

A Four-Factor Model of Perceived Control: Avoiding, Coping, Obtaining, and Savoring

Fred B. Bryant

Loyola University of Chicago

ABSTRACT This study provides evidence that people evaluate their control over events and over feelings separately with respect to both positive and negative experiences. Confirmatory factor analyses revealed that subjects made separate self-evaluations of control regarding their ability to (a) avoid negative outcomes, (b) cope with negative outcomes, (c) obtain positive outcomes, and (d) savor positive outcomes. In addition, beliefs about avoiding and obtaining were more highly correlated ($r = .50$) than were beliefs about coping and savoring ($r = .27$). It is argued that coping and savoring involve different sets of cognitive and behavioral skills. Multiple regression analyses generally indicated that beliefs about avoiding and coping related more strongly to measures of subjective distress, whereas beliefs about obtaining and savoring related more strongly to measures of subjective well-being. These four control beliefs are discussed in relation to other conceptual models of control, and ways in which savoring may promote perceived control are described.

Although successful mastery or control of the environment is often assumed to be beneficial and rewarding to the individual (deCharms, 1968, Phares, 1976, White, 1959), there is relatively little agreement as to how people go about evaluating personal control in their lives. Some basic

The research reported in this article was supported by a Research Stimulation Award from Loyola University of Chicago. The author wishes to thank Lynn Davidson, Yanghui Han, and Fran Weaver for help in data coding, Todd Miller and Paul Yarnold for assistance in data analysis, and Maggie Melville for typing the manuscript. I am also grateful to Marvin Acklin, Anita DeLongis, Larry Gruder, Dave Klingel, Darrin Lehman, Dan McAdams, Linda Perloff, Joseph Veroff, Steve West, Camille Wortman, Paul Yarnold, and the anonymous reviewers for their comments on earlier drafts of this manuscript. Address correspondence regarding this manuscript to Fred B. Bryant, Department of Psychology, Loyola University of Chicago, 6525 North Sheridan Road, Chicago, IL 60626.

Journal of Personality 57:4, December 1989. Copyright © 1989 by Duke University Press. CCC 0022-3506/89/\$1.50

theoretical frameworks, for instance, treat perceived control as a simple unidimensional construct—that is, people are presumed to assess personal control along only a single, global continuum ranging from the absence of control to complete control (Langer, 1975, Rotter, 1966, Seligman, 1975) Other theorists, in contrast, have argued that people assess personal control along more than one dimension (Bar-Zohar & Nehari, 1978, Gregory, 1978, Paulhus, 1983) For example, Rothbaum, Weisz, and Snyder (1982) have proposed a two-process model of perceived control, in which people's controlling responses are classified as either attempts to change the world (i.e., primary control) or attempts to change oneself to fit in with the world (i.e., secondary control) Many of these multidimensional frameworks suggest that people evaluate control over events separately from control over feelings in response to events

Besides distinguishing between primary and secondary control, other theorists have suggested that people evaluate control separately in relation to positive and negative events (Bryant & Veroff, 1984, Gregory, 1978, Reich & Zautra, 1981) As Gregory (1978) has noted, controlling positive outcomes involves attaining a positive reinforcer, whereas controlling negative outcomes involves avoiding an aversive event Despite the intuitive appeal of these conceptual models, however, there have been no formal attempts to integrate the distinctions between (a) primary and secondary control and (b) control over positive and negative experience For example, in discussing primary and secondary control, Rothbaum et al (1982) focused exclusively on people's judgments about control over negative events and control over feelings in response to negative events However, people may also make separate judgments of primary and secondary control in relation to positive events—that is, they may also evaluate their ability to obtain positive outcomes and to experience positive feelings in response to positive events

A Four-Factor Model of Perceived Control

By crossing primary-secondary control with positive-negative experience, a four-factor model of perceived control emerges that consists of self-evaluations of one's ability to (a) avoid negative events (primary-negative control), (b) cope with negative events (secondary-negative control), (c) obtain positive events (primary-positive control), and (d) savor positive events (secondary-positive control) There are many different ways in which people may perceive each of these types of control As

Thompson (1981) has noted, it is the perception of control, and not actual control, that is critical

Avoiding The perceived ability to avoid negative outcomes may result from beliefs about (a) direct behavioral control that one has over aversive events (Averill, 1973, Miller, 1979, Thompson, 1981), (b) one's personal good fortune (Rothbaum et al , 1982) or inherent moral character (Janoff-Bulman, 1979, Lerner, 1980), (c) one's ability to predict negative events so as to avoid them (Averill, 1973, Bandura, 1977, Rothbaum et al , 1982), (d) one's ability to ward off bad events through superstitious rituals or magical "charms" (Malinowski, 1948), or (e) one's protection from negative outcomes by powerful others (Bandura, 1977, Rothbaum et al , 1982)

Coping The perceived ability to cope with negative outcomes may stem from beliefs about (a) direct or indirect coping strategies that one can use to minimize or curtail distress (Averill, 1973, Lazarus, 1966, Thompson, 1981), (b) one's ability to predict negative events so as to avoid disappointment (Averill, 1973, Lazarus, 1966, Rothbaum et al , 1982), (c) one's ability to overcome problems through the help of powerful others (Brickman et al , 1982, Rothbaum et al , 1982), or (d) one's personal relationship with God, which can provide solace, inspiration, and meaning in the face of adversity (Rothbaum et al , 1982)

Obtaining As with the perceived ability to avoid negative outcomes, the perceived ability to obtain positive outcomes may result from beliefs about (a) direct behavioral control that one has over pleasant events (deCharms, 1968, Langer, 1975, Reich & Zautra, 1981), (b) one's dispositional good luck (Rothbaum et al , 1982) or inherent moral character (Lerner, 1980), (c) one's ability to predict positive events so as to obtain them (Rothbaum et al , 1982), (d) one's ability to bring about good events through superstitious rituals or "good luck charms" (Gmelch, 1978, Henslin, 1967), or (e) powerful others who can give one positive outcomes (Bandura, 1977, Rothbaum et al , 1982)

Savoring The perceived ability to savor positive outcomes may stem from beliefs about (a) cognitive or behavioral strategies that one can use to amplify or prolong enjoyment of positive events, (b) one's ability to anticipate future positive outcomes in ways that promote a sense of plea-

sure in the present, (c) one's ability to recall past positive events in ways that enhance present well-being, or (d) friends or relatives who can help one enjoy positive events, even if one cannot do so alone

In contrast to other dimensions of perceived control, relatively little work has focused directly on people's beliefs about their ability to savor positive events. It is often assumed that people naturally experience pleasure in response to positive events (Freud, 1920, Skinner, 1971). This assumption, however, may be at least partly unwarranted. Because happiness may be relative (Brickman, 1978, Brickman & Campbell, 1971), positive events may be experienced as more or less pleasurable depending on one's "hedonic baseline" or standard of comparison. For example, an extremely positive event, such as winning a state lottery, may make everything else seem less positive by comparison (Brickman, Coates, & Bulman, 1978), whereas an extremely negative event, such as being blinded, may make everything else seem less negative by comparison (Cameron, Titus, Kostin, & Kostin, 1973). And in the long run, people may adapt to extremely positive or negative events, take them for granted, and cease to use them as a standard by which to judge whether they are happy or not (Brickman, 1978). This suggests that obtaining good things and enjoying good things may involve two separate processes.

Research Objectives

Testing models of perceived control The present study had two main objectives. The first objective was to test how well this four-factor model explains people's self-evaluations of control relative to other models of perceived control. To accomplish this, a set of items assessing beliefs about avoiding, coping, obtaining, and savoring were generated, and confirmatory factor analyses were used to contrast the fit of various models to responses to these items. Beliefs about avoiding and obtaining were expected to be relatively correlated, based on the notion that they reflect interrelated perceptions of control over environmental events (cf Gregory, 1978, Rotter, 1966). Beliefs about coping and savoring, in contrast, were hypothesized to reflect different sets of cognitive and behavioral skills that should be less highly correlated.

Relating perceived control to subjective mental health A second objective of the present study was to test hypotheses about how these four di-

dimensions of perceived control relate to subjective well-being and distress. Numerous theorists (e.g., deCharms, 1968, Seligman, 1975) have argued that a belief in personal control is psychologically beneficial and that perceived loss of control is psychologically harmful. But do different dimensions of perceived control relate more strongly to certain aspects of adjustment than to others?

With respect to subjective adjustment, a wealth of research indicates that people evaluate positive subjective experience, or well-being, separately from negative subjective experience, or distress (Bradburn, 1969, Bryant & Veroff, 1982, 1984, Headey, Holmstrom, & Wearing, 1984, Veit & Ware, 1983). A growing body of evidence further suggests that the occurrence of negative events and one's capacity to cope with these events primarily influence one's level of subjective distress, whereas the occurrence of positive events and one's level of self-reinforcing activity primarily influence one's level of subjective well-being (Reich & Zautra, 1981, 1988, Zautra & Reich, 1983). Considered together, these findings suggest that beliefs about avoiding and coping should relate more strongly to distress than to well-being, whereas beliefs about obtaining and savoring should relate more strongly to well-being than to distress.

METHOD

Sample and Procedure

Respondents were 157 male and 367 female undergraduates at a midwestern university, who participated anonymously in partial fulfillment of an introductory psychology course requirement. Their average age was 18.6 years, and there was no significant sex difference in age. Same-sex groups of 5 to 10 students completed a self-report questionnaire concerning "people's perceptions of their own lives."

Dependent Measures

Subjective mental health. The questionnaire contained two sets of items. The first set consisted of 25 indices of subjective mental health developed by Bryant and Veroff (1984) that were used to operationally define well-being and distress. Based on detailed analyses of a 1976 national survey (Veroff, Douvan, & Kulka, 1981), Bryant and Veroff (1984) presented a formal model of self-evaluation that distinguishes among six dimensions of subjective mental health.

- 1 *Unhappiness*, an affective evaluation of positive experience, is composed of items assessing general happiness, past happiness, and future morale
- 2 *Lack of Gratification*, a cognitive evaluation of positive experience, is defined by items tapping satisfaction and value fulfillment in ongoing role relationships
- 3 *Strain*, an affective evaluation of negative experience, is composed of items assessing physical (ill health), psychological (anxiety and immobilization), and behavioral (drinking and drug taking) reactions to stress
- 4 *Feelings of Vulnerability*, a cognitive evaluation of negative experience, is defined by items tapping the degree to which one feels overwhelmed, susceptible to bad events, and prone to a "nervous breakdown"
- 5 *Lack of Self-Confidence*, a cognitive and affective evaluation of positive and negative aspects of oneself, is characterized by low self-esteem, depression, perceptions of outcomes as uncontrollable, and feelings of anomie
- 6 *Uncertainty*, a cognitive and affective evaluation of the future, is characterized by frequent worrying, life dissatisfaction, immobilization, anxiety, and self-doubt

Unhappiness and Lack of Gratification are considered measures of subjective well-being, Strain and Feelings of Vulnerability are considered measures of subjective distress, and Lack of Self-Confidence and Uncertainty are considered measures that combine distress and well-being. This six-factor model has been used to operationally define subjective mental health in past research on occupational complexity (Adelman, 1987), marital status (Weingarten & Bryant, 1987), intimacy motivation (McAdams & Bryant, 1987), educational attainment (Bryant & Marquez, 1986), and Type A behavior (Bryant & Yarnold, in press)

The items constituting these six factors were extracted from Veroff et al.'s (1981) interview schedule in their original order of appearance and were phrased identically.¹ Responses to these items were coded according to

1 The one exception to this rule involved the indices of role adjustment that comprise the Lack of Gratification factor. To measure Lack of Gratification in the original national survey, adults were asked to indicate how much satisfaction and value fulfillment they had gotten from work, marriage, parenting, and leisure time. Because the present college-aged sample was predominantly single, the items regarding marriage and parenting were rephrased to address relationships with members of the opposite sex and with one's family and friends. For a list of the actual items and the way in which they are coded, see Appendix A of Bryant and Veroff (1984, pp. 130-133). The correlation matrices for the perceived control items and the subjective mental health items are available upon request.

Bryant and Veroff (1984) so that high scores reflected distress or lack of well-being

Perceived control The second set of measures consisted of 15 additional items designed to assess various aspects of perceived control in people's lives (see Table 1). These items were based on measures of personal control and measures of affect developed by previous researchers, including Bradburn (1969), Rotter (1966), and Wortman (1975). Three items were intended to tap perceived ability to avoid negative outcomes, 3 items were intended to tap perceived ability to cope with negative outcomes, 4 items were intended to tap perceived ability to obtain positive outcomes, and 5 items were intended to tap perceived ability to savor positive outcomes. Three different types of response scales (4-, 5-, and 7-point scales) were interspersed among the 15 items and some of the items were reversed to counteract the response bias that might occur if only one type of format were used. Items were coded so that high scores represented a high degree of perceived control.

Testing Models of Perceived Control

One purpose of this study was to compare alternative theoretical models for explaining how people evaluate personal control in their lives. The Tucker-Lewis coefficient (TLC, Tucker & Lewis, 1973) was used to gauge the amount of common variance in perceived control measures explained by each model (see Bryant & Veroff, 1982, 1984). LISREL IV (Joreskog & Sorbom, 1978) was used to perform confirmatory maximum-likelihood factor analyses to test how well the hypothesized four-factor model fit the data and to compare its fit with that of seven simpler measurement models: a global one-factor model, two two-factor models, and four three-factor models. These simpler models embodied more parsimonious views on the structure of perceived control against which the more complex four-factor model was contrasted (see Bentler & Bonett, 1980).

All multidimensional models were specified as having correlated latent factors, in order to examine factor interrelationships. In addition, a representative item on each factor was constrained to an unstandardized value of 1.0, in order to define each factor uniquely (Joreskog & Sorbom, 1978), and measurement errors were specified as being independent of one another.

One-factor model The simplest alternative model (Model 1) specified only one factor and assumed that perceived control was unidimensional, i.e., that people assess personal control only globally along a single continuum ranging from the absence of control to complete control (Seligman, 1975). To

Table 1
Items Used to Measure Beliefs About Avoiding, Coping, Obtaining, and Savoring

Item	Mean	SD
Avoiding		
1 In general, how much control do you feel that you personally have over whether or not bad things happen to you? ^a	3.21	1.09
*2 Over their lives most people have something bad happen to them or to someone they love. By "something bad" we mean things like getting sick, losing a job, or being in trouble with the police, or like when someone dies, leaves, or disappoints you. Compared with most other people you know, have things like this happened to you a lot, some, not much, or hardly ever? ^b	2.57	0.96
*3 In general, how likely or unlikely do you think it is that bad things will happen to you? ^c	3.43	1.27
Coping		
1 When bad things have happened in your life, how well do you feel that you have typically been able to cope? ^d	3.79	0.96
*2 Compared with most other people you know, how much have these bad things typically affected you? ^d	2.98	1.04
*3 When something bad happens to you compared to most other people you know, how long does it usually affect the way you feel? ^e	3.83	1.61

Table 1
Continued

Item	Mean	SD
Obtaining		
1 In general, how much control do you feel that you personally have over whether or not good things happen to you? ^a	3.73	0.98
2 With respect to good things that have occurred in your life, to what extent do you think that you have typically been responsible for their occurrence? ^f	5.33	1.15
*3 Over their lives most people have something good happen to them or to someone they love. By "something good" we mean things like receiving an honor or award, getting a good grade in school, getting a promotion or raise, or going on a vacation, or like when someone does something nice for you or a good friend comes to visit. Or maybe just something important you wanted to happen did happen. Compared with most other people you know, have things like this happened to you a lot, some, not much, or hardly ever? ^b	1.62	0.67
4 In general, how likely or unlikely do you think it is that good things will happen to you? ^c	5.20	1.13

Table 1
Continued

Item	Mean	SD
Savoring		
1 When good things have happened in your life, how much do you feel you have typically been able to appreciate or enjoy them? ^a	4.34	0.82
2 Compared to most other people you know, how much pleasure have you typically gotten from good things that have happened to you? ^a	4.30	0.80
3 When something good happens to you, compared to most other people you know, how long does it usually affect the way you feel? ^e	4.91	1.31
*4 When good things have happened to you, have there ever been times when you felt like everything was really going your way, that is, when you felt on top of the world, or felt a great deal of joy in life, or found it hard to contain your positive feelings? How often would you say you felt like that? ^g	2.16	1.07
5 How often would you say that you feel like jumping or shouting for joy? ^h	3.05	0.74

Note $N = 524$

a 1 = none at all, 2 = a little bit, 3 = some, 4 = a lot, 5 = a great deal

b 1 = a lot, 2 = some, 3 = not much, 4 = hardly ever

c 1 (very unlikely) to 7 (very likely)

d 1 = not at all, 2 = a little bit 3 = some, 4 = a lot 5 = a great deal

e 1 (not for very long) to 7 (for a very long time)

f 1 (I have typically not been responsible) to 7 (I have typically been responsible)

g 1 = many times 2 = sometimes 3 = once in a while, 4 = never

h 1 = never 2 = rarely 3 = sometimes 4 = often

*Items that are reversed-scored

test the fit of this one-factor model via LISREL, all 15 measures of perceived control were constrained to load on the same factor

Two-factor models Two other alternative models specified that people evaluate perceived control along two dimensions. The first two-factor model (Model 2a) assumed that people assess personal control separately in relation to positive and negative experience (Gregory, 1978). To test the fit of Model 2a, the 9 positively focused control items were constrained to load only on one factor, and the 6 negatively focused control items to load only on a second factor.

A second two-factor model (Model 2b) assumed that people assess personal control separately with respect to events and feelings (Rothbaum et al., 1982). To test the fit of Model 2b, the 7 event-focused control items were constrained to load only on one factor, and the 8 feeling-focused control items to load only on a second factor.

Three-factor models Four other alternative models specified that people evaluate perceived control along three dimensions. These more complex models represent various three-factor combinations of the simpler two-factor models. The first three-factor model (Model 3a) assumed that people distinguish between control over events and control over feelings only with respect to negative experience and that they assess control over positive experience in a unidimensional fashion. To test the fit of Model 3a, the 3 items designed to tap beliefs about avoiding were constrained to load only on one factor, the 3 items designed to tap beliefs about coping to load only on a second factor, and the 9 positively focused control items to load only on a third factor.

A second three-factor model (Model 3b) assumed that people distinguish between control over events and control over feelings only with respect to positive experience and that they assess control over negative experience in a unidimensional fashion. To test the fit of Model 3b, the 4 items designed to tap beliefs about obtaining were constrained to load only on one factor, the 5 items designed to tap beliefs about savoring to load only on a second factor, and the 6 negatively focused control items to load only on a third factor.

A third three-factor model (Model 3c) assumed that people distinguish between control over positive and negative experience only with respect to control over events and that they assess control over feelings in a unidimensional fashion. To test the fit of Model 3c, the 4 items designed to tap beliefs about obtaining were constrained to load only on one factor, the 3 items designed to tap beliefs about avoiding to load only on a second factor, and the 8 items designed to tap control over feelings to load only on a third factor.

A fourth three-factor model (Model 3d) assumed that people distinguish between control over positive and negative experience only with respect to

Table 2
Chi-Square Statistics and Measures of Relative Fit for the Eight Models of Perceived Control

Model	χ^2	<i>df</i>	χ^2/df^a	TLC ^b
1 One global factor	918 530	90	10 206	55
2a Control over positive experience and control over negative experience	599 780	89	6 739	72
2b Control over events and control over feelings	835 036	89	9 382	59
3a Avoiding, coping, and control over positive experience	546 979	87	6 287	74
3b Obtaining, savoring, and control over negative experience	492 443	87	5 660	77
3c Avoiding, obtaining, and control over feelings	756 652	87	8 697	62
3d Coping, savoring, and control over events	568 801	87	6 538	73
4 Avoiding, coping, obtaining, and savoring	434 822	84	5 176	83

Note *N* = 524

a As this ratio decreases and approaches zero, the fit of the given model improves (Hoelter, 1983)

b This Tucker-Lewis coefficient reflects the proportion of common variance explained by the given model. As the coefficient increases and approaches 1.0, the fit of the model improves (Bryant & Veroff, 1982, 1984, Tucker & Lewis, 1973)

control over feelings and that they assess control over events in a unidimensional fashion. To test the fit of Model 3d, the 5 items designed to tap beliefs about savoring were constrained to load only on one factor, the 3 items designed to tap beliefs about coping to load only on a second factor, and the 7 items designed to tap control over events to load only on a third factor.

Four-factor model The most complex measurement model was the hypothesized four-factor model of perceived control (Model 4) that represented a complete factorial combination of Models 2a and 2b. This model assumed that people distinguish between control over events and control over feelings

separately with respect to both positive and negative experience. To test the fit of Model 4, the 4 items designed to tap beliefs about obtaining were constrained to load only on one factor, the 5 items designed to tap beliefs about savoring to load only on a second factor, the 3 items designed to tap beliefs about avoiding to load only on a third factor, and the 3 items designed to tap beliefs about coping to load only on a fourth factor. The major hypothesis was that the four-factor model (Model 4) would explain subjects' responses to the perceived control items better than any of the other models.

Relating Perceived Control and Subjective Mental Health

To test hypotheses about relationships between perceived control and subjective mental health, factor scores were constructed for each of the perceived control and subjective mental health factors.² To create an overall score for each factor, the items that comprised the particular factor were standardized and the unweighted mean of these items was computed. Multiple regression analyses were then conducted using scores on the perceived control factors to predict scores on the subjective mental health factors.³ All multiple regressions controlled for the main effect of gender by including sex of respondent as an additional term in the model.

RESULTS AND DISCUSSION

The Structure of Perceived Control

Contrasting alternative models Table 2 presents the chi-square statistics and measures of relative fit for the eight confirmatory models of perceived control. As can be seen from the TLCs in this table, the one-factor

² Confirmatory factor analyses revealed that the six-factor model of subjective mental health provided a reasonably good fit for the data of the college sample, $\chi^2(256) = 559.08$, $\chi^2/df = 2.18$, $p < .00001$. Simultaneous confirmatory analyses further indicated that the six-factor model produced equivalent factor loadings overall for the original national sample of adults and the present college sample, $\chi^2(23) = 18.45$, $p > .50$. However, three items were no longer characteristic of Uncertainty in the college sample: economic worries, dissatisfaction with time use, and low future morale. It was thus decided to exclude these three items in building factor scores for the Uncertainty dimension.

³ Although I have treated the perceived control measures as antecedent (independent) variables and the subjective mental health measures as consequent (dependent) variables, the present cross-sectional survey data are only correlational in nature and are incapable of establishing direct cause and effect relationships (Cook & Campbell, 1979). While it is certainly plausible that people's beliefs in personal control

model accounted for slightly more than 50% of the common variance, the various two- and three-factor models explained from 59% to 77% of the common variance, and the four-factor model explained 83% of the common variance in the perceived control measures

To test the hypothesis that perceived control is multidimensional, the chi-square value obtained using the one-factor model was contrasted with the chi-square values obtained using the two-, three-, and four-factor models. Each of the multidimensional models represents a highly significant improvement in fit over the one-factor model (all $ps < 00001$). Respondents did not simply evaluate whether or not they had personal control over their lives in a global fashion, but rather made judgments of control along more than one dimension. The next step of the analysis was to compare the chi-square value obtained using the four-factor model with the chi-square value obtained using each of the alternative multidimensional models, to determine which model best fit the data. The four-factor model that distinguishes between control over positive and negative experience separately in relation to events and feelings is a significant improvement in fit over any of the more parsimonious models (all $ps < 0001$). The four-factor model thus provides a more reasonable representation of the structure underlying responses to the perceived control measures than do the other models.⁴ Figure 1 displays the factor loadings and factor intercorrelations that constitute this four-factor model.⁵

are determined by their levels of well-being and distress, control theorists have typically emphasized the opposite causal direction. It is also possible that other variables, such as Type A life-style (Bryant & Yarnold, in press) or recent life events (Zautra & Reich, 1983), influence both perceived control and subjective adjustment.

4 Although the absolute fit of this four-factor model clearly leaves room for improvement, it is important to keep in mind that the purpose of this research was not to develop the one best-fitting measurement model, but rather to determine the relative fit of the four-factor model compared to alternative models. Nevertheless, a more technically elaborate version of the four-factor model was also tested that allowed for correlated measurement error (Joreskog & Sorbom, 1978), to see if this modification would increase the variance explained by the model. LISREL was used to test the fit of the four-factor model specifying appropriate 4-, 5-, and 7-point scale "method" factors. This more elaborate four-factor model, $\chi^2(53) = 192.19$, $\chi^2/df = 3.626$, explains 87% of the common variance in the perceived control measures and represents a significant improvement in fit over a four-factor model that assumes all measurement errors are uncorrelated, $\chi^2(31) = 242.63$, $p < 00001$. The level of absolute fit, however, is still somewhat inadequate.

5 An initial test of the between-sex equivalence of covariance matrixes revealed no

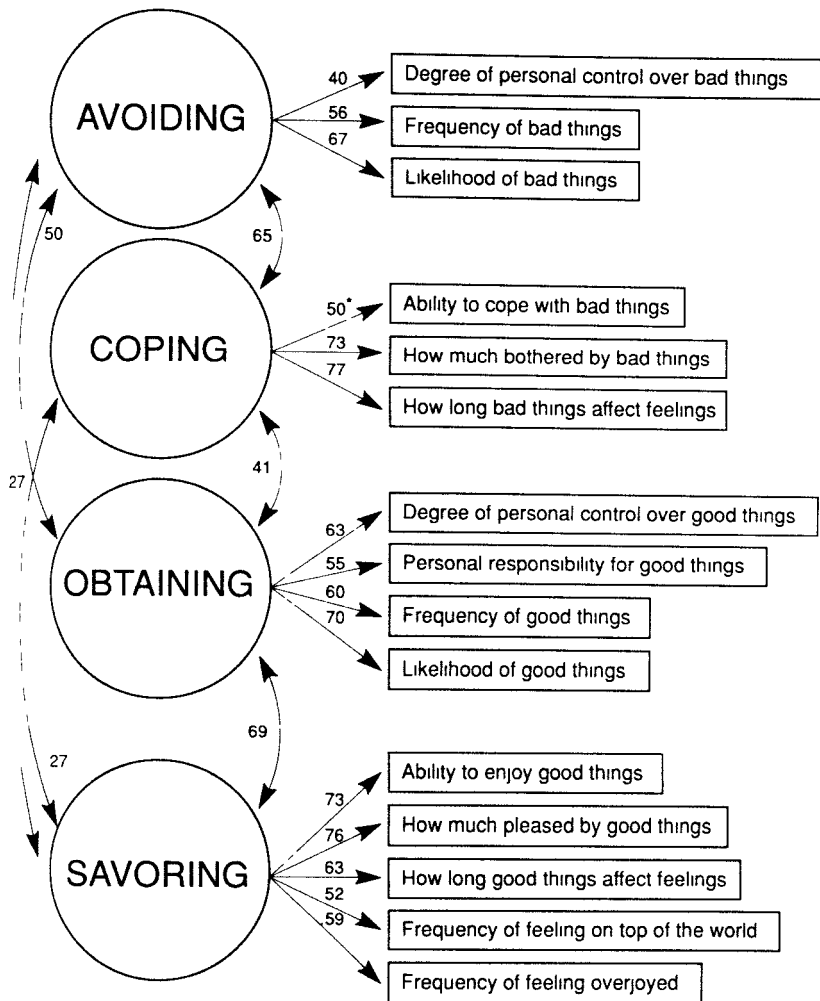


Figure 1

The Four-Factor Model of Perceived Control

Note These results are from a confirmatory factor analysis, $\chi^2(84, N = 524) = 434.82$, $p < .00001$. The individual perceived control items are enclosed in rectangles and the latent constructs, or factors, are enclosed in circles. Curved paths indicate correlations between factors, whereas straight paths indicate factor loadings. Factor loadings with superscripts were fixed at unstandardized values of 1.0. To simplify the model, the error terms associated with the items have been omitted from the figure. Cronbach's α 's for the factors were: avoiding, .60; coping, .70; obtaining, .71; and savoring, .78.

Factor interrelationships Confirming predictions, beliefs about avoiding and obtaining were more highly correlated ($r = .50$) than were beliefs about coping and savoring ($r = .27$), sharing over three times as much variance. To test whether these two correlations are significantly different, an additional confirmatory analysis was conducted that constrained the correlation between the avoiding and obtaining factors to equal the correlation between the coping and savoring factors. The model with this equality constraint did not fit the data nearly as well as the model without this equality constraint, $\chi^2(1) = 7.81, p < .001$, indicating that beliefs about avoiding and obtaining correlate more strongly than beliefs about coping and savoring. This is an important finding because it suggests that, whereas judgments of control over one type of event (either positive or negative) tend to generalize to judgments of control over the other type of event, perceived control over one type of feeling has relatively less to do with perceived control over the other type of feeling.

Perceived Control and Subjective Mental Health

Table 3 summarizes the critical results of the multiple regression analyses (i.e., the standardized beta coefficients) relating each dimension of perceived control to each dimension of subjective mental health. In general, the results support initial hypotheses. As predicted, beliefs about avoiding were significantly related to levels of subjective distress (i.e., Strain and Feelings of Vulnerability) and were unrelated to levels of subjective well-being (i.e., Unhappiness and Lack of Gratification). In ad-

significant sex differences, $\chi^2(120) = 40.91, ns$, indicating that the four-factor model of perceived control yielded equivalent factor loadings and equivalent factor variances-covariances for men and women. The present research also tested for sex differences in mean levels of perceived control. A multivariate analysis of variance (MANOVA), $F(4, 497) = 4.63, p < .001$, revealed that, whereas men perceived a greater ability to obtain positive events, $F(1,500) = 10.20, p < .001$, and cope with negative events, $F(1,500) = 3.85, p = .05$, than did women, women perceived a greater ability to savor positive events than did men, $F(1,500) = 3.00, p < .05$. There was no significant sex difference in the perceived ability to avoid negative events, $F(1,500) = 1.07, ns$. The evidence that men perceive themselves to be better copers whereas women perceive themselves to be better savorers supports the notion that coping and savoring involve different sets of skills.

Table 3
Results From Analyses Relating Perceived Control Factors to Subjective Mental Health Factors

Dimensions of subjective mental health ^b	R^{2c}	Dimensions of perceived control ^a						Gender r	β						
		Avoiding		Coping		Obtaining				Savoring					
	r^d	β^e	Φ^f	r	β	Φ	r	β	Φ						
Unhappiness	22	-.25*	-.08	-.30*	-.34*	-.20*	-.39*	-.31*	-.05	-.42*	-.38*	-.30*	-.43*	08	07
Lack of Gratification	22	-.13	-.02	-.20	-.15	00	-.22*	-.36*	-.15	-.54*	-.45*	-.36*	-.62*	-.04	-.01
Strain	18	-.33*	-.26*	-.51*	-.31*	-.18	-.51*	-.19	05	-.30	-.25*	-.18	-.32*	-.03	-.08
Feelings of Vulnerability	46	-.62*	-.53*	-.63*	-.49*	-.29*	-.78*	-.17	-.11	-.28*	-.11	-.01	-.15	16	03
Lack of Self-Confidence	45	-.38*	-.14	-.55*	-.43*	-.20*	-.58*	-.53*	-.22*	-.72*	-.53*	-.34*	-.64*	13	11
Uncertainty	21	-.29*	-.14	-.47*	-.35*	-.22*	-.61*	-.28*	-.02	-.47*	-.32*	-.24*	-.44*	09	06

Note $N = 524$

- a High scores on perceived control factors reflect a high degree of perceived control
b High scores on subjective mental health factors reflect distress or a lack of well-being
c R^2 's represent the proportion of variance in each subjective mental health factor explained by a multiple regression model that included scores on the four perceived control factors and gender (1 = male, 2 = female) as predictors
d r s represent Pearson product-moment correlations
e β s represent standardized β coefficients from multiple regression analyses using scores on the four perceived control factors and gender to predict scores on each subjective mental health factor
f Φ s represent measurement error-free correlations between standardized perceived control factors and standardized subjective mental health factors from a combined 10-factor confirmatory analysis of the perceived control and subjective mental health items
* $p < .05$ by Bonferroni adjustment To obtain an adjusted α level that corrected for Type I errors, the desired α level was divided by the number of statistical comparisons made Thus, $.05/84 = p < .0006$ was used to establish the .05 level of statistical significance for these data

dition, beliefs about coping were significantly related to levels of distress and were unrelated to Lack of Gratification, but beliefs about coping were also significantly related to Unhappiness, suggesting that either the perceived inability to cope may contribute to unhappiness or the perception that one is unhappy may make one feel less able to cope (Bryant & Veroff, 1982)

Partially supporting the hypotheses, beliefs about obtaining were significantly related to Lack of Gratification and were unrelated to Strain, but beliefs about obtaining were also unrelated to Unhappiness and were significantly related to Feelings of Vulnerability. In addition, beliefs about savoring were significantly related to levels of well-being and were unrelated to Feelings of Vulnerability, but beliefs about savoring were also significantly related to Strain, suggesting that either the perceived ability to enjoy life may reduce symptoms of distress (Lazarus, Kanner, & Folkman, 1980, Reich & Zautra, 1981) or the perception that one is relatively free of symptoms may make it easier for one to savor. That beliefs about savoring were related to happiness whereas beliefs about obtaining were not suggests that reported happiness has more to do with perceived control over positive feelings than it has to do with perceived control over positive events. Partially confirming predictions, all perceived control factors (except for beliefs about obtaining) were significantly related to dimensions of subjective mental health that combined well-being and distress (i.e., Lack of Self-Confidence and Uncertainty)

Construct Validity Issues

One crucial analytical issue concerns the discriminant validity of the perceived control factors relative to the subjective mental health factors. Are beliefs about avoiding, coping, obtaining, and savoring truly distinct constructs from dimensions of subjective well-being and distress? Although this study cannot resolve the question definitively, two additional types of analyses were conducted to evaluate the discriminant validity of the perceived control factors.

As an initial test of discriminant validity, the subjective mental health and perceived control items were included in the same confirmatory analysis, and a 10-factor model was specified (i.e., 6 subjective mental health factors and 4 perceived control factors). If the control items are simply additional indicators of well-being and distress, then the control factors should collapse in this combined analysis, and the fit of the over-

all model should decrease substantially as the control items try to merge with the subjective mental health factors. This result, however, did not occur. On the contrary, the goodness-of-fit of the combined 10-factor model is equivalent to that of both the separate 4-factor and 6-factor models, $\chi^2(581) = 1284.80$, $\chi^2/df = 2.21$, $TLC = .88$. This finding supports the notion that beliefs about avoiding, coping, obtaining, and savoring are different constructs from the subjective mental health factors. This combined confirmatory analysis also provided estimates of correlations between standardized perceived control factors and standardized subjective mental health factors that are free of measurement error. These correlations are reported as phi coefficients (Φ s) in Table 3, and their pattern generally supports the initial hypotheses.

Hierarchical confirmatory analyses were also conducted specifically to evaluate the discriminant validity of the coping and savoring factors. The major potential problem in the model is that savoring simply may be an additional indicator of well-being, whereas coping may be an additional indicator of distress. If this were the case, then a confirmatory model specifying (a) strain and perceived vulnerability as first-order indicators of a higher order construct of distress and (b) happiness and gratification as first-order indicators of a higher order construct of well-being should fit the data significantly better when beliefs about coping and savoring are structured as additional first-order indicators of distress and well-being, respectively, rather than when beliefs about coping and savoring are structured as first-order indicators of a separate higher order construct of perceived control. Again, however, this was not so. A model that includes a separate higher order perceived control factor of which coping and savoring beliefs are first-order indicators actually provides a marginally better fit than a model that includes higher-order factors only for distress and well-being, $\chi^2(3) = 6.32$, $p < .05$. This evidence suggests that beliefs about coping and savoring are not merely additional measures of distress and well-being, but rather are distinctly separate constructs.

Given that beliefs about avoiding, coping, obtaining, and savoring seem not to be measures of well-being and distress, what evidence is there that these beliefs represent different perceptions of control? To try to provide further evidence of the convergent/discriminant validity of the perceived control measures, additional data were collected. A sample of 47 undergraduates (23 men and 24 women) comparable to the original college sample completed (a) the present measures of beliefs about

avoiding, coping, obtaining, and savoring, (b) Rotter's (1966) Internal-External (I-E) scale, and (c) Rosenbaum's (1980) Self-Control schedule Scores on the I-E scale, which predominantly taps perceived control over environmental events, correlated significantly with beliefs about avoiding, $r = .51, p < .001$, and obtaining, $r = .36, p < .01$, but were uncorrelated with beliefs about coping, $r = .18, ns$, and savoring, $r = .07, ns$ Conversely, scores on the Self-Control schedule, which taps the use of self-management techniques to regulate emotional and physiological responses, correlated significantly with beliefs about coping, $r = .44, p < .001$, and savoring, $r = .28, p < .05$, but were uncorrelated with beliefs about avoiding, $r = .20, ns$, and obtaining, $r = .15, ns$ These results support the convergent and discriminant validity of the present measures and suggest that the avoiding and obtaining factors reflect perceived control over events, whereas the coping and savoring factors reflect perceived control over feelings

CONCLUSIONS

The most important finding of the present study is that a four-factor model that distinguishes between perceived primary control (over events) and perceived secondary control (over feelings) separately in relation to positive and negative experiences not only explained people's self-evaluations of control better than other conceptual models, but also was relatively accurate in predicting levels of subjective well-being and distress These results clearly demonstrate that people's concepts of personal control are more complex than was once thought Concerning the relationship between perceived control and subjective mental health, the present findings provide further evidence that positive and negative self-evaluations involve separate domains of cognitive and affective experience Just as people evaluate their positive and negative feelings separately, they also seem to evaluate their control over positive and negative feelings separately

There are some important limitations to the present measures of perceived control First, the avoiding and obtaining factors include items assessing not only control over good and bad events, but also the perceived frequency and likelihood of these events And the coping and savoring factors include items assessing not only the perceived ability to manage good and bad feelings, but also the emotional impact of good and bad events Although these second sets of items were considered in-

direct indicators of perceived control, one might argue that only the first sets of items actually represent beliefs about control. Indeed, the inclusion of these other items may confound relationships between perceived control factors and subjective mental health factors by inflating the correlations between them (Nicholls, Licht, & Pearl, 1982). When the offending items are removed from the factor scores and the multiple regressions are repeated, however, the critical relationships remain statistically significant, and the pattern of results is the same. Nevertheless, more items that directly assess beliefs about control are needed for each factor.

Another way to improve the present measures is to increase their precision. For instance, the savoring factor does not distinguish between individuals who believe they are incapable of enjoying and individuals who believe they are able to enjoy but who choose not to do so. Disciplined achievers, for example, may delay gratification to increase productivity, but may be fully capable of savoring. Indeed, the delay of gratification may give one a sense of control over positive feelings, through active suppression (Uleman, 1987) or through the creation of future "hedonic contrast" (Brickman & Campbell, 1971). The present items represent a first attempt to measure the four types of beliefs in control, and further improvements in scope and specificity are clearly needed.

In attempting to clarify these four dimensions of perceived control, it is important to place the present framework in the context of control models that others have proposed. One of the most popular distinctions in the control literature (Averill, 1973, Thompson, 1981) has been between behavioral control (the perceived availability of a response that can directly influence a negative event) and cognitive control (the belief that one has a cognitive strategy that can reduce the aversiveness of a negative event). Although this distinction has been used exclusively in relation to negative events, it seems applicable to positive events as well. Beliefs about avoiding negative outcomes and obtaining positive outcomes appear most closely associated with perceptions of direct behavioral control, or instrumental control (Miller, 1979). However, perceptions that one can indirectly influence outcomes, as through predictive, vicarious, or illusory control (Averill, 1973, Rothbaum et al., 1982), may also foster beliefs in one's ability to avoid or to obtain.

Beliefs about coping and savoring, in contrast, seem closely associated with perceptions of both cognitive and behavioral control. With respect to coping, past theorists (Averill, 1973, Rothbaum et al., 1982, Thompson, 1981) have already noted that people may gain a sense of

control over negative feelings through informational or interpretive forms of cognitive control. People may also believe they can control negative feelings through problem-focused or emotion-focused behaviors (Folkman & Lazarus, 1980).

While it seems fairly clear that coping processes may provide people with a sense of control, how perceived control relates to savoring, on the other hand, may seem less evident. People who savor positive outcomes may not have to consciously control the experience the way they might have to control their reactions to a negative event. However, although savoring may not always require conscious effort, people may learn and then consciously use strategies that help them enjoy positive outcomes and that give them a sense of control over positive feelings.

People may also learn that certain savoring strategies are ineffective or counterproductive for them, and they may consciously avoid these thoughts or actions (e.g., not comparing one's level of enjoyment with that of co-participants, not getting drunk or overeating at a celebration). In addition, people may learn to plan and structure activities consciously in ways that maximize the intensity and duration of their enjoyment and that give them a sense of control over positive feelings (e.g., by allowing time for solitude, by inviting friends to share in the experience, or by playing music during the activity). Clearly, however, there are other forms of savoring that involve the absence of conscious effort, as with absorption or flow experiences, and self-awareness may well reduce positive affect in these situations (Brickman, 1978, Czikszentmihalyi, 1975).

In sum, this study's main contribution to our understanding of perceived control is that it identifies savoring as a control-related phenomenon. The notion that people strive to maintain a belief in control over positive feelings has important theoretical and practical implications. For example, learned helplessness theorists (e.g., Seligman, 1975) have focused exclusively on people's perceptions of control over environmental outcomes. But there may be a form of helplessness specifically associated with the perceived inability to savor positive experience. This may help to explain the paradox of "success depression" (Berglas, 1986), in which people who feel able to achieve desired goals nevertheless report being unable to enjoy their accomplishments. Effective therapy in this case may require teaching people effective strategies for savoring positive outcomes.

REFERENCES

- Adelman, P K (1987) Occupational complexity, control, and personal income Their relation to psychological well-being in men and women *Journal of Applied Psychology*, **72**, 529–537
- Averill, J R (1973) Personal control over aversive stimuli and its relation to stress *Psychological Bulletin*, **80**, 286–303
- Bandura, A (1977) Self-efficacy Toward a unifying theory of behavioral change *Psychological Review*, **84**, 191–215
- Bar-Zohar, Y , & Nehari, Y (1978) Conceptual structure of the multidimensionality of locus of control *Psychological Reports*, **42**, 363–369
- Bentler, P M , & Bonett, D G (1980) Significance tests and goodness-of-fit in the analysis of covariance structures *Psychological Bulletin* **88** 588–606
- Berglas, S (1986) *The success syndrome Hitting bottom when you reach the top* New York Plenum Press
- Bradburn, N M (1969) *The structure of psychological well-being* Chicago Aldine
- Brickman, P (1978) *Happiness Can we make it last?* Unpublished manuscript, Northwestern University Evanston, IL
- Brickman, P , & Campbell, D T (1971) Hedonic relativism and planning the good society In M H Appleby (Ed), *Adaptation level theory* (pp 287–302) New York Academic Press
- Brickman, P , Coates, D , & Bulman, R (1978) Lottery winners and accident victims Is happiness relative? *Journal of Personality and Social Psychology*, **30**, 917–927
- Brickman, P , Rabinowitz, V C , Karuza, J , Jr , Coates, D , Cohn, E & Kidder, L (1982) Models of helping and coping *American Psychologist*, **37**, 308–384
- Bryant, F B , & Marquez, J T (1986) Educational status and the structure of subjective well-being in men and women *Social Psychology Quarterly*, **49**, 142–153
- Bryant, F B , & Veroff, J (1982) The structure of psychological well-being A socio-historical analysis *Journal of Personality and Social Psychology*, **43**, 653–673
- Bryant, F B , & Veroff, J (1984) Dimensions of subjective mental health in American men and women *Journal of Health and Social Behavior*, **25**, 116–135
- Bryant, F B , & Yarnold, P R (in press) The impact of Type A behavior on subjective life quality Bad for the heart, good for the soul? *Journal of Social Behavior and Personality*
- Cameron, P , Titus, D G , Kostin, J , & Kostin, M (1973) The life satisfaction of non-normal persons *Journal of Counseling and Clinical Psychology*, **41**, 207–221
- Cook, T D , & Campbell, D T (1979) *Quasi-experimentation Design and analysis issues for field settings* Chicago Rand McNally
- Czikszentmihalyi, M (1975) *Beyond freedom and anxiety* San Francisco Jossey-Bass
- deCharms, R (1968) *Personal causation The internal affective determinants of behavior* New York Academic Press
- Folkman, S , & Lazarus, R S (1980) An analysis of coping in a middle-aged community sample *Journal of Health and Social Behavior*, **21**, 219–239
- Freud, S (1920) *Beyond the pleasure principle* New York Norton
- Gmelch, G (1978) Baseball magic *Human Nature*, **1**, 32–39

- Gregory W L (1978) Locus of control for positive and negative outcomes *Journal of Personality and Social Psychology*, **36**, 840–849
- Heady, B Holmstrom, E , & Wearing, A (1984) Well-being and ill-being Different dimensions? *Social Indicators Research*, **14**, 115–139
- Henslin, J M (1967) Craps and magic *American Journal of Sociology* **73**, 316–330
- Hoelter, J W (1983) The analysis of covariance structures Goodness of fit indices *Sociological Methods and Research*, **11**, 325–344
- Janoff-Bulman, R (1979) Characterological versus behavioral self-blame Inquiries into depression and rape *Journal of Personality and Social Psychology*, **37**, 1798–1809
- Joreskog, K G , & Sorbom, D (1978) *LISREL IV Analysis of linear structural relationships by the method of maximum likelihood* Chicago National Educational Resources, Inc
- Langer, E J (1975) The illusion of control *Journal of Personality and Social Psychology*, **32**, 311–328
- Lazarus, R S (1966) *Psychological stress and the coping process* New York Mc Graw-Hill
- Lazarus, R S , Kanner, A D , & Folkman, S (1980) Emotions A cognitive phenomenological analysis In R Plutchik & H Kellerman (Eds), *Theories of emotion* (Vol 1, pp 189–217) New York Academic Press
- Lerner, M J (1980) *The belief in a just world* New York Plenum Press
- Malinowski, B (1948) *Magic, science, and religion* Garden City, NJ Doubleday
- McAdams, D P , & Bryant, F B (1987) Intimacy motivation and subjective mental health in a nationwide sample *Journal of Personality*, **55**, 1–19
- Miller, S M (1979) Controllability and human stress Method, evidence, and theory *Behavior Research and Therapy*, **17**, 287–304
- Nicholls, J G , Licht, B G , & Pearl, R A (1982) Some dangers of using personality questionnaires to study personality *Psychological Bulletin*, **92**, 572–580
- Paulhus, D (1983) Sphere-specific measures of perceived control *Journal of Personality and Social Psychology* **44**, 1253–1265
- Phares, E J (1976) *Locus of control in personality* Morristown, NJ General Learning
- Reich, J W , & Zautra, A (1981) Life events and personal causation Some relationships with satisfaction and distress *Journal of Personality and Social Psychology*, **41**, 1002–1012
- Reich, J W , & Zautra, A J (1988) Direct and stress-moderating effects of positive life experiences In L H Cohen (Ed), *Life events and psychological functioning* (pp 149–180) Beverly Hills Sage
- Rosenbaum, M (1980) A schedule for assessing self-control behaviors Preliminary findings *Behavior Therapy*, **11**, 109–121
- Rothbaum, F , 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
- Rotter, J B (1966) Generalized expectancies for internal versus external control of reinforcement *Psychological Monographs*, **80**, 1–28
- Seligman, M E P (1975) *Helplessness* San Francisco Freeman
- Skinner, B F (1971) *Beyond freedom and dignity* New York Knopf
- Thompson, S C (1981) Will it hurt less if I can control it? A complex answer to a simple question *Psychological Bulletin*, **90**, 89–101

- Tucker, L. R. , & Lewis, C (1973) A reliability coefficient for maximum likelihood factor analysis *Psychometrika*, **38**, 1010
- Uleman, J. S (1987) Consciousness and control: The case of spontaneous trait inferences *Personality and Social Psychology Bulletin*, **13**, 337-354
- Veit, C. T. , & Ware, J. E. , Jr (1983) The structure of psychological distress and well-being in general populations *Journal of Consulting and Clinical Psychology*, **51**, 730-752
- Veroff, J. , Douvan, E. , & Kulka, R (1981) *The inner American*. New York: Basic Books
- Weingarten, H. , & Bryant, F. B (1987) Marital status and the meaning of subjective well-being: A structural analysis *Journal of Marriage and the Family* **49**, 883-892
- White, R. W (1959) Motivation reconsidered: The concept of competence *Psychological Review*, **66**, 297-333
- Wortman, C. B (1975) Some determinants of perceived control *Journal of Personality and Social Psychology*, **31**, 282-294
- Zautra, A. J. & Reich, J. W (1983) Life events and perceptions of life quality: Developments in a two-factor approach *Journal of Community Psychology*, **11**, 121-132

Manuscript received October 17 1988, revised May 25 1989

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.