

BOUNDARIES OF SELF-CONTROL: RELINQUISHING CONTROL OVER AVERSIVE EVENTS

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Research suggests that while people generally prefer to retain a sense of personal control, they also often freely relinquish control over events. We argue that in many situations people give up behavioral control over an event to retain a perception of control over their general well-being. Three experiments and a pilot study found that people given a choice of administering a blood sample to themselves or of allowing an experimenter to take the sample opted to give the experimenter control over the sample in the majority of cases. In support of our interpretation of this phenomenon, Experiment 1 subjects opted to retain control when led to believe an assistant-administered sample would lead to more harm and pain than a self-administered sample. Experiment 2 subjects again relinquished control to the experimenter and to a competent assistant, but chose self-administration when they believed the assistant was no more competent to administer the blood sample than they were. Subjects in the latter condition also reported decreased anxiety when made aware of the self-administration option. Finally, Experiment 3 subjects who scored high on a measure of need for control, and who therefore valued the control option highly, were less likely to relinquish control over the blood sample than those low in this need.

The concept of perceived personal control has received a great deal of attention from psychologists over the past decade or so. In general, increasing the perception that one is in control of one's destiny has been found to have positive effects, whereas decreasing the amount of perceived personal control has been associated with negative effects. For example, increased control has been identified as beneficial in dealing with stress (Glass & Singer, 1972), coping with adversity (Taylor, 1983), adjusting to an old-age residence (Langer & Rodin, 1976), learning new material (Perlmutter & Monty, 1977), and succeeding with a weight-loss program (Mendonca & Brehm, 1983). On the other hand, a perceived decline in

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one's ability to control a situation has been tied to feelings of crowding (Schmidt & Keating, 1979) and to learned helplessness and depression (Seligman, 1975).

It is tempting to conclude from this literature that the perception of personal control is a positive commodity and that people will retain rather than relinquish their ability to influence events whenever possible. However, sprinkled throughout this literature are a large number of studies that persistently demonstrate that people sometimes do not prefer control or react to increased control with negative affect (Burger, Brown, & Allen, 1983; Folkman, 1984; Miller, 1980; Mills & Krantz, 1979; Reid, 1984; Rodin, Rennert, & Solomon, 1980; Strube, Berry, & Moergen, 1985; Strube & Werner, 1985).

Thus, when this literature is looked at as a whole, an interesting paradox surfaces. People want to feel in control of their destinies, yet they often freely relinquish that control. One explanation for this inconsistency may be that in some situations giving up control at the behavioral level allows us to retain a perception of personal control at a higher level. That is, actually performing a behavior may be less important for retaining a sense of well-being than the perception that we are still capable of doing what is best for us, even if that means giving up control over a specific event. As described below, there are situations in which the higher-order perception of personal control is best preserved, if not enhanced, by relinquishing actual control. Thus, in these situations the perception of control is at least partly illusory. Genuine control has been relinquished, but the illusion of control has been retained.

Recently Taylor and Brown (1988) have argued that it is the illusion of an exaggerated amount of control over the events in our lives, rather than an accurate perception of control, that is associated with a sense of personal well-being. Generally, this illusion can be maintained by retaining and exercising control over events. However, we have argued elsewhere that negative as well as positive reactions to personal control are possible because of the many potential consequences people associate with increased control (Burger, 1989, in press).

On the positive side, exercising control can lead to feelings of competence and mastery (Perlmutter & Monty, 1977), can help people obtain desirable outcomes, and can help to overcome or avoid feelings of helplessness (Seligman, 1975). However, we also identified three reasons why increased perceived control might lead to negative reactions (Burger, 1989). First, increasing personal control may result in an increased concern for what others will think in the event of a poor performance. This concern can result in changes in affect (Burger *et al.*, 1983) and performance on the subsequent task (Burger, 1987b). Second, increasing personal control might cause a person to focus more attention on the aversive aspects of the situation, particularly if the aversive stimuli are presented

in a predictable manner. Third, in some situations increased control may mean a decreased likelihood of achieving desired outcomes. This last reason to relinquish personal control is the focus of the present set of studies.

Although obtaining control over an event or a project often means an increased opportunity to make things turn out the way we want, this is not always the case. For example, I may have a choice of working on a research project by myself or with a knowledgeable colleague. I might decide the advantages that come from retaining complete control over the project (*e.g.*, a sense of personal competence and mastery) are outweighed by the benefits that come from relinquishing some of that control to my colleague (*e.g.*, a better study with increased likelihood of publication). In this case, although I am less able to influence how things will turn out, by giving up some control over the specific project I can retain a sense of being able to do what is best for me.

Miller's (1980) "mini-max" hypothesis is relevant here. She has argued that people facing potentially aversive consequences select the option that ensures they will experience aversive stimuli within a range they find tolerable. People are said to relinquish control to others when such action increases their chances of staying within their range of tolerance. This reasoning also is consistent with the analysis of control offered by Rothbaum, Weisz, and Snyder (1982). These researchers have argued that people sometimes opt to take no action in the case of aversive events because the lack of effort on balance is preferable to the negative consequences of trying to exert control over a situation that probably is not controllable.

The present series of experiments was designed to examine this notion empirically. We expected people to be highly motivated to avoid the potential harm and pain associated with taking a sample of their own blood. The concern about hurting themselves should lead people to prefer relinquishing control over the blood sampling to an experienced researcher rather than retaining personal control over the procedure. Although there are certain advantages to retaining control over the administration of this sampling, such as feeling in control of the situation, we expected that the motivation to avoid potential harm would be greater than the need to secure the advantages that come from retaining control.

PILOT STUDY

Forty undergraduates were asked to give a blood sample as part of their participation in an experiment. A male experimenter gave subjects the option of having him prick their finger to collect the sample or of doing it themselves. The experimenter demonstrated how the sample would

be taken, then asked subjects to indicate on an informed consent sheet if they wished to prick their own finger or have the experimenter take the sample. As expected, the majority (75%) preferred to have the experimenter take the blood sample. Subjects also indicated on a questionnaire that the likelihood the administration would be harmful or painful if they administered it was higher ($M = 8.71$ on an 11-point scale) than if the experimenter took the blood sample ($M = 6.88$), dependent $t(39) = 3.56, p < .001$.

EXPERIMENT 1

Why did the subjects in the pilot study opt to relinquish control over the blood sample? At first this finding seems to contradict the large body of research that points to the positive consequences of perceived control. Certainly the large literature on learned helplessness (cf. Peterson & Seligman, 1984) suggests that it is a lack of control over potentially aversive events that often leads to problems. Thus, we might expect people to be motivated to retain control whenever in this type of situation. However, our analysis argues that people will prefer control when the advantages of retaining control outweigh the disadvantages. While it is probably true that people will opt for control when risks are minimal, subjects in the pilot study appeared to weigh their motivation to feel in charge of their destiny with the potential pain and damage they might do to themselves if they botched the blood sample. In this case, the desire to avoid pain won out, and control was relinquished.

Experiment 1 was designed to test this interpretation. If subjects were choosing safety over control, then they should have relinquished control only when they believed that option helped them avoid the aversive consequences. Thus, some subjects were given a choice of taking their own sample or of allowing the researcher to take it. Others were given a choice of taking their own sample or of allowing an inexperienced volunteer to take it. The pilot data suggest subjects believed the researcher was experienced and therefore less likely to harm them than they would themselves. However, if an inexperienced volunteer were the option, then the advantages of retaining control should outweigh the now-negated advantages of relinquishing control.

METHOD

Subjects. Forty-one male and female undergraduates served as subjects in exchange for class credit.

Procedure. Procedures similar to those described in the pilot study were used. Subjects arrived at the experiment room in small groups. Six to 12 subjects sat around a large table. An array of medical equipment was arranged at the head of the table on a white towel, including some cotton swabs, rubbing alcohol, tissue paper, glass slides, a few bottles of "medicine," and, very prominently, some lancets to be used in the finger pricking. A female experimenter explained that the study was concerned with the relationship between physiology and personality. Subjects were told that recent research suggested a link between biology and personality, and that the physiological measure of concern in this study was blood type. It was explained that each subject was to give a small blood sample, and that his or her blood type would be determined and compared to scores from some personality inventories that would be administered later. The experimenter demonstrated the procedure for taking the sample on herself, without actually puncturing her skin.

Subject groups were randomly assigned to either the *Experimenter* or *Assistant* conditions. In the *Experimenter* condition, subjects were told they could choose between administering the blood sample to themselves or allowing the experimenter to do this. In the *Assistant* condition, the experimenter asked the group if anyone would like to volunteer to help with the experiment. One male subject (actually a confederate) reluctantly volunteered. The experimenter asked if he had ever taken a blood sample. The confederate said that he had not, and the experimenter answered that she would show him how. Subjects were told that their choice was between taking the blood sample themselves or having the volunteer assistant take the sample.

At this point, subjects were given a consent form to sign. The form asked them to indicate that they understood the procedures and to indicate by checking the appropriate box which of the administration options—self or experimenter/assistant—they had chosen. Subjects were seated so that their responses on the consent form were not visible to other subjects. When the form was completed, subjects were asked to complete a short questionnaire. The questionnaire asked subjects to indicate on 11-point scales, among other things, how aversive and how painful they anticipated the blood sample would be. Subjects also were asked to indicate how competent they felt the experimenter or assistant was at administering the sample. Following completion of the questionnaire, subjects were told the experiment was over and were fully debriefed.

RESULTS AND DISCUSSION

The percentage of subjects who chose to have someone else administer the blood sample was calculated for each condition. When subjects were

given an option of administering the blood sample themselves or of allowing the experimenter to take the sample, 70% (14/20) chose the experimenter. However, when the choice was between themselves and the assistant, only 38% (8/21) wanted the assistant to administer the sample. These percentages differ significantly, $\chi^2(1, N = 41) = 4.19$, $p < .04$.

Subjects also rated how competent they felt the experimenter/assistant was at taking blood samples. They rated the experimenter as significantly more competent than the assistant, $t(39) = 2.48$, $p < .02$. Thus, the manipulation appears to have succeeded. Subjects also tended to believe that the blood sample would be an aversive experience ($M = 8.17$ on an 11-point scale) and a painful one ($M = 8.68$ on an 11-point scale). Because all subjects chose the option that would most likely be the less aversive and less painful one, there were no differences in these ratings across conditions.

The findings support the predictions. When subjects were given a choice of administering the sample to themselves or allowing the supposedly experienced experimenter to do this, they tended to believe that the experimenter would cause them less trauma than they might themselves. Thus, retaining control in this situation was seen as more aversive than relinquishing it, and the subjects opted to relinquish it. However, when the alternative to self-administration was an inexperienced assistant who provided no more assurance of reducing harm, the advantages of retaining personal control tilted the decision toward retention of control.

EXPERIMENT 2

Although the findings from Experiment 1 are entirely in line with the predictions, several questions can be raised. First, because subjects were given a choice of a female experimenter in one condition and a male volunteer in the other, the option variable was confounded with gender. Second, there may have been some other unknown difference between the experimenter and the volunteer besides perceived competence that accounted for the preference for one over the other. Therefore, Experiment 2 was designed to replicate the first experiment, but without these potential confounds. In addition, we assessed anxiety level at two points in the process, before and after subjects learned they could take the blood sample themselves. If differences in preference for retaining control result from differences in concern for negative outcomes, this should be reflected in anxiety levels. Specifically, we expected people anticipating a blood sample from an incompetent volunteer to reduce their anxiety when they discovered the self-administration option.

METHOD

Subjects. One hundred and twenty undergraduates participated in the study in exchange for class credit. Three subjects opted to not participate in the study after hearing about the procedure, leaving 117 in the finale sample.

Procedure. Subjects participated in the experiment in groups of 3 or 4. Half the subjects were randomly assigned to male experimenter teams and half to female experimenter teams. That is, the experimenter and the confederate (in appropriate conditions) were always the same gender. As in Experiment 1, subjects were told they would be giving a blood sample so the experimenters could compare biological measures with personality scores. The same "medical" environment created in Experiment 1 was used, and again the experimenter demonstrated how the blood sample would be taken.

Subjects were randomly assigned to either the *experimenter-option condition*, the *incompetent volunteer-option condition*, or the *competent volunteer-option condition*. The first two conditions were similar to the ones used in Experiment 1. In the competent-volunteer condition, the confederate responded to the experimenter's question that he or she had worked the previous summer for the Red Cross and had taken this type of blood sample many times. Thus, unlike subjects in the incompetent-volunteer condition, subjects in this condition should have perceived that relinquishing control to the confederate would be more likely to lead to the desired outcome (a safe, painless administration) than retaining control.

At this point subjects were asked to complete what was described as the first set of personality questionnaires. Each was given the Spielberger State Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970). This 20-item scale asks subjects to indicate how they feel at the moment, thus assessing current levels of anxious mood. After the scale was collected, the experimenter explained to subjects that they also had the option of taking the blood sample themselves. The experimenter then passed out the consent form, which asked subjects to indicate if they wanted the experimenter/assistant to take the sample or if they wanted to do it themselves. Subjects were also reminded that they could choose to not participate in this phase of the experiment.

After indicating their choice on the consent form, subjects were asked to complete an additional questionnaire. Subjects were asked to indicate on 9-point scales the extent to which they felt the experimenter/assistant (depending upon condition) was "competent to administer the blood sampling; that is, capable of pricking your finger with a minimal amount of pain and harm" and how competent they felt themselves to be at this. Next, subjects again completed the Spielberger State-Trait Anxiety Scale. Following this, they were debriefed and dismissed.

RESULTS AND DISCUSSION

The number of subjects who opted to retain or relinquish control was analyzed along three dimensions: gender of experimenter team, subject gender, and experimental condition. No significant main effects or interactions for the experimenter's or the subject's gender were found. Therefore, these variables were collapsed for the remaining analyses. A significant effect was found for experimental condition, $\chi^2(2, N = 117) = 12.41, p < .002$. As shown in Table 1, subjects in the experimenter-option and competent-volunteer option conditions were significantly more likely to relinquish control over the blood sample than subjects in the incompetent-volunteer condition.

A significant main effect for condition also was uncovered for how competent subjects rated the experimenter/volunteer at taking the sample, $F(2, 114) = 12.97, p < .001$. As expected, subjects in the incompetent-volunteer option rated the person as less competent than subjects in the other two conditions (Newman-Keuls tests, $p < .01$). No differences were found across conditions on the extent to which subjects rated themselves as competent.

Anxiety scores from the Spielberger State Anxiety Scale were analyzed within a 3 (condition) by 2 (before-after) ANOVA. The means for these cells are shown in Table 2. A significant main effect was found for the before-after variable, $F(1, 114) = 22.63, p < .001$. The main effect for the condition variable fell just short of significance, $F(2, 114) = 3.06, p < .051$. More important, a significant interaction emerged in this analysis, $F(2, 114) = 8.43, p < .001$. As shown in Table 2, this interaction reflects changes in anxiety level in the incompetent-volunteer condition. Subjects in this condition reported significantly less anxiety after hearing about the self-administration option ($p < .01$).

The findings from Experiment 2 were entirely consistent with our predictions. They replicated the Experiment 1 findings while arguing against the possibility that gender or something else about the volunteer besides competence was responsible for the results of the first experiment.

TABLE 1
Number of Subjects Retaining and Relinquishing Control, Experiment 2

	EXPERIMENTER	COMPETENT VOLUNTEER	INCOMPETENT VOLUNTEER
Relinquished control	32 (82.1%)	29 (87.9%)	25 (55.6%)
Retained control	7 (17.9%)	4 (12.1%)	20 (44.4%)

TABLE 2
Spielberger State Anxiety Inventory Scores, Experiment 2

	EXPERIMENTER	COMPETENT VOLUNTEER	INCOMPETENT VOLUNTEER
Before	34.56	38.97	39.56
After	33.74	38.73	36.82

The only difference between the option given to Experiment 2 subjects in the competent-volunteer condition and the incompetent-volunteer condition appears to have been the perceived competence of the confederate to administer the blood sample. When subjects anticipated that the blood sample would be taken by the incompetent confederate, their anxiety levels increased. When they were made aware of the self-administration option, their anxiety scores decreased. Taken together, the two studies provide support for our position that people will often relinquish control over an aversive event when they perceive that that action will lead to better outcomes and when the preference for these outcomes outweighs the advantages of retaining control.

EXPERIMENT 3

The findings from the first two experiments indicate that people often choose to reduce their amount of control over an aversive event and that this is most likely to occur when the person perceives that the advantages of relinquishing control outweigh the advantages of retaining it. Yet another way to test this hypothesis is to examine individual differences in the choice to retain or relinquish control. In the blood sampling situation, the positive feelings that come with control were not as attractive as the opportunity to avoid potential pain and harm for most subjects. However, for some people the need to retain control may be so powerful that the advantages of retaining control outweigh the advantages of relinquishing control in this situation. More specifically, people who generally have a strong need to see themselves in control should give more value to control retention than those low in this need. This should give enough weight to the control-retention advantages to offset the control-relinquishment advantages for many of these people.

Burger and Cooper (1979) developed the Desirability of Control Scale to measure the extent to which people generally are motivated to see themselves in control of events. Past research indicates that subjects scoring high on the scale are more likely than those scoring low to demonstrate an illusion of perceived control over chance events (Burger,

1986; Burger & Smith, 1985), more susceptible to learned helplessness and depression (Burger, 1984; Burger & Arkin, 1980), more motivated to achieve and overcome challenging tasks (Burger, 1985), and less likely to conform to group pressure (Burger, 1987a). In general, the pattern of findings from this research has found consistent support for the idea that compared to lows, those high in the desire for control generally prefer to control events and are more likely to react with increased motivation and greater affect when their perception of personal control is challenged. We can hypothesize from this description that, compared to lows, high-desire-for-control people will find the control-retention option in the blood sample situation more valuable and thus will be more likely to opt for retaining control.

METHOD

Subjects. Forty-three male and female undergraduates served as subjects in exchange for class credit. All had taken the Desirability of Control (DC) Scale (Burger & Cooper, 1979) approximately 2 weeks earlier as part of a larger test battery. No connection between the scale and the experiment was made at the time of recruitment.

Procedure. A procedure similar to the one used in Experiment 1 was employed. However, in this study all subjects were given a choice between taking the blood sample themselves or allowing the experimenter to take the sample. Subjects again indicated their preference on the consent form. They also indicated on 11-point scales the extent to which they expected the upcoming blood sampling to be painful and aversive.

RESULTS AND DISCUSSION

Subjects were divided into high and low halves via a median split of their DC Scale scores. The percentages of subjects in each of these groups who chose to relinquish and retain control were calculated. As expected, the vast majority of the low-DC subjects preferred that the experimenter take the blood sample (18 of 23 subjects, 78.3%). However, significantly fewer high-DC subjects chose the experimenter-administration option (9 of 20 subjects, 45%), $\chi^2(1, N = 43) = 5.06, p < .03$. High- and low-DC subjects did not differ on how painful they thought the blood sample would be. However, a significant main effect was found on the anticipated aversiveness measure, $F(1, 39) = 5.33, p < .03$, with high-DC subjects expecting the sample to be less aversive than the low-DC subjects.

The findings are consistent with those from the earlier studies. Although high-DC subjects who retained control did not believe that their blood sample would be any less painful than did those low-DC subjects retaining control, they did expect that the experience would be less aversive. This follows from the description of high-DC people as those who generally prefer to feel in charge of events. Because taking the sample themselves satisfied this need, the high-DC subjects saw retaining control as more valuable and thus less aversive. They therefore were more likely to select this option than low-DC subjects.

GENERAL DISCUSSION

The three experiments reported here combine to support the hypothesis that changes in perceived personal control have a number of consequences. Determining if these changes will result in positive or negative reactions requires a weighing of the positive features of control against the negative aspects. As proposed by Burger (1989), one of the potentially negative aspects of increased control that people use in deciding to retain or relinquish control is the likelihood of achieving desired outcomes. When the possibility of undesirable outcomes with increased control is high enough, and the consequences of losing these desired outcomes great enough, the advantages of retaining control may be outweighed by the disadvantages. If there exists the option of relinquishing control to someone else, thereby improving the chances of obtaining the desired outcomes, people often will choose to relinquish their control.

The findings also help to explain the apparent paradox found in a large number of studies demonstrating that people prefer control yet often give it up. Our analysis suggests that while people may give up *actual* control over the specific behavior or event, they do so to enhance *perceived* control over their own well-being. Because the two are often not the same—and, in fact, may not even be compatible in situations like the one used in the experiments reported here—researchers should take care to specify which level of control they are dealing with when trying to predict the effects of changes in personal control. Following the lead of Taylor and Brown (1988) and others, we argue that retaining the perception of control, even if illusory, is more closely tied to a sense of well-being than actual control, and therefore generally the preferred choice.

This line of reasoning also leads to some important practical implications. Brehm and Smith (1986) argue that while many clinicians believe it is almost always beneficial to give clients control over the therapeutic

procedure and a perception of control over stress-inducing events, the issue is more complex than this. For example, they point out that some events are simply not controllable, and extended efforts to change these events may result in a harmful expenditure of resources, perhaps ultimately in a very negative failure experience. Moreover, some events may be controllable, but at such a high price that the client is no better off.

The potential for creating more harm than good through increased-control manipulations has also been noted by those working in the areas of health and coping (Folkman, 1984; Reid, 1984). Reid (1984), for example, noted that chronically ill elderly patients often relinquish control over health-related issues to physicians and staff. Like the subjects who opted for the experimenter to take the blood sample, these patients believe that allowing health professionals to make decisions about their treatment results in better health care than if they try to control their treatment themselves.

The lesson for professionals working in such areas as health, mental health, or education is to analyze all of the potential consequences of increased control before utilizing changes in control as part of an intervention. However, predicting how all of the many consequences of changes in perceived control will interact in these complex situations remains a significant challenge.

REFERENCES

- Brehm, S. S., & Smith, T. W. (1986). Social psychological approaches to psychotherapy and behavior change. In S. L. Garfield & A. E. Bergin (Eds.), *Handbook of psychotherapy and behavior change* (3rd ed.) (pp. 69-115). New York: Wiley.
- Burger, J. M. (1984). Desire for control, locus of control, and proneness to depression. *Journal of Personality*, 52, 71-89.
- Burger, J. M. (1985). Desire for control and achievement-related behaviors. *Journal of Personality and Social Psychology*, 48, 1520-1533.
- Burger, J. M. (1986). Desire for control and the illusion of control: The effects of familiarity and sequence of outcomes. *Journal of Research in Personality*, 20, 66-76.
- Burger, J. M. (1987a). Desire for control and conformity to a perceived norm. *Journal of Personality and Social Psychology*, 53, 355-360.
- Burger, J. M. (1987b). Increased performance with increased personal control: A self-presentation interpretation. *Journal of Experimental Social Psychology*, 23, 350-360.
- Burger, J. M. (1989). Negative reactions to increases in perceived personal control. *Journal of Personality and Social Psychology*, 56, 246-256.
- Burger, J. M. (in press). Personality and control. In V. J. Derlega, B. A. Winstead, & W. H. Jones (Eds.), *Contemporary research in personality*. Chicago: Nelson-Hall.
- Burger, J. M., & Arkin, R. M. (1980). Prediction, control and learned helplessness. *Journal of Personality and Social Psychology*, 38, 482-491.
- Burger, J. M., Brown, R., & Allen, C. A. (1983). Negative reactions to personal control. *Journal of Social and Clinical Psychology*, 1, 322-342.

- Burger, J. M., & Cooper, H. M. (1979). The desirability of control. *Motivation and Emotion*, 3, 381-393.
- Burger, J. M., & Smith, N. G. (1985). Desire for control and gambling behavior among problem gamblers. *Personality and Social Psychology Bulletin*, 11, 145-152.
- Folkman, S. (1984). Personal control and stress and coping processes: A theoretical analysis. *Journal of Personality and Social Psychology*, 46, 839-852.
- Glass, D. C., & Singer, J. E. (1972). *Urban stress*. New York: Academic Press.
- Langer, E. J., & Rodin, J. (1976). The effects of choice and enhanced personal responsibility for the aged: A field experiment in an institutional setting. *Journal of Personality and Social Psychology*, 34, 191-198.
- Mendonca, P. J., & Brehm, S. S. (1983). Effects of choice on behavioral treatment of overweight children. *Journal of Social and Clinical Psychology*, 1, 343-358.
- Miller, S. M. (1980). Why having control reduces stress: If I can stop the roller coaster, I don't want to get off. In J. Garber & M. E. P. Seligman (Eds.), *Human helplessness: Theory and applications* (pp. 71-95). New York: Academic Press.
- Mills, R. T., & Krantz, D. S. (1979). Information, choice, and reactions to stress: A field experiment in a blood bank with laboratory analogue. *Journal of Personality and Social Psychology*, 37, 608-620.
- Perlmutter, L. C., & Monty, R. A. (1977). The importance of perceived control: Fact or fantasy? *American Scientist*, 65, 759-765.
- Petersen, C., & Seligman, M. E. P. (1984). Causal explanations as a risk factor for depression: Theory and evidence. *Psychological Review*, 91, 347-374.
- Reid, D. W. (1984). Participatory control and the chronic-illness adjustment process. In H. M. Lefcourt (Ed.), *Research with the locus of control construct: Vol. 3. Extensions and limitations* (pp. 361-389). New York: Academic Press.
- Rodin, J., Rennert, K., & Solomon, S. K. (1980). Intrinsic motivation for control: Fact or fiction. In A. Baum & J. E. Singer (Eds.), *Applications of personal control* (Vol. 2, pp. 131-148). Hillsdale, NJ: Erlbaum.
- Rothbaum, R., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology*, 42, 5-37.
- Schmidt, D. E., & Keating, J. P. (1979). Human crowding and personal control: An integration of the research. *Psychological Bulletin*, 86, 680-700.
- Seligman, M. E. P. (1975). *Helplessness: On depression, development and death*. San Francisco: Freeman.
- Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Strube, M. J., Berry, J. M., & Moergen, S. (1985). Relinquishment of control and the Type A behavior pattern. *Journal of Personality and Social Psychology*, 49, 831-842.
- Strube, M. J., & Werner, C. (1985). Relinquishment of control and the Type A behavior pattern: The role of performance evaluation. *Journal of Personality and Social Psychology*, 48, 688-701.
- Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, 38, 1161-1173.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193-210.