

What Makes for a Good Day? Competence and Autonomy in the Day and in the Person

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This diary study examined the proposal that satisfaction of two psychological needs, competence and autonomy, leads to daily well-being. Between-subjects analyses indicated that participants higher in trait competence and trait autonomy tended to have "better" days on average. Independently, within-subject analyses showed that good days were those in which participants felt more competent and autonomous in their daily activities, relative to their own baselines. Other predictors of daily well-being included gender, whether the day fell on a weekend, and the amount of negative affect and physical symptomatology felt the day before. Although past diary studies have tended to focus on threats to daily well-being, the authors suggest that psychological need concepts offer promise for understanding its positive sources.

What are the roots of day-to-day happiness and well-being? Many psychologists have addressed this perennial question by studying stable traits such as optimism (Scheier & Carver, 1993; Taylor, 1989), self-esteem (Rosenberg, 1965), or personality integration (Sceman, 1983; Sheldon & Kasser, 1995) that predict a person's general level of psychological health. From a trait perspective, daily fluctuations in mood and well-being tend to be considered error variance, because they are merely deviations from what is to be predicted—that is, the person's average level of well-being.

Yet life is not lived merely "as a trait," and each of us has salient experiences of good and bad days, relative to our own baselines. This fact can have profound implications when, for example, we face an important task or opportunity on a particular day. Accordingly, another research tradition has developed that considers daily fluctuations in well-being not as secondary issues but, rather, as the focus of research. For example, diary studies have found that daily mood and well-being are negatively affected by contextual factors such as unpleas-

ant events (Rehm, 1978), stressors (Affleck, Tennen, Urrows, & Higgins, 1994; Bolger, DeLongis, Kessler, & Schilling, 1989; Caspi, Bolger, & Eckenrode, 1987; DeLongis, Folkman, & Lazarus, 1988; Marco & Suls, 1993; Stone & Neale, 1984), daily hassles (Rowlison & Felner, 1988), and major life disruptions (Felner, Rowlison, & Terre, 1986). Note that studies in this tradition have concentrated primarily on what makes for "bad" days (Langston, 1994).

In this article, we extend existing research by examining two primary contentions. First, we argue that to best understand and predict positive outcomes on a given day, it is necessary to consider both who the person is and the quality of the particular day, relative to the person's other days (Bolger & Schilling, 1991; Feist, Bodner, Jacobs, Miles, & Tan, 1995). In developing this thesis, we draw on both the research traditions described above. Second, we argue that in studying the quality of a particular day, it is valuable to consider factors that lift our spirits and keep us going (Kanner, Coyne, Schaefer, & Lazarus, 1981), as well as factors (such as hassles or unpleasant events) that may drag us down. Put differently, we argue that it is worth asking, "What makes for a good day?"

We propose that "good days" are those in which fundamental psychological needs are met. Specifically, we postulate that when a day's primary activities are congruent with presumed organismic needs (Sheldon & Kasser, 1995, 1996; Sheldon, Ryan, Rawsthorne, & Ilardi, 1996), one experiences greater well-being on that day. The idea that well-being results when needs are satisfied has a long

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PSPE, Vol. 22 No. 12, December 1996 1270-1279
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Received August 8, 1995

Revision accepted February 10, 1996

history in subjective well-being research (Diener, 1984) but has received little attention at the day-to-day level. We focused in this study on two specific needs, competence and autonomy, that have often been viewed as fundamental (Deci & Ryan, 1985). Using a diary methodology, we tested the hypothesis that these two qualities of experience would independently contribute to the prediction of well-being in both person-level and day-level analyses. We discuss these hypotheses below.

COMPETENCE AND AUTONOMY NEEDS

Research from a variety of perspectives has demonstrated that psychological health depends on ongoing feelings of effectance or competence. White (1963) argued that the need to feel competence is a basic organismic propensity that underlies self-esteem and self-confidence. More recently, Bandura (1977) showed that self-efficacy, the feeling that one can bring about desired outcomes, is an important determinant of psychological health. Similarly, Carver and Scheier (1990) asserted that health benefits accrue when people feel they are progressing quickly enough toward their goals or when they have a sense of optimism regarding their goals (Scheier, Weintraub, & Carver, 1986). In contrast, feeling that behavior and desired outcomes are non-contingent may lead to a feeling of pervasive helplessness or hopelessness (Abramson, Metalsky, & Alloy, 1989; Abramson, Seligman, & Teasdale, 1978), with many negative consequences.

Less widely acknowledged is the view that people must also feel autonomous and self-determined in their lives for optimal psychological health to ensue (Deci & Ryan, 1985, 1991; Ryan, 1995). This idea is expressed in deCharms's (1968) distinction between psychological "origins" and "pawns." Pawns may feel quite effective at what they are doing without feeling fully engaged in or choosing of their actions. Lacking a sense of being the authors of their own behavior, they may experience less satisfaction and more frustration with their lives (Deci & Ryan, 1991; Ryan, 1995; Sheldon & Kasser, 1995). Supporting this idea, people who act for more intrinsic or identified ("autonomous") reasons in religious (Ryan, Rigby, & King, 1993), academic (Ryan & Connell, 1989; Vallerand & Bissonnette, 1992), and close relationship (Blais, Sabourin, Boucher, & Vallerand, 1990) domains have been shown to be better adjusted than people who act for more external or introjected ("controlled") reasons in those domains. At the daily level, Csikszentmihalyi and Figurski (1982) showed that the lack of felt voluntariness in everyday activities predicts negative emotions.

We presumed that competence and autonomy needs, when satisfied, offer two different kinds of psychological rewards. Whereas competence involves feeling that one

can act effectively and bring about goals, autonomy involves feeling that one's activities and goals are self-chosen and are concordant with intrinsic interests (Deci & Ryan, 1985) and values (Kasser & Ryan, 1996). To illustrate the distinction, consider that a person may feel quite competent at an activity that he or she does only out of a sense of compulsion, such as an onerous work assignment, and that a person may feel a strong sense of volition in performing an activity at which he or she feels little competence, such as learning to play racquetball. Although some have claimed that autonomy has no legitimate place within a theory of healthy agency (Bandura, 1989), we hypothesized that autonomy and competence are both important and that greater well-being occurs when both qualities are present within a day.

As noted above, we examined these issues at two levels of analysis. That is, we asked both "What kind of person has the best days, on average?" and also "What makes for a good day, regardless of who has it?" Figure 1 illustrates the distinction by tracking the daily well-being of two hypothetical persons. As can be seen, persons A and B differ in their mean levels of well-being. In a typical personological study, as alluded to earlier, these mean differences are predicted from trait measures of personality. The assumption in this approach is that "good days" are determined by stable, enduring qualities of the person.

However, Figure 1 also illustrates that A and B fluctuate around their own means. On Day 5, for example, person A felt better than usual, whereas person B felt worse than usual. Accordingly, another approach to understanding daily well-being, alluded to in the second paragraph of this article is to try to predict such within-subject fluctuations using day-specific measures. The assumption here is that good days are determined by transient qualities of the day, relative to the person's other days. In other words, regardless of who one is, some days are more satisfying than others.

When appropriate procedures are used, between- and within-subject effects are statistically independent. They can also be conceptually and functionally independent, as illustrated by the fact that different patterns are often found at the two levels of analysis (Epstein, 1983; Marco & Suls, 1993). That is, relations among variables aggregated across subjects may not be the same as relations among the same variables tracked over time within subjects (Emmons, 1991), presumably because somewhat different processes may operate in the two realms (Epstein, 1983; Lazarus, 1994). Because of this potential for divergent results, finding that experiences of autonomy and competence matter in both person- and day-level analyses would strengthen our assumption that these represent two distinct and important psychological needs.

In addition to competence and autonomy, we also assessed the impact of four other factors on the quality

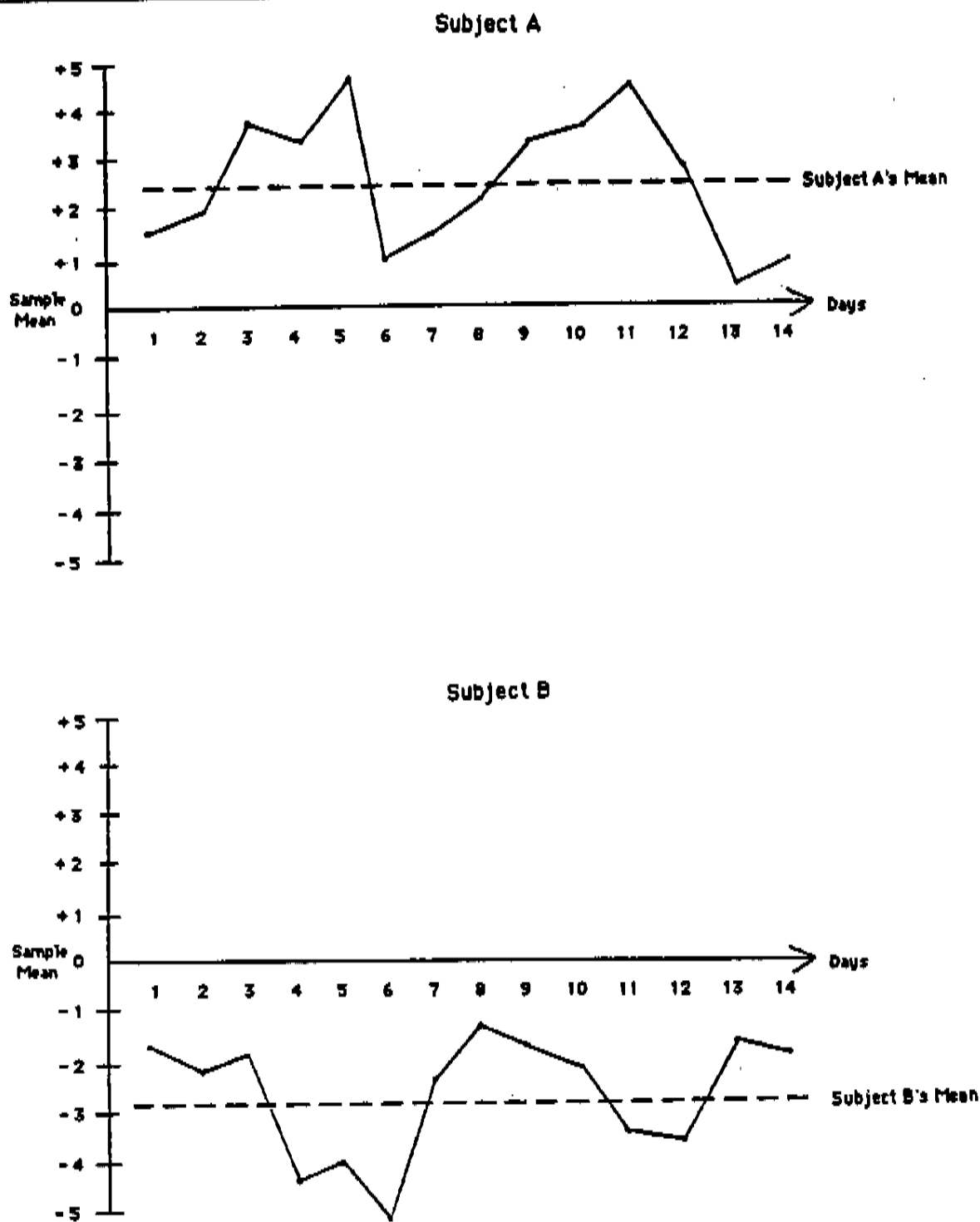


Figure 1 Illustrating between-subject and between-day effects: Two hypothetical subjects' overall means and daily fluctuations.

of a day, both because they were interesting in and of themselves and to rule them out as possible alternative explanations. These factors were whether the day fell on a weekend (because people may feel better on weekend days, when they typically have more free time); the degree

of well-being experienced on the prior day (because good or bad feelings may carry over to influence the next day); the relative importance of the day's primary activities; and the amount of time spent in those primary activities. The latter two factors are an attempt to exam-

ine the "intensity" of motivated behavior on a given day, as it relates to well-being outcomes.

METHOD

Participants

Participants were 60 students in a psychology class at the University of Rochester (15 men and 44 women; gender information was missing for 1 participant) who participated for extra class credit.

Procedure

As part of a semester-long data collection, participants came to group testing sessions and completed questionnaire packets. The trait-level measures were administered during these group sessions. The sessions were run by trained research assistants, and four questionnaire packets were available; at each session, participants completed the packet next in sequence for them.

Students who had completed at least two packets were given the option of participating in the 2-week diary study, which occurred during October. Interested students were given the first week's diary forms in class and were instructed to complete each day's form near the end of the day. One week later, they turned in this set of forms and received a set for the second week. Participants who did not complete both sets were dropped from the study.

Person-Level Measures

Autonomy. In their first group testing session, participants completed the Self-Determination Scale (Sheldon & Deci, 1996), which we chose to represent the construct of trait autonomy. This 10-item scale has two factors, Self-Contact and Choicefulness. Items ask participants to estimate which of two statements feels more true of them. For example, "My emotions sometimes seem alien to me" versus "My emotions always seem to belong to me" is a self-contact item, and "What I do is often not what I'd choose to do" versus "I am free to do whatever I decide to do" is a choicefulness item. The scale has good internal consistency (alphas ranging from .85 to .93 in numerous samples) and adequate test-retest reliability ($r = .77$ over an 8-week period) and has been shown to be a strong predictor of a wide variety of psychological health outcomes, including self-actualization, empathy, and life satisfaction (Sheldon & Deci, 1996), creativity (Sheldon, 1995), and resistance to peer pressure (Grow, Sheldon, & Ryan, 1994).

Competence. In their third group testing session, participants completed the Multidimensional Self-Esteem Inventory (MSEI; O'Brien & Epstein, 1988). Of specific interest for the current study was the competence

subscale, which measures the perception that one is effective, able to learn quickly, capable of mastering new tasks, and able to do well at most activities. The nine-item scale has published internal consistency and test-retest reliability coefficients of .86 (O'Brien & Epstein, 1988). Example items include "I am usually able to demonstrate my competence when I am being evaluated" and "I am usually able to learn new things very quickly."¹

Daily Diary Measures

Well-being outcome measures. On each day, participants completed a nine-item mood checklist, indicating how much of four positive (*joyful, happy, pleased, enjoyment/fun*) and five negative (*depressed, worried/anxious, frustrated, angry/hostile, and unhappy*) mood adjectives they had experienced during that day (Emmons, 1991). The scale ranged from 1 = *not at all* to 7 = *extremely*. Separate scores for positive and negative mood were computed for each day by summing across appropriate items.

On each day, participants also completed a seven-item "state" Psychological Vitality Scale, designed to assess "an animating energy, manifest in both physical and mental domains, that is characterized by the experience of aliveness and vigor" (Ryan & Frederick, in press). One item is "At this moment, I feel alive and vital"; another item is "I don't feel very energetic right now" (reverse-coded). Participants also completed a nine-item physical symptom checklist (Emmons, 1991) that includes symptoms such as runny nose, difficulty in breathing, and soreness. Both measures also employed 7-point scales, and indexes of vitality and symptomatology were computed by summing across appropriate items. Thus there were four outcomes for each day, two desirable (positive mood and vitality) and two undesirable (negative mood and symptomatology). We also created a fifth variable called *daily well-being* by standardizing the four outcomes and then subtracting negative affect and symptomatology from the sum of positive affect and vitality.

We computed aggregate negative affect, positive affect, vitality, and symptomatology variables by taking the average score on each variable across the 14 days of the study. Because of scattered missing data for a few participants, some of these averages were based on fewer than 14 observations. However, in no case were they based on fewer than 12 observations. We also computed an *aggregate well-being* score by combining the four aggregate outcome measures in the same way as described above.

Daily activity measures. For each day, participants were asked to describe the three activities they had spent the most time doing, excluding sleeping, and to note *how much time* (in minutes) they spent at each activity. Actual examples of activities are "practicing my cello," "studying at the library," "talking with friends," and "attending classes." For each of these three activities, participants

TABLE 1: Correlations and Semipartial Correlations of Trait Autonomy and Trait Competence With Averaged Daily Well-Being Variables ($N = 60$)

	Total Well-Being		Negative Affect		Positive Affect		Vitality		Symptomatology	
	r	β	r	β	r	β	r	β	r	β
Trait autonomy	.36**	.30**	-.18	-.09	.28*	.26*	.34**	.29*	-.27*	-.24 [†]
Trait competence	.30*	.22 [†]	-.33**	-.31*	.15	.07	.25*	.16	-.17	-.10
R^2		.17**		.12**		.09 [†]		.14*		.08

[†] $p < .10$. * $p < .05$. ** $p < .01$.

rated (a) how *effective* they felt at that activity, (b) how *important* the activity was to them, and (c) *why* they did the activity. In accord with past research on the perceived locus of causality for action (Ryan & Connell, 1989; Ryan et al., 1993), the "why" question asked participants to rate how much they did each activity for each of four different reasons (also using a 1-7 scale). *External* reasons were defined as "something about your external situation forced you to do it." *Introjected* reasons were defined as "you made yourself do it, to avoid anxiety or guilt." *Identified* reasons were defined as "interesting or not, you felt that it expressed your true values." *Intrinsic* reasons were defined as "you did it purely for the interest and enjoyment in doing it."

Following past procedure (Grolnick & Ryan, 1987; Grolnick, Ryan, & Deci, 1991; Sheldon & Kasser, 1995), a summary autonomy score for each activity was computed by giving external and intrinsic scores weights of -2 and +2, respectively, and introjected and identified scores weights of -1 and +1. An autonomy score for each day was then computed by summing autonomy across the three listed activities, and a competence score for each day was computed by summing effectiveness ratings across the three activities. Finally, for each day, a time-spent variable was created by summing the three time ratings, and an importance variable was created by summing the rated importance of the three activities.

The day-level data file employed contained 780 cases (13 days \times 60 subjects; we dropped the first day from the data file because we had no information on the day preceding it and thus no way of examining lag effects). Each case in the file contained both person-level and day-level data.

RESULTS

Preliminary Analyses

We first examined associations between the trait variables and among the aggregated well-being variables. As expected, trait competence and autonomy were significantly correlated ($r = .30$, $p < .05$). Aggregate positive affect and vitality were strongly correlated ($r = .62$, $p < .01$), as were aggregate negative affect and symptoms ($r =$

$.53$, $p < .01$). Aggregate negative affect was also negatively correlated with vitality ($r = -.36$, $p < .01$) and with positive affect ($r = -.27$, $p < .05$), and aggregate vitality was negatively correlated with symptoms ($r = -.32$, $p < .05$).

Table 1 lists correlations between the two trait measures and the five aggregate well-being measures. As we predicted, competence was positively correlated with aggregate vitality and well-being and negatively correlated with negative affect ($ps < .05$). Also as hypothesized, autonomy was significantly correlated with aggregate well-being, vitality, and positive affect and was negatively correlated with symptoms. To examine the relative contribution of both traits to well-being, the two measures were entered simultaneously in regression analyses for each of the five well-being variables. As shown in Table 1, the general pattern of results was not substantially altered.

We also examined all these aggregate and trait variables for sex differences. The only significant difference was that women reported significantly higher levels of negative affect than men ($M_s = 16.56$ vs. 13.94), $t(57) = -2.17$, $p < .05$.

Next, we examined the correlation of *daily* autonomy and competence and the intercorrelations of the (unaggregated) daily well-being variables. We did this in two ways. First, we simply correlated the variables across all days, ignoring "whose day it was" (i.e., $N = 780$). In these analyses, there was a modest association between day-level autonomy and competence, which was quite significant given the large N ($r = .14$, $p < .001$). Correlations between the daily well-being variables were somewhat larger, went in expected directions, and were also quite significant (these correlations are presented in the lower triangle of Table 2). In the second method of analysis, we correlated the variables within-person (i.e., using each subject as a sample, with 14 "cases" per sample), converted the resulting 60 r s to Fisher's z' values and averaged them, and then converted them back to r s. This analysis provided mean within-person correlations between these variables, and significance tests were based on an N of 60. Once again, day-level autonomy and competence were significantly correlated ($r = .32$, $p < .05$). Average within-subject correlations for the daily

TABLE 2: Associations of Daily Well-Being Variables

	Negative Affect	Positive Affect	Vitality	Symptoms
Negative affect	—	-.55**	-.43**	.23
Positive affect	-.41**	—	.47**	-.17
Vitality	-.40**	.50**	—	-.29**
Symptoms	.37**	-.19**	-.30**	—

NOTE: Between-day correlations below the diagonal; average within-subject correlations above the diagonal.

* $p < .05$. ** $p < .01$.

well-being variables are listed above the diagonal in Table 2; the associations are similar to those presented below the diagonal.

Tests of Hypotheses:

A Hierarchical Linear Model

To examine our primary hypotheses, we adopted a hierarchical linear model approach (Bryk & Raudenbush, 1992). This method simultaneously addresses both levels of the hierarchically nested data structure used in our research, in which a lower-level unit of analysis, days, was nested in a higher-level unit, persons (Kenny, Kashy, & Bolger, 1995). At the person level, we examined relationships between the trait and gender variables and daily well-being, to again examine whether generally competent and autonomous people tend to feel better than others. In contrast, day-level analyses address the question whether day-to-day variation in need satisfaction is related to day-to-day fluctuations in well-being. This analysis considers the average within-subject association between daily need satisfaction and daily well-being, over and above between-subject differences; it is conceptually equivalent to computing for each subject slopes for predicting well-being from need satisfaction and then computing weighted averages of these slopes.

Several methods are available for conducting hierarchical analyses (reviewed in Kenny, Kashy, and Bolger, in press). We chose the more conservative and precise weighted least squares (WLS) approach (Kenny et al., 1995) because it provides estimates closer to population values than traditional ordinary least squares analyses. Weights are assigned to compensate for differences in variability across subjects. An important advantage of the hierarchical model is that it evaluates the hypothesis that individuals differ in the strength of association (i.e., the slope) between predictor and outcome variables. When such differences exist—as they sometimes did in our data—WLS allows one to use error terms that account for them. One can then generalize results to any similar sample of subjects, not just this sample (i.e., subjects are treated as a random, not a fixed, facet).

We followed the model of Kenny et al., (1995) for conducting WLS analyses. The order in which variables were entered was guided by our conceptualization. The first stage of the analysis examined person-level effects. Three between-subjects variables were examined first (trait autonomy, trait competence, and sex), followed by the Sex \times Autonomy and Sex \times Competence interactions (in preliminary analyses, Autonomy \times Competence interactions were found to be nonsignificant and were trimmed from the model). The second stage examined day-level (i.e., within-subjects) effects. While examining the effects of day-level competence and autonomy, we also controlled for the impact of four other variables that might have affected daily well-being, as noted in the Competence and Autonomy Needs section: the rated importance of the day's primary activities, the time spent on activities, whether the day fell on a weekend, and the previous day's value on the outcome variable.

Person-level effects. Person-level results are presented in Sets 1 and 2 in Table 3. Although we used unstandardized regression coefficients, we report standardized coefficients in Table 3 to facilitate comparison across variables. Looking first at the person-level variables, trait autonomy and competence were significantly related to daily well-being. For autonomy, the effects were significant for all outcome variables except negative affect; for competence, they were significant for the well-being composite, negative affect, and vitality and approached significance for symptoms. These data essentially replicate those reported in Table 1, except that herein trait competence does make a significant contribution in predicting vitality and also makes a marginally significant contribution to low symptomatology. There were also significant sex differences or trends for negative affect, symptoms, and overall well-being. Specifically, women reported more negative affect and symptoms than men.

Set 2 presents the several Sex \times Trait interactions that emerged in this analysis. Specifically, the daily well-being composite was influenced by significant Sex \times Trait interactions for both autonomy and competence: trait competence to daily well-being, women's $F(1, 40) = 17.84$, $p < .001$, versus men's $F(1, 14) = 1.17$, *ns*; trait autonomy to daily well-being, women's $F(1, 40) = 3.39$, $p < .10$ versus men's $F(1, 14) = 33.69$, $p < .001$. Separate analyses were conducted to identify the source of these differences. Women high in trait competence experienced less negative affect than men high in trait competence, women's $F(1, 40) = 32.90$, $p < .001$, men's $F(1, 14) = 1.18$, *ns*, and this also held true for symptoms, women's $F(1, 40) = 18.13$, $p < .001$, men's $F(1, 14) = 6.68$, $p < .05$. In contrast, trait autonomy had consistently stronger positive associations with men's well-being than with women's: negative affect, women's $F(1, 40) = 1.31$, *ns*,

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TABLE 3: Predicting Daily Well-Being From Person- and Day-Level Variables

Predictor	Well-Being Composite		Positive Affect		Negative Affect		Vitality		Symptoms	
	β	F	β	F	β	F	β	F	β	F
<i>Person-Level Variables</i>										
Set 1										
Trait autonomy	.177	23.16***	.155	17.29***	-.054	1.67	.133	8.96**	-.166	21.31***
Trait competence	.132	13.34***	.026	<1	-.181	19.30***	.108	6.12*	-.067	3.63 [†]
Sex	.060	3.50 [†]	-.046	1.87	-.170	20.57***	.054	1.85	-.102	10.09**
Set 2										
Sex \times Autonomy		18.38***		<1		19.61***		5.47*		22.47***
Sex \times Competence		8.25**		<1		12.54***		<1		23.51***
<i>Day-Level Variables</i>										
Set 3										
Yesterday's dependent variable	.064	2.69	.014	<1	.090	5.21*	.058	1.63	.229	21.21***
Weekend	.086	4.87*	.141	11.68**	-.018	<1	.079	4.15*	.003	<1
Activity importance	-.089	4.89*	-.084	2.88 [†]	.036	<1	-.071	3.12 [†]	.013	<1
Activity time	-.074	3.81 [†]	-.001	<1	.061	2.48	-.107	7.01**	.094	16.92***
Today's autonomy	.147	7.47**	.164	7.91**	-.108	4.03*	.129	3.41 [†]	-.040	1.06
Today's competence	.306	27.03***	.261	20.64***	-.300	23.90***	.211	11.27**	-.088	2.96 [†]

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

men's $F(1, 14) = 12.60$, $p < .001$; symptoms, women's $F(1, 40) = 4.81$, $p < .05$, men's $F(1, 14) = 22.76$, $p < .001$; vitality, women's $F(1, 40) < 1$, men's $F(1, 14) = 10.14$, $p < .01$. For both genders, the signs of the coefficients relating traits to outcome variables were always the same as those reported in Table 3.

Day-level analyses. Set 3 presents the results for the four control variables that were entered prior to the theoretically relevant day-level variables. There were significant serial effects for two variables, negative affect and symptoms, indicating that when subjects felt bad or ill on one day, they tended to feel similarly the next day. Day of the week also produced significant effects for positive affect, vitality, and the well-being composite; perhaps not surprisingly, subjects tended to feel better on weekend days than weekdays. The only significant effect for activity importance occurred on the well-being composite; subjects reported greater well-being on days when they did less important activities. Finally, subjects reported more physical symptoms on days when they spent more time engaged in the three target activities. Of greater theoretical interest are the findings for daily ratings of autonomy and competence, also presented in Set 3. It should first be noted that in several instances there were significant Person \times Predictor variable effects, indicating that individuals differed in the degree to which the various day-level predictors were associated with outcomes. The WLS approach that we used explicitly controls for these

differences by using a more appropriate error term than standard regression analyses do (Kenny et al., 1995). Daily competence related significantly to overall well-being, positive affect, negative affect, and vitality and approached significance for symptoms. Daily autonomy significantly predicted overall well-being, positive affect, and negative affect and approached significance for vitality. In each case, the direction of effect confirmed our hypotheses: Higher levels of daily competence and autonomy related to better outcomes.

Finally, we examined the data for interactions between sex and daily autonomy and daily competence. Of 10 such effects, only 1 was significant, which seems plausibly attributable to chance.² Thus, although the feelings of general autonomy and competence that are measured by these personality inventories did interact with gender in predicting general well-being, feeling more autonomous and competent during a day relative to one's own baseline did not interact with gender in predicting daily well-being.

DISCUSSION

In this study, we found support for the hypothesis that fulfillment of psychological needs for competence and autonomy is associated with greater daily well-being. First, participants high in trait competence and trait autonomy tended to have better days, on average, than participants low in these traits. Second, even after controlling

for trait-level differences, sex, and several other relevant variables, days on which participants felt more competent or autonomous relative to their own baseline were also better days. The fact that competence and autonomy variables had significant effects at both between- and within-subjects levels of analysis is consistent with our assumption that they are each distinct and important psychological needs, which are likely to relate to well-being in any measurement context, time frame, or level of analysis.

In addition to supporting our major hypotheses concerning competence and autonomy, the study revealed several other correlates of daily well-being. A particularly interesting finding was that participants experienced more positive mood and vitality on weekend days than on weekdays. Although this effect was not predicted, we speculate that it occurred because people engage in more volitional or self-selected activities on the weekend—that is, they feel more autonomous. Post hoc *t* tests showed this to be the case (weekend $M = 12.06$ vs. weekday $M = 4.98$), $t(59) = 6.87$, $p < .01$. Participants also experienced significantly more competence (weekend $M = 16.14$ vs. weekday $M = 15.68$), $t(59) = 2.66$, $p < .05$ on weekends. Note that in Table 3 the effects reported for daily autonomy and competence control for day of the week. But one might also argue that the (culturally ordained) difference between weekends and weekdays constitutes a legitimate aspect of the daily autonomy and competence effects. Therefore, we again ran our hierarchical model with the well-being composite as the dependent measure, this time omitting weekend from the analysis. The significance of the daily competence variable was essentially unchanged, whereas the *F* value for daily autonomy increased from 7.47 to 16.54. In short, it appears that daily autonomy effects may be underestimated by our primary (conservative) model.

Another intriguing effect was that bad days have a carryover. Participants had somewhat worse days when they had felt more sick or sad the day before, whereas participants did *not* have better days when they had felt more positive affect or vitality the day before. This differential persistence of negative as opposed to positive experience is consistent with Marco and Suls's (1993) suggestion that negative emotions leave a "residue" the next day. Other study findings showed that (a) subjects reported somewhat lower well-being for days in which they spent time on more "important" activities, suggesting perhaps, some association between activity importance and stress; and similarly, (b) people reported more physical symptomatology for days in which they spent more time on their primary activities, suggesting that greater duration of motivated behavior leads to greater physical fatigue and enervation. Although these latter patterns

were not predicted, they nonetheless attest to the myriad factors that undoubtedly contribute to day-to-day fluctuations in psychological and physical well-being.

The study's primary findings concerning competence and autonomy raise a number of interesting issues. As noted earlier, most prior diary studies of daily well-being have focused on what makes for bad days (e.g., stressors, disruptions, or hassles), rather than considering what makes a day enjoyable and satisfying. In this, they have implicitly pursued a "decremental" approach to understanding daily well-being (Langston, 1994). The current results suggest that it may be fruitful to consider positive sources of daily well-being as well as threats to it—that is, the effects that accrue when one's activities and goals are congruent (Sheldon & Kasser, 1995, 1996) with significant psychological needs.

Need theories are often controversial, in part because the concept of psychological need has been defined in very different ways in the context of different theories (Ryan, 1995). Some theorists refer to needs as innate and universal in humans (e.g., Aronson, 1967; Goldstein, 1939; Maslow, 1968), whereas others conceptualize needs as acquired individual differences in motives such as achievement, affiliation, and power (Atkinson, 1992; McClelland, 1985). Besides disagreeing on the origin and universality of psychological needs, theorists also disagree on the definition of a need. For example, Murray (1938) defined *need* broadly enough to include almost any chronic motivating force and thus arrived at a long list of 20 "primary" needs. In contrast, we have applied a functional definition, in which needs, when satisfied, provide the "psychological nutrients" necessary for well-being to occur (Ryan, 1995; Ryan, Sheldon, Kasser, & Deci, 1996). In this usage, the term *need* does not refer to *any* chronic want or desire (some of which are clearly irrelevant or even harmful to health and development) but only to inputs that are important for psychological health and integrity. Specifically, in this study, we conceive of psychological needs (such as competence and autonomy) as qualities of experience that are essential to any person's well-being, in the same way that sun, soil, and water are nutrients essential to any plant. The functional role of need-fulfilling experiences, we assume, is to replenish psychological energies and thereby enable ongoing motivated behavior.³

More generally, we suggest that the importance of a postulated need can be established by showing that it uniquely predicts criterion measures of well-being, health, or development in virtually everyone. Given this definition of needs and this strategy for identifying them, the question of how many needs there are becomes an empirical one. Indeed, future research could consider a wide variety of candidate needs, to ascertain what expe-

ritional qualities are most important. Deci and Ryan (1991; Ryan, 1995) claim that autonomy, competence, and relatedness are three fundamental human psychological needs, arguing that this set provides a relatively complete and parsimonious account of the psychological nutrients essential to personality development and well-being. Although we did not examine relatedness needs in this study, there is good reason to believe that their satisfaction also enhances daily well-being (Ryan & Solky, 1996). Watson (1988), for example, found that more social activity within a given day was associated with greater positive affect. One promising avenue of research, in which we are currently engaged, is to examine how experiences of interpersonal relatedness, particularly the experiences of feeling connected, intimate, or close with others (Reis & Patrick, 1996), may provide another, independent route to "good days."

A number of caveats concerning our findings deserve mention. First, although positive main effects were associated with greater autonomy and competence at both the day and person levels of analysis, trait measures of autonomy and competence also evidenced an unpredicted interaction with sex of subject: Being high in trait autonomy had more positive impact on men's well-being, whereas being high in trait competence was more influential for women. This differential pattern is interesting but it requires replication in larger samples. Another limitation of this study is that we sampled college undergraduates, whose psychological dynamics may not be representative of the population as a whole. In addition, this sample is culturally homogeneous, and whether evidence for common psychological needs can be obtained across cultures is a particularly interesting theoretical issue. We are currently engaged in cross-cultural work focusing on the possibility of differences in the impact of autonomy and relatedness experiences in individualistic versus collectivistic cultures. A further limitation is that we studied a small sample of days at only one time of year. Although we were able to contrast weekdays and weekends, we were not able to address longer monthly or seasonal cycles. We also note that the quality of each day's activities was assessed at the end of that day and that daily mood was measured concurrently with these retrospective activity assessments. Thus we have not shown that experiences of autonomy and competence during the day *cause* the greater well-being evident at the end of the day; other causal models are possible. It may be necessary to assess activity and mood at several points during the day, or to use more objective measures of mental and physical well-being, to definitively address this issue. Finally, we acknowledge that these data do not directly compare need-based models and other models of psychological well-being; they merely show that need theories can suggest fruitful research hypotheses.

Despite these limitations, this study outlines a promising conceptual and methodological approach for understanding the sources of personal well-being. What makes for a good day? Among other things: competence and autonomy in the day and in the person.

NOTES

1. Because the MSEI was given in a later packet, 13 fewer subjects completed the competence scale than completed the Self-Determination Scale. For our final sample, we selected only subjects who had scores on both measures, because we wished to use both measures in our regression model. Auxiliary analyses revealed no differences between this final sample of 60 and the somewhat larger sample of 73 derived by using those subjects with data on the Self-Determination Scale but not the competence scale.

2. We also conducted analyses examining several other theoretically plausible, though not expected, effects. For example, we looked at interactions between activity importance and time and between daily competence and autonomy. Only 2 of 20 such effects were significant, and the effects were small; consequently, these terms were deleted from the model.

3. In the absence of such "replenishment," states of amotivation may result (Deci & Ryan, 1985). Thus, like any nutrient, psychological needs are a double-edged sword—a source of vulnerability as well as energy (Maslow, 1968).

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Received January 25, 1995

Revision accepted February 18, 1996.

Mediating Effects of Blame Attributions on Feelings of Anger

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Two structural equation models are presented to examine the relationship between anger and blame. In the first model, attributions of blame mediate the relationship between feelings of anger and attributions concerning the provoker's intentions to harm, his or her justification in harming, and the amount of harm done. In the second model, anger and blame exist in a reciprocal relationship. The self-reports of 158 individuals concerning an incident in which they had been harmed were analyzed using LISREL VIII. Both models showed satisfactory fit to the data; however, on the basis of theory and past research, the second model is proposed as more acceptable. Additional analyses demonstrated that interactional injustice was the most often reported type of injustice and that men were more likely to be reported as the offender than women. Implications of the research are discussed and suggestions for future research are presented.

The emotion of anger has long been studied in psychology because of the important role it plays in theories of emotion (e.g., Izard, 1977), explanations of aggression and violence (e.g., Berkowitz, 1993; Tedeschi & Felson, 1994), and the treatment of psychological disorders (e.g., Novaco, 1975). Although anger is an important concept to many fields of psychology, a clear and consistent understanding of what constitutes the emotion is difficult to find. Anger is contradictorily treated as an evolutionary leftover of our ancestors' fight-or-flight instinct or described as a cognitively mediated experience that serves as a functionally important aspect of interpersonal relations (see Averill, 1983; Tyler, 1982). The purpose of the present research is to examine possible models of anger-arousing cognitions and to examine the relationship of anger to judgments of blame.

In his well-known analysis of anger, Averill (1982, 1983) proposed that the antecedents of anger are appraisals about the actions of people in social situations. In 59% of the reports of anger-inducing situations exam-

ined by Averill, the cause of anger was attributed to a voluntary and unjustified act by another person. Averill (1983) concluded that anger, "more than anything else, is an attribution of blame" (p. 1150). On the basis of Weiner's (1986) attribution theory, Betancourt and Blair (1992) proposed that feelings of anger are caused by an attributional process consisting of evaluations of an actor's intentions and the amount of control the actor had over the situation. Their study provided strong support for this hypothesis, as attributions strongly predicted anger. Weiner, Amirkhan, Folkes, and Verette (1987), in a survey study concerning times when people had not fulfilled social obligations, found that the more intentional harm attributed to the harmdoer, the more anger was felt by those who had been harmed.

In addition to attributions of intention and controllability, observers' judgments concerning the appropriateness of the actor's behavior affect anger reactions. If the behavior is perceived as antinormative or lacking in justification, it is likely to cause the target to experience anger. Zillmann and Cantor (1976) found that prior justification muted the degree of anger experienced by subjects who were attacked by an assistant of the experimenter. Furthermore, it has been reliably found that arbitrary (i.e., unjustified) frustration causes subjects to

Authors' Note: Portions of this research were presented at the sixth annual meeting of the American Psychological Society, Washington, D.C., July 1994. The authors would like to thank Daphne Bugental and three anonymous reviewers for their helpful comments on earlier drafts of this article. We would also like to thank Carmen Radecki and Kenneth E. Leonard for their helpful statistical suggestions. Correspondence concerning this article should be directed to Brian M. Quigley, who is now at the Research Institute on Addictions, 1021 Main St., Buffalo, NY 14203, E-mail quigley@ria.org.

PSPB, Vol. 22 No. 12, December 1996 1280-1286
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