies subjects use to achieve involvement and detachment, as well as the situational and personality determinants of these strategies and their effectiveness in altering emotional arousal.

METHOD

The study was actually conducted in three separate sessions held on consecutive days. The first session was identical for all subjects and involved the presentation of a stress film *twice* under *natural* (N) conditions, i.e., with no particular emotional orientation explicitly solicited. This permitted a relatively stable level of reactivity to be achieved before the introduction of the *involvement* (I) and *detachment* (D) instructions on the second and third sessions. For these latter sessions, subjects were divided into three groups. The ID group received involvement instructions on the second session and detachment instructions on the third, the DI group received the reverse order of instructions. The third group (NN) was a control which continued to view the film under natural conditions.

Subjects

Male students were solicited as paid volunteers from various undergraduate courses or through the student newspaper. In all, 115 subjects completed the experiment, 40 in the ID group, 38 in the DI group, and 37 in the NN group.

Stimulus Film

The stimulus was a 13-minute industrial safety film entitled, "It Didn't Have to Happen." It portrays three accidents: first, a worker lacerates a finger in a planing machine, second, another worker amputates two joints of a finger in a milling machine, and third, a circular saw drives a board through the abdomen of a passing workman. The accident episodes are quite delimited and in previous research (e.g., Lazarus, et al., 1965, Folkns, et al., 1968, Nomikos, Opton, Averill, & Lazarus, 1968) they have been shown to produce sharp rises in autonomic and subjective distress reactions.

Response Measures

Physiological. A Fels Dermohmeter was used to obtain continuous measurement of palmer skin resistance which was recorded on a Beckman Type-R Dynograph. Heart rate was measured by a Beckman cardi tachometer from electrodes attached to the left wrist and the right calf.

Skin resistance was read at 46 points during the film. With respect to the three accident scenes, 13 readings were taken at five-second intervals around each point of impact. There also were 7 readings during the benign, nonaccident scenes. The latter were taken at approximately 1-minute intervals, skipping the accident scenes. All resistance measures were converted to skin conductance (SC) before analysis.

The same procedure was followed for heart rate (HR) as for SC, except that the mean of three readings (five seconds apart) was used to measure activity at each of the 7 nonaccident points. Due to technical difficulties the HR data for four subjects—one in the DI group and three in the NN group—were not usable.

Two types of measures were derived for both SC and HR: (a) Reactivity—the average of three change scores, one for each accident, a change score was calculated as the difference between the maximum reading during an accident scene and the reading 30 seconds prior to impact, and (b) Benign-scene level—the average of the 7 measurements taken during the nonaccident parts of the film.

Psychological A post-film questionnaire designed to assess the emotional impact of the film was administered at the end of each session. The specific measures of self-reported affect are discussed below with the presentation of results. On the second and third sessions, the experimental subjects also were asked to indicate (a) the psychological strategies they used in achieving involvement or detachment, (b) how successful they felt these strategies were, and (c) the amount of effort associated with the use of various strategies.

Personality Measures

A self-report inventory was administered to the subjects, who met in small groups prior to the first experimental session. The inventory consisted of eleven scales selected on the basis of their apparent relevance to emotional control. These included measures of Manifest Anxiety (Taylor, 1953), Repression-sensitization (Byrne, 1964), Ego-strength (Barron, 1953), Over-control and Under-control (Block, 1965), Flexibility (Gough, 1957), Social-desirability (Crowne and Marlowe, 1964), Thinking-feeling (Myers-Briggs, 1962), Premsia-harria (Cattell, 1962), the Anti-intracception subscale of the F scale (Adorno et al, 1950), and the Jackson-Payne Mood Scale (Jackson & Payne, 1963).

Procedure and Instructions

The Procedure was similar for all subjects except with regard to instructions. The subject was seated comfortably in a reclining chair with physiological recording equipment located in an adjacent room. Following attachment of electrodes, he was allowed to rest for five minutes with the lights turned off. This provided a base period for physiological recording. The natural, involvement, or detachment instructions were then presented, depending upon the session and the group, and the subject was left alone for two more minutes. In the I and D conditions, this two-minute period was designed to permit the subject to plan the strategies he was to use for achieving either involvement or detachment. In the N condition, the subject was simply asked to continue to rest for two more minutes. The film was then started without warning.

The *natural* instructions which preceded the presentation of both showings of the film on the first session, and which were used for the NN group on the second and third sessions, were as follows.

You are going to watch a movie about safety in work. I want you to watch the movie attentively and to absorb all its contents. During this time we will be recording your physiological reactions, so please try not to move.

The involvement and detachment instructions were presented in counterbalanced order to the ID and DI groups on the second and third sessions. Subjects were instructed to become *involved* in the following manner:

Some people can get involved or emotional about potentially upsetting experiences much more than others. Such people seem able to let themselves go, so to speak, and participate more fully in joys, dreads, sorrows or angers more intensively than others whose feelings are always modulated.

You are going to watch the same movie again but now I want you to adopt a certain attitude toward it. I want you to "let yourself go" to the fullest extent that you are able, to be upset in respect to events in the film that move you. You may achieve the emotional involvement in the upsetting passages of the movie with a minimum of constraint, as intensely and as naturally as you can. Since not every scene contains a potentially emotional content, and some scenes will be more meaningful to you than others, one would expect that there will be rises and falls in your emotional state in keeping with the various events that are portrayed.

The *detachment* instructions read as follows:

Some people can experience with great detachment the conditions that provoke intense emotions in others. An interesting example is the surgeon who did an appendectomy on himself by means of local anesthesia and mirrors. You are going to watch the same movie again but now I would like you to adopt a certain attitude towards it. I want you to try to maintain as total detachment from it as you are capable of, and to be as unemotional as possible while watching the disturbing scenes in the movie. This is quite a difficult task and requires quite an effort. However, the capacity to detach oneself from certain emotional experiences is one of the most important features of good adjustment. You may achieve this unemotional stance in any way you prefer, except by not paying attention to what is portrayed. In other words, your task is to know what is going on in the movie without being in the least bit upset by it.

RESULTS AND DISCUSSION

There were no significant differences among the three groups (ID, DI, and NN) in terms of SC, HR, or self-reported arousal during the two film presentations in session 1. Therefore, these

data are largely ignored in the presentation of results. Our main concern is with the effects of the I and D instructions on the third and fourth showings of the film. These results are organized around the three issues mentioned in the introduction, namely, the ability to achieve involvement and detachment upon request, the influence of prior involvement or detachment on subsequent efforts to achieve the opposite orientation, and the types of strategies used to achieve involvement and detachment.

The Ability to Achieve Involvement and Detachment upon Request

The physiological and self-report data related to emotional arousal under the I and D instructions are presented in Table 1. These data were analyzed by means of a 2×2 analysis of variance with sequence groups (ID vs DI) and instructions (I vs. D) forming the two factors. With regard to *HR reactivity*, the main effects for instructions were highly significant ($F = 10.95$, $df = 1,72$, $p < .005$)—involvement resulted in greater HR changes than detachment. The difference was most apparent for the ID group, the sequence \times instruction interaction reaching a marginal level of significance ($F = 3.51$, $df = 1,72$, $p < .10$). When compared to the effects of the N instructions, involvement resulted in significantly higher HR reactivity ($I_3 = 17.34$, $N_3 = 14.15$ bpm, $p < .10$, and $I_4 = 16.15$, $N_4 = 11.92$ bpm, $p < .01$). Contrary to expectations, the D instructions also resulted in higher HR than did the N instructions, but not significantly so.

The effects of the experimental manipulations on *SC reactivity* were meager, but tended to be in the same direction as those for HR (see also Table 1). The sequence \times instruction analysis of variance yielded a marginally significant interaction ($F = 3.57$, $df = 1,72$, $p < .10$), but no main effects. As in the case of HR, the difference between the I and D instructions was evident primarily in the ID sequence. Moreover, both the I and D instructions resulted in greater reactivity than the N instructions, though the differences were statistically significant only in the case of involvement ($I_3 = 4.310$, $N_3 = 2.240$ μ mhos, $p < .01$; and $I_4 = 3.829$, $N_4 = 2.415$ μ mhos, $p < .05$).

The mean level of physiological activity during the benign

Table 1 Effects of Involvement (I_3 and I_4) and Detachment (D_3 and D_4) instructions on three measures of emotional arousal.

Sequence group	Variable	Instructions	
		Involvement	Detachment
ID	HR bpm	I_3 17.34	D_4 12.49
	SC μ mhos	4.310	3.233
	Self-report ^a	2.66	1.62
DI	HR bpm	I_4 16.15	D_3 14.83
	SC μ mhos	3.829	4.228
	Self-report ^a	2.32	1.55

^aSubjects were asked to rate on a 5-point scale the degree to which they felt aroused by the film in comparison with the first time they saw it

scenes of the film did not show any significant effects due to I and D instructions, which would indicate that any emotional control subjects were able to exert was fairly well attuned to the more threatening aspects of the film.

The fact that D instructions resulted in higher (rather than lower) physiological reactivity than did N instructions was unexpected. It is not important that the differences were nonsignificant since theoretically detachment should have resulted in smaller reactions. There are two possible explanations. First, of course, the D instructions simply may have been ineffective. Any differences observed between the I and D conditions would then be attributable to the I instructions alone. A second possible explanation is that the attempt to detach oneself from the emotional impact of a threatening event itself may have produced physiological arousal due to the effort required.

Self-reports of emotional arousal would seem to indicate that the D instructions were, subjectively at least, effective in reducing affective disturbance (see also Table 1). Specifically, at the end of the second and third sessions, subjects were asked to rate the degree to which they felt emotionally aroused by the film in comparison with the first time they saw it. A 5-point scale was used ranging from "much less" (1) to "much more" (5), with the midpoint (2.5) being "about the same." Under the I instructions, subjects reported that they had been about as aroused as

on the first showing, in spite of the fact that by this time they had seen the film either three (I_3) or four times (I_4). Under D instructions, subjects reported that they felt considerably less aroused than on the first showing. Statistically, the main effect for instructions was highly significant ($F = 36.18$, $df = 1,72$, $p < .001$), but neither the sequence effect nor the instruction \times sequence interaction were significant.

The questionnaire was not worded in such a manner as to allow a direct comparison between the effects of the I and D instructions and those of the N instructions on self-reported arousal. However, after each presentation of the film under the I or D instructions, three questions were asked in order to assess the *success*, *effort*, and *difficulty* of maintaining the two experimental sets: (a) "How successful do you think you were in achieving involvement (detachment)?" (b) "Rate the degree of effort that you felt you had to make in order to achieve involvement (detachment)." (c) "How difficult was it for you to maintain involvement (detachment)?" Analysis of variance on the answers to these questions yielded no significant effects for the I and D instructions, nor for the sequence \times instruction interaction. In contrast to the physiological measures and self-reported emotional arousal, there were significant main effects for the ID vs DI sequence groups on the above items, but these results are more conveniently discussed in the next section. At present, it is sufficient to note that Ss felt they were about equally successful in achieving involvement and detachment and that both orientations required about the same amount of effort.

The Influence of Prior Involvement or Detachment on Subsequent Efforts at Emotional Control

Is it more difficult to become involved after one has detached oneself from a threatening event, and conversely, what about efforts to become detached following prior involvement? An expectation that detachment, once achieved, could make the person incapable of shifting readily to involvement would be consistent with clinical observations of people with highly generalized intellectualized ways of handling potentially emotional events who find it difficult, if not impossible, to turn the detach-

ment off so as to experience emotional reactions in a more labile fashion. Such an issue cannot be adequately evaluated here because the effects of sequence, that is, whether involvement is more difficult after detachment or vice-versa, are hopelessly confounded in this study with the effects of habituation taking place from film presentation three (session 2) to film presentation four (session 3). Still, some light might be shed on the question by looking cautiously at the interaction between sequence and instructions. There were no significant main effects for sequence on HR, SC, or self-report measures of emotional arousal. However, for the two physiological variables the sequence \times instructions interactions were marginally significant (i.e., differences between I and D instructions were greater when presented in the ID than DI sequence). Moreover, the three ratings dealing with successfulness, effort, and difficulty in achieving involvement and detachment all yielded significant main effects for ID vs. DI sequence groups ($F = 10.09, 16.93, \text{ and } 16.60$, respectively, $df = 1,72, p < .01$). Subjects in the ID sequence group tended to report *better success* in achieving both of the experimental sets, and to find the task of maintaining these sets *less difficult* and *less effort-consuming*. It thus would appear that the ID order was more amenable to manipulation of emotional reaction than the DI order.

As a result of the confounding, the results just presented can be interpreted either in terms of a session (habituation) \times instruction interaction, or in terms of a sequence \times instruction interaction. According to the habituation interpretation, the I instructions were more effective on the third (session 2) rather than the fourth (session 3) presentation because the earlier impact of the film was naturally stronger. Thus, by the fourth presentation, habituation to the film may have made detachment easier and involvement more difficult. On the other hand, the two film presentations on the first session were introduced specifically to provide a check on habituation, and an examination of session (habituation) effects in the NN group showed that, indeed, little change in reactivity actually occurred between the second and third sessions. Nevertheless, one cannot be certain that further unassessed habituation did not account for the results.

In the sequence interpretation the interaction is ascribed to "order" or "carry over" effects from the previous orientation. That is, involvement following detachment may be harder to achieve than detachment following involvement. There is some independent support for this interpretation. At the end of session 3, after subjects had attempted both involvement and detachment, they were asked to rate on a 3-point scale whether having first adopted one orientation made it easier or more difficult subsequently to adopt the other. The mean ratings obtained were 1.90 for the ID group and 2.59 for the DI group ($t = 4.58$, $df = 75$, $p < .001$), low ratings implying a facilitatory effect of prior orientation. That is, subjects in the ID group reported that having first adopted a detached attitude towards the film made it more difficult subsequently to become emotionally involved, subjects in the DI group, on the other hand, did not feel that prior involvement had much influence on their ability to achieve detachment at a later time.

Although we cannot say so for sure from the present data, because of possible confounding due to habituation effects, it is interesting to speculate that once attempted successfully, detachment may inhibit subsequent involvement, contrariwise, involvement at the outset may not have such restricting effects on detachment. One practical consequence of this is that we might expect detachment as a generalized style of coping to make it difficult for a person ever to enjoy a labile or reactive emotional life. If whenever one is exposed to an emotional experience he starts to respond to it by detachment, he may be thereby incapable of relinquishing this orientation on other similar experiences.

It is unfortunate that we cannot answer the question of sequence effects unequivocally. To have done so would have required an experimental design far more costly than the one actually employed. We would have needed two additional subject groups, one of which used the detachment strategy on both trials, and the other the involvement strategy on both trials. This analysis is presented here, not because our experiment provides the crucial data, but in order to point up what we regard as an important issue capable of being tackled in this type of experimental analogue of the self-control of emotional reactions.

Types of Strategies Used to Achieve Involvement and Detachment

Information regarding the psychological strategies employed to achieve emotional involvement or detachment was obtained from two sources. (a) subjects first completed an open-ended written question, "please describe how you attempted to achieve emotional involvement (detachment) in the film", they were then asked (b) to indicate on an a priori list of strategies which ones they had used and to rank these in order of importance.

The answers to the open-ended question revealed a wealth of idiosyncratic devices used to achieve emotional control. Various attempts were made to classify these responses (e.g., into repressive- and intellectualizing-like defenses in the case of detachment), but the classifications did not prove fruitful in subsequent analyses and hence will not be discussed here. On the whole, the a priori list of strategies to be described below adequately summarized the subjects' attempts to achieve involvement and detachment. About the only firm generalization which could be drawn from the open-ended descriptions was that detachment entailed a greater number and variety of strategies than did involvement. It appears that involvement is the more "natural" condition in the sense that persons usually react immediately and intuitively to a threatening event. Detachment, on the other hand, seems to require a certain intellectual "distancing" from the threat and hence involves a greater variety of intervening coping mechanisms than does involvement. This conclusion, of course, may not hold for all types of threat, but primarily those which imply a direct, physical or psychological harm, e.g., the scenes of mutilation used in the present experiment. The relationship might actually be reserved in the case of more abstract threats to the social or moral order, with detachment being the more immediate response and involvement requiring the mediation of complex strategies.

The a priori list of strategies presented to subjects is reproduced in Table 2, which also shows the percentage of subjects choosing each item (% used), and the percentage of subjects who checked a strategy as their principle choice (% 1st choice). For example, the most popular involvement strategy on both counts was item I 2, imagining that the misfortunes depicted in the film

Table 2 Percentage of subjects who used a particular strategy for Involvement and Detachment, and the percentage who listed that strategy as their first or principal choice

	ID group		DI group	
	% Used	% 1st choice	% Used	% 1st choice
Involvement strategy				
I 1 I tried to relate the scenes to a similar experience I had or was witness to	42.5	20.5	28.9	2.6
I 2 I tried to imagine that it is happening to me.	72.7	49.0	60.5	42.1
I 3 I tried to imagine that it is happening to somebody I know	27.5	5.5	36.8	13.2
I 4 I tried to think about, and exaggerate the consequences of the accident	50.0	11.5	34.2	11.8
I 5 Something else. Specify_____	37.5	13.5	31.6	13.6
Detachment strategy				
D 1 I constantly tried to remind myself that it was a film rather than a real occurrence.	57.5	39.0	55.3	28.9
D 2 I watched the film concentrating on the technical aspects involved in its production	50.0	18.5	55.3	26.3
D 3 I concentrated on the details involved in the cause of the accidents and possible ways of their prevention.	10.0	0.0	18.4	5.3
D 4 I told myself that the workers were actually responsible for what happened	20.0	10.0	7.9	0.0
D 5 I tried to adopt a humorous attitude towards what happened	17.5	2.5	34.2	7.9
D 6 I told myself that such accidents are inevitable	0.0	0.0	5.3	0.0
D 7 Something else. Specify_____	57.5	30.0	28.9	13.2

were happening to oneself. The most common detachment strategy was item D 1, reminding oneself that the stressful stimulus was a film rather than real occurrence. Responses to the items listed in Table 2 formed the bases for an investigation into what determined the choice of strategies and also the effectiveness of the various strategies in reducing or enhancing emotional arousal.

Determinants of choice of strategies. There are three classes of antecedents which are of interest in considering the choice of strategies. (a) the degree of initial threat as indicated by reactions to the film on session 1 before explicit attempts were made at involvement or detachment, (b) the emotional stand (involvement or detachment) adopted on a previous showing—it is pos-

sible, for example, that involvement strategies differ following detachment from those preceding it, (c) the personality characteristics of the individual. Due to the large amount of data analyzed, only findings which showed consistency across two or more response measures, and where appropriate, across the ID and DI sequence groups, will be presented.

(a) Reactions to the second film presentation under N instructions (session 1) were used to assess degree of initial threat. The second rather than first presentation was used because reactions to the second were presumably less confounded by such factors as surprise, curiosity, suspense, etc. There were only three relationships between choice of strategy and initial threat reactions which were statistically reliable. "Reliability" in this instance meant that the individual correlations between a coping strategy and at least two measures of emotional arousal (e.g., self-report and HR) had to reach significance at the .10 level of confidence in both the ID and DI groups. On the basis of this criterion, intensity of initial reaction was negatively related to the choice of strategy D₁ (see Table 2), that is, when asked to become detached, subjects who did not find the film too threatening resorted to the idea that the accidents were merely film portrayals and hence not real. Second, there was a positive relationship between degree of initial threat and the tendency to place responsibility for the accident on the workers themselves (item D₄). Third, a weak initial reaction was associated with the tendency to choose a detachment strategy other than the ones provided (item D₇).

It is difficult to infer cause and effect from the above relationships, but several conclusions are worth entertaining. It appears that the more threatened a subject was initially, the less able he was to dismiss the accidents as unreal film portrayals and the more likely he was to blame the workers for their own misfortune. This is consistent with the findings of Lerner and Simmons (1966) that subjects tend to devalue and reject an "innocent victim" when they are powerless to alter the victim's fate and when circumstances do not seem to provide a rationale for the victim's suffering. The present results would indicate that this tendency to view the victim as deserving of his own misfortunes is a common strategy for achieving emotional detachment, especially

when the degree of threat is high. Also of relevance here is the observation by Walster (1966) that the attribution of responsibility to a victim is greater for an accident with a severely negative than a mildly negative outcome. Other studies have failed to replicate this finding (e.g., Shaver, 1970), perhaps—as the results reported here would suggest—due to differences in the degree of threat induced. If subjects are not too threatened, they may be able to dismiss the experimental manipulations as, say, unreal or unrepresentative, thus obviating the need to take the more drastic step of blaming another for his mishaps.

Finally, with regard to the third relationship mentioned above, namely, the tendency to list a detachment strategy other than the ones provided when initial reaction was weak, this might indicate that higher levels of stress allow idiosyncratic coping patterns to emerge, while a high degree of initial threat limits response options.

(b) The influence of previous orientation on subsequent attempts to achieve involvement or detachment was analyzed by comparing the ID and DI groups (see Table 2) in terms of strategies checked. Specifically, D 3 strategies were compared with D 4 strategies, indicating the influence of prior involvement, and I 3 strategies were compared with I 4, indicating the influence of prior detachment. Only a few of the comparisons reached statistical significance. Subjects more frequently blamed the workers for their own misfortunes (item D 4) when detachment followed rather than preceded involvement ($t = 2.33$, $df = 37$, $p < .05$). We have already discussed the influence of degree of threat on the choice of this strategy. Apparently, prior involvement was also a factor. It seems that once the emotional value of a stressful event has been acknowledged, blame is a frequent way to achieve emotional distance. One is tempted to see in this finding an analogy to social phenomena such as the tendency of expatriots and apostates to display a reaction of blame and accusation toward their former associates.

The other comparison to reach statistical significance involved the blank fill-in item (D 7), it was checked more frequently for the fourth than the third presentation ($t = 2.47$, $df = 37$, $p < .05$). The same was true for the corresponding involvement item (I 5),

although in this case the difference was not statistically significant. It appears that new and more idiosyncratic strategies are required when a switch from one emotional orientation to its opposite is called for.

(c) Most of the relationships between personality and choice of strategy observed in one sequence group were not replicated in the other group. Since, as we have already seen, the ID sequence was psychologically different in important respects from the DI sequence, the differences between groups may have been genuine. Nevertheless, reports of personality correlates tend to be ephemeral upon replication and it does not seem worthwhile to describe relationships which do not have some assurance of generality. Therefore, only those relationships which held consistently for both sequence groups are mentioned below. The correlations reported are the means of the correlations obtained in the two groups

Choice of strategies other than the ones provided (item D 7) was found to relate positively to the CPI Flexibility scale ($r = .20$, $p < .10$) and negatively to the MAS ($r = -.22$, $p < .05$). The first of these relationships is intuitively reasonable, i.e., persons who are more flexible tend to use a greater variety of coping strategies. The second relationship is also reasonable in that it parallels the finding that idiosyncratic strategies are inhibited when degree of initial threat is high.

The remaining relationships observed were as follows: the MAS scale was positively related to item D 2, "concentrating on technical aspects of film" ($r = .23$, $p < .05$), Ego-control was related positively to item D 3, "concentrating on details" ($r = .20$, $p < .10$) and negatively to item D 4, "adopt a humorous attitude" ($r = -.27$, $p < .02$), Anti-Intracception was related positively to item D 1, reminding oneself that it is a "film rather than real occurrence" ($r = .24$, $p < .05$). There is little point in commenting on these relationships since they do not shed much light on the underlying dynamics leading to choice of strategies.

Before leaving the topic of personality relationships, a brief comment may be made concerning individual differences in emotion arousal, regardless of strategies used to achieve involvement or detachment. Extensive analyses of personality correlates

of emotional arousal during involvement and detachment yielded largely inconclusive results, i.e., relationships were not replicated when different response indices (e.g., HR or SC) were used, or across the two sequence groups. For what it is worth, the only personality measure which demonstrated some consistency was the Myers-Briggs Type Indicator. Subjects who scored high on the feeling dimension or low on the thinking dimension were more successful in achieving both involvement and detachment as indicated by psychophysiological reactivity.

Effectiveness of the various strategies Were some strategies more effective than others in increasing or decreasing emotional arousal under involvement or detachment? In examining this question, only those relationships which held for at least two measures of reactivity (i.e., self-report, SC, and/or HR) are described. Thus, each correlation reported below is actually the mean of the correlations between a coping strategy and two measures of emotional arousal. Among the *involvement* strategies, item I 3, imagining the accident "is happening to somebody I know," was negatively related to self-reported success and HR reactivity in both the ID ($r = -.30, p < .05$) and DI ($r = -.31, p < .05$) groups. Exaggeration of the harm (item I 4) was effective as a strategy in the ID group only ($r = .37, p < .01$), and the idea that it is "happening to me" (item I 2) elevated emotional arousal in the DI group only ($r = .33, p < .05$). It thus appears that trying to empathize with the victim was not a very effective means of achieving involvement, while exaggerating the accident or focusing on the self was more conducive to heightened arousal.

Two *detachment* strategies—reminding oneself that the accident "was a film rather than a real occurrence" (item D 1) and "concentrating on the technical aspects involved in its production" (Item D 2)—were associated with lowered arousal in the ID group ($r = -.31, p < .05$, and $r = -.30, p < .05$, respectively), as well as in the DI group ($r = -.30, p < .05$ and $r = -.36, p < .01$, respectively). (The correlations are the mean of those between the particular coping strategy, on the one hand, and self-report and SC measures of reactivity, on the other.) In short, the most effective strategies for detachment involved some denial of the reality of the portrayed events.

CONCLUDING REMARKS

The experiment reported above provides positive evidence that when simply asked to do so, subjects are capable of a degree of control over their emotional reactions while watching a stressful movie. This in itself is not surprising or terribly important except for methodological reasons, it does suggest that it is possible to study the problem of emotional control in an experimental setting. The most fundamental questions about emotional control concern the mediating cognitive processes by which such states as involvement and detachment are achieved. The contribution of this experiment is primarily to pose these questions and not to draw firm conclusions. Nevertheless, we have been able to provide some normative data on the more common strategies used to achieve involvement and detachment, and to present some hypotheses and data concerning the antecedents and consequences of these strategies.

The specific results we have presented are, to a certain extent, undoubtedly tied to the type of threat used in this experiment (a film portrayal of accidental physical injuries). Clearly, however, the issues raised and the experimental analogue employed both relate to any naturalistic context in which people must cope repeatedly with emotional inputs. In such contexts we want to know how people manage their emotions (keep them down, allow them to be expressed in moderation, or revel in them), the conditions determining such management, and their outcomes, both in the degree and quality of the emotional reaction. In any research on this topic, it is important to remember that "healthy" emotional control involves enhancement as well as reduction.

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Manuscript received August 2, 1971

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