

## Self-Concordance, Goal Attainment, and the Pursuit of Happiness: Can There Be an Upward Spiral?

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Two studies used the self-concordance model of healthy goal striving (K. M. Sheldon & A. J. Elliot, 1999) to examine the motivational processes by which people can increase their level of well-being during a period of time and then maintain the gain or perhaps increase it even further during the next period of time. In Study 1, entering freshmen with self-concordant motivation better attained their 1st-semester goals, which in turn predicted increased adjustment and greater self-concordance for the next semester's goals. Increased self-concordance in turn predicted even better goal attainment during the 2nd semester, which led to further increases in adjustment and to higher levels of ego development by the end of the year. Study 2 replicated the basic model in a 2-week study of short-term goals set in the laboratory. Limits of the model and implications for the question of how (and whether) happiness may be increased are discussed.

The “pursuit of happiness” is a right accorded to all U.S. citizens. But is the attempt to become happier than we already are a futile quest? Genetic determinist models of happiness suggest that it may be, because level of subjective well-being may be largely determined at birth. If so, then fluctuations away from one's own characteristic level of happiness may be only random, temporary, or even illusory (Lykken & Tellegen, 1996). This “futility” conclusion has also been suggested by research concerning adaption level (Headey & Wearing, 1989). For example, although lottery winners usually experience a short-term surge in measured well-being, they are typically no happier 1 year later than they were before (Argyle, 1987; Diener, Suh, Lucas, & Smith, 1999). Thus, the following question arises: Can people pursue increased happiness in such a way that it is not only attained but also lasts and perhaps leads to even more happiness?

We used a five-wave panel design and path-modeling techniques to test a two-cycle model, in which initial self-concordant motivation (Sheldon & Elliot, 1999) predicts good goal attainment during the first cycle. Attainment leads to increased well-being and even more positive motivation for the second cycle of striving, which leads to even better attainment and further increases in well-being. The supportive results presented below indicate that self-concordant motivation may indeed play an important instigating role in such a process. In other words, when people strive “for the right reasons,” they may be able to initiate an “upward spiral” of positive outcomes (Ryff & Singer, 1998), with each outcome

tending to transfer momentum onto the next phase of the sequence. However, we also found some interesting limits to this hypothesized process.

### The Self-Concordance Model

The self-concordance model is rooted in self-determination theory (SDT; Deci & Ryan, 1985, 1991). Extensive research in the SDT tradition has demonstrated the negative effects that controlling social contexts can have on individuals' motivation, performance, and adjustment within that domain. Specifically, such contexts may sap individuals' intrinsic motivation, depress their well-being, and forestall their ability to internalize the doing of what has to be done. For example, an overbearing teacher might take the fun out of mathematics and also fail to persuade children of the importance of mastering math concepts.

The self-concordance model extends SDT by focusing on people's broad personal goal statements, rather than focusing on domain-specific motivation and the situational factors that can influence it (Sheldon, in press). This shift enables researchers to consider proactive motivation and the difficult question of how individuals select (and perhaps misselect) global life initiatives from among the potentially bewildering array of possibilities (Schwartz, 2000). The self-concordance model also extends SDT by exploring in detail the longitudinal processes by which initial positive motivation promotes later positive outcomes. For example, Sheldon and Elliot (1999) used path-modeling techniques to show that self-concordant goal pursuit promotes sustained effort over time, which leads to greater progress in goals, which leads to more satisfying daily experiences, which lead finally to changes in global well-being. Thus, as one can see, the model is intended to address the entire “conative cycle” (Kanfer, 1989; Little, 1993) by which individuals strive over time, more or less successfully, to meet their own needs.

From a phenomenological perspective, self-concordance refers to the feeling of ownership that people have (or do not have) regarding their self-initiated goals. Even though all idiographic goals are self-generated in a nominal sense, past research has

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suggested that “not all personal goals are personal” in an experiential sense (Sheldon & Elliot, 1998, p. 546)—that is, some people have little feeling of choice in pursuing their goals, despite the fact that they themselves generated them. As we indicated above, when such is the case, people are unlikely to do well in their goals (Sheldon & Elliot, 1999) or to benefit as much emotionally even if they do succeed at them (Sheldon & Kasser, 1998). In short, a person’s inability to fully accept and internalize his or her own stated goals may significantly impede that person’s attempts to effect positive change in his or her life.

We operationally defined *self-concordance* as the rated extent to which people pursue their set of personal goals with feelings of intrinsic interest (Csikszentmihalyi, 1993) and identity congruence (Brunstein & Gollwitzer, 1996; Little, 1993), rather than with feelings of introjected guilt and external compulsion (Deci & Ryan, 1985, 1991). According to SDT, these four types of motivation (intrinsic, identified, introjected, and external) represent a continuum of internalization ranging from very much, to some, to none at all (Deci & Ryan, 1991; Ryan & Connell, 1989). We assumed that in the special case of personal goals, such ratings index the degree to which the goals match or well represent the person’s enduring values and developing interests; that is, they help indicate whether the person is “correct” in the conscious goals that he or she selects. Sheldon and Kasser (1995, 1998) reported data consistent with this assumption, in that participants with higher self-concordance scores perceived more linkages between their goals and their long-term values and better enjoyed the process of goal pursuit.

We should note that other methodologies might also be used to assess how well a person’s goals fit that person. For example, researchers have examined matches between participants’ goals and their social motives (Brunstein, Schultheiss, & Graessman, 1998), personal resources (Diener & Fujita, 1995), and personality traits (McGregor, McAdams, & Little, 2000) as predictors of positive outcomes. An advantage of the methodology that we used in the present article is that it provides a link to salient research and theory concerning the nature of optimal motivation, cognitive functioning, and psychosocial development (Deci & Ryan, 1991). In this light, we construed our measure as indexing the extent to which a person has access to important organismic resources and integrative capacities during the period of striving.

Thus far, the self-concordance model described above has been applied to only one consecutive cycle; that is, the outcomes of a particular striving cycle have never been “fed back into the system” and examined as potential causes of later outcomes in subsequent cycles. Accordingly, an important and as yet unexamined question for the model is whether goal-related gains last over time and whether they in some way influence later performance. If the gains afforded by initial self-concordance in turn have influence on later self-concordance, and thus on even later gains, then the quality of an individual’s initial motivation becomes an even more important issue and a potentially important focus for interventions (Sheldon, Kasser, Smith, & Share, in press). If, instead, goal-related gains in adjustment are merely random fluctuations, after which individuals quickly return to their own baselines (Lykken & Tellegen, 1996), then the importance of goal attainment is diminished. In our research program, we assume that such gains are not arbitrary or transient but rather represent one of the most important means by which the “self-constructing living systems” (Ford,

1987) that we call human beings can enhance and develop themselves.

## Objectives of the Present Study

### *Extending the Self-Concordance Model to New Outcomes*

In addition to generalizing the self-concordance model to two consecutive striving cycles (as we discussed above), in the present research, we also extended past research by using important new outcome measures. Although the model has been applied thus far only to predict changes in self-reported mood and life satisfaction, we reasoned that self-concordance should have positive effects on almost any outcome because self-concordance (in theory) represents the most optimal or organismically integrated state of personal functioning. In the first and most important study, we focused on the important real-world outcome of adaptation to college—namely, which incoming freshmen best adjust to, and even thrive in, their challenging new circumstances?

Our primary measure of adaptation was the often-used Student Adjustment to College Questionnaire (SACQ; Baker & Siryk, 1984), which assesses emotional adjustment, social adjustment, academic adjustment, and institutional attachment. Use of the SACQ allowed us to compare our results with other findings in the college counseling literature (Brooks & DuBois, 1995; Gerdes & Mallinckrodt, 1994). In addition, we used the Extended Objective Measure of Identity Status (EOMIS; Adams, Bennion, & Huh, 1989) to measure changes in level of ego development from the beginning to the end of the freshman year (Hy & Loevinger, 1996; Marcia, Waterman, Matteson, Archer, & Orlofsky, 1993), attempting to further extend the generalizability of the self-concordance model to the question of how global personality development occurs. Finally, we examined freshman-year grade point average (GPA; controlling for American College Test [ACT] scores) as a third new outcome variable, one with obvious real-world ramifications.

### *Going Beyond Past Studies of Freshman Adjustment*

Most prior personality-based research concerning college adjustment has had substantial limitations. First, most studies in this area are cross-sectional (Rice, Fitzgerald, Whaley, & Gibbs, 1995), meaning that predictors are measured simultaneously with outcomes. Although such results are often interpreted in causal terms, it is only by using within-subject, longitudinal designs and by measuring change in a variable that one can plausibly argue that a hypothesized predictor has had a causal effect on that variable (Cohen & Cohen, 1983). Second, although many different personality variables have been studied as predictors of incoming freshmen’s adjustment, including ego strength (Fukunishi, 1996), locus of control (Martin & Dixon, 1994), and the Big Five personality traits (Brooks & DuBois, 1995), few personality studies have used dynamic (i.e., motivational) constructs. There is good reason to believe that goal and motivational constructs are especially important for understanding students’ adjustment (Cantor & Langston, 1989). An additional advantage of our approach is that personal goals possess significant changeability and malleability (Emmons, 1989). Thus, goal assessment may offer counselors substantial leverage in trying to help students or clients to clarify and perhaps

change their desires and objectives (Sheldon et al., in press; Wadsworth & Ford, 1983).

### *Examining the Stability of Gains in Well-Being*

Finally, we were also able to examine the questions raised in the opening section of this article. Is it possible not only to attain enhanced happiness through one's goal pursuits but also to attain even greater happiness through one's subsequent pursuits? Or do people instead tend to slip back to their original condition, regardless of what happens during the second cycle of striving?

### *Specific Models Tested in the Present Studies*

As a first step, we again tested essential paths from prior self-concordance research (Sheldon & Elliot, 1999). In particular, we examined whether earlier findings linking self-concordance to attainment, and attainment to increased well-being, could be replicated for the expanded set of outcome variables. Because of the repeated-cycles design, these hypotheses could be tested twice: once in the first striving period using the full sample and once in the second period using a somewhat reduced sample (due to attrition).

More important, we examined linkages among variables reaching across the two successive striving periods, using LISREL path-modeling techniques (Joreskog & Sorbom, 1993). Figure 1 presents the integrated two-cycle model that was tested using all five waves of data. As one can see in Figure 1, we reasoned that self-concordant initial motivation would promote goal attainment during the first period, which would lead to increased well-being and performance at the end of the period. Regarding the linkage between cycles, we expected that first-period attainment would lead to increased self-concordance regarding goals for the second period. In other words, "success begets further success," in large part because it enhances participants' sense of ownership of their personal initiatives, in addition to enhancing participants' confidence in their goal-setting skills and their expectancies regarding future attainment (Bandura, 1989). We further hypothesized that this increased self-concordance would be linked to even greater attainment during the second cycle, which would lead to even further increases in well-being.

It is important to note that our model predicts only an indirect effect from self-concordance to increased well-being, rather than a direct effect mediated by goal attainment (Holmbeck, 1997). This lack of a direct relationship between initial self-concordance and later outcomes is important, given that increased self-concordance

is itself a later outcome. If there were a direct effect, then self-concordance would, in effect, be producing more of itself. In such a model, those who happened to start out in the top half of the self-concordance distribution would tend to move themselves ever higher within that distribution over time, an obvious illogicality. Instead, self-concordance merely provides better starting conditions for the sustained striving process that must follow. It is also important to note that in our model, enhanced well-being does not play a causal role in the second cycle; instead, it is a side effect, with the dynamic "action" being carried by increased self-concordance and increased goal attainment.

### *Ancillary Analyses in Study 1*

In one ancillary set of analyses, we attempted to validate key constructs (specifically, self-concordance and psychological adjustment) by using non-self-report as well as self-report methodologies. We did this because these rather subjective constructs are susceptible to many possible biases and distorting influences. If knowledgeable observers can agree on the level of a participant's adjustment or the quality of his or her motivation, then theoretical interpretations of self-report results are given new weight. However, if observers' reports do not converge with the participant's own judgments, then there is reason to doubt the importance of self-report results. We expected to find significant convergences among these sources of information.

As a second set of ancillary analyses, we examined whether models would be supported even when we controlled for a relevant trait variable, namely, neuroticism. Of course, neuroticism is an important determinant of well-being and may itself be largely genetically determined (Lykken & Tellegen, 1996). To find that goal-related outcomes persist when neuroticism is partialled out of the equation would support the argument that goal pursuits are important vehicles to new well-being, regardless of one's characteristic traits and temperament (Elliot & Sheldon, 1998). In fact, we expected this to be the case, given that neuroticism is presumably a stable trait and should not have a strong influence on the process by which individuals change their levels of well-being over time. In contrast, goal variables represent the person's energized initiatives for change and should be able to produce such change, if anything can.

As a final Study 1 ancillary analysis, we also examined whether aggregate goal progress during the year would predict increases in ego development from the beginning to the end of the freshman year. In other words, might the greater overall goal attainment help

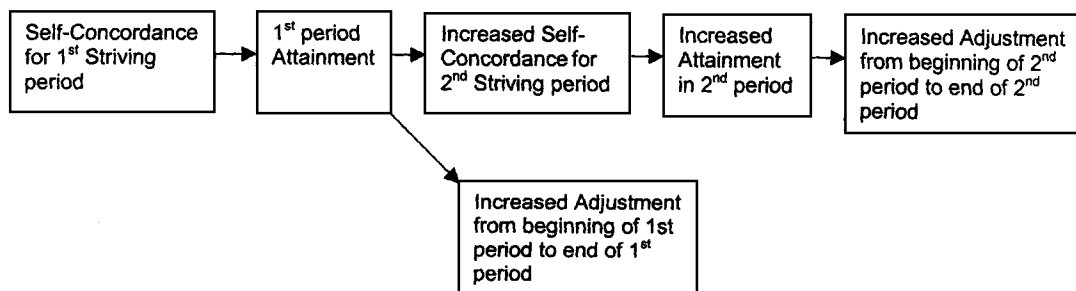


Figure 1. Two-cycle path model tested by the present studies.

participants to better consolidate their personal identities (Sheldon et al., in press)? Consistent with our assumption that personal goal pursuit and attainment are important means by which people can develop themselves, and also consistent with our supposition that attainment-related gains in adjustment or well-being are more than transient fluctuations, we hypothesized that such a relation would indeed be found.

### Summary and Hypotheses

The primary purpose of Study 1 was to test the integrative two-cycle path model presented in Figure 1, using increased student adjustment, increased self-concordance, and better than expected academic performance as outcomes. Before arriving at this full test, however, we first (a) examined the convergence of self-report motivation and adjustment measures with measures based on parent and peer reports; (b) twice tested important propositions within the single-cycle model, once for each semester; and (c) examined whether the self-concordance to attainment and attainment to adjustment effects within the single-cycle model would persist even after the effects of participants' level of neuroticism was partialled out. Finally, after the full test, we examined whether adjustment gains made in the first cycle lasted through the second cycle, or whether initially progressing participants instead tended to regress back to their starting point during the second cycle.

### Study 1

#### Method

##### Participants

All participants were first-year students in the class of 2002 at the University of Missouri—Columbia. Some participants were recruited by mail during the summer prior to matriculation, and others were recruited from introductory psychology classes during the first 2 weeks of the semester. All participants were offered a \$25 monetary incentive for completing the entire yearlong study, and introductory psychology students were also offered experimental credit for their participation in the study.

Although 239 students completed a preliminary questionnaire, only 189 followed through to complete all first-semester assessments.<sup>1</sup> This sample of 189, on whom we tested the first-semester model, consisted of 31 men and 158 women. Although we usually observe such gender imbalances in our undergraduate samples, the magnitude of the difference in this particular sample was unexpected. Helping to mitigate concerns regarding generalizability, however, supplementary analyses revealed neither main effects nor moderator effects of gender on important variables and relationships. Thus, we do not further discuss gender.

One hundred and fourteen of the 189 first-semester participants continued on to complete all assessments during the second semester. The 114 participants who completed the entire study differed in several ways from the 75 who dropped out after the first semester (as is discussed below). The entire two-cycle or five-wave model could be tested only for the 114 participants who completed all parts of the study.

##### General Procedure and Time Line

Interested participants completed the preliminary questionnaire packet at home. This questionnaire packet included the initial identity status measure and a measure of participants' expected adjustment to college. Participants brought these completed packets to the laboratory early in the semester, at

which time they were asked to generate and rate a set of eight personal goals for the semester. Participants also completed a 12-item neuroticism scale at this time (Costa & McCrae, 1989). During this initial period, parents were also mailed questionnaires, which asked each parent to rate (separately) how well they expected their child to adjust to college, using the same inventory that the child was given. Midway through the semester, participants were mailed a short questionnaire assessing their degree of attainment of their eight goals, which they completed and mailed back to us. They returned to the laboratory in December to complete the adjustment measure again, this time with respect to their actual level of adjustment to college that semester.

In January, after Christmas break, participants again returned to the lab to generate and rate personal goals, this time concerning the second semester. They were allowed to retain the old goals if they wished. In early March, participants were again mailed a short questionnaire that assessed their attainment of their goals. Also included in this mailing were three sealed envelopes, which participants were asked to give to close friends and associates (referred to as "peers"). Each envelope contained a questionnaire including some of the adjustment measures, which the peer completed with reference to the participant. Peers were offered a lottery incentive to complete the questionnaire and returned these forms directly to us. In late April or early May, participants returned to the lab a final time, to again complete the adjustment measure as well as the final identity status measure.

##### Measures

**Goals.** The goal assessment procedure was based on the personal projects model (Little, 1993). Separate assessments were carried out at the beginning of each semester, each in the manner described below. Goals were defined as "projects that we think about, plan for, carry out, and sometimes (though not always) complete or succeed at." After being shown examples, participants were asked to list eight goals that would last "at least through the end of the semester." Goals listed by actual participants included "get good grades," "get involved in campus organizations," "get to know lots of people," "don't gain weight," and "call my parents once a week."

Next, participants rated why they were pursuing each goal, in terms of each of four different reasons: external (*You strive for this goal because somebody else wants you to, or because the situation seems to compel it*), introjected (*You strive for this goal because you would feel ashamed, guilty, or anxious if you didn't*), identified (*You strive for this goal because you really believe that it's an important goal to have*), and intrinsic (*You strive for this goal because of the enjoyment or stimulation which that goal provides you*). A 1 (*not at all because of this reason*) to 9 (*completely because of this reason*) scale was used. As noted in the introduction, we assumed that in the case of self-generated personal goals, such ratings reflect the degree to which the goals match the person's implicit values and interests (Sheldon & Elliot, 1998, 1999). As in past research, a single self-concordance score was computed by summing the eight identified and the eight intrinsic ratings and then subtracting the eight external and the eight introjected ratings (Cronbach's  $\alpha = .78$  for the first semester and  $.75$  for the second semester).

Midway through each semester, participants completed a questionnaire in which they were asked, "How well are you doing in each goal?" using a 1 (*not at all well*) to 7 (*very well*) scale. First-semester and second-semester attainment scores were computed by averaging these ratings across the eight goals.

<sup>1</sup> Attrition analyses revealed no difference between the 50 immediate dropouts and the 189 remaining participants in terms of expected adjustment, identity status, life skills, or ACT scores, suggesting that these early dropouts were no different from the rest of our sample.

*General motivation for college.* In the preliminary questionnaire packet, we also asked participants to rate their general motivation for attending college in terms of the same four reasons (external, introjected, identified, and intrinsic). We used these four ratings to create a self-concordant college motivation variable, which we examined as a convergent measure of self-concordance in personality. In addition, we asked each parent to rate the participant's motivation for attending college in terms of the same four reasons. Self-concordant college motivation variables were created separately for each parent. These two parent variables were also used to validate and support the participant's self-reports of self-concordance. Despite follow-up letters, not all parents returned the questionnaires (156 of the mothers and 137 of the fathers of the 189 first-semester participants returned the questionnaires). Thus, the sample size for these analyses was somewhat reduced from the full sample size.

*Adjustment.* As noted earlier, our primary measure of adjustment was the SACQ (Baker & Siryk, 1984). This is a well-validated 67-item inventory that has been widely used in the college counseling literature (Brooks & DuBois, 1995; Gerdes & Mallinckrodt, 1994). The inventory contains four subscales: Social Adjustment, Emotional Adjustment, Institutional Attachment, and Academic Adjustment. Baker and Siryk reported that the subscales can be examined separately or a global score can be used. In the present study, we focused primarily on the global score because we did not have hypotheses about which specific facets of adjustment should be most influenced by self-integrated goal pursuit. In the preliminary questionnaire, the SACQ items were worded somewhat differently than they were in later administrations; specifically, participants were asked how they expected to feel during the first semester at the university (see Baker, McNeil, & Siryk, 1985). An expected adjustment score was computed by averaging all items (after appropriate recodings). This expected adjustment variable was used primarily as a covariate, to focus the first-semester analyses on changes (positive or negative) in participants' adjustment, relative to their own expected levels of adjustment. The SACQ was administered again in December and in April by asking participants how they felt at the present time. Postsemester 1 and Postsemester 2 adjustment scores were computed from these ratings.

The same 67-item questionnaire was also administered to each parent, asking the parents how they expected their child to feel during the first semester of college. Mothers' expected adjustment and fathers' expected adjustment variables were derived from these ratings. These variables were used to help validate participants' self-reported adjustment. As we noted above, the sample size for these parent variables was somewhat smaller than the full sample size.

In addition, in March, the three peers selected by the participant were each asked to complete the Social Adjustment and Emotional Adjustment subscales of the SACQ, with respect to the participant's current level of adjustment. For each respondent, we combined the two subscales to compute a peer's actual adjustment variable.<sup>2</sup> Not all peers returned these questionnaires. We averaged the responses that were received (1, 2, or 3) to create a single score for each participant. Of course, participants for whom no peer returned the questionnaire had missing data on this variable; thus, as we noted above, the sample size for these peer variables was somewhat smaller than the full sample size. Peer-rated SACQ scores were also used to help validate participants' self-reports of adjustment.

*Identity status.* Because levels of ego development change slowly, if at all, during the college years (Cohn, 1998; Marcia et al., 1993), we measured this construct only twice, at the beginning and the end of the study. Specifically, we twice administered the EOMIS (Adams et al., 1989), which was developed to represent the variations in identity status specified by Eriksonian developmental theory (Erikson, 1963; Marcia et al., 1993). In our study, we included both the eight-item Occupational Identity scale and the composite 40-item measure of interpersonal identity (which addresses sex roles, friendship, recreation, and dating; see Adams et al., 1989). Inclusion of these two measures enabled us to examine our dynamic goal variables as predictors of two important outcomes: students' ability to

consolidate their career plans and their ability to consolidate their social identities within the new milieu. To create continuous variables for correlational analysis, for each construct and measurement occasion, we computed a single achieved identity score by summing the achieved items and subtracting the diffusion items.<sup>3</sup> We also computed an aggregate achieved identity score by averaging all five subscales (vocational identity and the four subtypes of interpersonal identity). This variable allowed an omnibus test of the hypothesis of ego developmental change.

*Academic performance.* At the end of the year, the university registrar provided us with data on participants' incoming ACT scores (the required test at the University of Missouri), their fall GPA, and their spring GPA. Fall GPA and spring GPA were used as primary outcome measures. ACT scores were used as a covariate to focus the analyses on academic performance relative to measured academic ability.

## Results

### Descriptive Statistics

Table 1 provides descriptive statistics for all major study variables in the temporal order in which they were measured. As we noted above, there were no gender differences for any of these variables. However, some within-subject differences emerged among measures repeated over the first and second semesters. Specifically, the sample as a whole experienced a significant decline in SACQ adjustment from expected to post-first semester ( $M = 15.15$  vs.  $14.95$ , respectively),  $t(188) = 1.98$ ,  $p < .05$ . Suggesting that these differences do not merely represent the gap between expected and actual, there was also a marginally significant decline for those who remained in the study between the post-first-semester and the post-second-semester actual adjustment scores ( $M = 15.13$  vs.  $14.95$ , respectively),  $t(113) = 1.86$ ,  $p < .07$ . Finally, there was also a marginally significant decline in GPA between the fall and spring semesters,  $t(113) = 1.84$ ,  $p < .07$ , for those who remained in the study. These findings concur with other results suggesting that the freshman year is difficult and takes a toll on students (Sher, Wood, & Gotham, 1996). It is interesting, however, that there was also a significant sample-wide increase in

<sup>2</sup> The Institutional Attachment and Academic Adjustment subscales were omitted from the peer questionnaires in the interest of brevity. We should note that regression analyses revealed that the Social Adjustment and Emotional Adjustment subscales together accounted for 88% and 86% of the variance, respectively, in participants' expected adjustment and post-first-semester adjustment scores, suggesting that including only the Emotional Adjustment and Social Adjustment subscales in the peer questionnaires still allowed a close approximation of the total score that peers would have provided given the opportunity.

<sup>3</sup> One approach with such data is to use median splits to assign participants to particular identity categories (i.e., achieved, foreclosed, moratorium, or diffused; Marcia et al., 1993). However, the data generated by such a procedure are problematic in two ways. First, categorical data are not easily amenable to correlational analyses of the type presented below. Second, assignment to category is made relative to sample means; thus, if a particular sample is unusually mature or immature, median splits may result in miscategorization of many participants (Waterman, 1999). To avoid these problems and to reduce the data, we chose to create continuous ego-development variables by subtracting diffusion from achievement scores (A. Waterman, personal communication, October 13, 1999). Although this procedure did not take moratorium and foreclosure scores into account, this was deemed acceptable given the inherent ambiguity involved in locating the latter two constructs on a continuum of ego development.

Table 1  
*Descriptive Statistics for Primary Study Variables*

Variable	<i>M</i>	<i>SD</i>	<i>N</i>
Initial and 1st semester			
Combined ACT score	26.35	3.77	189
Expected adjustment	15.15	1.39	189
Achieved identity	17.78	1.44	189
1st-semester self-concordance	5.95	3.43	189
Neuroticism	2.70	0.71	189
1st-semester attainment	4.79	0.87	189
Post-1st-semester adjustment	14.95	1.37	189
1st-semester GPA	3.22	0.65	189
2nd semester			
2nd-semester self-concordance	5.81	4.14	114
2nd-semester attainment	4.89	0.91	114
Post-2nd-semester adjustment	14.95	1.45	114
2nd-semester GPA	3.29	0.58	114
Achieved identity	18.25	1.84	114

Note. ACT = American College Test; GPA = grade point average.

aggregate identity achievement from the beginning to the end of the year,  $t(113) = 3.10$ ,  $p < .01$ . This finding suggests that personal growth may still occur even as a person experiences stress- or trauma-related reductions in immediate happiness or adjustment (see Tedeschi, Parks, & Calhoun, 1998). No between-semester differences were observed for the attainment or self-concordance variables.

#### Validation Correlations

Table 2 provides correlations between self-reported and other-reported SACQ adjustment measures. As one can see, there was significant convergence between these measures. It is notable that the mothers' and fathers' expected adjustment variables were more strongly associated with their children's expected adjustment than with children's later actual adjustment, which is logical given how much closer in time and context these initial ratings were. In a similar manner, peer-rated adjustment (data collected late in the second semester) was most closely associated with post-second-semester adjustment, also as one would expect, assuming that observers' reports were sensitive to the participants' state at a particular moment in time. Demonstrating further convergence among measures, mothers' and fathers' ratings correlated .48 ( $n = 131$ ,  $p < .01$ ), mothers' ratings correlated .27 with later peer

ratings ( $n = 79$ ,  $p < .05$ ), and fathers' ratings correlated .28 with peer ratings ( $n = 72$ ,  $p < .05$ ).

Table 3 provides the correlations between parent-rated motivation for college attendance and the three participant-rated motivation measures. As one can see, both mothers' and fathers' ratings of participants' self-integrated reasons for attending college were associated with participants' self-rated integrated reasons for attending college. In addition, these two parent variables were significantly associated with participants' first-semester goal self-concordance. These findings suggest that, at a given moment in time, participants were in a more or less self-integrated motivational state, on which both they and observers could agree. However, this state also seemed to be amenable to change, given that parents' ratings of initial concordant college motivation were not associated with participants' second-semester goal self-concordance (see Table 3) and also given that participants' first-semester and second-semester goal self-concordance measures only correlated .48 (i.e., the test-retest coefficient was not extremely high).

#### Testing the Single-Cycle Model

Again, the primary point of the study was to test a simultaneous two-cycle model of how positive change and development can occur, focusing on initial self-concordant motivation as an important instigating variable. However, before proceeding to this most complex analysis, we first tested the basic single-cycle model, separately in each of the two semesters, to examine its replicability over two different time periods with two somewhat different samples. According to this model, self-concordant motivation promotes better goal attainment. Goal attainment in turn leads to increases in performance and adjustment-related outcomes.

Table 4 presents correlations between the first-semester variables. As one can see, self-concordance was positively associated with goal attainment ( $r = .28$ ,  $p < .01$ ), which is consistent with the assumption of a direct effect of initial self-integrated motivation on later attainment. To examine the effects of attainment on positive outcomes, we conducted a regression analysis to predict post-first-semester adjustment. Expected adjustment was entered in the first step, to focus the longitudinal analysis on adjustment relative to expectations, and was a highly significant predictor, as we expected. Attainment was entered at the second step and was found to have a significant effect ( $\beta = .32$ ,  $p < .01$ ), supporting the assumption that doing well in one's goals over a period of time

Table 2  
*Correlations Between Self-Reported Adjustment and Parent- and Peer-Reported Adjustment*

Self-reported adjustment	Others' reports of participants' adjustment		
	Mothers' expected adjustment	Fathers' expected adjustment	Peers' actual adjustment
Expected adjustment	.32** (156)	.20* (137)	.19† (91)
Post-1st-semester adjustment	.17* (156)	.16† (137)	.21* (91)
Post-2nd-semester adjustment	.24* (103)	.22* (94)	.31** (79)

Note. Parents' expected adjustment ratings and participants' self-reported adjustment ratings were made in August and September, prior to or near the beginning of the first semester. Peers' actual adjustment ratings were made in March, near the end of the second semester. Sample sizes (*ns*) for each correlation are in parentheses.  
†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ .

Table 3  
Correlations Between Self-Reported Concordance Measures and  
Parent-Reported Concordance Measures

Self-reported variable	Parent-reported variable	
	Mothers' rating of self-concordance of participants' reasons for attending college	Fathers' rating of self-concordance of participants' reasons for attending college
Self-concordant reasons for attending college	.21* (155)	.40** (135)
Self-concordant reasons for pursuing 1st-semester goals	.20* (156)	.17* (136)
Self-concordant reasons for pursuing 2nd-semester goals	.06 (123)	.14 (108)

Note. All ratings were made prior to or near the beginning of the first semester. Sample sizes (*ns*) for each correlation are given in parentheses.

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

is an important means by which one can become (relatively) better adjusted. To determine whether the effect was specific to particular forms of adjustment, we conducted follow-up analyses examining each of the four subscales of the SACQ separately (Social Adjustment, Emotional Adjustment, Academic Adjustment, and Institutional Attachment, as measured in December), also controlling for the appropriate expected adjustment scores. Attainment was found to have significant positive effects in every case.

A second regression used fall GPA as the dependent measure. ACT score was entered at the first step, and attainment was entered at the second step. As we expected, ACT score was significant in this analysis ( $\beta = .51$ ,  $p < .01$ ). Most important, attainment manifested the predicted significant effect ( $\beta = .18$ ,  $p < .01$ ) at Step 2.

We next tested the same single-cycle model for the second semester. Before doing this, however, we conducted attrition analyses to find out if the 75 participants who dropped out after the first semester differed from the 114 participants who remained. As revealed by *t* tests, the dropouts did not differ from the remaining participants on any of the initial variables (i.e., expected adjustment, life skills, first-semester self-concordance, or goal expectancies). However, the dropouts were marginally significantly lower in mid-semester goal attainment,  $t(187) = 1.82$ ,  $p < .10$ ; achieved a significantly lower fall GPA,  $t(187) = 3.50$ ,  $p < .01$ ; and were also lower in post-first-semester adjustment,  $t(187) = 2.50$ ,  $p < .05$ . It is perhaps most revealing, that they were lower in ACT score ( $M = 25.23$  vs.  $27.09$ ),  $t(187) = 3.41$ ,  $p < .01$ ,

measured the previous year. This pattern suggests that, although study dropouts expected to do as well in their goals and expected to adjust as well overall, their more limited academic ability conduced to poorer performance and lower actual adjustment and also led them to withdraw from our study. Thus, the second-semester model was tested (below) on a somewhat more able group of students.

Table 5 presents the correlations between all major second-semester variables. As one can see, self-concordance was again positively associated with attainment ( $r = .34$ ,  $p < .01$ ), which was again consistent with our assumption of a direct relationship between these two variables. A regression was conducted with post-second-semester adjustment as the dependent measure. Post-first-semester adjustment was entered at the first step to focus the analysis on changes in adjustment relative to the end of the first semester. As we noted above, the adjustment test-retest coefficient was significant. At Step 2, the second-semester attainment variable was significant ( $\beta = .20$ ,  $p < .01$ ), again indicating that goal attainment was one means by which individuals became better adjusted, relative to others in the sample. Separate analyses of the four SACQ subscales revealed significant effects of attainment on positive change for all except the Emotional Adjustment subscale.

We then conducted a second regression analysis, with spring GPA as the dependent measure. ACT score was entered in the first step. Second-semester attainment was entered at the second step and was again found to predict academic performance, controlling for academic ability ( $\beta = .17$ ,  $p < .05$ ).

Table 4  
First Semester: Correlations Between Major Variables ( $N = 189$ )

Variable	1	2	3	4	5	6
1. Expected adjustment	—					
2. Self-concordance	.24**	—				
3. Attainment	.30**	.28**	—			
4. Post-1st-semester adjustment	.48**	.28**	.46**	—		
5. Semester GPA	.17*	.18**	.22**	.33**	—	
6. ACT score	.15*	.03	.02	.26**	.46**	—

Note. GPA = grade point average; ACT = American College Test.

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

Table 5  
*Second Semester: Correlations Between Major Variables (N = 114)*

Variable	1	2	3	4	5	6
1. Post-1st-semester adjustment	—					
2. Self-concordance	.20*	—				
3. Attainment	.17	.34**	—			
4. Post-2nd-semester adjustment	.72**	.20*	.31**	—		
5. Semester GPA	.28**	.02	.12	.38**	—	
6. ACT score	.35**	-.08	-.08	.27**	.47**	—

Note. GPA = grade point average; ACT = American College Test.

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

As an ancillary analysis, we controlled for neuroticism while examining the effects of self-concordance on attainment and of attainment on increased adjustment in both semesters. In the first semester, neuroticism had its own negative effect on goal attainment ( $\beta = -.24, p < .01$ ), but self-concordance remained significant ( $\beta = .19, p < .01$ ). Goal attainment also remained a significant predictor of increased adjustment ( $\beta = .28, p < .01$ ) with neuroticism in the equation; it is interesting that neuroticism predicted decreased adjustment following the first semester ( $\beta = -.31, p < .01$ ). In the second semester, self-concordance also remained a significant predictor of goal attainment with neuroticism in the equation ( $\beta = .32, p < .01$ ); neuroticism was not significant. Goal attainment continued to predict positive changes in adjustment ( $\beta = .20, p < .01$ ) with neuroticism in the equation, and neuroticism again predicted decreased adjustment from the beginning to the end of the semester ( $\beta = -.18, p < .05$ ).

As a final ancillary analysis, we examined whether participants had changed their goals between the first and second semesters. A count was made of how many of the second-semester goals were the same as those in the first semester ( $M = 2.57, SD = 2.56$ ). This variable did not affect any of the aforementioned results.

#### *Testing the Proposed Linkage Between the Two Semester Models*

As Figure 1 shows, we hypothesized that strong goal attainment during the first semester would promote increases in self-concordance from the first to the second semester (Sheldon et al., in press). To test this hypothesis, we regressed second-semester self-concordance on first-semester self-concordance and first-semester goal attainment. In this analysis ( $N = 114$ ), the test-retest coefficient for self-concordance was significant ( $\beta = .42, p < .01$ ); more important, first-semester goal attainment was also significant ( $\beta = .23, p < .01$ ). This finding indicates that the gains in self-knowledge or self-assurance afforded by attaining one's goals in one cycle may enable one to select more self-appropriate goals in the next cycle or feel more identification with and interest in whatever goals one selects.

#### *Testing the Entire Two-Cycle Model*

Next, we used the LISREL 8 program (Joreskog & Sorbom, 1993) to simultaneously test the entire yearlong model. First, we focused on SACQ adjustment, specifying paths as shown in Figure 1.<sup>4</sup> In addition to these theoretically derived paths, we also included paths from expected adjustment to post-first-semester

adjustment, from post-first-semester adjustment to post-second-semester adjustment, from first-semester self-concordance to second-semester self-concordance, and from first-semester goal attainment to second-semester goal attainment. We added the latter constraints to focus the analysis on change in these constructs, unfolding over time.

All specified paths were found to be significant in this model. To evaluate the overall fit of the model, we examined the chi-square statistic. We also examined the goodness-of-fit index (GFI), the fit statistic recommended by Joreskog and Sorbom (1993); the normed fit index (NFI), which has long been popular in the structural equation modeling (SEM) literature (Tanaka, 1987); and the comparative fit index (CFI; Bentler, 1990), which can correct for the NFI's tendency to underestimate fit in small samples. Nonsignificant chi-square values and fit indices of .90 or greater are typically held to indicate good fit (Tanaka, 1987).

Although the aforementioned model represented the data well according to the formal fit statistics (GFI = .95, NFI = .91, CFI = .95), chi-square was significant,  $\chi^2(11, N = 112) = 20.78, p < .04$ , suggesting an imperfect fit. Modification indices suggested that a path should be included from expected adjustment to first-semester goal attainment. It is notable that in earlier longitudinal modeling, we were also led to include such a path (see Sheldon & Elliot, 1999, Studies 1 and 3); again, it appears that initial adjustment or well-being may have been an important predictor of later positive outcomes, consistent with the findings of Feist, Bodner, Jacobs, Miles, and Tan (1995). Inclusion of this path yielded the following quite adequate fit statistics:  $\chi^2(10, N = 112) = 9.46, p < .50$ ; GFI = .98; NFI = .96; and CFI = 1.00. Notably, as we expected, change in adjustment following the first semester was not a predictor of further positive outcomes in the second semester; instead, it seemed to be more of a side effect of first-semester goal attainment.

To address our second major dependent measure, GPA, we ran the model again, this time including five additional paths: ACT score to fall GPA, first-semester goal attainment to fall GPA, ACT score to spring GPA, second-semester goal attainment to spring GPA, and fall GPA to spring GPA. Model fit was good but not excellent,  $\chi^2(28, N = 112) = 44.88, p < .03$ ; GFI = .93; NFI = .89; and CFI = .95, largely because the path from increased goal attainment in the second semester to increased GPA in the second

<sup>4</sup> We did not estimate latent variables in these analyses because the participants-to-parameters ratio would have been prohibitively small. Instead, we used our standard compositing procedures.



semester (controlling for ACT score and for fall GPA) was not significant. Given the sheer number of variables included within the model and the fact that every central study finding could be represented within it, however, we believe that the overall conceptual framework was quite well supported by the empirical data. The theoretically central paths from the final summary model, along with their standardized parameter estimates, are presented in Figure 2.

### Examining Changes in Ego Development

Next, we tested the hypothesis that attaining initial college goals can help a person to consolidate his or her social and vocational identities. Specifically, we conducted three regression analyses; one for interpersonal identity, one for occupational identity, and one for the aggregate identity measure. The year-end version of each variable was the dependent measure, which was to be predicted by the initial version of the variable and by the participant's summed goal attainment over the year. Although yearlong goal attainment was positively associated with changes in vocational identity ( $\beta = .21, p < .05$ ), it was not associated with changes in interpersonal identity ( $\beta = .11, p < .21$ ). However, goal attainment was significantly associated with changes in the aggregate achieved identity measure ( $\beta = .16, p = .05$ ). In sum, it appears that freshmen who do well in their self-generated goals (who likely are pursuing more self-concordant goals) thereby achieve relatively more consolidated identities, especially in the domain of vocational or occupational choices.

### Examining the Stability of Well-Being Gains

Finally, we examined whether first-semester gains in adjustment lasted, or if participants who made gains instead regressed in the second semester. To address this question, we first computed two difference scores, one for each semester, by subtracting the initial SACQ score from the final SACQ score ( $M_s = -.20$  and  $-.15$  for the first and second semester, respectively). Positive scores on these measures indicate a positive change relative to one's prior baseline, and negative scores indicate a negative change. These

two measures were negatively correlated ( $r = -.24, p = .01$ ), indicating that there was indeed a "regression to the mean" effect, such that those who gained in adjustment during the first period tended to lose ground in the next. However, this effect was not large, and clearly some participants who made gains did not thereafter regress. Were these the ones who also did well in their goals during the second semester?

To examine this question, we conducted a  $2 \times 2$  analysis of variance predicting the second-semester adjustment difference score as a function of two variables: the first-semester adjustment difference score (positive or negative, according to median split) and second-semester goal attainment (low vs. high, according to median split). This analysis revealed a negative main effect of first-semester gain,  $F(1, 110) = 8.02, p < .01$ ; a positive main effect of second-semester goal attainment,  $F(1, 110) = 5.57, p = .02$ ; and no interaction between the variables. Specifically, participants who increased in adjustment in the first semester tended to regress back to their original level in the second semester, if they did poorly in their second-semester goals ( $M = -.69$ ): For a paired-sample  $t$  test comparing adjustment at the beginning and the end of the second semester,  $t(30) = 2.98, p < .01$ . Most important, those who gained in the first semester but who did well in their second-semester goals did not regress back ( $M = -.15$ ),  $t(26) = 1.15, ns$ . Finally, those who lost ground in the first semester and did poorly in their second-semester goals also experienced no change in adjustment during the second semester ( $M = -.07$ ),  $t(27) = 0.45, ns$ , as did those who lost ground in the first semester and did well in their second-semester goals ( $M = .27$ ),  $t(27) = 1.50, ns$ . In short, it appears that one can at least maintain one's well-being-related gains, if not improve them further, if one can continue to do well at one's personal goals. However, one is likely to slip back if one does not continue to do well.

### Discussion

Study 1 provided good support for our proposed two-cycle model of positive personal change. Those who began the semester with goals that matched their implicit values and interests were

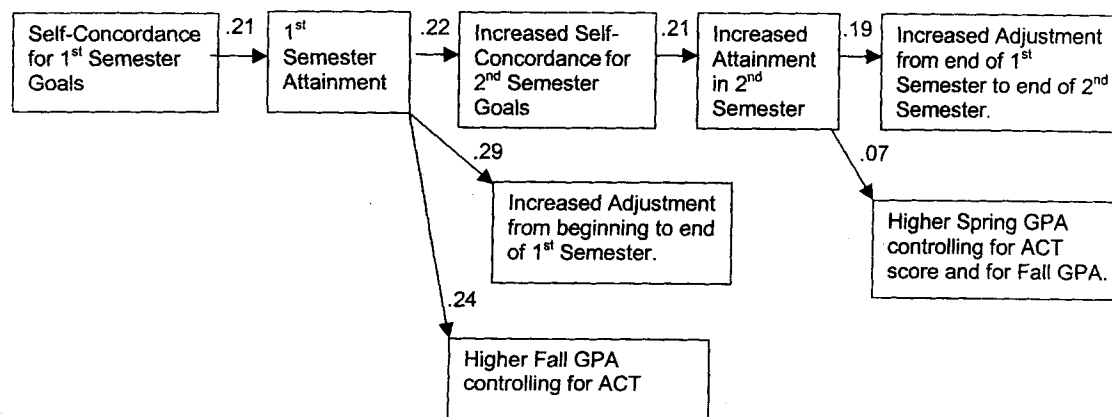


Figure 2. Study 1: Parameter estimates for the two-cycle path model. All coefficients greater than or equal to .19 are significant at the .05 level or better. Test-retest and control variable coefficients are omitted. GPA = grade point average; ACT = American College Test.

better able to attain those goals over the semester, which in turn led to increased adjustment. Goal attainment yielded an additional benefit in that high-achieving participants felt a greater sense of self-determination in their second-semester goals, which in turn predicted even higher levels of attainment during the second semester. Study 1 also showed that the effects were not reducible to neuroticism, as well as provided validation peer and parent data regarding the self-report adjustment and self-concordance measures. In addition, Study 1 showed that increased adjustment itself had no causal impact. Instead, it was in essence a side effect, whereas goal variables carried the real dynamic impetus into the second semester.

Is an upward spiral of ever-increasing well-being possible? The final set of analyses from Study 1 provided mixed support for this idea. It appears that one can increase one's level of well-being from the study baseline by doing well at personal initiatives during a first striving cycle. However, few participants were able to increase their well-being still further, in absolute terms, during the second cycle. Nevertheless, we believe it is no small feat simply to maintain a higher level of well-being than before, as those who did well in both semesters were able to do. We believe these findings carry an inspirational but also a realistic message: You can hope to make yourself happier, but it will take hard work to get there and more hard work to stay there. It is interesting that the Study 1 results also suggest that one can increase one's level of ego development through one's goal attainments. These latter types of gains, which involve movement upward along a continuum of stages, are presumably less tenuous and more lasting (Marcia et al., 1993).

In Study 2, we sought to test our two-cycle model in a 2-week longitudinal study to examine its applicability in a much different span of time. To find support for the model in a study of shorter term goals and fluctuations would help establish generalizability for the motivational processes being studied. To this end, we assessed participants' self-concordance for an initial set of goals set in the laboratory. We then assessed their level of goal attainment and their sense of positive personal change 1 week later, again assessing their feelings of self-concordance regarding their goals. Finally, we assessed their attainment and their sense of positive personal change again, 2 weeks after the beginning of the study. We intended to use LISREL modeling to test the fit of the same two-cycle model as was tested in Study 1.

## Study 2

### Method

#### Participants and Procedure

Participants were 94 undergraduates who participated in the study for extra credit in a psychology course. Participants attended a laboratory computer session during which they selected 8 personal goals to pursue during the next 2 weeks. They completed a follow-up E-mail questionnaire 1 week later and another follow-up E-mail questionnaire 2 weeks later. The gap between the initial session and the first E-mail questionnaire enabled us to model the first part of the sequence presented in Figure 1, and the gap between the first and the second E-mail questionnaire enabled us to model the second part of the linked sequence.

### Measures

Participants were presented with a list of 32 personal goals that a person might pursue, all of which were commonly observed in our goal studies (Sheldon & Wild, 2000). The list was balanced with representative numbers of approach versus avoidance goals (Elliot, Sheldon, & Church, 1997) and goals with extrinsic versus intrinsic content (Sheldon & Kasser, 1998). Example goals included "do well in school," "avoid feeling inferior to others," and "be close with my girlfriend/boyfriend." Participants were asked to select 8 goals from this list that they would be willing to pursue in the next 2 weeks.

After settling on a set of 8 goals, participants proceeded to rate each goal on the four perceived locus of causality (PLOC) dimensions described above, using a 1 to 5 scale. A Time 1 self-concordance score was derived in the same way as in Study 1 by summing the intrinsic and identified ratings and then subtracting the external and introjected ratings (Cronbach's  $\alpha = .80$ ).

One week later, participants were sent an E-mail questionnaire in which they rated their progress in each goal during the past week, using a 1 (*none*) to 5 (*very much*) scale. A Time 2 progress score was computed by averaging these eight ratings. In this questionnaire, participants made PLOC ratings again, using the same scale as before. A Time 2 self-concordance score was computed from these ratings (Cronbach's  $\alpha = .85$ ).

As an indicator of positive well-being or personal change, the first E-mail questionnaire also asked participants to consider how goal pursuit had affected their "struggle to grow and develop as a person" (Ryff & Singer, 1998; Sheldon et al., in press). A 1 (*none*) to 5 (*very much*) scale was used, and a Time 2 sense-of-growth score was computed by averaging the eight ratings. There was no Time 1 sense-of-growth variable because the construct referred to the process of striving, which had not yet begun at the initial session. Therefore, in Study 2 the well-being outcome for the first cycle was retrospective sense of growth only, not measured change in sense of growth.

A second E-mail questionnaire containing further questions about progress and sense of growth was sent 1 week later. Time 3 progress and Time 3 sense-of-growth variables were computed from these ratings, in the same way as before. Notably, in the second cycle, it was possible to try to predict change in our well-being indicator. However, because this was not possible in the first cycle, Study 2 did not allow us to examine the persistence of positive change in well-being (i.e., the question of the stability of well-being gains).

### Results

Table 6 presents correlations between the six study variables. Consistent with the results of Study 1, self-concordance at the beginning of a cycle predicted greater goal attainment by the end of that cycle. Specifically, Time 1 self-concordance was associated with Time 2 progress, and Time 2 self-concordance was associated with Time 3 progress.

We then tested the same summary path model that was tested in Study 1 by using LISREL 8 software (Joreskog & Sorbom, 1993; see Figure 1). In addition to the theoretically derived paths presented in Figure 1, test-retest paths were also included from Time 2 sense of growth to Time 3 sense of growth, from Time 2 progress to Time 3 progress, and from Time 1 self-concordance to Time 2 self-concordance. The latter constraints were added to focus the analysis on participants' rank-order changes in these constructs, unfolding over time.

All specified paths were found to be significant in this model, with the exception of the path from Time 2 self-concordance to Time 3 progress, which was marginally significant ( $p < .07$ , two-tailed). These parameter estimates are presented in Figure 3.

Table 6  
Study 2: Correlations Between Major Variables

Variable	1	2	3	4	5	6
1. Time 1 self-concordance	—					
2. Time 2 self-concordance	.41**	—				
3. Time 2 progress	.26**	.29**	—			
4. Time 3 progress	.15	.33**	.66**	—		
5. Time 2 sense of growth	.02	.20*	.19	.20*	—	
6. Time 3 sense of growth	.19	.24**	.24**	.29**	.61**	—

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

To assess overall model fit, we again examined chi-square, GFI, NFI, and CFI. Chi-square indicated a good-fitting model,  $\chi^2(7, N = 94) = 8.47, p > .29$ . GFI, NFI, and CFI were .97, .94, and .99, respectively, also indicating a good fit. In short, the basic two-cycle model of Study 1 was replicated in Study 2.

### Discussion

Study 2 provided a second test of our integrated longitudinal path model, again finding reasonably good support for the model, this time in a much shorter time frame. Specifically, the results again indicated that "success may breed more success," in that those who did well during the 1st week reported stronger engagement and identification with their goals following the 1st week, a fact that predicted even better goal attainment and thus enhanced well-being following the 2nd week. In Study 2, it is clear that it was participants' experience of their goals that changed after the first cycle, not the appropriateness of their actual goal choices, because participants did not have the opportunity to select new goals after the 1st week. In other words, because the measure changed when the goals did not, these results suggest that the self-concordance measure can index transient feelings regarding goals, as well as the "fit" of goals with stable personality. However, it is also worth noting that the goals in Study 2 were not self-generated but, rather, were selected from a prespecified list. In this context, the question of changing feelings regarding goals may have more relevance, and the question of whether the person can generate self-appropriate goals in an open-ended assessment may have less relevance.

### General Discussion

These two studies tested an ambitious longitudinal path model of the motivational processes by which people "pursue happiness," more or less successfully. We believe our personal goal methodology provides an ideal tool for addressing this question because personal goals represent the proactive efforts of individuals to satisfy their needs and to shape their lives in positive new directions (Ryff & Singer, 1998; Kasser & Sheldon, 1998; Sheldon et al., in press). Another advantage of goal constructs is that although they demonstrate enough temporal stability to have a sustained impact over time (Emmons, 1989), they are also changeable at the onset of a new context or period of time. Thus, they are sensitive to and reflect the influence of both the recent past and the social ecology in which the participant is embedded (Cantor, 1994; Little, 1993). Finally, precisely because of their malleability and self-motivational potential, idiographic personal goals may provide opportune targets for interventions (Wadsworth & Ford, 1983). In other words, one way to help people to better "pursue happiness" may be to help them to better identify and pursue personal goals (Diener et al., 1999; Sheldon et al., in press).

The present research focused on one potentially important factor influencing successful goal pursuit—namely, participants' ability to select "self-concordant" goals, that is, ones that well represent (according to theory) their implicit interests, values, and growth trends. We assume that this is a difficult skill, requiring both accurate self-perceptual abilities and the ability to resist social pressures that may sometimes push one in inappropriate directions (Deci & Ryan, 1991; Sheldon, in press). Results indicate that

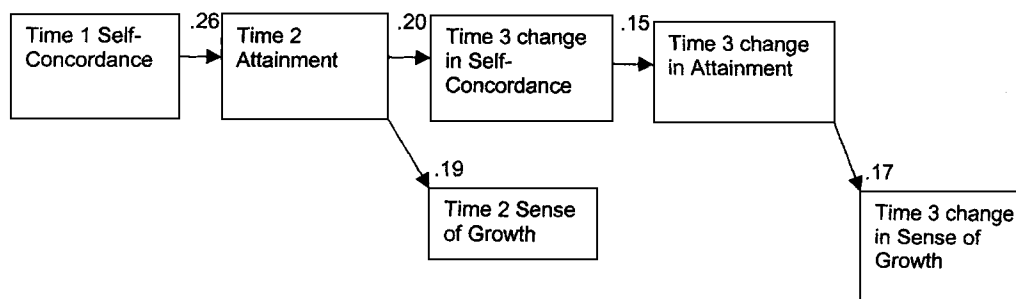


Figure 3. Study 2: Parameter estimates for the two-cycle path model. All coefficients are significant at the .05 level or better, except for Time 3 change in self-concordance to Time 3 change in attainment ( $p < .07$ ). Test-retest and control variable coefficients are omitted.

self-concordant motivation may indeed provide an important resource for goal strivers. Those with strong intrinsic and identified initial motivation were more likely to attain their first-cycle goals, which in turn made increases in well-being more likely. Furthermore, high first-cycle attainment predicted increased feelings of self-concordance prior to the second cycle as compared with the first cycle. This enhanced self-concordance then promoted relatively better goal attainment during the second cycle as compared with the first cycle. Finally, those with higher second-cycle goal attainment were likely to show the highest adjustment and sense of growth at the end of the study, controlling for all prior levels of these variables.

In Study 1, such attainment effects were also shown to hold for an important performance-related outcome, namely, GPA. In other words, individuals pursuing self-concordant goals were ultimately able to exceed the level of academic achievement predicted by their ACT scores, even though most goals were not directly class- or grade-related. This finding suggests that those people who can identify sets of goals that well represent their implicit interests and values are indeed able to function more efficiently, flexibly, and integratively across all areas of their lives (Deci & Ryan, 1991). High-achieving Study 1 participants were also most likely to demonstrate enhanced ego development from the beginning to the end of the year, suggesting that goal attainment is an important route to personal growth (Sheldon et al., *in press*). In short, the present research helps to considerably generalize the self-concordance model beyond the mood, symptom, and life satisfaction outcomes that have been previously studied (Sheldon & Elliot, 1999).

Further extending past results, substantial convergent validation of both motivation and adjustment constructs was provided through parent and peer ratings. This result is significant because both types of construct are subject to impression management and self-deceptive biases. The fact that participants and external observers can to some extent agree on both the quality of participants' motivation and their levels of adjustment helps mitigate against these concerns, thus affording additional confidence in the self-concordance measure and model. Other ancillary analyses indicated that the positive effects of self-concordance are not reducible to the effects of neuroticism (Elliot et al., 1997); that is, it appears that goal-striving variables are not just proxies for relevant personality traits.

Perhaps the most notable contribution of the present study, however, is its examination of the ways in which the outcomes of a particular striving cycle may carry over to affect processes and outcomes occurring during a subsequent cycle. Although a number of recent studies have examined the longitudinal effect of attainment on well-being in a single cycle of striving (Brunstein, 1993; Sheldon & Kasser, 1998), no previous studies have explored the stability of such effects. How does previous personal goal attainment influence later goal attainment? If a person derives enhanced well-being from successful goal pursuit, does the enhanced well-being last? In other words, can momentum be maintained?

In fact, there may be good reason not to expect a carryover from cycle to cycle, at least when it comes to well-being. For example, Lykken and Tellegen (1996) suggested that adjustment or happiness is a "stochastic phenomenon." As we discussed in the introductory section of this article, emotional well-being may be largely determined by traits or genes and thus may fluctuate only mini-

mally, randomly, or temporarily. From this perspective, we had better learn to accept our current level of happiness or adjustment, because any movement away from baseline levels is more likely due to chance than to any permanent change.

However, a contrasting view, which is consistent with folk wisdom and with common hopes and desires, is that it is possible to become happier through one's striving pursuits, if one picks the right goals and does well at them; furthermore, such changes should last and perhaps conduce to even more positive change. Indeed, without this possibility, many of our struggles and endeavors, and even the very "right to pursue happiness," which is guaranteed by the American Declaration of Independence, would be pointless. Study 1 happily suggests that the more optimistic view may be correct (at least for 18- and 19-year-olds), in that early success in goals tended to carry over to influence later positive outcomes.

However, perhaps pleasing the puritans among us, it also appears that it takes continual effort to improve oneself and one's condition (see Sheldon & Elliot, 1998, 1999), and that forward motion is not automatically maintained—at each step, regression to one's prior level is possible. First, in Study 1, those who increased in adjustment over the first semester tended to slide back to their original level in the second semester, unless they also did very well in their goals during the second semester. That is, success was necessary at each step of the way, if the prior gains were to be maintained. Further consistent with this step-by-step or indirect view (Holmbeck, 1997), no variable in the two-cycle model (see Figure 1) needed to be linked to any variable more than one wave away (excepting ACT score predicting spring GPA in Study 1; see Figure 2). Again, this finding indicates that a person's traits and starting condition do not tell the whole story and that the momentary quality of his or her motivation and striving efforts is vitally important for subsequent outcomes. Of course, these variables are doubtlessly affected by many other factors besides the ones we measured.

If people must continually do well in their goals just to maintain their earlier well-being increases, aren't they bound to eventually slip back to their set points, because we all must fail from time to time? Perhaps, but as Diener et al. (1999) pointed out, there are many other factors besides genetic set point that influence well-being, with one of these being adaptation level. The concept of adaptation level is typically used to explain how people adjust to setbacks or become accustomed to windfalls, thereby returning to their prior well-being baselines. In other words, people habituate to new external stimuli and contextual changes. However, we suggest that people can also habituate to new internal conditions and emotions (Diener et al., 1999). Specifically, we believe that a person may become accustomed to a new level of well-being, if he or she can maintain that level for a sufficient period of time, and if he or she can attribute the change to his or her own successful life efforts. In this case, the person may come to expect to be happier than before, an expectation that can create a self-fulfilling prophecy (Seligman, 1995).

For example, an entering college student may do well in his or her first-semester goals, thus feeling happier than he or she expected to; may then do well at his or her next set of goals, thus maintaining that new happiness; and may finally come to define himself or herself, in general, as a happier and more successful person than in high school. Given this new self-definition, the

person may acquire a new and higher well-being baseline that not only resists erosion but also provides a potential springboard to even higher levels of well-being. It is doubtless that such changes become ever more difficult to gain and also to maintain as a person exceeds his or her genetic predispositions by greater and greater amounts. As a result, it is probably impossible for a person's well-being to "spiral upward" indefinitely, no matter how successful he or she is in life.

However, one area in which internal gains may be lasting, and may even continue "upward" lifelong, is the domain of ego development. As a whole, the Study 1 sample experienced an increased level of ego development over the year, despite the fact that the sample as a whole experienced reductions in measured adjustment across the year. Furthermore, high-achieving participants in Study 1 enhanced their identities even more than the rest of the sample. Such ego gains are presumably relatively secure, given the assumption that they reflect new levels of cognitive organization and personal maturity (Marcia et al., 1993). In terms of our example, the entering freshman who strives effectively during the freshman year, overcoming difficult challenges and actualizing new possibilities, may thereby acquire a more integrated personality (Sheldon et al., in press). Given this gain, the freshman may be prepared to pursue even further positive change (Mithaug, 1993).

Of course, it will take future research, perhaps examining a third or even fourth cycle of striving, to test our speculation that a person's new level of well-being can become that person's new baseline, if it can be maintained long enough. Also, additional research needs to demonstrate the replicability of the two-cycle model for older adults, who are perhaps lodged more irrevocably at a particular level of development and well-being. Furthermore, research needs to examine the robustness of findings with respect to other dispositional traits besides neuroticism, including positive traits such as optimism and general behavioral approach tendencies (Carver & White, 1994). Finally, research needs to extend the model to still more types of positive outcomes, such as objective physical health, satisfaction or performance in marriage, parental domains, or career domains. Perhaps some types of positive gains are better maintained than others, as suggested by the aforementioned speculations concerning ego-developmental versus SACQ adjustment gains. We believe that such issues offer an important new avenue of inquiry for researchers of well-being.

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