

DAILY PSYCHOLOGICAL ADJUSTMENT AND THE PLANFULNESS OF DAY-TO-DAY BEHAVIOR

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Over the course of 21 days, participants provided measures of how carefully they had planned their social and achievement-related activities for each day and how well these plans had been realized. They also provided measures of their psychological adjustment. Compared to participants who were not at-risk for depression, participants who were at-risk planned activities less carefully and their plans were realized less fully. The daily psychological adjustment of all participants was higher on days when their plans were realized more fully than on days when their plans were realized less fully; the size of this relationship did not differ as a function of participants' risk for depression.

Considerable psychological research and theory suggest that psychological adjustment is directly related to people's beliefs about their abilities to predict and control their environments. The positive relationship between perceptions of control over one's environment and adjustment has been found across a wide variety of situations and for various aspects of adjustment (Rodin & Salovey, 1989). More specifically, control has figured prominently in theories of depression, and a lack of control over one's life has been theorized to be an important contributing factor to the onset and maintenance of depression. Such relationships are frequently discussed within the context of Abramson, Seligman, and Teasdale's (1978) theory of learned helplessness, or more recently, Abramson, Metalsky, and Alloy's (1989) theory of learned hopelessness. The present study sought to extend this work by examining the relation-

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ship between plans for daily activities and psychological adjustment, with adjustment being operationalized in terms of constructs known to be related to depression.

The primary hypothesis guiding the study was that the fulfillment of plans for daily activities would be positively related to psychological adjustment. The underlying assumptions of the study were that (1) people's plans reflect a desire to predict or control the environment, and (2) realizing or fulfilling plans suggests that one can predict or control the environment; failing to realize or fulfill plans suggests that one cannot. Plans represent people's expectations about future activities and how they will accomplish certain goals or attain certain outcomes. Therefore, plan fulfillment indicates that individuals can predict and control their environments, and such feedback should be associated with better adjustment. Conversely, failing to fulfill plans suggests that people cannot predict or control their environments, and such failure should be associated with poorer adjustment.

These assumptions are consistent with considerable research and theorizing about goals, plans, perceived control, and adjustment that has been conducted from various perspectives. For example, Gollwitzer has described how "implemental mind sets" and "implementation intentions" accompany plans and how these mind sets and intentions help realize goals (Gollwitzer, 1990). In turn, Ryan and colleagues (Ryan, 1992; Ryan, Sheldon, Kasser, & Deci, 1996), working within the context of Deci and Ryan's (1985) research on causality orientation, discuss how goal attainment is positively related to adjustment because attaining goals (which may frequently include fulfilling plans) increases an individual's sense of autonomy. There is also ample evidence that a perceived lack of control over life events is associated with an increase in depressive symptoms (Weary & Gannon, 1996). Finally, a reduced sense of hope (Snyder et al., 1991), a construct that includes how motivated people are to meet their goals and how well they plan to meet them has also been found to be associated with increased depressive symptoms.

The present study is one of the first to examine plans for daily activities over an extended period of time. Each day for 21 days, participants provided descriptions of their plans and of their psychological adjustment. Much of the existing research on planning consists of either controlled laboratory studies (Heckhausen & Gollwitzer, 1987) or concern plans for specific events or activities such as personal problems (Gollwitzer, Heckhausen, & Ratajczak, 1990). Most previous studies have not examined the relationships between day-to-day plan fulfillment and psychological adjustment over the period of time and breadth of activities covered in this study. An important exception to this rule is one of the studies described by Snyder et al. (1996) in which participants provided

daily measures of their state hope. State hope, a measure based on Snyder et al.'s (1991) dispositional measure of hope, has two components, agency and pathways, and the pathways component refers to how well people plan to meet goals.

Relationships between planfulness and adjustment were examined simultaneously at both the between-and within-person levels using multilevel random coefficient modeling. Between-person relationships were examined in terms of differences between depressed and nondepressed people in how carefully they planned their days and how fully these plans were realized. Within-person relationships were examined via the day-to-day covariation between plan fulfillment and adjustment. Daily adjustment was operationalized with an emphasis on depression because of the hypothesized and demonstrated negative relationships between depression and control over the environment.

At the between-person level, individuals who were more poorly adjusted (at-risk for depression) were expected to plan less carefully and to have their daily plans realized less fully than those not at-risk. A recurring theme in research on depression is that depressed people feel that they have less control over their environments than the nondepressed, and over time they stop trying to exert control, a tendency that has been labeled learned helplessness or hopelessness. Such a prediction is also consistent with the negative relationships between hope and depression reported by Snyder et al. (1991).

The results of studies of daily social interaction are consistent with this general position. For example, Nezelek, Imbrie, and Shean (1994) found that students who were at-risk for depression perceived less influence and felt less confident in daily social interaction than those not at-risk. This finding was replicated by Nezelek, Hampton, and Shean (2000) who found, in a community sample, that those who met DSM criteria for depression perceived less influence in their daily social interactions than those who did not meet these criteria.

Assuming plans represent attempts to control the environment, depressed people should plan less carefully and their plans should be realized less fully. In terms of daily activities, this supposition was supported by Nezelek and Hampton (1996). Each day, participants in Nezelek et al. (2000) described how closely their daily lives had met their expectations. Nezelek and Hampton (1996) found that depressed people's expectations for daily activities were confirmed less fully than the expectations of the nondepressed.

A positive relationship between adjustment and the extent to which plans were realized was also expected at the within-person level. The rationale for this hypothesis was the same as it was for between-person relationships, but instead of emphasizing differences between persons,

this hypothesis concerned differences among days within a person. Adjustment was expected to be higher on days when plans were realized more fully and lower on days when plans were realized less fully. Such a prediction is also consistent with the results of Snyder et al. (1996) who found that a daily measure of state hope positively covaried with adjustment as measured by self-esteem and affect.

People make daily plans for a various activities, and the present study focused on plans for social and achievement activities. This distinction was made because considerable research and theory suggest that the distinction between the work and social spheres is an important one in people's daily lives. Although certainly the two spheres can be combined (working with friends), psychologists have distinguished task and socio-emotional concerns since Freud discussed "Lieb und Arbeit." For example, Bales (1950) identified two types of group processes, (1) the expressive or socio-emotional, and (2) the task or instrumental. Spence (1984) made a similar distinction, suggesting that nurturance and agency are basic dimensions underlying interpersonal styles.

A secondary hypothesis of the current study was that day-to-day relationships between plans and adjustment within each of these domains would be stronger than relationships across domains. More specifically, daily adjustment operationalized in terms of the social domain was expected to covary more strongly with social plan fulfillment than with achievement plan fulfillment. Conversely, daily adjustment operationalized in terms of achievement was expected to covary more strongly with achievement plan fulfillment than with social plan fulfillment.

Plans and adjustment in the same domain were expected to be more closely related than those across domains because the feedback provided by plan fulfillment may be domain specific. The realization of plans in one domain may not have implications for individuals' sense of adjustment in another domain. Such a distinction is consistent with Abramson and colleagues' (1978) position that perceived helplessness in one situation does not necessarily lead to perceived helplessness in another. This domain-specific hypothesis was also suggested by the results of Emmons (1991) who found that the nature of people's goals (and by implication their plans) moderated relationships between daily events and adjustment. The daily moods of people with achievement goals (and presumably more achievement plans) covaried with the nature of daily achievement events, whereas the daily moods of people with affiliative goals (and presumably more social plans) covaried with the nature of interpersonal events.

Daily adjustment was measured with five depressogenic constructs. Measures of three of these constructs did not distinguish between the

achievement and social domains because previous research had not made such distinctions. These were measures of depressive symptoms based on Beck's (1972) cognitive triad, and self-esteem and anxiety. Self-esteem was included because it has been consistently found to be related to depression (e.g., Tennen & Herzberger, 1987). Similarly, a daily measure of anxiety was included because anxiety has been found to be correlated with depressive symptoms (Greenberg, Vazquez, & Alloy, 1988).

Measures of two adjustment constructs distinguished the social and achievement domains because the development of these constructs included specific references to these two domains. One construct was a measure of perceptions of control over the environment based on Deci and Ryan's (1985) impersonal causality orientation. Impersonal orientation refers to people's beliefs about their ability to regulate their behaviors in ways that lead to desired outcomes. A measure of this construct was included because impersonal orientation scores have been found to be negatively correlated with reports of depressive symptoms (Deci & Ryan, 1985). The second construct was a measure of causal uncertainty (Weary, Jordan, & Hill, 1985). Causal uncertainty refers to the certainty people have about the reasons why the daily events in their lives occur as they do. A measure of this construct was included because causal uncertainty has been found to be positively correlated with reports of depressive symptoms (Weary & Edwards, 1994).

It is important to note that the present study concerned the covariation between adjustment and plan fulfillment. It was not designed to study causal relationships between these constructs. Although the language used to introduce this topic may imply a causal relationship from plans to adjustment, the opposite causal relationship is also possible. Causal relationships are discussed later in this article.

METHOD

PARTICIPANTS

The 128 participants who began the study were introductory psychology students attending the College of William and Mary. All received credit in partial fulfillment of class requirements. To ensure that the sample contained a sufficient number of participants who were at-risk for depression, people were invited to participate in the study on the basis of two measures of depressive symptoms collected before the study began, and those at-risk for depression were slightly oversampled. Five

participants were excluded from the analyses due to problems recording their data.

Seven weeks before the study began, participants completed the Beck Depression Inventory (BDI; Beck, 1972) and the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) in a mass testing session held during classes. Approximately 25% of those who were invited to participate scored above at-risk cutpoints on both the BDI and the CES-D (scores of 10 and 17, respectively), whereas the remaining 75% were randomly sampled from those who scored below the cutpoints on both measures. At the beginning of the study participants completed a second BDI; three weeks after that, at the end of the study, they completed a second CES-D.

Participants were classified as at-risk for depression (or not) based on their responses on all four depression measures. Those who scored above the cutpoints on the BDI and the CES-D on at least three out of the four depression scores were classified as at-risk (depressed). This criterion was adopted to ensure that only participants who reported high levels of depressive symptoms over an extended period of time were classified as at-risk. This procedure produced subsamples of 33 depressed and 90 nondepressed participants.¹

PROCEDURE

At the beginning of the study participants attended a meeting at which they were given instructions and a computer disk containing the data collection program. They were told that they would be using a computer to complete a series of questionnaires every day for three weeks and that they should run the programs toward the end of the day before going to sleep. The data collection program was written using the Micro-Analytic Experimental Laboratory software package (MEL; Schneider, 1988). Participants were able to run the program and provide data from any PC-based personal computer. For each measure, the program presented

1. Of the 123 participants who provided daily measures, 106 provided scores all four depression scores, and 17 provided three scores. There was sufficient information in the scores of these 17 participants to classify them unambiguously as depressed or not; 12 were classified as nondepressed, and five were classified as depressed. For purposes of this discussion, those who scored above three of the four cutpoints will be referred to as "depressed," and those who did not will be referred to as "nondepressed." These terms are used to simplify the discussion, and the use of the term "depressed" is not meant to imply that participants who scored above the cutpoints had been diagnosed as clinically depressed.

standard instructions that had been modified to refer to a daily frame of reference, then it presented each item and collected the participant's responses.

A member of the research team maintained regular contact with participants via electronic mail. Participants were told to contact the research team if there was a problem such as a disk failure or computer virus. Problems of these types occurred rarely, and when they did, participants were given replacement disks and continued the study.

Measures of Daily Adjustment. Daily self-esteem was measured with a modified version of the Rosenberg (1965) Self-Esteem Scale (RSES). The instructions for the scale and the individual items were reworded to refer to how participants felt about themselves that day. Using nine-point scales ranging from (1) strongly disagree to (9) strongly agree, participants indicated their agreement with items on the scale such as "Today, on the whole, I am satisfied with myself." Daily self-esteem was operationalized as the mean response across the ten items for each day.

The essential elements of Beck's (1972) theory of depression, negative view of self, negative view of life in general, and negative view of the future, were assessed with three items, and these items are referred to as the cognitive triad. Participants used 7-point scales (with higher numbers indicating a more positive outlook) to answer the following three questions: (1) Overall, how positively did you feel about yourself today? (2) Thinking of your life in general, how well did things go today? (3) How optimistic are you about how your life (in general) will be tomorrow? Daily cognitive triad was operationalized as the mean response across the three items for each day.

Anxiety was assessed with three items from the Profile of Mood States (Lorr & McNair, 1971) that had been used previously to assess daily anxiety (Bolger, 1990). Participants used nine-point scales ranging from (1) strongly disagree to (9) strongly agree to respond to the following three statements: I felt on edge today, I felt uneasy today, and I felt nervous today. Daily anxiety was operationalized as the mean response across the three items for each day.

Feelings of control over the outcomes of one's behavior were assessed with four questions (two social and two achievement) based on Deci and Ryan's (1985) measure of impersonal causality orientation, or people's beliefs about their ability to regulate their behaviors in ways that lead to desired outcomes. Social control questions began with "Thinking back on your day today in terms of your relationships with others and the social events that occurred...", whereas achievement control questions began with "...in terms of non-social areas of performance (e.g., school work, sports, fitness, etc.)." Using 7-point scales ranging from (1) not at

all to (7) very much so, participants indicated to what extent they were able to control the outcomes of these events, and “to what extent did they feel they had a choice about what they did and to what extent did things happen the way they wanted them to happen.” Responses to the two questions about non-social events were averaged to form an achievement control score, and responses to the two questions about social events were averaged to form a social control score.

Causal uncertainty was measured using four questions (two social and two achievement) based on items from the Causal Uncertainty Scale (CUS; Weary & Edwards, 1994). Items from the CUS were chosen on the basis of factor loadings from previous studies (Weary & Edwards, 1994) and appropriateness for daily assessment. Using 6-point scales ranging from (1) strongly disagree to (6) strongly agree participants described their causal certainty about four topics: positive and negative social events, and positive and negative non-social events: “Thinking back on my day today in terms of the positive [or negative] interactions I had with others [or non-social events (e.g., school work, sports, etc.) that occurred], I did not understand why things happened the way they did.” Responses to the two questions about non-social events were averaged to form an achievement uncertainty score, and responses to the two questions about social events were averaged to form a social uncertainty score.

Measures of Planfulness. Participants also described the plans they had for the day that had just ended. Two questions (one about carefulness of plans and one about plan fulfillment) referred to social activities, and two referred to non-social (achievement) activities. Using scales ranging from 1 to 5, with endpoints labeled “not very much” and “very much,” participants indicated how carefully they had planned activities: “Thinking of today only, how carefully/precisely had you planned in advance activities that involved other people [or performance or achievement related activities (studying, sports, etc.)].” Following this, they employed used scales ranging from 1 to 5, with endpoints labeled “not at all” and “very much,” to indicate the extent to which these activities occurred as planned: “Thinking of today only, to what extent did these activities occur as you had planned them to occur?”

Reactions to Participation. At the end of the study, participants answered a series of questions about their participation. Their responses suggested that participation in the study did not change their daily routine meaningfully. Most (53%) reported spending 5 minutes or less per day running the program, and 99% reported spending 10 minutes or less per day. Participants reported that it was relatively easy to run the program, a mean of 4.6 using a 1 to 5 scale where 1 = very difficult and 5 = very easy. Finally, using 1 to 5 scales where 1 = not at all and 5 = very

much, participants reported that participating in the study did not make them feel or think differently about themselves (2.1), their relationships with other people (1.8), or their schoolwork or other areas of performance (1.7).

Of the 128 participants who began the study, two participants' data were unusable due to disk failures, two failed to follow instructions, and one lost a disk, leaving 123 who provided usable data on the daily measures, and these data are the focus of the analyses of this paper. These 123 participants completed daily measures for a total of 2,412 days (an average of 19.6 days each); 48% provided daily measures for all 21 days; 24% provided data for 20 days; and 24% provided data for 16 to 19 days.

It should be noted that, explicit time and date responses were not captured by the program. Although having such data would have been preferable, there are reasons to believe that participants complied with instructions. First, participants were reminded to complete records on a regular basis. Second, and more important, the distributions of measures collected in studies of similar samples in which time and date were recorded (Nezlek & Plesko, 2001) are very similar to the distributions of the measures collected in this sample. Nevertheless, the present results have to be evaluated in light of the absence of these data.

RESULTS

The present data comprised a multilevel data structure in that observations at one level of analysis (days) were nested within another level of analysis (people). Accordingly, the data were analyzed with a series of multilevel random coefficient models (MRCM) using the program HLM (Bryk, Raudenbush, & Congdon, 1998; Version 4.03a). MRCM was chosen over ordinary-least-squares (OLS) methods (e.g., using within-person correlations to measure within-person relationships) because MRCM provides more accurate parameter estimates than OLS methods (Bryk & Raudenbush, 1992). This analytic strategy is described in Nezlek (2001).

Models and analyses are described using the nomenclature standard to multilevel modeling; within this terminology, the primary analyses were two-level models. Measures for days were nested within people, and for each person, coefficients were estimated representing day level (or within-person) phenomena. Within the more familiar terminology of OLS analyses, regression equations were calculated for each person, and the coefficients from these analyses became the dependent measures in analyses at the next level. One set of analyses concerned individual differences in daily means for planning variables: were there differences between the

Table 1. Descriptive Statistics for Daily Measures

Measure	Mean	Reliability	Between	Within
Social plans care	2.8	.92	.57	.97
Social plans fulfilled	3.4	.90	.40	.86
Achievement plans care	3.2	.89	.41	.93
Achievement plans fulfilled	3.3	.87	.34	.94
Self-esteem	7.2	.97	1.31	.74
Cognitive triad	5.1	.94	.74	.89
Anxiety	3.7	.95	2.43	2.67
Social uncertainty	2.4	.96	.63	.51
Achievement uncertainty	2.5	.96	.70	.58
Social control	4.7	.93	.77	1.06
Achievement control	4.8	.93	.68	1.00

Note. The column labeled "Between" contains the between subject (person level) variance for each measure, and the column labeled "Within" contains the within subject (day level) variance.

depressed and nondepressed in the extent to which daily plans were fulfilled? A second set of analyses concerned the day level covariation between planning measures and adjustment: was adjustment higher on days when plans were realized more fully? Although no hypotheses were formulated about individual differences in the covariation between plans and adjustment, a third set of analyses examined such differences on an exploratory basis: was the day level covariation between plans and adjustment stronger for the depressed than for the nondepressed?

To provide a more informative context for understanding the present results, descriptive statistics for the daily measures are presented in Table 1. These statistics were provided by what is called an "unconditional" model of each measure. Unconditional refers to the fact that no terms other than intercepts are included at any level of the model. Reliabilities are provided pro forma by HLM. As can be seen from these data, the daily measures were reliable, and there was sufficient variability at the day (or within-person) level to allow for the possibility of modeling within-person relationships.

Depression and Planfulness. The first hypothesis of the study was that depressed people, compared to the nondepressed, would plan less carefully and that their plans would be realized less fully. To test this hypothesis, carefulness and realization of social and achievement plans were analyzed using the following models:

$$\text{Level 1: PLAN}_{ij} = \beta_{0j} + r_{ij}$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{DEPRESSED}) + u_{0j}$$

In these models, PLAN represented a planning variable (collected across i days for each of j individuals), β_{0j} was a random coefficient representing the daily mean for that variable for each person, and r_{ij} represented error. Individual differences in daily means were analyzed at Level 2 (the person). At Level 2, differences between depressed and nondepressed participants in daily means of the planning measures were examined using a dummy-coded variable, DEPRESSED. If the coefficient for DEPRESSED (γ_{01}) was significantly different from 0, the daily means for depressed and nondepressed participants were significantly different.

In confirmation of the first hypothesis of the study, depressed participants, compared to the nondepressed, felt that they planned both social and achievement activities less carefully ($ts = 2.7, 3.4, ps < .001$) and that both their social and achievement plans were not realized as fully ($ts = 5.4, 4.7, ps < .001$). The means from these analyses are presented in Table 2.

Relationships Between Daily Adjustment and Daily Plans. The second hypothesis of the study was that people's daily adjustment would be higher on days when their plans were realized more fully than on days when their plans were realized less fully. To test this hypothesis, a series of analyses were conducted in which daily adjustment was modeled as a function of daily fulfillment of plans. Individual differences in means of the planning measures were controlled by group mean centering the planning measures (within the present context this called also be described as within-person centering). This meant that differences between depressed and nondepressed people in how fully their plans were realized did not contribute to the estimation of coefficients. Therefore, an individual's coefficients (slopes in multilevel terminology as opposed to intercepts) represented relationships between deviations from his or her mean adjustment and deviations from his or her mean plan fulfillment.

In these analyses, measures of daily adjustment were modeled as a function of the extent to which both daily social and achievement plans were realized. The models were:

$$\text{Within-person level: } ADJ_{ij} = \beta_{0j} + \beta_{1j}(\text{SPLAN}) + \beta_{2j}(\text{APLAN}) + r_{ij}$$

$$\text{Between-person level: } \beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + u_{1j}$$

$$\beta_{2j} = \gamma_{20} + u_{2j}$$

In these models, ADJ represented a measure of adjustment, β_{1j} was a coefficient (slope) representing the within-person (day level) relationship between that measure and the extent to which daily social plans had been realized (SPLAN), and β_{2j} was a slope representing the within per-

Table 2. Carefulness and Fulfillment of Plans

	Depressed	Nondepressed
Social plans		
Carefulness	2.5	2.9
Fulfillment	3.0	3.6
Achievement plans		
Carefulness	2.9	3.3
Fulfillment	2.9	3.5

Note. Group means were calculated based on coefficients from the analyses.

son relationship between that measure and the extent to which daily achievement plans had been realized (APLAN). The β_{1j} and β_{2j} slopes were estimated for each participant, and the variability of these slopes was analyzed at the participant level (level 2). A statistically significant relationship between a measure of adjustment and a planning measure was indicated by the fact that the γ_{10} or γ_{20} coefficient (the means of the level 1 β_{1j} s and β_{2j} s) was significantly different from 0. It is important to note that because the two planning variables were modeled simultaneously, their covariation was included in the estimates of the individual slopes.

In confirmation of the primary hypothesis of the study, the analysis of day-to-day variability in self-esteem indicated that self-esteem was higher on days when plans were more fulfilled than on days when plans were less fulfilled. Across all participants, the mean slope for social plans was .18, and the mean slope for achievement plans was .11, both $ps < .001$. These slopes indicated that on average, individuals' self-esteem on a particular day was .18 above their mean self-esteem for every 1.0 that social plan fulfillment for that particular day was above their mean fulfillment of social plans. Self-esteem was .11 higher for every 1.0 that the day's achievement plan fulfillment was above their mean fulfillment of achievement plans. A test of the difference of the slopes approached, but did not meet, conventional levels of significance, $\chi^2(1) = 2.8, p < .10$.

In confirmation of the primary hypothesis of the study, the analysis of day-to-day variability in the cognitive triad measure indicated that people's scores on this measure were higher (indicating better adjustment) on days when plans were more fulfilled than on days when plans were less fulfilled. Across all participants the mean slope for social plans was .28, and the mean slope for achievement plans was .12, both $ps < .001$. A comparison of the two slopes indicated that they were significantly different $\chi^2(1) = 13.7, p < .01$.

Table 3. Relationships Between Daily Adjustment and the Extent to Which Daily Plans Were Realized

	Self-Esteem	Cognitive Triad	Anxiety
Intercept	7.2	5.1	3.7
Social plans			
Mean coefficient	.18	.28	-.25
<i>t</i> -ratio	5.8	8.6	5.1
<i>p</i> -level	.01	.01	.01
Achievement plans			
Mean coefficient	.11	.12	-.03
<i>t</i> -ratio	4.8	5.0	.8
<i>p</i> -level	.01	.01	ns

The analysis of day-to-day variability in anxiety also confirmed the primary hypothesis of the study. People were less anxious on days when social plans were more fulfilled than on days when their social plans were less fulfilled. Across all participants, the mean slope for social plans, $-.25$, was significantly different from 0 ($p < .001$); however, the mean slope for achievement plans, $-.03$, was not significantly different from 0 ($p = .44$). As might be expected given these results, a comparison of the two slopes indicated that they were significantly different $\chi^2(1) = 9.1, p < .01$. A summary of the analyses of self-esteem, the cognitive triad measure, and anxiety is presented in Table 3.

Another hypothesis of the study was that within-domain relationships between adjustment and plan fulfillment would be stronger than cross-domain relationships. This hypothesis was tested in a series of analyses that examined the covariation between social and achievement plan fulfillment and the four daily measures of adjustment that distinguished the social and achievement domains (control—social and achievement; uncertainty—social and achievement). These results are summarized in Table 4.

As expected, daily perceived control over social outcomes positively covaried with the extent to which social plans were fulfilled, whereas it did not covary with the extent to which achievement plans were fulfilled. Moreover, a comparison of the two mean slopes indicated that they were significantly different ($\chi^2(1) = 36.1, p < .01$). On days when social plans were more fulfilled, people felt as if they had more control over their social lives.

Also as expected, daily perceived control over achievement outcomes covaried with the extent to which achievement plans were fulfilled, whereas it did not covary with the extent to which social plans were ful-

Table 4. Relationships Between Daily Perceived Control and Causal Uncertainty and the Extent to which Daily Plans Were Realized

	Control		Uncertainty	
	Social	Achieve	Social	Achieve
Intercept	4.7	4.8	2.4	2.5
Social plans				
Mean coefficient	.33	.07	-.11	-.11
<i>t</i> -ratio	9.0	2.6	5.1	4.9
<i>p</i> -level	.01	.01	.01	.01
Achievement plans				
Mean coefficient	.03	.30	-.05	-.06
<i>t</i> -ratio	1.2	11.5	2.4	3.2
<i>p</i> -level	ns	.01	.05	.01

filled. Moreover, a comparison of the two mean slopes indicated that they were significantly different ($\chi^2(1) = 33.6, p < .01$). On days when achievement plans were more fulfilled, people felt as if they had more control over their achievement-related activities.

The analyses of causal uncertainty indicated that daily uncertainty about social activities negatively covaried with the fulfillment of both social and achievement plans, although these slopes were significantly different from each other ($\chi^2(1) = 4.1, p < .05$). On days when social and achievement plans were less fulfilled, people were more uncertain about why their social lives unfolded as they did, although this relationship was stronger for social than for achievement plans.

Daily uncertainty about achievement activities negatively covaried with the fulfillment of both social and achievement plans, although these slopes were not significantly different from each other ($\chi^2(1) = 1.9, p = .16$). On days when social and achievement plans were less fulfilled, people were more uncertain about why their achievement outcomes occurred as they did.

Depression and the Relationship Between Daily Adjustment and Daily Plans. No hypothesis was formulated concerning differences between depressed and nondepressed participants in the day-to-day relationships between adjustment and plan fulfillment; nevertheless, such differences were examined. The level 1 slopes from the previous analyses (β_{1j} and β_{2j}), which represented the within-person relationships between plans and adjustment, were analyzed at level 2 as a function of whether or not participants were at-risk for depression. These models were similar to those used in the previous analyses except that they included DEPRESSED as a dummy-coded variable representing the at-risk status of

participants. If γ_{11} or γ_{21} was significantly different from 0, then within-person relationships between plan fulfillment and adjustment varied as a function of risk for depression.

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{DEPRESSED}) + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}(\text{DEPRESSED}) + u_{1j}$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}(\text{DEPRESSED}) + u_{2j}$$

Although there were differences between depressed and nondepressed participants in how fully their plans were realized and their level of daily adjustment 2, the strength of the day-to-day relationships between plan fulfillment and adjustment did not differ between the two groups. None of the γ_{11} s or γ_{21} s was significantly different from 0.

Mediated and Lagged relationships. Although no variables were manipulated, the data structure provided the opportunity to examine possible casual relationships in two ways. First, static covariances representing day-level relationships among constructs could be examined for mediated relationships. Second, lagged relationships between plans and adjustment could be examined. It is important to note that analyses of the mediated relationships were exploratory in nature. There was little theoretical justification for assuming any particular casual precedence among the daily measures of adjustment, and so the results of such analyses have to be viewed with some caution.

To analyze mediated relationships the following day level model was used:

$$\text{ADJ1}_{ij} = \beta_{0j} + \beta_{1j}(\text{ADJ2}) + \beta_{2j}(\text{SPLAN}) + \beta_{3j}(\text{APLAN}) + r_{ij}$$

This model evaluated the extent to which ADJ2 mediated the relationships between ADJ1 and the planning measures. If the inclusion of ADJ2 in this model renders a slope between ADJ1 and a planning measure (the β_{1j} and β_{2j} coefficients) nonsignificant (when it was significant in an anal-

2. The means of all of the daily adjustment measures (β_0 in these analyses) were significantly lower for depressed participants than for nondepressed participants, regardless of whether planning measures were included in Level 1 or not. All the γ_{01} s were significantly different from 0 at the .001 level. Although such differences are interesting and important, they were not a focus of this article. The relationships between risk for depression and day-to-day adjustment are discussed in Gable and Nezlek (1998).

ysis without ADJ2), then ADJ2 mediates the relationship between ADJ1 and that planning measure.

These analyses found that the daily measure of Beck's triad mediated the relationships between self-esteem and both social and achievement plans. When the triad measure was included as ADJ2 in the mediational model predicting daily self-esteem, the slopes for both social and achievement plans were not different from 0 ($ps > .15$). Recall that both slopes were significant in the original analyses. In contrast, when self-esteem was included in a mediational model predicting the triad measure, the slopes for both types of plans remained significant (as they were in the original analysis). These analyses also found that self-esteem and the triad measure mediated relationships between causal uncertainty and fulfillment of achievement plans. When either self-esteem or the triad measure was included as ADJ2, the slope for achievement events became nonsignificant ($ps > .10$). In contrast, causal uncertainty did not mediate relationships between plans and either the triad or self-esteem measures.

To examine causal relationships, a series of lagged analyses were conducted. These analyses focused on one-day lags. Did plan fulfillment from a previous day predict adjustment on a particular day after controlling for relationships between adjustment for the two days? Correspondingly, did adjustment from a previous day predict plan fulfillment on a particular day after controlling for relationships between plan fulfillment for the two days? Of the total of 2,412 days recorded in the study, 2,221 had data recorded for the days immediately preceding them and were included in these analyses. Lagged relationships were examined with two equations:

$$\begin{aligned} \text{ADJ}(\text{DAY } n)_{ij} &= \beta_{0j} + \beta_{1j}(\text{ADJ DAY } n-1) + \beta_{2j}(\text{PLAN DAY } n-1) + r_{ij} \\ \text{PLAN}(\text{DAY } n)_{ij} &= (\alpha_j + \beta_{1j}(\text{ADJ DAY } n-1) + \beta_{2j}(\text{PLAN DAY } n-1) + r_{ij} \end{aligned}$$

The critical slopes are the β_{2j} coefficient in the first equation, representing the lag from plans to adjustment, and the β_{1j} coefficient in the second equation, representing the lag from adjustment to plans.

These analyses suggested that adjustment influenced plan fulfillment more than fulfillment influenced adjustment. None of the plan-adjustment lagged coefficients was significant or approached conventional levels of significance. In contrast, there were two significant lags from adjustment to fulfillment. Adjustment on the previous day, as measured by Beck's triad, was positively related to the fulfillment of social plans on the present day, (slope = .05, $t = 2.4$, $p < .05$). Greater depressogenic ad-

justment lead to more social plan fulfillment. Also, anxiety on the previous day was positively related to fulfillment of achievement plans on the present day (slope = .02, $t = 1.9$, $p < .06$). Increased anxiety lead to more achievement plan fulfillment.

In studies in which data are collected each day over an extended period of time, it is important to control for artifacts such as autocorrelation and trends due to differences in measures between weekends and weekdays. Analyses that accounted for autocorrelations and day-of-week effects did not produce coefficients that were meaningfully different than those presented in this article.

DISCUSSION

The results confirmed the primary hypotheses of the study. At both the between- and within-person levels, psychological adjustment was positively related to planfulness. At the between-person level, people at-risk for depression planned their days less carefully and their plans were realized less fully compared to those not at-risk. At the within-person level, adjustment was higher on days when plans were fulfilled more completely.

The present results complement previous research on the etiology and maintenance of depression. For example, the learned helplessness and hopelessness models of Abramson et al. (1978, 1989), posit a cycle in which people do not control some aspect of the environment and then begin to generalize this lack of control to other domains. In turn, they begin to make global, internal, and stable attributions about their inability to control their lives, which diminishes the likelihood that they will try to exert control. In terms of daily activities, depressed people may plan daily events less carefully because they believe that their plans do not matter much because they do not think their plans can be realized. Such a possibility is also consistent with research on hope (Snyder et al., 1991), which has found that depression is associated with reduced motivation to pursue goals and to plan to achieve goals. The present results extend the work of Emmons (1986) who found that, regardless of past success, chronically unhappy people believed they would be less successful than those who were not chronically unhappy.

In turn, less careful planning may make plan fulfillment less likely. Such a link is consistent with the relationships between carefulness and fulfillment found in the correct study. The estimated correlation between carefulness and fulfillment was .50 for social activities and .41 for achievement activities. For depressed people, their repeated failure to fulfill their plans (compared to the nondepressed) may lead to diminished sense that plans are worthwhile.

One of the more comprehensive models of the relationships among plans, goals, and behavior is the model of action phases (Heckhausen & Gollwitzer, 1987; Gollwitzer, 1990). Differences between depressed and nondepressed individuals in the carefulness and fulfillment of plans may be understood in terms of depression effects at any of the model's four stages. At the predecisional phase, depressed people may believe that they are less likely to succeed than the nondepressed. At the preactional phase, they may feel less confident about their understanding of how and why things happen. At the actional phase, they may persist less. Finally, at the postactional phase, they may evaluate their accomplishments less positively than the nondepressed.

The model of action phases can be used to integrate present results with existing research on depression and perceptions of causality for daily events. In the model, the feasibility of a wish is part of the predecisional phase, and "A wish's feasibility is determined by reflecting on the chances that it can be realized..." (Gollwitzer, 1996, p. 289). The perceived ability to control outcomes can be considered a measure of such chances, and considerable research suggests that depressed people perceive less control over their environments than the nondepressed (Weary & Gannon, 1996). Assuming this, depression effects in the care and fulfillment of plans may reflect depression effects in the predecisional phase.

During the preactional phase of the model, people form specific plans delineating when, where, how, and how long they will act, and forming such plans requires understanding why things happen. Research by Weary and colleagues on causal uncertainty suggests that depressed people are more uncertain about why daily events occur than are the nondepressed (Weary & Edwards, 1994; Weary & Gannon, 1996); by implication, the depressed may plan less carefully. Although existing research on depression and causality can be understood within the model of action phases, the model's ability to explain differences in the planfulness of depressed and nondepressed people needs to be examined explicitly.

In addition to examining the relationships between planfulness and adjustment at the between-person level, the present study also examined relationships between daily adjustment and the fulfillment of social and achievement plans. With one exception, measures of daily adjustment covaried more strongly with social plan fulfillment than with achievement plan fulfillment. Social plans covaried more strongly than achievement plans with the three measures that did not distinguish the social and achievement domains: self-esteem, depressive thinking, and anxiety. Social plans also covaried more strongly than achievement

plans with people's uncertainty about the causes of social and achievement outcomes.

The stronger covariation between daily adjustment and the fulfillment of social plans suggests that psychological adjustment is more closely related to social activities than to achievement activities, a possibility consistent with Baumeister and Leary's (1995) conclusion that belongingness is a basic human need. If social plans are not met, if others do not appear when they are supposed to or if social events do not turn out as planned, people may begin to feel less secure about their social relationships. Consistent with Baumeister and Leary's conclusion, the current findings suggest that disconfirmation of plans in the social domain has broader implications for adjustment than disconfirmation of plans in achievement domains.

Alternatively, this stronger covariation may have been due to the nature of the sample. For young adults, the social aspects of their lives may be relatively more important than achievement domains, whereas for more mature people, differences between importance of the two domains may be smaller, or even reversed. Furthermore, it is possible that the relative strength of the covariation between adjustment and the fulfillment of different types of plans may have varied as a function of people's strivings (Emmons, 1991). For example, adjustment and achievement plans may have covaried more strongly for people with achievement-focused strivings than for people with interpersonally-focused strivings. Examining such possibilities requires further research.

A secondary hypothesis of the study was that relationships between daily adjustment and the fulfillment of plans would be domain specific, and analyses of daily adjustment as measured by Deci and Ryan's (1985) impersonal orientation confirmed this hypothesis. Fulfilling daily social plans positively covaried with perceived control over social activities, whereas fulfilling daily achievement plans positively covaried with perceived control over achievement activities. Although Deci and Ryan's work has a different meta-theoretical basis than Bandura's research on self-efficacy, the specificity of these relationships may be understood in terms of Bandura's research on self-efficacy (Bandura, 1986; pp. 390-453).

Of the adjustment measures collected in the present study, perceived control is probably the one that measures self-efficacy most closely, and Bandura emphasizes that self-efficacy judgments apply to specific performance areas (Bandura, 1986; p. 391). One way Bandura distinguishes self-efficacy from other self-constructs such as self-concept and self-esteem is in terms of their specificity; self-efficacy judgments are more specific than these other constructs. Within this context, social plan fulfillment would provide positive feedback about self-efficacy regarding

social performance, and achievement plan fulfillment would provide positive feedback about self-efficacy regarding achievement performance. The lack of domain specific relationships in the analyses of causal uncertainty may reflect the fact that causal uncertainty measured self-concept more directly than self-efficacy. At this point, however, such explanations are speculative and require empirical confirmation.

Some might argue that the daily measure of perceived control ("to what extent did you feel that you had a choice about what you did and to what extent did things happen the way you wanted them to happen?") was a proxy measure of plan fulfillment. Although, participants were thinking of how well their plans were fulfilled when they answered these questions, the plan fulfillment and control measures were not synonymous. At the day-to-day level, the shared variance between plan fulfillment and perceived control was approximately 17% for both social and achievement domains, which suggests that perceptions of control consisted of more than plan fulfillment. For example, perceptions of control may have reflected participants' ability to control unplanned or unanticipated events.

In the current study, the day-to-day covariability between plan fulfillment and adjustment was similar for depressed and nondepressed participants. Assuming these null results were not due to technical limitations (statistical power, measurement problems, etc.), they merit consideration. It is possible that the difference between the two groups in depressive symptoms was too small, even though participants were classified as at-risk based on four measures of depression collected over 10 weeks, a more stringent operationalization than that used in most studies of nonclinical samples. When considering such a possibility, it is important to keep in mind that depression effects were found in the analyses of daily means of planfulness and adjustment. Compared to the nondepressed, the plans of the depressed were fulfilled less completely, and the depressed were less well adjusted. This means that the fulfillment and adjustment of the depressed were varying around lower values than they were for the nondepressed. Although various theories posit depression differences in mean fulfillment and adjustment, none explicitly suggests that relationships between fulfillment and adjustment should be more pronounced for the depressed than for the nondepressed.

One shortcoming of the present study was the fact that detailed plans for each day were not measured, leaving open the possibility that reports of plan fulfillment were not true. Although the veracity of reports of plan fulfillment cannot be explicitly demonstrated for the present sample, other research on daily plans suggests that such reports were accurate. In a study of daily plans and their fulfillment in which detailed

plans and activities were measured for each day, Nezlek and Sullivan (1999) found no differences between prospective and retrospective reports of plans nor any differences in plan fulfillment as a function of whether plans were described retrospectively or plans were made prospectively. Moreover, there were no differences in plan fulfillment as a function of participant sex, self-monitoring, private and public self-consciousness, and social anxiety.

Although the current study was not explicitly designed to measure causal relationships, the mediational and lagged analyses provide some insight into causal relationships. Assuming a causal sequence from plans to adjustment, the analyses of the static covariances (i.e., same-day relationships) suggested that individual differences in the measure of Beck's triad mediated self-esteem and causal uncertainty. Such a sequence makes sense in that this measure assessed people's optimism about the future, a construct that would seem to involve expectations about plan fulfillment fairly directly.

The lagged analyses suggested a slightly different causal sequence in that day-to-day changes in some types of adjustment lead to changes in plan fulfillment. Increases in measures of Beck's triad lead to increased fulfillment of social plans, suggesting that feeling better about one's self and greater optimism lead to a more predictable social life. Speculatively speaking, other people may be more likely to honor commitments they have made to someone who is more pleasant to be with. If I meet you on Tuesday and you are pessimistic and depressed, I may be less likely to meet you again on Wednesday than if you had been optimistic and cheerful. In contrast, increases in anxiety (an indication of poorer adjustment) lead to increased fulfillment of achievement plans. Achievement plans explicitly included plans for study and academically relevant activities, and this lagged relationship may reflect the fact that as participants worried more about their performance, they decided to fulfill the plans they had made to study and write papers. A series of additional analyses (not previously discussed) examining lagged and mediated relationships between plan fulfillment, carefulness of planning, and adjustment, found no lagged or mediational relationships between carefulness and other constructs. These results suggest that relationships between adjustment and plan fulfillment exist above and beyond relationships between these two constructs and how carefully plans are made.

Determining the causal relationships between psychological adjustment and planfulness clearly requires more research. Laboratory research may be needed to explicate how adjustment influences the planning process and how the fulfillment of plans influences adjustment. Examining causal relationships in naturalistic research such as the cur-

rent study may require more sophisticated modeling procedures such as hierarchical structural equations. Nevertheless, although the present results do not provide a basis for firm conclusions about causal relationships between plans and adjustment, they do provide guidance for future research.

Finally, it is not clear what implications the present results have for understanding clinical depression. Although the present sample was classified on the basis of four measures taken over a three-month period, as discussed by Flett, Vrendenburg, and Krames (1997), one cannot assume that results found in studies of poorly adjusted (dysphoric) collegians will generalize to other, potentially more distressed populations. It is quite possible that the present results are generalizable; however, this needs to be demonstrated rather than assumed.

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