

The Desirability of Control¹

Jerry M. Burger² and Harris M. Cooper

University of Missouri—Columbia

The psychological construct of desirability of control was related to several theoretical statements (e.g., Kelley, 1971; White, 1959) and areas of current research (e.g., Glass & Singer, 1972; Deci, 1975) in psychology. A scale designed to measure individual differences in the general level of motivation to control the events in one's life was presented. The Desirability of Control Scale was found to have substantial internal consistency (.80) and test-retest reliability (.75), as well as discriminant validity from measures of locus of control (Rotter, 1966) and social desirability (Crowne & Marlowe, 1960). The results of an "illusion of control" study (cf. Langer, 1975) provided construct validation: only subjects high in the desire for control displayed a belief in personal control over chance outcomes. Construct validation was also provided from studies on learned helplessness and hypnosis. The practical, as well as theoretical, value of the instrument was discussed.

The motive to control the events in one's life has been introduced by many psychological theorists. Adler (1930), for example, proposes a striving to demonstrate one's competence and superiority over events as the individual's major motivational force. Kelly (1955) describes man as a scientist, constantly matching expectancies against perceptions in an effort to obtain optimum predictability and control. Kelley (1971) suggests that the purpose of causal analysis and attribution for events in one's world is the "effective exercise of control in that world" (p. 22). Kelley further argues that this desire for control is responsible in part for the introduction of biases into our explanations. We are said to attribute to controllable sources those events over which we desire the greatest amount of control.

This research was facilitated by National Science Foundation grant BNS78-08834 to Harris Cooper.

Address all correspondence to Jerry M. Burger, Center for Research in Social Behavior, University of Missouri—Columbia, Columbia, Missouri 65211.

Other psychologists have built their theories around a central concept of control motivation. White (1959) has posited an inherent "effectance motivation." The reward for interaction with the environment in this theory is said to be the feeling of competence one obtains from exerting control over one's world. Although the motivation is described as innate, White indicates the possibility of individual differences that are "differentiated . . . through life experiences" (p. 323). DeCharms (1968) states that "[m]an's primary motivational propensity is to be effective in producing changes in his environment. Man strives to be a causal agent, to be the primary locus of causation for, or the origin of, his behavior; he strives for personal causation" (p. 269).

In addition to these and other theoretical statements, several research efforts have explored concepts closely related to the motivation for control. Glass and Singer (1972), for example, have demonstrated the importance of perceived control over aversive noise. A lack of perceived control has been tied to performance decrements and increased frustration. Brehm (1966) and his colleagues have provided a series of studies demonstrating a "reactance effect" to perceived attempts to usurp personal control. Individuals have been found to react to such situations with increased efforts to assert control over the events.

Numerous investigations in the area of learned helplessness (cf. Seligman, 1975) have demonstrated the debilitating effects of prolonged exposure to uncontrollable aversive stimuli. Poorer performances on subsequent tasks and increased affective responses (most notably depression) have been found following the helplessness training (e.g., Hiroto & Seligman, 1975; Miller & Seligman, 1975). Subjects exposed to the same aversive events who perceive some control over those events do not display the helplessness effects. One is said to recover from helplessness with the return of control over life events. Finally, psychologists have examined the differences and relationships between intrinsic and extrinsic motivation. Intrinsically motivated behaviors have been described as "behaviors which a person engages in to feel competent and self-determining" (Deci, 1975, p. 61). The desire to control events in one's life therefore also seems to be closely tied to the concept of intrinsic motivation.

These theoretical statements and experimental efforts implicitly or explicitly suggest the existence of a motive to control the events in one's environment. Clearly, however, not all subjects react identically to issues of personal control. If a desire for control over events is an important psychological dimension, then individual differences in the motivation for control should help account for variation in human behavior. The Desirability of Control (DC) Scale introduced here has been designed to measure individual differences in the general desire for control over the events in

one's life. The level of control motivation obviously varies from situation to situation. However, it is proposed that a general level of this motive can be measured and can prove to be valuable in several areas of research that utilize the control motive concept.

Persons high in the desire for control can be described as assertive, decisive, and active. They generally seek to influence others when such influence is advantageous. They prefer to avoid unpleasant situations or failures by manipulating events to ensure desired outcomes. These persons usually seek leadership roles in group situations. The person low in the desire for control is generally nonassertive, passive, and indecisive. These persons are less likely to attempt to influence others and may prefer that many of their daily decisions be made by others.

People's general level of control motivation is posited to interact with situational variables to account for behavioral differences. That is, differential responses covarying with desire for control will be most likely to occur in situations where the ability to control events is moderately advantageous. Persons both high and low in the desire for control will display similar behaviors in situations that indicate that personal manipulation would be highly advantageous. Similarly, it is expected that no personal desire for control will be found for either highs or lows in unimportant situations that provide little or no payoff for control. Some of the research reported here will help to determine the situational variables that interact with individual differences in the motivation for control.

CONSTRUCTION OF THE DESIRABILITY OF CONTROL SCALE

Fifty-three self-descriptive statements were generated by the two experimenters. Statements were created that were felt to relate to the desire for control over events in one's environment. In addition to several items that described control in general terms (e.g., "I enjoy having control over my own destiny"), many items described more specific situations in which control might be desirable (e.g., "When driving, I try to avoid putting myself in a situation where I could be hurt by someone else's mistake").

The 53 items were administered to 453 introductory psychology students. Subjects were asked to respond to each statement on a 7-point scale, anchored with "This statement doesn't apply to me at all" (1) and "This statement always applies to me" (7). Approximately one-third of these items were written so that a response on the low end of the scale was indicative of a high desire for control.

Table I. The Desirability of Control Scale^{a,b}

	Sample 1 <i>r</i> with total score (20 items)	Sample 2 <i>r</i> with total score (20 items)	Sample 1 factor loadings	Sample 2 factor loadings
1. I prefer a job where I have a lot of control over what I do and when I do it.	.45	.58	I	I
2. I enjoy political participation because I want to have as much of a say in running government as possible.	.41	.37	V	IV
3. I try to avoid situations where someone else tells me what to do.	.35	.50	IV	I
4. I would prefer to be a leader rather than a follower.	.66	.59	V	IV
5. I enjoy being able to influence the actions of others.	.43	.34	I	IV
6. I am careful to check everything on an automobile before I leave for a long trip.	.38	.36	III	III
7. Others usually know what is best for me.	.36	.37	II	V
8. I enjoy making my own decisions.	.60	.53	I	III
9. I enjoy having control over my own destiny.	.47	.53	I	II
10. I would rather someone else took over the leadership role when I'm involved in a group project.	.51	.57	V	V
11. I consider myself to be generally more capable of handling situations than others are.	.48	.44	I	I
12. I'd rather run my own business and make my own mistakes than listen to someone else's orders.	.48	.56	I	I
13. I like to get a good idea of what a job is all about before I begin.	.31	.43	III	III
14. When I see a problem I prefer to do something about it rather than sit by and let it continue.	.48	.59	III	III
15. When it comes to orders, I would rather give them than receive them.	.52	.71	V	I
16. I wish I could push many of life's daily decisions off on someone else.	.38	.36	II	II
17. When driving, I try to avoid putting myself in a situation where I could be hurt by someone else's mistake.	.33	.37	III	III
18. I prefer to avoid situations where someone else has to tell me what it is I should be doing.	.44	.54	IV	I
19. There are many situations in which I would prefer only one choice rather than having to make a decision.	.34	.26	II	II

Table I. Continued

20. I like to wait and see if someone else is going to solve a problem so that I don't have to be bothered by it.	.36	.34	II	V
---	-----	-----	----	---

^aThe instructions for the scale were: "Below you will find a series of statements. Please read each statement carefully and respond to it by expressing the extent to which you believe the statement applies to you. For all items a response from 1 to 7 is required. Use the number that best reflects your belief when the scale is defined as follows: 1. The statement doesn't apply to me at all. 2. The statement usually doesn't apply to me. 3. Most often, the statement does not apply. 4. I am unsure about whether or not the statement applies to me, or it applies to me about half the time. 5. The statement applies more often than not. 6. The statement usually applies to me. 7. The statement always applies to me. It is important that you respond to all items."

^bItems 7, 10, 16, 19, and 20 are reversed before scoring.

Item Analysis to Produce Maximum Internal Consistency

An item analysis was performed on responses to the 53 original items. The aim of the analysis was to select those items that had a maximum internal consistency. In a manner described by Nunnally (1967), the Kuder-Richardson 20 reliability coefficient (r_{yy}) was computed for cumulative sets of items. That is, r_{yy} was computed first for all 53 items. The item exhibiting the lowest average correlation with other items was then dropped from the analysis and r_{yy} was recomputed. If this second r_{yy} was larger than the first, the next lowest average correlation item was dropped and r_{yy} again computed. This process was reiterated until r_{yy} became negatively affected by the diminishing number of items.

The 20 items appearing in Table I produced the maximum r_{yy} . The Kuder-Richardson 20 reliability for the final 20 items was .80. In a second sample, composed of 98 undergraduate college students, a Kuder-Richardson 20 reliability coefficient of .81 was obtained. This second result was both gratifying and surprising, because we expected our initial r_{yy} estimate to be inflated by our item choices taking advantage of chance. The correlation of each item with the total DC Scale score (20 items) was computed from the original sample and appears in Table I. As can be seen, these correlations range from .31 to .66. The correlation of each item with the total DC score for the second sample is also presented in Table I. The correlations in this sample range from .26 to .71.

Test-Retest Reliability

Thirty-one of the subjects in the original sample were recontacted and had the shortened DC Scale (20 items) readministered to them. This was

done approximately 6 weeks after the first administration. A test-retest reliability coefficient for the 20-item scale of .75 was obtained.

Discriminant Validity

To gauge the validity of the DC Scale, it was necessary to demonstrate that the scale was not measuring constructs other than the desire for control (cf. Campbell & Fiske, 1959). One possible confound lies in the similarity between the concept of perceived locus of control and the desirability of control. The locus of control dimension examines the degree to which a person believes he/she controls events while the desire for control dimension examines how attractive such control is. While the concepts are obviously similar, we felt they were also independent. To demonstrate this conceptually, it is possible to argue for either a positive or a negative relation between the two concepts. A "wishful thinking" or "cognitive consistency" hypothesis would lead us to predict that people who find personal control highly desirable feel personally effective. A "sour grapes" or "reactance" hypothesis would predict low personal control leading to high desirability. That is, an individual may desire personal control because he/she perceives little internal control in his/her life. It seems, then, that knowing a person's position along one dimension tells us little about the other. This analysis is borne out statistically.

Two hundred and sixty-eight subjects in the original sample were also administered the Rotter Internal-External Locus of Control Scale (Rotter, 1966). A low negative relationship between the 20-item DC Scale and the Rotter IE Scale was found, $r = -.19$. This suggests that while persons who generally perceive events as internally determined also show a slight tendency to desire control over events, the two scales appear to be measuring different concepts.

To test for the possibility that test-takers were answering with a socially desirable response set, 360 subjects in the original sample were administered the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). A low positive correlation between this measure and the 20-item DC Scale was found, $r = .11$. Subjects who report a desire for control are therefore probably not responding merely in a socially desirable manner.

Factor Analysis

A factor analysis of the final 20 items was performed on the data from the original sample. A principal component analysis revealed that five factors had eigenvalues exceeding 1 and that these factors captured 50.4%

of the original scale variation. The five original factors were then subjected to an equimax rotation. The five rotated factors (in order of size) can be labeled as follows: (1) a General Desire for Control factor (e.g., "I enjoy having control over my own destiny"); (2) a Decisiveness factor (e.g., "There are many situations in which I would prefer only one choice rather than having to make a decision"); (3) a Preparation-Prevention Control factor (e.g., "I like to get a good idea of what a job is all about before I begin"); (4) an Avoidance of Dependence factor (e.g., "I try to avoid situations where someone else tells me what to do"); and (5) a Leadership factor (e.g., "I would rather someone else take over the leadership role when I'm involved in a group project"). Table I also presents the factor on which each item loaded most highly. A factor analysis on these same items using a varimax rotation produced similar results.

The scores from the 98 subjects used in the second sample were also subjected to a factor analysis using an equimax rotation and again retaining five factors. The five factors in this sample accounted for 55% of the variance. While less clear than those in the original sample, the same general pattern of loadings was found (see Table I). The Avoidance of Dependence factor items have been subsumed into the General Control factor. The Leadership factor becomes the fourth largest and a new factor, suggesting a preference for a subordinate role (all items reversed before scoring), emerges (e.g., "Others usually know what is best for me").

Norms

The norms for the original sample, categorized by respondent gender, are presented in Table II. The score for each subject was derived by summing the responses to each of the 20 scale items. The second sample of 98 subjects yielded similar figures ($\bar{X} = 100.5$, $SD = 12.73$). In sample 1, there was a tendency for male college students to report greater motivation for control than the females in the sample ($t(451) = 4.74$, $p < .001$). This finding is consistent with research indicating more dominance among boys and greater compliance and conformity toward adult figures by girls (Maccoby & Jacklin, 1974). However, it is felt that future work with different populations may yield different results. It may be expected that a

Table II. Norms for the Desirability of Control Scale

	<i>N</i>	<i>X</i>	<i>SD</i>
Males	153	102.7	11.31
Females	300	97.3	11.64
Total	453	99.1	11.80

female attending college probably displays a greater desire than the average American woman for control over the events in her life.

CONSTRUCT VALIDATION: THE MOTIVATION FOR CONTROL AND THE ILLUSION OF CONTROL

The above analyses reveal that the DC Scale is a stable and internally consistent instrument. While it contains as many as five subscales, its r_{yy} of .80 indicates it can be usefully employed as a unidimensional measurement. The DC Scale also proved to have discriminant validity from the locus of control construct and proved relatively devoid of social desirability influences. Next, it seemed important to measure directly the scale's construct validity. One area of research that may be related to the desirability of control concept is that examining the "illusion of control," or the tendency to perceive a degree of personal control over outcomes that are chance-determined. Several investigators (Ayeroff & Abelson, 1976; Langer, 1975; Langer & Roth, 1975; Strickland, Lewicki, & Katz, 1966; Wortman, 1975) have demonstrated conditions under which this phenomenon is displayed. Strickland et al. (1966), for example, found that subjects were willing to bet more money in a dice game when they were allowed to throw the dice after the bet was placed than if they bet just prior to discovering the results of previously thrown dice. Wortman (1975) had either the subject or the experimenter draw a colored marble either before or after informing them of the marbles' prize value. Subjects who knew which marble represented which prize beforehand felt more control over the outcome, more choice, and more responsibility, than did subjects with no foreknowledge of the prize representations and/or who watched the experimenter draw the marble.

Each of these studies examines situational variables that are responsible for creating the illusion of control. It may be reasoned, however, that behind this illusion of control is a motivation to *obtain* control over the situation (Kelley, 1971). The strength of this motive for control, therefore, should interact with the situational variables to create the perception of control over outcomes that are obviously chance-determined.

If this reasoning is correct, then it can be expected that individuals high in the desire for control will react differently from those low in the desire for control to the illusion of control setting. More specifically, it is predicted that subjects scoring high in the desire for control will display the illusion of control phenomena to a greater extent than low scorers. Put

operationally, high desire for control individuals should bet more in a dice-throwing "illusion of control" situation than those who score low on the DC Scale. In a "no-illusion of control" situation, highs and lows should not differ.

Method

Subjects. Forty male and female undergraduate psychology students served as subjects in exchange for class credit. The subjects were randomly selected from a list of students who took the DC Scale approximately 8 weeks earlier and whose scores were at least one standard deviation above or below the mean.

Procedure. Subjects were recruited for what was described as an experiment on gambling behavior. No mention of the relationship with the earlier testing was made at that time. Subjects were randomly preassigned to either the "bet before" or the "bet after" condition, such that equal numbers of high and low DC subjects were in each group.

Upon arrival, it was explained to all subjects that the experimenter was interested in individual differences in gambling behavior. Each subject was supplied with 50 poker chips, which were referred to as "dollars." Subjects were asked to act as though they were playing with 50 dollars of their own money.

It was then explained to all subjects that they were to bet on whether or not the numbers on a pair of thrown dice would add up to a certain number. It was explained to subjects in the *bet-before condition* that each game would begin with the experimenter giving the number to be bet on and the payoff ratio for that bet. These subjects would then place their bets and toss the dice. Subjects in the *bet-after condition* were told to begin each game by tossing the dice, but to leave them hidden under the dice cup. These subjects were told that after tossing the dice they would be informed of the target number and the payoff ratio. Bets were to be placed and then the cup lifted.

All subjects played 18 games. The target numbers were presented in the same order for all subjects and the payoff ratios were legitimate chance figures (for example, the chance of throwing a 9 is 1 to 9, and a 9-to-1 payoff ratio was used for this number). Chips were taken away or paid off by the experimenter after each of the 18 games. Subjects were limited to a bet of five chips on each game but were informed that they could also choose to bet no chips on some games if they wished. Examples of how the payoff ratios worked were given and no subject seemed to have difficulty understanding the concept.

Table III. Mean Number of Total Chips Bet^a

	High DC	Low DC
Bet before	37.2 _a	22.8 _b
Bet after	25.3 _b	20.9 _b

^aMeans not sharing the same subscript differ significantly by a Newman-Keuls test ($p < .05$).

Results

The total number of chips bet over the 18 trials was computed for each subject. The mean number of total chips bet for each desire for control (high/low) and betting (before/after) condition is presented in Table III. A 2 X 2 analysis of variance revealed a significant DC level effect ($F(1,36) = 14.34, p < .006$), a significant bet-before/bet-after effect ($F(1,36) = 7.73, p < .009$), and a significant interaction effect ($F(1,36) = 4.06, p < .05$). A subsequent Newman-Keuls test revealed that the total number of chips bet by subjects scoring high on the DC Scale who were also allowed to bet before throwing the dice was significantly higher than the totals of the other three groups ($p < .05$). The three remaining groups did not differ significantly on this measure. Thus the illusion of control phenomenon was found only in the bet-before condition and only for the high DC subjects.

Discussion

The results provide validation for the concept of control motivation and for the DC Scale. The illusion of control was found in the bet-before condition only for subjects scoring high on the DC Scale. Subjects relatively low in the desire for control did not bet significantly more in the bet-before condition than did subjects in the bet-after condition. The level of desire for control failed to differentiate between subjects in the bet-after condition.

These findings suggest that individual differences in the motivation for control interact with situational variables to create the perception of control over outcomes that are chance-determined. One unexpected observation made during the experiment was that 4 of the 10 subjects in the high DC/bet-before condition asked if they could throw the dice with their hand, rather than using the cup as instructed. None of the subjects in the other three conditions made this request. The desire to hold the dice can be seen as another indication of the motivation for control.

CONSTRUCT VALIDATION: THE USE OF THE DC SCALE IN LEARNED HELPLESSNESS AND HYPNOSIS RESEARCH

Two other experiments that utilized the DC Scale provide additional validation for the control motivation concept and the DC Scale. In a study on learned helplessness, Burger and Arkin (in press) divided subjects, through a median-split method, into high and low DC halves. These participants were subjected to helplessness training with aversive noise blasts in a manner similar to Hiroto and Seligman (1975). Subjects were then given 2 minutes to examine a list of words and were asked to recall as many of those words as possible. A main effect for the DC variable was found. For the total number of errors made on the recall task, high DC subjects made more errors than low DC subjects. High DC subjects also showed a tendency to report greater feelings of depression following the helplessness training than the low DC subjects, but this finding fell short of significance.

These results indicate that individuals with a high desire to control events in their lives may be more susceptible to learned helplessness than are persons low in this motive. Those who desire little control are less likely than those who desire a great deal of control to react to a situation in which they cannot control aversive stimuli.

One other experiment (Burger, 1979) has compared persons high and low on the DC Scale. This experiment focused primarily on hypnosis so participants were also divided into those who believed that their hypnotic behavior was controlled by the hypnotist and those who believed that they controlled their own hypnotic responses. High DC subjects who believed they were in control of their own behavior under hypnosis responded to the hypnotic suggestions significantly more often than the subjects in the remaining three groups.

Thus those individuals with a high motivation for control displayed a greater responsiveness to stimuli than low DC persons when they perceived an opportunity to control the events in their lives. When both high and low DC subjects perceived a situation in which control was not possible, no differences were found.

The results of these two studies provide additional support for the concept of individual differences in the motivation for control over events in a person's life. In both studies the individual difference variable, as measured by the DC Scale, interacted with the subject's perception of the situational variables to determine the behavior. Accordingly, the two studies provide additional validation for the DC Scale. The fact that a median-split method was used in both of these studies, a weak manipulation of the DC variable, and yet significant effects were still discovered, is encouraging.

GENERAL DISCUSSION

The research reported here provides support for individual differences along the dimension of motivation to control the events in one's environment. The level of desirability of control for the individual in three experiments interacted with their perceptions of the situational variables to produce significant behavioral differences.

The results of these investigations also provide support for the DC Scale, designed to measure individual differences in the motivation for control. The internal consistency, test-retest reliability, and discriminant validity indices suggest the psychometric characteristics of the scale are well within the range of acceptability.

One experiment that failed to provide support for the concept was also conducted by the present authors. In attempting to apply the DC concept to the reactance phenomenon (Brehm, 1966), an experiment based upon a study by Worchel and Brehm (1970) was conducted. It was expected that introductory psychology students reading a speech arguing against increasing college tuitions would display a reactance to several statements designed to induce this effect. Subjects whose scores were at least one standard deviation above and below the mean on the DC Scale were presented with a speech containing several coercive statements (e.g., "You must agree . . .") or an identical speech without the statements. The prediction that high DC subjects would report attitudes less in agreement with the reactance-inducing speech than would subjects in the other groups was not confirmed. No significant differences among the four groups were found. Thus the failure to find an effect for the desirability of control variable for the reactance phenomenon may have been due to the failure to replicate the Worchel and Brehm findings.

As mentioned in the introduction, several areas currently being investigated by basic researchers utilize concepts related to the motivation for control. The theoretical application of this individual difference variable to this research may therefore prove to be valuable. In addition, the desire for control dimension may have practical applications. The findings from the illusion of control study reported here may relate to programs aimed at curbing gambling behavior. Individuals "hooked" on gambling may be those who are highly motivated to control their environments. Also, if individual differences in the motive to control can be tied to individual differences in intrinsic motivation, several practical applications, such as facilitating interest in academic or factory settings, may accrue from individualizing programs for interest enhancement. Finally, the research on learned helplessness suggests a link between the motivation for control and clinical depression. Those high in the desire for control may react to uncontrollable and unpredictable aversive stimuli with greater learned helplessness.

REFERENCES

- Adler, A. Individual psychology. In C. Murchinson (Ed.), *Psychologies of 1930*. Worcester, Massachusetts: Clark University Press, 1930.
- Ayeroff, F., & Abelson, R. P. ESP and ESB: Belief in personal success at mental telepathy. *Journal of Personality and Social Psychology*, 1976, *34*, 240-247.
- Brehm, J. W. *A theory of psychological reactance*. New York: Academic Press, 1966.
- Burger, J. M. *Desirability of control and hypnotic susceptibility*. Manuscript submitted for publication, 1979.
- Burger, J. M., & Arkin, R. M. Prediction, control, and learned helplessness. *Journal of Personality and Social Psychology*, in press.
- Campbell, D. T., & Fiske, D. W. Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 1959, *56*, 82-105.
- Crowne, D. P., & Marlowe, D. A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 1960, *24*, 349-354.
- deCharms, R. *Personal causation*. New York: Academic Press, 1968.
- Deci, E. L. *Intrinsic motivation*. New York: Plenum Press, 1975.
- Glass, D. C., & Singer, J. E. *Urban stress*. New York: Academic Press, 1972.
- Hiroto, D. S., & Seligman, M. E. P. Generality of learned helplessness in man. *Journal of Personality and Social Psychology*, 1975, *31*, 311-327.
- Kelley, H. H. *Attribution in social interaction*. Morristown, New Jersey: General Learning Press, 1971.
- Kelly, G. A. *The psychology of personal constructs*. New York: Norton, 1955.
- Langer, E. J. The illusion of control. *Journal of Personality and Social Psychology*, 1975, *32*, 311-328.
- Langer, E. J., & Roth, J. Heads I win, tails it's chance: The illusion of control as a function of the sequence of outcomes in a purely chance task. *Journal of Personality and Social Psychology*, 1975, *32*, 951-955.
- Maccoby, E. E., & Jacklin, C. N. *The psychology of sex differences*. Stanford: Stanford University Press, 1974.
- Miller, W. R., & Seligman, M. E. P. Depression and learned helplessness in man. *Journal of Abnormal Psychology*, 1975, *84*, 228-238.
- Nunnally, J. C. *Psychometric theory*. New York: McGraw-Hill, 1967.
- Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 1966, *80*(1, Whole No. 609).
- Seligman, M. E. P. *Helplessness*. San Francisco: Freeman, 1975.
- Strickland, L. H., Lewicki, R. J., & Katz, A. M. Temporal orientation and perceived control as determinants of risk-taking. *Journal of Experimental Social Psychology*, 1966, *2*, 143-151.
- White, R. Motivation reconsidered: The concept of competence. *Psychological Review*, 1959, *66*, 297-330.
- Worchel, S., & Brehm, J. W. Effects of threats to attitudinal freedom as a function of agreement with the communicator. *Journal of Personality and Social Psychology*, 1970, *14*, 18-22.
- Wortman, C. B. Some determinants of perceived control. *Journal of Personality and Social Psychology*, 1975, *31*, 282-294.

