
Pursuing Personal Goals: Skills Enable Progress, but Not All Progress Is Beneficial

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Although goal theorists have speculated about the causes and consequences of making progress at personal goals, little longitudinal research has examined these issues. In the current prospective study, participants with stronger social and self-regulatory skills made more progress in their goals over the course of a semester. In turn, goal progress predicted increases in psychological well-being, both in short-term (5-day) increments and across the whole semester. At both short- and long-term levels of analysis, however, the amount that well-being increased depended on the “organismic congruence” of participants’ goals. That is, participants benefited most from goal attainment when the goals that they pursued were consistent with inherent psychological needs. We conclude that a fuller understanding of the relations between goals, performance, and psychological well-being requires recourse to both cybernetic and organismic theories of motivation.

This article explores the causes and consequences of making progress at personal goals. To this end, we draw from two distinct perspectives on motivation and personality. First, cybernetic (e.g., Carver & Scheier, 1981, 1990) and cognitive-behavioral theories (e.g., Bandura, 1989a; Locke & Latham, 1990) of motivation are employed to consider how goal progress occurs. We attempt to show that people with stronger life skills do better in their semester-long goals and, further, that life skill measures yield predictive information that is not supplied by knowledge of peoples’ initial expectancies regarding, and/or commitment to, their goals. Second, organismic theories of motivation (e.g., Deci & Ryan, 1985; Rogers, 1963) are employed to consider how progress affects well-being. We attempt to show that goal progress best

promotes increased well-being when progress is made at goals that are “congruent” (Sheldon & Kasser, 1995) with presumed inherent psychological needs.

How does progress occur? To move toward a particular goal, a series of smaller steps is usually necessary, requiring diverse combinations of skills and abilities (Cantor & Kihlstrom, 1987). For example, a student’s goal of “getting a 4.0 grade point average (GPA) this semester” is likely helped by the ability to concentrate when necessary, the ability to delay gratification, the ability to follow instructions, and even the ability to create rapport with potential study partners. The idea that expertise in different ability domains help people take the specific steps required to achieve goals is basic to cybernetic models of self-regulation (Carver & Scheier, 1981; Hyland, 1988; Powers, 1973). According to these models, an action system is optimally configured when purposes at higher levels of the system are readily served by behavioral competencies at lower levels of the system. Such vertical “coherence” (Little, 1989; Sheldon & Kasser, 1995) presumably allows people to reduce discrepancies between actual and desired states of affairs and thus to make progress at their goals.

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Although many goal theorists appear to endorse these ideas (Mithaug, 1993), little research has focused on skills and competencies as predictors of personal goal attainment (Karoly, 1991; Lee, Locke, Latham, 1989; Pervin, 1982). Instead, studies have tended to assess a different type of construct—the specific beliefs that people have regarding their goals. For example, efficacy beliefs (Bandura, 1989b; Locke & Latham, 1990), expectancy-value products (Brunstein, 1993; Vroom, 1964), and optimism (Scheier, Weintraub, & Carver, 1986) have all been validated as predictors of success in goals, presumably because positive feelings regarding one's goals help one to maintain motivation in the face of setbacks and difficulties (Bandura, 1989a).

In this study, we endeavored to compare the two types of construct as prospective predictors of semester-long progress. To assess relevant goal-specific beliefs, we examined participants' initial efficacy expectations (Bandura, 1989b) regarding each of their goals and their sense of commitment regarding each goal, intending to examine efficacy, commitment, and the Efficacy \times Commitment interaction (i.e., the expectancy-value product) as predictors of performance (Brunstein, 1993; Feather, 1968; Kopelman, 1979). To assess behavioral competence, we focused on a set of life skills, which are commonly identified as components of social and pragmatic intelligence (Cantor & Kihlstrom, 1987; Sternberg, Conway, Keton, & Bernstein, 1981) or as personal resources relevant to success in goals (Diener & Fujita, 1995). These skills covered emotional, physical, and cognitive self-regulation; reasoning, problem finding, and idea generation; stress resistance; and interpersonal abilities. We measured these life skills using peer-report data as well as self-report data to assess participants' behavioral competencies with greater objectivity. In accord with our contention that such competencies are an important but neglected topic in personal goal research (Diener & Fujita, 1995), we expected that knowledge of participants' life skills would supply predictive information regarding progress above and beyond knowledge of participants' goal-specific expectancy and value beliefs.

How does goal progress influence well-being? One approach to understanding well-being is to consider the process of discrepancy reduction, which is often assumed to be inherently satisfying (Diener, 1984; Karoly, 1991). For example, Carver and Scheier (1990) proposed that positive affect results when people feel that they are progressing fast enough in eliminating the gap between where they are now and where they want to go. From this perspective, the way to happiness is to move rapidly toward attaining one's goals. Indeed, cross-sectional research supports this idea; for example, Emmons (1986) and Little (1989) reported a relationship between people's rated attainment of their goals

and their current well-being. Also, in a recent longitudinal study, Brunstein (1993) showed that students who made good progress in their personal goals over a school term evidenced enhanced mood and life satisfaction at the end of the term, as compared to the beginning of the term (such residual change indices are considered to be the appropriate outcomes to examine in longitudinal studies of well-being) (Diener, 1984).

Although the mere fact of progress has generally been seen as beneficial by cognitive and cybernetic theories, organismically oriented psychologists have argued that the quality of progress, as well as its amount or speed, is an important determinant of well-being. In such theoretical traditions, people are assumed to have inherent psychological needs that may or may not be well served by their goals (Maslow, 1954; Rogers, 1963; Ryan, Sheldon, Kasser, & Deci, 1996). According to this perspective, well-being will be most enhanced when people make progress in goals that are congruent with their organismic needs (Sheldon & Kasser, 1995).

One organismic need postulated to be important for well-being is autonomy (i.e., the sense of feeling self-determined and choiceful in one's behavior). The positive effect of experiential autonomy has been documented in a wide variety of social psychological experiments (see Deci & Ryan, 1985, for a review) and has also been shown in more recent research concerning the subjective reasons for which people behave. Specifically, people experience greater adjustment and satisfaction when they engage in behavior for autonomous reasons (i.e., because of conviction and/or interest) more than for controlled reasons (i.e., because of externally or internally applied pressure). This finding has been demonstrated in people's daily (Sheldon, Ryan, & Reis, 1996), religious (Ryan, Rigby, & King, 1993), academic (Grolnick & Ryan, 1987; Vallerand & Bissonnette, 1992), and intimate relationship (Blais, Sabourin, Boucher, & Vallerand, 1990) activities. In short, considering *why* people pursue goals may help psychologists to understand how goals are related to well-being (Sheldon & Kasser, 1995).

The extent to which organismic needs are fulfilled may also depend on *what* goals people pursue. For example, goals aiming toward self-acceptance, emotional intimacy, and community involvement have been termed *intrinsic goals* (Kasser & Ryan, 1996) because they are associated with the move toward actualization and integration. On the other hand, goals aiming for financial success, physical attractiveness, and popularity have been termed *extrinsic goals* (Kasser & Ryan, 1996) because they are focused on rewards and other peoples' opinions. This intrinsic/extrinsic content distinction parallels Fromm's (1976) distinction between "being" and "having" orientations. Research with adolescents

and adults has demonstrated that people who are oriented toward extrinsic goals evidence greater psychological maladjustment, whereas being oriented toward intrinsic goals has been associated with greater well-being (Kasser & Ryan, 1993, 1996). These differences in well-being are assumed to result because intrinsically oriented individuals obtain more experiences satisfying of their psychological needs, whereas extrinsically oriented people, who tend to ignore or be out of touch with their needs, have unsatisfying experiences characterized by pressure, tension, and irritation.

Sheldon and Kasser (1995) introduced the concept of organismic congruence to capture the idea that both the reasons one pursues goals (autonomous vs. controlled) and the content of one's goals (intrinsic vs. extrinsic) are important for understanding the relationship between goals and psychological well-being. In two cross-sectional studies, they showed that people who strive for more autonomous reasons or whose strivings are taking them toward intrinsic possible futures scored higher on many different trait indices of health and adjustment, including self-actualization, openness to experience, empathy, and self-esteem. In the current longitudinal study, we examine whether the congruence concept is also relevant to understanding how people make positive changes in their well-being. We propose that when people make short-term progress in congruent goals, they satisfy psychological needs, which in turn leads them to experience enhanced daily well-being. By the same reasoning, we assume that when people make sustained progress in congruent goals, they come to experience enhanced general well-being. To examine these predictions, we tested the main and interactive effects of progress and congruence on changes in well-being, at both short-term and long-term levels of analysis.

Summary of hypotheses. First, we expected that individuals with higher expectancies and a greater expectancy-value product for their projects would make more progress over the semester. This finding would replicate prior research showing that goal-specific beliefs affect goal attainment. Second, we hypothesized that measures of peoples' life skills would predict progress over and above the effects of the expectancy and value constructs. This finding would suggest that our understanding of how people achieve goals can be enhanced by considering their general behavioral competencies as well as their goal-specific beliefs. Third, we expected to replicate Brunstein's (1993) longitudinal finding that goal progress leads to enhanced well-being. However, we extended this research by testing the hypothesis both in the short-term (i.e., changes in daily well-being, assessed every 5 days) and at a statistically orthogonal long-term level of analysis (i.e., changes in monthly well-being from

the beginning to the end of the semester). Fourth, we hypothesized that the progress-to-increased-well-being effect would be moderated by the organismic congruence, or need consistency, of the goals in which participants make progress. This finding would suggest that the effect of goal progress on well-being may depend on both the why and the what of goals (Ryan et al., 1996) (i.e., it may be that not all progress is beneficial). As stated previously, we tested this hypothesis at both a short-term and a statistically orthogonal longer-term level of analysis.

METHOD

Participants

Participants were students in a social psychology course at the University of Rochester who were offered extra course credit; 154 students began the study. However, 53 students who filled out the initial packet did not complete the demanding diary portion of the study (described later in this article), and an additional 11 students were eliminated from the sample because of missing peer-report data. Thus, the final sample consisted of 90 students (24 males and 66 females). Their mean age was 20 years.

t tests were conducted on all variables collected at the beginning of the study to determine whether the 64 participants not included in the final sample differed from the 90 participants who completed the study. No differences emerged between the two groups for any of the initial project or well-being variables. However, there was a difference on 1 of the final set of 10 life skills studied—interestingly, dropouts were significantly lower in the ability to budget time. This fact may somewhat limit the generalizability of our findings.

Procedure

In early October a brief in-class introduction to the study was given. The study was described to participants as a semester-long research project concerning motivation and emotion in everyday life. Interested participants were given a questionnaire booklet to take home and return within 10 days. This October booklet included measures of participants' personal projects, life skills, and initial general well-being (all of which are described in more detail later in this article). When they returned the booklet, participants were given five sealed envelopes and asked to give or mail them to "people who know you." Each envelope contained a cover letter and a short questionnaire asking the respondent to rate the participant's life skills and his or her general positive and negative affect (Watson, Tellegen, & Clark, 1988). As an incentive, the cover letter promised that 20 respondents would be randomly chosen to receive a \$10 cash award.

An average of 3.54 reports were returned for each participant. Of these, 281 were from friends or acquaintances, whereas 38 were from family members. Because the vast majority of reports were from friends and acquaintances, we hereafter refer to them as peer reports.

After returning the October booklet, participants were given their first month's packet of six diary questionnaires, which assessed, at 5-day intervals, their daily well-being and their recent progress in each of their five projects. Participants were instructed to put each questionnaire in a drop box on the questionnaire's due date, which was written at the top of each form; we required participants to drop each form off separately to maximize the temporal validity of the 5-day data. Most participants were conscientious about returning diary questionnaires on time. Those who were not were called, and repeat offenders were dropped from the study. When they turned in their sixth diary questionnaire, participants were given their second month's packet of six diary questionnaires.

When participants turned in their 12th diary questionnaire in December, they were given a final take-home booklet. This booklet contained the final general well-being measures and also asked participants to make ratings of the overall progress they had made in each of their projects.

Measures

Personal projects. Personal projects (Little, 1993) were defined for participants in the October packet as "goals and concerns that people think about, plan for, carry out, and sometimes (though not always) complete or succeed at." Participants were instructed to brainstorm a set of candidate projects that would last "at least through the end of the semester" and then asked to put the booklet aside at least overnight. Next, participants selected the five most relevant projects from their set of candidate projects (examples of actual projects included "save money," "mend my relationship with my girlfriend," "get a 3.5 this semester," and "make new male friends"). Participants then completed a variety of ratings on each project.

To assess the degree of self-determination of participants' goals, we asked them to rate how much they pursued each project for each of four different reasons. These four reasons represent a continuum of perceived locus of causality for action (Ryan & Connell, 1989; Sheldon & Kasser, 1995), ranging from controlled and non-self-determined to autonomous and self-determined. The most controlled reason that a participant might endorse for pursuing a project was external (i.e., "because somebody else wants you to, or because you'll get something from somebody if you do—you probably wouldn't do this project if you didn't get some kind of

reward, praise, or approval for it"). Introjected reasons, a somewhat less controlled form of motivation, involved pursuing the project "because you would feel ashamed, guilty, or anxious if you didn't—you feel that you 'ought' to strive for this." Identified reasons, which are relatively autonomous, involved pursuing projects "because you really believe that it is an important goal to have—you endorse it freely and value it wholeheartedly." Finally, intrinsic reasons, which are assumed to be the most autonomous (Deci & Ryan, 1985), involved pursuing the project "because of the fun and enjoyment which the project will provide you—the primary reason is simply your interest in the experience itself." Ratings were made on a 1 (*not at all because of this reason*) to 9 (*completely because of this reason*) scale. A self-determination score was created for each project by first doubling the external and intrinsic scores for that project (the two extremes of the continuum) and then subtracting the external and introjected scores from the identified and intrinsic scores (c.f. Grolnick & Ryan, 1987; Grolnick, Ryan, & Deci, 1991; Sheldon & Kasser, 1995). An aggregate self-determination score was created for each participant by summing across the five projects ($\alpha = .60$).

To assess the content of goals, we asked participants to rate the extent to which they believed that success at each project would take them closer to three intrinsic and three extrinsic possible futures (Sheldon & Kasser, 1995). The three intrinsic possible futures included self-acceptance/personal growth, intimacy/friendship, and societal contribution; the three extrinsic possible futures were physical attractiveness, popularity/recognition, and financial success (Kasser & Ryan, 1996). Ratings were made on a 1 (*no help*) to 9 (*very much help*) scale. An intrinsic orientation score was created for each project by summing the intrinsic ratings and subtracting the extrinsic ratings. An aggregate intrinsic orientation score was created for each participant by summing across the five projects ($\alpha = .63$).

To make the idea of self-determination and intrinsic orientation more concrete, we identified the projects listed by participants that were lowest and highest on these two measures. Of the $90 \times 5 = 450$ projects studied, the two least self-determined projects were "get a 4.0 GPA this semester" and "apply to medical school." The two most self-determined projects were "grow with God" and "become more sensitive to my fiancée." The two least intrinsically oriented projects were "getting out of academic probation" and "earn a 3.5 GPA," whereas the two most intrinsically oriented projects were "keeping in touch with friends back home" and "grow with God." The fact that the same project (i.e., grow with God) was near the top of the list for both self-determination and intrinsic orientation supports our assumption that the two constructs share an underlying similarity due to their

TABLE 1: Loadings of the 10 Retained Life-Skill Variables on the Two Primary Factors

	Factor 1 Social Skills	Factor 2 Self-Regulatory Skills
<i>Ability to . . .</i>		
Create rapport with others	.83	-.12
Express myself and communicate effectively	.78	.13
Perceive social norms	.63	-.03
Use my emotions as information about the current situation	.61	.32
Be assertive when necessary	.51	-.03
Adopt different roles as situations require	.50	-.04
Forgo immediate gratification for long-term rewards	.08	.80
Conceive of an appropriate plan to attain my goals	.08	.75
Concentrate when necessary	-.08	.71
Budget my time effectively	.12	.62

congruence with organismic needs and growth tendencies. The fact that the two constructs were significantly correlated ($r = .32, p < .01$) further supports this assumption.

We also assessed several of participants' initial beliefs regarding their projects. First, participants rated their sense of self-efficacy regarding each project (i.e., "the extent you feel you have the skills and resources necessary to attain the project") using a scale ranging from 1 (*very little efficacy*) to 9 (*very much efficacy*). We based this measure on Bandura's (1989b) suggestion that goal efficacy involves positive judgments regarding one's ability to attain goals. An aggregate expected efficacy variable was created from these ratings by summing across the five projects ($\alpha = .75$). To derive a measure of how much participants valued their projects, we also asked participants "how committed do you feel to each of your five projects?" and asked them to respond using a scale ranging from 1 (*not at all committed*) to 9 (*extremely committed*). We summed across these five ratings to obtain an aggregate measure of commitment ($\alpha = .80$). Finally, we asked participants to rate the difficulty of each goal on a 1 (*very easy*) to 9 (*very difficult*) scale and then created an aggregate difficulty variable in the same way as previously discussed ($\alpha = .72$). The difficulty data were collected for use as a covariate to help ensure that results hold for people of all levels of ambition.

Life skills. In the October packet, participants were also presented with a set of 20 skills, "some of which you are probably quite good at, and some of which you may not be so good at." As mentioned above, these skills were

adopted from a variety of sources, including studies of implicit theories of intelligence (Sternberg et al., 1981), social or pragmatic intelligence (Cantor & Kihlstrom, 1987), and goal-relevant personal resources (Diener & Fujita, 1995). Participants rated how much they possessed each of the 20 skills relative to other University of Rochester undergraduates. The scale ranged from 1 (*much less than average*) to 5 (*about average*) to 9 (*much more than average*). Participants' peers also rated the participants on the same set of 20 life skills, thinking of "how you see them, not necessarily how they see themselves." The 20 peer-rated skill variables were created by averaging the reports supplied by peers.

To examine the convergence of the self-rated and peer-rated skill measures, each of the peer-rated skill variables was correlated with the corresponding self-rated skill variable. These 20 correlations ranged from .04 to .58 and were significantly or marginally significantly correlated in 13 out of 20 cases (mean $r = .22$). To reduce the data and use all available information, we averaged the peer-rated and self-rated scores for each of the 20 skills and then subjected the resulting 20 variables to a principal components factor analysis using varimax rotation. Two primary factors emerged, accounting for 22% and 15% of the variance, respectively. Five smaller factors emerged, all with eigenvalues of less than 1. Essentially the same two primary factors emerged when the peer- and self-rated skill variables were analyzed separately, prior to averaging.

Of the 20 averaged skill variables, 10 loaded most strongly on one or the other of the first two factors. These 10 skills, and their loadings on the two factors, are given in Table 1. Examination of the pattern of loadings suggested naming the two factors Social Skills and Self-Regulatory Skills; they correspond reasonably well with the basic distinction between social and formal intelligence advocated by some psychologists (see Cantor & Kihlstrom, 1987). Given their interpretability and their prominence via scree test, we decided to focus on these two factors and the 10 skills that defined them. Thus, for each participant, a score was created on each of the two factors by summing together the appropriate skill scores (using unit weighting).

Coefficient alpha was .72 for the 6-item social skills variable and was .71 for the 4-item self-regulatory skills variable. The intercorrelation of the two skill variables was $r = .15, ns$, suggesting that they are relatively independent dimensions of competence. To examine the degree of convergence of peer- and self-report information regarding these two summary factor scores, we computed social and self-regulatory skills variables separately for the peer-report and self-report data, on the basis of the factor analyses reported previously. Peer-rated and self-rated social skills were significantly corre-

TABLE 2: Means, Standard Deviations, and Alpha Coefficients of the October and December Well-Being Measures

	October			December		
	M	SD	α	M	SD	α
Life satisfaction	24.07	8.88	.89	24.52	7.44	.89
Positive affect	57.61	13.58	.91	53.53	13.55	.90
Negative affect	47.92	12.70	.88	48.19	13.27	.88
Depression	66.72	27.28	.93	70.94	27.98	.93

NOTE: The decrease in positive affect was significant ($p < .05$) and the increase in depression was marginally significant ($p = .06$).

lated ($r = .32$, $p < .01$), as were peer- and self-rated self-regulatory skills ($r = .28$, $p < .01$). Furthermore, discriminant correlations were nonsignificant. These results offer additional support for our decision to create two composite variables for use in further analyses.

Subjective well-being. In October, participants completed several measures assessing their subjective well-being. General instructions for these questions asked participants to consider "how you felt during the last month, compared to how you feel in general." This wording was used to obtain baseline measurements that were neither too trait-like and resistant to change nor too state-like and susceptible to momentary influences. The scale employed for all measures ranged from 1 (*much less than usual*) to 5 (*about as much as usual*) to 9 (*much more than usual*). The measures included the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), the Center for Epidemiological Studies Depression Scale (Radloff, 1977), and the Positive Affect/Negative Affect Scale (Watson, Tellegen, & Clark, 1988). After appropriate recodings, October life satisfaction, positive affect, negative affect, and depression scores were computed for each participant. An October combined well-being score was also computed by standardizing these variables and subtracting depression and negative affect from life satisfaction and positive affect.

In December, participants again responded to all well-being scales, again with the instructions to answer according to "how you felt in the last month, compared to how you feel in general." December life satisfaction, positive affect, negative affect, depression, and combined well-being scores were created in the same way as for the October responses.¹ Table 2 gives means, standard deviations, and alpha coefficients for the October and December well-being variables. Participants experienced a significant decrease in positive affect between the beginning and the end of the semester, $t(89) = 2.28$, $p < .03$, and a marginally significant increase in depression, $t(89) = -1.92$, $p < .06$. We did not remove or control

for these differences because they make sense given the accumulated stress of dealing with schoolwork and the onset of a Rochester winter.

Well-being was also assessed at 5-day intervals over the course of the semester (12 short-term assessments in all). Specifically, participants completed a diary questionnaire every 5th day in which they rated how much they had experienced each of five negative moods (depressed, frustrated, unhappy, worried/anxious, and angry/hostile) and four positive moods (happy, joyful, pleased, and enjoyment/fun) (Emmons, 1991) on that day. Short-term positive affect and short-term negative affect scores were computed for each of the participants' 12 report days. A short-term combined well-being variable was derived for each report day by subtracting the standardized short-term negative affect score from the standardized short-term positive affect score.²

Progress in projects. Each of the 12 diary questionnaires asked participants to rate how much progress they had made in each of their five projects during the 5 days since the last report, using a 1 (*none*) to 9 (*very much*) scale. For each of the 12 periods, the five project progress ratings were averaged to obtain a measure of the short-term progress made during that period. In addition, a 60-item semester progress variable was created from these ratings by averaging across the 12 short-term periods ($\alpha = .71$). In the final take-home packet, participants were asked "how much progress did you make overall?" for each of their five projects; responses were made on a scale ranging from 1 (*much less than expected*) to 9 (*much more than expected*). A retrospective progress variable was created by averaging across these five retrospective assessments ($\alpha = .47$). The semester progress and the retrospective progress variables were strongly correlated ($r = .75$, $p < .01$); however, because of its unacceptably low internal consistency, we chose to ignore the retrospective progress variable in the results reported later in this article and instead focus on the 60-item semester progress variable.

RESULTS

Preliminary Analyses

Sex differences. *t* tests examined whether males and females differed on the October well-being and goal variables; no differences were found. Also, there were no gender differences in the semester progress or December well-being variables. Furthermore, gender did not interact with any of the major findings presented later in this article. Therefore, gender will be omitted from further discussion. As a final set of preliminary results, we present in Table 3 the intercorrelations between all major study variables.

TABLE 3: Intercorrelations of All Major Study Variables

	1	2	3	4	5	6	7	8	9
1. Project self-determination									
2. Project intrinsic orientation	.32***								
3. Commitment	.29***	.20*							
4. Expectancy	.23**	.13	.66***						
5. Difficulty	.06	-.13	.26**	.10					
6. Social skills	.17*	-.11	.12	.32***	-.24				
7. Self-regulatory skills	.24**	.01	.25**	.19*	-.04	.15			
8. Semester progress	.02	.07	.13	.24**	-.36	.40***	.21**		
9. October well-being	.28***	.10	.29***	.37***	-.29	.32***	.11	.20*	
10. December well-being	.11	.06	.04	.14	-.29	.06	.02	.34***	.48***

* $p < .10$. ** $p < .05$. *** $p < .01$.

Primary Analyses

Predicting semester progress. First, we tested the hypothesis that goal-specific beliefs (initial efficacy-expectations and the Efficacy \times Commitment interaction) would predict progress. Expected efficacy was correlated with semester progress ($r = .26$, $p < .05$) as predicted; commitment was unrelated. We then used a hierarchical regression to test the hypothesis that these two variables would interact to predict progress. After controlling for the main effects, the product term contributed significant additional variance at Step 2 of the regression ($\Delta R^2 = .097$, $p < .01$). Consistent with Brunstein's (1993) results, commitment was more strongly related to progress for participants high in efficacy than for participants low in efficacy.

To examine the second hypothesis, that life skills would also predict progress and would continue to do so even after controlling for the effects of efficacy and Efficacy \times Commitment, we conducted the following analyses. First, we found that semester progress was significantly positively correlated with the possession of both social skills ($r = .42$, $p < .01$) and self-regulatory skills ($r = .21$, $p < .05$). We then conducted a regression analysis in which the two skill variables were entered together at the third step of a hierarchical regression, after controlling for expected efficacy, commitment, and their interaction. As a set, the social and self-regulatory skill variables added significant predictive variance at the third step ($\Delta R^2 = .074$, $p < .05$), as expected. This occurred despite the fact that the variance shared by the skill measures and the expected efficacy measure ($r = .19$, $p < .10$ with self-regulatory skills, and $r = .32$, $p < .01$ with social skills) was assigned a priori to expected efficacy. Notably, the skills effect was carried primarily by the social skills variable ($\beta = .28$, $p = .01$), not the self-regulatory skills variable ($\beta = .11$, $p = .27$). Additional analyses revealed that the effect of the two skill variables on

progress also remained when the difficulty of participants' projects was first controlled ($\Delta R^2 = .066$, $p < .05$), indicating that the observed effects held for participants of all levels of ambition.

Predicting changes in well-being. The next series of analyses was designed to test our third prediction that making progress at one's goals leads to enhanced well-being (Brunstein, 1993). We first examined this prediction at the short-term level by testing whether the progress made during a given 5-day period was associated with changes in well-being since the last diary report. Because no baseline data were available for the day that was 5 days prior to the first diary report, the first of the 12 reports was omitted from these analyses. Thus, we created a data file in which 990 short-term periods (90 participants \times 11 reports) were the units of analysis rather than the participants themselves. Three hierarchical regressions were then conducted in which short-term positive affect, short-term negative affect, or short-term combined well-being was the dependent measure. A set of 89 (i.e., $n - 1$) dummy variables was entered into these regressions to specify and control for person-level effects (West & Hepworth, 1991). This procedure removes all subject-related mean differences, thereby centering the data around 0 (Marco & Suls, 1993). Also entered was a variable identifying which of the 11 periods the report fell into, in an effort to remove any time-of-semester effects. In addition, the previous report's positive affect, negative affect, or combined well-being score was entered so that the dependent measure would reflect residual change in well-being at the short-term level. Finally, the period's short-term progress score was entered into the equation after controlling for the variables previously mentioned.

In these analyses, short-term progress was a significant predictor of decreased short-term negative affect ($\beta = -.29$, $p < .001$), increased positive affect ($\beta = .28$, $p < .001$),

TABLE 4: Associations of October Well-Being Measures and Semester Progress With December Well-Being

	<i>December Measures</i>				
	<i>Combined Well-Being</i>	<i>Life-Satisfaction</i>	<i>Positive Affect</i>	<i>Negative Affect</i>	<i>Depression</i>
Well-being	.43***	.44***	.14	.32***	.70***
Semester progress	.25***	.33***	.32***	-.08	-.12

NOTE: These are beta coefficients resulting from hierarchical regressions in which the October well-being variable was entered at Step 1 and the semester progress variable was entered at Step 2.

*** $p < .01$.

and increased combined well-being ($\beta = .33$, $p < .001$). These results support the general hypothesis that goal progress leads to heightened psychological well-being at a molecular level of analysis.

Next, we tested whether making sustained progress over the course of the semester was associated with changes in monthly well-being. In other words, we tested our third prediction at a more broad and long-term level of analysis, in which well-being was measured orthogonally to the first set of analyses. In the results presented in Table 4, each December well-being variable was regressed on its corresponding October variable and the semester progress variable. In four of the five regressions, October well-being variables were significant predictors of their respective December counterparts (however, these test-retest coefficients were quite moderate). More important, semester progress was significantly associated with increases in life satisfaction, positive affect, and combined well-being, again supporting the general hypothesis that making progress in goals enhances well-being. Semester progress did not significantly predict decreases in negative affect or depression, although the effects were in the expected direction.

Auxiliary analyses revealed that neither the two skill variables nor expected efficacy, commitment, or the interaction of the latter two variables predicted changes in any of the monthly well-being measures. That is, although having life skills or an initial sense of efficacy and/or commitment apparently helped participants to make progress, and progress helped participants to increase their levels of life satisfaction and positive mood, neither skills, efficacy, nor the Efficacy \times Commitment interaction were directly associated with increased well-being. Thus, our study did not replicate Brunstein's (1993) finding that the Expectancy \times Value interaction directly predicted increased well-being.

Progress, organismic congruence, and well-being. Our final set of analyses concerned the proposal that the relation-

TABLE 5: Associations of Congruence \times Semester Progress Interaction Terms With Changes in General Well-Being Between October and December

	Δ Combined Well-Being	Δ Life-Satisfaction	Δ Positive Affect	Δ Negative Affect	Δ Depression
Self-Determination \times Semester Progress	.19**	.14	.15	-.16	-.10
Intrinsic Orientation \times Semester Progress	.26***	.27***	.23**	-.12	-.14*

NOTE: Given are the beta coefficients that resulted when the centered main effects were also in the equation.

* $p < .10$. ** $p < .05$. *** $p < .01$.

ship between goal progress and increased psychological well-being depends on the organismic congruence of the goals in which one makes progress. To test this fourth hypothesis, two types of interaction terms were used: those involving self-determination scores and those involving intrinsic orientation scores. Interaction terms were computed by multiplying each participant's semester progress score by his or her score on the relevant moderator variable.

First, we tested the congruence moderation hypothesis at the short-term level by reanalyzing the sample of 990 short-term periods. We followed the same hierarchical regression procedure as before, except that each main effect was centered (Aiken & West, 1991) and the Progress \times Congruence interaction term was now included after controlling for the other effects. Self-determination significantly amplified the beneficial effects of progress on increases in every well-being variable (beta coefficients ranged from .08 to .10). Intrinsic orientation significantly amplified the beneficial effects of progress on the combined well-being variable and showed marginally significant effects on positive and negative affect separately (beta coefficients ranged from .07 to .08). The form of these interactions was such that participants highest in a given indicator of organismic congruence evidenced the largest association between short-term progress and increased short-term well-being.

We next examined whether this congruence moderation effect also occurred for long-term changes in well-being. We did this by conducting regressions for each December well-being variable in which the October well-being variable, the semester progress variable, the self-determination or intrinsic orientation score, and the appropriate product term were entered hierarchically. Table 5 gives the resulting beta coefficients for the interaction terms. Conceptually replicating the short-term findings, the Semester Progress \times Self-Determination interaction was a significant predictor of increased combined well-being. Furthermore, the Semester Progress \times

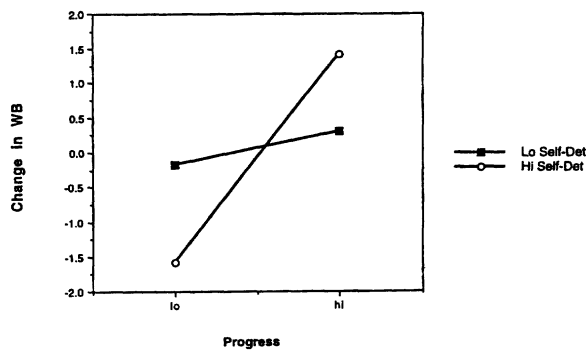


Figure 1 Predicted change in combined well-being scores in standardized units for four hypothetical participants with equal October combined well-being who made low or high amounts of progress in goals low or high in self-determination.

Intrinsic Orientation interaction was a significant predictor of enhanced life satisfaction, positive affect, and combined well-being.³

To make these moderator relationships more concrete, we used a predictor equation (Cohen & Cohen, 1983) to estimate values of December combined well-being for four hypothetical participants who had values at the sample mean for October combined well-being but who made low (1 standard deviation below the mean) or high (1 standard deviation above the mean) amounts of progress over the course of the semester and who were also either low or high in the self-determination of the projects that they pursued. Figure 1 presents this relationship for self-determination scores, and Figure 2 presents this relationship for intrinsic orientation scores. As can be seen, these four hypothetical participants, identical in combined well-being in October, would come to feel quite different by the end of the semester. Specifically, those participants with noncongruent goals would maintain about the same level of well-being regardless of how much progress they made. In contrast, those participants who made substantial progress at congruent goals would experience enhanced well-being by December, and those who made little progress at congruent goals would experience reduced well-being. Essentially the same pattern emerged when the four measures that comprise the combined well-being variables were analyzed separately.⁴

Testing four alternative explanations for the congruence moderation effect. One potential methodological problem with the current study concerns participants who finished projects early in the semester; it is not clear how this would affect their subsequent ratings. In the final packet, we therefore asked participants to identify which

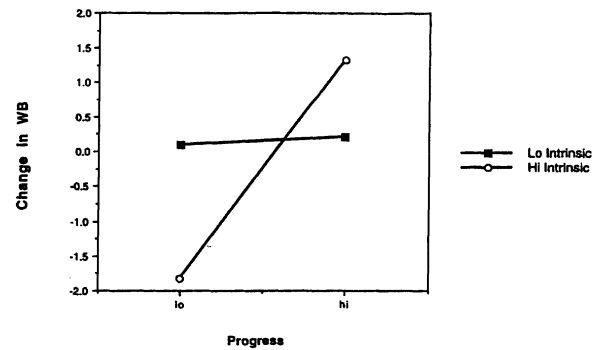


Figure 2 Predicted change in combined well-being scores in standardized units for four hypothetical participants with equal October combined well-being who made low or high amounts of progress in goals low or high in intrinsic orientation.

projects, if any, they felt that they had completed by the end of the semester. On average, participants felt they had completed 1.57 of their 5 projects, with a standard deviation of .57. However, controlling for the number of projects that participants had completed had no effects on any of the results reported previously.

One conceptually based alternative explanation of the congruence moderation effect is that noncongruent goals simply mattered less to participants and, thus, progress (or lack of progress) had less effect on their well-being. This raises the possibility that organismic congruence is reducible to, or is a mere surrogate for, participants' conscious commitment to their projects (Lydon & Zanna, 1990). To examine this possibility, we reconducted the regression analyses presented in Table 5, entering commitment at Step 2 along with either self-determination or intrinsic orientation and semester progress. At Step 3, we entered the appropriate interaction terms. The resulting interaction coefficients were essentially unchanged from those presented in Table 5, suggesting that the moderating effects of congruence do not merely reflect differences in participants' degree of commitment to their projects. The results were also unchanged when the Commitment \times Semester Progress interaction was controlled.

Another alternative explanation of our results is that congruent goals are more abstract, difficult, and meaningful (Emmons, 1992), whereas noncongruent goals are more concrete and manageable. The examples of goals low and high on self-determination and intrinsic orientation, given in the Methods section, are consistent with this suggestion. If so, it is possible that the moderating effects of congruence on the progress to increased well-being relationship occur simply because congruent

goals are more abstract and thus difficult, making their attainment more impactful. To address this possibility, we coded the level of abstraction of each participants' goal system using Emmons's (1992) criteria. The resulting variable was marginally positively correlated with both the degree of self-determination and the degree of intrinsic orientation of participants' goal systems ($r = .20$, $p = .06$ and $r = .17$, $p < .10$). It was also positively associated with October depression and with difficulty, consistent with Emmons's (1992) results. However, level of abstraction was unrelated to changes in well-being, either as a main effect or in interaction with semester progress. Furthermore, the congruence moderation effects previously reported were unaltered when level of abstraction was included in the equations.

Finally, we coded each of the 450 projects for approach or avoidance using Emmons's (1996) system. We reasoned that avoidance goals might be particularly non-congruent (Elliot & Sheldon, 1996) and that this factor might explain the congruence moderation effects. Only 45 goals fell into the avoidance category, and controlling for the number of avoidance goals pursued by participants did not affect any of the results.

DISCUSSION

This longitudinal study explored some of the causes and consequences of making progress in idiographic personal goals. Concerning the prospective predictors of progress, results indicated that participants with high initial efficacy expectancies regarding their goals, or who had high efficacy in conjunction with high commitment, made more progress in their goals. These goal-specific belief findings support existing theory and findings (Bandura, 1989a; Brunstein, 1993). Going beyond past research, we found that participants in the current study who had stronger social and self-regulatory skills, as rated by themselves and by their peers, also made more progress in their personal projects over the course of the semester. Furthermore, these skill variables were found to supply predictive information above and beyond that associated with initial expectancy and value, an effect that held up for all levels of project difficulty.

We believe that the life-skill measures supplied unique predictive variance because they are more functionally relevant to ongoing discrepancy reduction than are the goal-specific belief measures. Having a sense of optimism and commitment regarding goals undoubtedly helps people to become motivated to pursue goals in the first place and also helps them to cope with setbacks and frustrations that occur during the process of goal pursuit (Bandura, 1989b; Scheier et al., 1986). However, for actual steps to be taken toward goals, concrete behavioral skills must be applied. As an example, consider two

people with the project "make new friends." The first person believes that he or she can make new friends. The second person believes that he or she can make new friends and also is strong in the skills of "creating rapport with others" and "adopting different roles as situations require." Although the second person will be able to bring his or her skills to bear in interactions with others to become closer to them, the first person will not necessarily be able to do what it takes to accomplish this. Although we have not demonstrated a direct link between the having of skills and the reduction of goal-relevant discrepancies, our findings indicate that it may be profitable for personal goal researchers to give more attention to this aspect of performance.

Concerning the consequences of goal progress, results showed that participants who made more progress in their goals experienced increased well-being over time, at both short-term and long-term levels of analysis. This finding replicates and extends the work of Brunstein (1993) and is consistent with the general proposition that reducing discrepancies between actual and desired states leads people to experience positive feelings (Carver & Scheier, 1990; Diener, 1984).

However, we also found an important caveat to this result: The relationship of progress to enhanced well-being depended on the organismic congruence of participants' goals (Sheldon & Kasser, 1995). In the present study, organismically congruent goals were operationally defined as those that are pursued more for autonomous reasons than for controlled reasons and that are oriented more toward intrinsic than extrinsic outcomes. Both aspects of congruence (i.e., both why goals were pursued and on what they were focused) interacted with progress to predict increased well-being. Specifically, making short-term progress in either self-determined or intrinsically oriented goals led to greater short-term well-being, and making sustained progress in self-determined or intrinsically oriented goals led to greater general well-being. Because the hypotheses tested were interactional and longitudinal and because results were replicated at short- and long-term levels of analysis, it is unlikely that these results can be accounted for by demand characteristics, self-report biases, momentary state influences, or time frame. In addition, greater confidence is warranted given that the same moderation effect was found for two parallel measures of congruence that were only modestly correlated ($r = .32$). Also, the congruence moderation effect remained significant after controlling for participants' initial commitment to their goals, the level of abstraction of goals, and whether the goals were predominantly approach or avoidance oriented. Thus, the findings are nicely supportive of our assumption that progressing at congruent goals helps

people to better satisfy their inherent psychological needs (Omodei & Wearing, 1990) and thereby increase their well-being.

This leads us to a perhaps bold speculation, which is consistent with the writings of many theorists. It may be that what has been indirectly measured in the current study is personal growth. It is a *sine qua non* of organismic theories that need satisfaction affords personal growth and that growth leads to enhanced well-being (Deci & Ryan, 1985; Maslow, 1971; Ryff, 1989). By progressing in need-congruent goals, people may provide themselves with the "psychological nutriment" (Ryan, 1995; Sheldon et al., 1996) that are necessary to attain new levels of adjustment, self-actualization (Rogers, 1963), and personality integration (Sheldon & Kasser, 1995). The idea that personal growth was indirectly measured in this study is supported by examination of the three most highly congruent goals listed by participants. "Grow with God," "become more sensitive to my fiancée," and "keep in touch with friends back home" are all goals that, when attained, seem quite conducive to psychological development. In contrast, "get off of academic probation," "apply to medical school," and "get a 4.0 GPA" may be less directly relevant to psychological growth processes. Of course, the current results do not show directly that people who made progress in need-congruent goals underwent personal growth—further research is required to test this idea.

Several limitations of this study are noteworthy. First, other potential predictors of progress were not examined, such as interpersonal support (Ruehlman & Wolchik, 1988), goal specificity (Locke & Latham, 1990), implementation intentions (Gollwitzer, 1993), or environmental affordances and threats (McArthur & Baron, 1983). Second, we did not consider the specific relevance of life skills to projects (Diener & Fujita, 1995). Another limitation is that the study covered a relatively short period of time. One may well ask whether the people who made progress at congruent goals were able to maintain their well-being gains; studies with longer time frames are needed to address this issue. Fourth, our conclusions are based on a single study; results might not replicate. However, the fact that the same patterns emerged at two statistically orthogonal levels of analysis within this study provides some reassurance on this score. Finally, our measures of progress were all self-report; such reports may misrepresent participants' objective progress in their goals. One way to address this latter problem would be to help participants identify a range of potential outcomes at the beginning of the study so that their overall progress could later be rated by an outside party (e.g., Goal Attainment Scaling) (Kiresuk, Smith, & Cardillo, 1994; Sheldon & Elliot, 1998). These issues await further research.

CONCLUSION

These results suggest that progress in personal goals, and the effects of such progress on well-being, can be better understood by considering both cybernetic and organismic theories of motivation. The integration of these two theoretical approaches led to two important findings. First, we found that goal attainment is more likely to occur when people have strong social and self-regulatory skills, in addition to having positive beliefs about their goals. This finding goes beyond the question of initial motivation and its effect on performance and begins to address the question of how people actually reduce discrepancies and take steps toward goals. Second, we found that making progress at goals enhances well-being, but only when the goals attained are consistent with presumed inherent psychological needs (Ryan, 1995; Sheldon & Kasser, 1995) and innate growth tendencies (Rogers, 1963). These findings demonstrate for the first time that self-determination and intrinsic orientation are important moderator variables that influence the impact of life attainments on well-being. In addition, these findings provide new support for need-satisfaction models of well-being, the type of support called for by Diener (1984) in his discussion of such models. In sum, it appears that organismic theories can serve to remind cybernetic and cognitive-behavioral theories that our understanding of the impact of goal striving on persons is incomplete unless consideration is given to the underlying needs that goals must serve. On the other hand, cybernetic and cognitive-behavioral theories can offer to organismic models the means to better understand the serial processes by which people go about satisfying their needs.

NOTES

1. We conducted a principal components analysis of the four October well-being variables and another analysis of the four December well-being variables. In both of these analyses, only one factor emerged, which accounted for 64.3% and 62.7% of the variance, respectively. Furthermore, the alpha coefficients for the two composites were acceptable: .81 (October) and .80 (December). These results suggest that combining the four specific well-being variables into an aggregate combined well-being variable is justified.

2. Recall that we had asked peers to rate participants' general well-being by using the Positive Affect/Negative Affect Scale (Watson, Tellegen, & Clark, 1988). We correlated peer-rated positive and negative affect with participants' October and December positive and negative affect scores and also with two variables representing the average of participants' 12 short-term positive and negative affect scores. Peer-rated positive affect was associated with the average short-term positive affect variable ($r = .25, p < .05$) but was associated with neither October nor December positive affect. Similarly, peer-rated negative affect was associated with the average short-term negative affect variable ($r = .22, p < .05$) but was associated with neither October nor December negative affect (all nonsignificant $ps > .33$). These results, along with the low test-retest coefficients found in Table 3, support our assumption that the monthly well-being variables are midway between state and trait.

3. We note that there were no main effects of congruence on well-being changes, at either the short- or the long-term level of analysis. That is, merely pursuing projects for self-determined reasons or pursuing projects that are intrinsically oriented does not seem to lead to increased well-being, unless one also experiences success in those projects.

4. It is interesting to note that participants who made low progress at congruent goals actually experienced reduced well-being compared to their initial baselines (as shown in Figures 1 and 2), whereas those who made low progress at noncongruent goals did not lose ground. One interpretation of this finding is that pursuing congruent goals can be risky: one gains if one succeeds but is hurt if one fails. For example, in seeking a new romantic partner, one may risk embarrassment and pain in hopes of gaining joy and satisfaction. In contrast, those who pursue incongruent goals may be ignoring their psychological needs; by so doing, they may maintain the status quo and protect themselves from potential psychic pain, but it is at the cost of pursuing opportunities to gain new happiness and well-being.

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