Personality and Individual Differences 90 (2016) 99–107

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

# The humble path to progress: Goal-specific aspirational content predicts goal progress and goal vitality

Nora H. Hope *, Marina Milyavskaya, Anne C. Holding, Richard Koestner

*McGill University, Canada*

ARTICLE INFO

*Article history:*
Received 30 April 2015
Received in revised form 19 October 2015
Accepted 20 October 2015
Available online 5 November 2015

*Keywords:*
Life aspirations
Motivation
Goal-setting
Self-determination theory
Vitality

ABSTRACT

While previous research has demonstrated that striving for personal goals connected to intrinsic aspirations benefits psychological well-being, the relation between aspirational content and goal progress has remained unexamined. Using a multilevel modeling (MLM) approach in two longitudinal studies, we examined the relationship between life aspirations at the level of the person and the level of the goal, differentiating the ability of aspirations at both levels to predict later goal progress. We found that students made significantly more progress on (and were more likely to attain) their goals that were more intrinsic in aspirational content. These effects were goal-specific rather than person-driven. Study 2 replicated the findings of study 1 and also revealed an interaction between intrinsic aspirational content and progress in predicting goal-related affect. Specifically, we found that making progress on a goal that was more intrinsic in content led to greater feelings of vitality for that goal, while making progress on a less intrinsic goal did not. These findings highlight the benefits of setting goals connected to intrinsic aspirations (even for generally extrinsically-oriented individuals) and the value of shifting towards MLM approaches for research on goal pursuit.



## 1. Introduction

Contemporary motivational researchers have posed the questions: "are some life values more psychologically beneficial than others?" (e.g., Kasser, Ryan, Couchman, & Sheldon, 2004) and "what makes for a good goal?" (e.g., Locke & Latham, 2002; Ryan, Sheldon, Kasser, & Deci, 1996; Sheldon, Ryan, Deci, & Kasser, 2004). In the present paper, we consider the possibility that people are more amenable to making progress on personal goals that are intrinsic in aspirational content compared to more extrinsic goals.

### 1.1. Life aspirations

An empirical framework has been applied to investigate the impact of values orientation on goal pursuit and well-being. Self-determination theory researchers Kasser and Ryan (1993, 1996) have contrasted two different types of life values: intrinsic and extrinsic aspirations. While intrinsic aspirations, such as community contribution, forming meaningful relationships, and self-growth, are thought to directly satisfy basic psychological needs, extrinsic aspirations, such as fame, affluence, and alluring physical image, rely on external reward, approval, or envy of others and thwart basic psychological need satisfaction.

The pursuit of extrinsic aspirations is not inherently malignant; however, the relative prioritization of extrinsic aspirations over intrinsic aspirations appears to have a negative effect on functioning. Prioritization of extrinsic aspirations has been related to decreased global adjustment, decreased positive affect, increased symptoms of depression and anxiety, and decreased self-actualization, while prioritization of intrinsic aspirations has been related to increased well-being, and decreased symptoms of mental illness (Kasser & Ryan, 1993, 1996). The beneficial consequences of prioritization of intrinsic aspirations have been replicated transnationally, including in China (Lekes, Gingras, Philippe, Koestner, & Fang, 2010), Germany (Schmuck, Kasser, & Ryan, 2000), Russia (Ryan et al., 1999), and Korea (Kim, Kasser, & Lee, 2003). Recently, Kasser et al. (2014) demonstrated in two longitudinal studies that increased prioritization of intrinsic relative to financial success aspirations is related to enhanced well-being over time (study 1 and study 2), and that this change in well-being is mediated by greater satisfaction of basic psychological needs (study 2).

Research on intrinsic aspirations has also lead to revealing findings about normative changes in values in certain cultural, institutional, and environmental milieus. For example, in most community and university samples in North America individuals have been found to prioritize intrinsic aspirations over extrinsic aspirations, and become more intrinsic in their orientation with age (Sheldon, 2005; Sheldon & Kasser, 2001). However, Sheldon and Krieger (2004) found that first year law students shifted from prioritization of intrinsic aspirations to extrinsic aspirations over the year. Furthermore, as law students' oriented towards extrinsic aspirations, their well-being plunged.

* Corresponding author at: Department of Psychology, Stewart Biology Building, 1205 Dr. Penfield, H3A 1B1, Canada.
*E-mail address:* nora.hope@mail.mcgill.ca (N.H. Hope).

http://dx.doi.org/10.1016/j.paid.2015.10.038
0191-8869/

Sheldon and McGregor (2000) reviewed similarities between orientation to extrinsic values and other personality variables, such as external perceived locus of causality (Ryan & Connell, 1989), which might also represent deviation from "natural interests or developmental trends within themselves" (p. 286). However, Sheldon and MacGregor noted that "[orientation to extrinsic aspirations] is different from these constructs in that it refers to enduring personal values, which may lead individuals to adopt motives and goals which are chronically unsatisfying of their psychological needs". This leads to an important question: how do life aspirations influence the kinds of personal goals we set? Time-framed personal goals represent a lower tier on the motivational hierarchy, and may be influenced by higher order life aspirations.

### 1.2. Aspirational content and personal goal pursuit

Personal goals specify desired end states that one hopes to achieve, and can add structure and meaning to individuals' lives (Cantor et al., 1991). Goals direct attention away from distracting, irrelevant activities towards goal-related activities (Locke & Latham, 2002). Many personal goals are time-framed. For example, students may set goals for the new semester, just as many working adults set goals for the New Year. Making progress on one's goals has been tied to a number of beneficial life outcomes, including increased well-being (Diener, Suh, Lucas, & Smith, 1999) and job satisfaction (Judge, Bono, Erez, & Locke, 2005). In a meta-analysis, Koestner, Lekes, Powers, and Chicoine (2002) found a highly significant positive overall effect for the relationship between goal progress and well-being. People tend to experience significantly greater positive affect, and significantly less negative affect over time as they make progress on their goals.

Sheldon and colleagues have expanded research on intrinsic and extrinsic life aspirations to personal goal pursuit (Sheldon & Kasser, 1995; Sheldon & Kasser, 1998; Sheldon et al., 2004). Sheldon and Kasser (1995) proposed goal coherence, the extent to which the content of personal goals connects to intrinsic aspirations, as a possible indicator of personality integration. They found that the extent to which personal goals were connected to intrinsic aspirations was positively related to daily well-being (vitality, positive affect, and meaningfulness of activities), as well as trait measures of self-actualization, openness, cognitive empathy, and self-esteem. In contrast, the extent to which personal goals were connected to extrinsic aspirations was only related to the daily number of "distracting" activities reported by participants.

In two longitudinal studies, Sheldon et al., 2004 asked university students to generate several personal goals that they would be pursuing over the semester (study 2) or over their first post-graduation year (study 3) and rate the extent to which each goal connected to three intrinsic (meaningful relationships, personal growth, and societal contribution) and three extrinsic possible futures (financial success, popularity and fame, attractive physical image). From these ratings, a relative extrinsic content score was computed for each goal, and a person-level score was computed across the goals. In both studies, person-level analyses revealed that mean relative extrinsic content across goals was associated with decreased well-being over time.

Although the results of Sheldon et al.'s (2004) longitudinal investigations (studies 2 and 3) are compelling, one disadvantage is that these studies used between-person analyses in order to investigate outcomes related to pursuing goals intrinsic relative to extrinsic in content. In other words, relative intrinsic content was aggregated across all personal goals (eight goals for study 2; five goals for study 3) for each person, rendering it an individual differences measure rather than a goal-specific measure. While this approach can address the question: "what are the outcomes associated with individual differences in general tendencies to select and pursue goals that are more intrinsic vs. extrinsic in nature?", it does not address the question "what are the goal-specific outcomes of a person pursuing a goal that is relatively more intrinsic than their other goals vs. more extrinsic than their other goals?" Furthermore, while there is evidence for a relationship between aspirational content across goals and psychological well-being, the relationship between aspirational content and goal progress has not been explored.

Researchers have suggested that goals offering natural incentives may be less effortful to pursue. Cantor and Blanton (1996) contrast the "strategic pursuit" of personal goals with the "spontaneous pursuit" of natural incentives. Strategic pursuit requires more cognitive resources for planning and commitment, while spontaneous pursuit operates more automatically. The authors suggest that goals with natural incentives may aid spontaneous goal pursuit as incremental progress is made and rewarded with these incentives: "Natural incentives are biologically based motivations, grounded in each individual's need for procreation and survival, that are associated with pleasant affective experiences. Thus, cues that signal the possibility of experiencing natural incentives cause an emotional charge or 'energization'. This anticipatory state causes people to seek the 'kick' that accompanies natural incentives" (p.339).

We propose that goals connected to intrinsic aspirations will be more likely to meet success as these goals offer natural incentives. Arguably, goals that are intrinsic in content (such as building close relationships and giving back to others) are more aligned with natural incentives compared to goals that are extrinsic in content (e.g., appearing more attractive; accumulating material goods). Many extrinsic goals are only rewarding because of the symbolic or cognitive meaning placed on the extrinsic attainment. For example, money is only rewarding in that shelter, clothing, status symbols, toys, people, and persuasion can be bought with it. It would have no value to its proprietor if that proprietor was the sole inhabitant on a deserted island. In contrast, striving for close relationships may lead to immediate benefits of greater social connectedness and intimate exchanges, which are valuable benefits even when removed from the context of modern North American society.

#### 1.2.1. Vitality

Subjective vitality is the feeling that one is alive and energized, and is proposed to reflect organismic wellness (Ryan & Frederick, 1997). Subjective vitality is not simply a reflection of caloric energy available to metabolize, but rather a *feeling* that energy is available, with both psychological and physical factors influencing self-reports of vitality (Thayer, 1996; Ryan & Frederick, 1997). Subjective vitality has been found to be related to self-actualization, physical self-efficacy, physical health and well-being, while it has been negatively correlated with anxiety and depression (Ryan & Frederick, 1997). Additionally, activities in which one feels volitionally engaged and agentic catalyze feelings of vitality, while those in which one feels under the control of the environment decrease subjective vitality. For example, in a group of patients engaging in a treatment program for morbid obesity, those who were high in internal reasons (contrasted with external reasons) for following treatment guidelines reported significantly greater subjective vitality, compared to those who were low in internal reasons (Ryan & Frederick, 1997).

Just as people can feel alive and vital when pursuing certain activities, we expected that vitality could also be experienced in the context of goal pursuit. For example, it is likely that a person would feel more vital when pursuing a goal that helps them spend more time with their spouse than when pursuing a goal that helps them earn more money. Specifically, we expected that goals connected to relatively more intrinsic aspirations would lead people to feel more vital. Additionally, research has demonstrated the affective and well-being benefits of accomplishing personal goals (e.g. Koestner et al., 2002), and it may be the case that progress on *certain* goals leads to especially beneficial affective consequences. We expect greater vitality when goals related to intrinsic aspirations (but not those related to extrinsic aspirations) are attained. We examine goal vitality in study 2.

### 1.3. The present study

The present investigation had several aims, addressed in two longitudinal studies as participants pursued personal goals over four months. The first aim was to evaluate the relationship between life aspirations and goal-specific aspirational content. As proposed by Sheldon and McGregor (2000) personality differences in prioritization of intrinsic vs. extrinsic aspirations may be meaningfully related to the kinds of personal goals people adopt. The second aim was to evaluate the impact of pursuing intrinsic goals on goal progress. The third aim was to evaluate whether goal content (relative intrinsic aspirational content) and goal progress interact to predict feelings of goal-specific vitality. We expected that participants would have greater feelings of vitality (feeling energized and enlivened by the goal) on goals for which they make progress, but only when they are intrinsic in content. In study one, we address the first two aims, while in study 2, we examine whether the results replicate, and evaluate the third aim.

We chose a multilevel (MLM) approach to data analyses with goals nested within participants, in order to compare the outcomes of specific goals within participants, and test our hypotheses at the level of the goal. This approach carries a significant advantage, as it allows us to get closer to differences in self-regulatory outcomes of real goals, rather than aggregating predictors and outcomes across goals (e.g., averaging goal progress across four goals for each participant). Aggregating across goals is disadvantageous as it can render goal-specific measures into individual differences, confounding goal measures with participants' general response tendencies and personalities. Furthermore, we are able to consider the nested nature of goals within people with a MLM approach, rather than neglecting individual differences in the participants pursuing the goals by disaggregating goals from people. Previous research has found substantial variability (70–90%) in goal-related variables including goal motivation and goal progress within a person (Milyavskaya & Inzlicht, submitted for publication; Nurmi et al., 2009), suggesting that the appropriate level of analysis is the goal, rather than the person (Milyavskaya, in preparation).

#### 1.3.1. Hypotheses

Our first hypothesis concerned the relationship between life aspirations (motives at a higher, more abstract level), and goal content of time-framed personal goals (motives at a lower, more concrete level). We hypothesized that prioritization of intrinsic life aspirations over extrinsic life aspirations would be positively associated with pursuing time-framed goals related to intrinsic vs. extrinsic ends (e.g., setting goals such as "calling my grandparents more" vs. "gaining a lucrative, high paying summer job") as represented by the self-reported aspirational content of each personal goal.

Our second hypothesis concerned the relationship between the aspirational content of a goal and progress on that goal. We expected students to make more progress on goals with higher intrinsic goal content, relative to their other goals. In examining this hypothesis, we looked at goal-specific aspirations (for multiple goals per person, using within-person analyses), as person-level differences in aspirational content and goal pursuit can be confounded by extraneous personality factors, and individual differences in self-report ratings of aspirational content (e.g., tendency to give high ratings for all goals). In contrast, within-person (goal-specific) analyses pit an individual's goals against each other on the basis of aspirational content, controlling for the individual's mean ratings across goals.

Third, we hypothesized that there would not be an interaction between life aspirations and aspirational content of individual goals in predicting goal progress or well-being. In other words, if someone highly prioritized extrinsic life aspirations (such as being wealthy), we did not expect them to benefit more from pursuing a relatively more extrinsic personal goal (compared to the other goals they were pursuing) than someone else who did not prioritize extrinsic life aspirations. Rather, we expected that everyone would benefit from pursuing goals that were relatively more intrinsic in aspirational content, regardless of their over-arching life aspirations. Finally, we hypothesized that participants would feel more energized when pursuing goals that were intrinsic in aspirational content. Furthermore, we expected that greater goal progress overtime would be positively related to feelings of vitality for that goal, but only for goals that were intrinsic in content. In other words, we hypothesized an interaction between goal progress and goal content in predicting goal vitality, such that making progress on extrinsic goals would not lead to greater goal vitality, while making progress on intrinsic goals would.

## 2. Study 1

### 2.1. Materials and methods

#### 2.1.1. Participants and procedure

Two hundred and forty students (72% female; mean age = 20.2) fluent in English and attending one of several universities in a major city in Canada were recruited for a study on personal goals at the start of the academic year. The study was approved by the university's Research Ethics Board, and all participants provided written consent prior to participation. Participation entailed completion of one survey in September (T1), and a second survey in December (T2)[1]. Participants were financially compensated for their participation in person, following the initial survey and the final survey. Two hundred and twelve (88%) participants completed the December survey; independent samples t-tests revealed no difference between the means for students who completed the final survey in December and those who did not, therefore all participants who fully completed the first survey in September were used in the analyses.

#### 2.1.2. Measures

*2.1.2.1. Aspiration Index.* In order to measure individual differences in life aspirations, each participant completed an adapted 12-item version of the Aspiration Index (AI; Kasser & Ryan, 1996) in September (T1). Participants are asked to rate the personal importance of 12 long-term life aspirations on a 7-point scale, from *not at all important* to *very important*. For example, two sample items for intrinsic aspirations were "to work for the betterment of society" and "to have committed, intimate relationships, while two sample items for extrinsic aspirations were "to have your name appear frequently in the media" and "to be financially successful". At baseline, the Cronbach's alpha for the items assessing intrinsic aspirations was 0.70, while the Cronbach's alpha for the items assessing extrinsic aspirations was 0.83**.** As suggested by Sheldon and Kasser (2001, 2008), we calculated a life aspirations index (of relative prioritization of intrinsic to extrinsic aspirations) for each participant, by subtracting mean extrinsic aspirations ratings from mean intrinsic aspirations ratings for each participant.

*2.1.2.2. Personal goals.* In the initial survey, goals were defined for participants as "projects that people think about, carry out, and sometimes (though not always) complete or succeed at", and participants were asked to list three time-framed goals of their own that they intended to pursue during the semester. Goals listed by participants included: "Achieve a 3.8 GPA or higher", "Lose two kilograms by December", and "Find out more about [and] become better friends with my roommates".

[1] Other research with this sample has examined the role of domain need satisfaction in autonomous goals (Milyavskaya, Nadolny & Koestner, 2014), goal support (Koestner, Powers, Milyavskaya, Carbonneau, & Hope, 2015) trait perfectionism and changes in affect (Milyavskaya, Harvey, Koestner, Powers, Rosenbaum, Ianakieva, & Prior, 2014), and changes in identity and intimacy development as a function of changes in values (Hope, Milyavskaya, et al., 2014). None of the other studies have examined the construct of aspirational content of goals, and there is no overlap between the content and the hypotheses of the present study and the other studies that have used this sample.

*2.1.2.3. Aspirational content of each goal.* Following the procedure from Sheldon and colleagues (Sheldon and Kasser, 1995; Sheldon & Kasser, 1998), participants were asked to rate the extent that each of their goals might help bring about six possible futures on a 7-point scale from not at all to very much (six items per goal). Three futures were related to intrinsic aspirations (meaningful relationships; personal growth; and societal contribution), while three futures were related to extrinsic aspirations (financial success; popularity and fame; attractive physical image). An aspirational content score (relative intrinsic aspirational content) was computed for each goal by subtracting the mean of the ratings for the three extrinsic possible futures for that goal from the mean ratings for the three intrinsic possible futures.

*2.1.2.4. Goal progress.* In December (T2), participants were reminded of the personal goals they had listed in the initial survey and reported on their goal progress and goal standing for each goal. Goal progress was assessed using one item: "How far have you progressed towards achieving this goal?", with responses made on a sliding scale from 0 (made no progress) to 100% (accomplished their goal). To assess goal standing, participants responded to the question "Where do you currently stand on this goal?" with four options: "1 = I abandoned this goal", "2 = I failed at this goal", "3 = I made some progress but did not fully achieve this goal", or "4 = I achieved this goal".

### 2.2. Results

#### 2.2.1. Calculation and data analytic strategy

Since each participant reported three goals and our hypotheses focused on the relationship between goal-specific aspirational goal content and later goal outcomes, analyses were conducted using two-level multilevel modeling (MLM) with goals nested within person. We used SPSS 20 for all MLM analyses, except for one logistic regression which was run with HLM2, as SPSS does not allow multi-level logistic regressions. Goal-specific variables (aspirational content of each goal and goal progress) represented level-1, the level of the individual goal, while trait variables (life aspirations, gender) represented level-2, the level of the person. In order to examine the effects of the aspirational content of each goal relative to a person's other goals, we person-mean centered goal aspirational content (Nezlak, 2012) so that the value of each goal reflected the difference between that goal and the person's average across goals. In all analyses we also included gender as a predictor. Regarding the issue of power in this study, 50 or more level-2 units (participants) is adequate for unbiased estimation of level-1 and level-2 variables in MLM (Maas & Hox, 2005). Therefore, our sample was more than adequate for meeting the requirements for power.

#### 2.2.2. Preliminary analyses

Before beginning analyses, we wanted to examine the external validity of students' ratings of the aspirational content of their goals. Is there a meaningful relationship between the types of goals students set (e.g., academic goals vs. relational/social goals) and the ratings of aspirational content students tend to give these goals? While the measure of aspirational content has been used in past research (Sheldon and Kasser, 1995; 1998; Sheldon et al., 2004), there is no explicit evidence for the external validity of this measure. In order to examine this question, all goals were coded into nominal categories by two independent raters based on the content of the goals[2]. The coding scheme was designed to capture and evaluate the most frequent types of goals set by university students. Previous research using the same paradigm has found that academic, relational, and health goals were quite common amongst students (Koestner et al., 2002). We added self-growth, community, financial, and job-related goals as four additional categories because they seemed relatively frequent and appropriate for evaluating on the basis of aspirational content (degree that the goal is tied to intrinsic relative to extrinsic life aspirations). We removed a category for physical attractiveness-related goals and popularity-related goals, as there were not enough goals that could be coded in either category ($n < 5$).

A MIXED model was conducted in SPSS with aspirational content as the dependent variable and goal category as a categorical variable. Fig. 1 presents the means by goal category; these means are taken from the MIXED model, and have been adjusted for non-independence of the goal data. Follow-up pairwise contrasts (from the MIXED model) between the seven types of goals tested whether different types of goals significantly differed in aspirational content. We expected that relational goals, self-growth goals, and community contribution goals would not significantly differ from each other, but that they would be significantly higher in mean intrinsic aspirational content (based on participants' ratings) compared to financial goals, job-related goals, and academic goals. We did not have any hypotheses for health/physical activity goals. Consistent with our hypotheses, pairwise comparisons (see Fig. 1) indicated that the intrinsic aspirational content of relational goals, community contribution goals, and self-growth goals was significantly higher than financial goals, job-related goals, and health/physical activity goals. We also found that the intrinsic aspirational content of relational and community contribution goals was significantly higher than that of self-growth goals.

#### 2.2.3. Primary results

First, using MLM, we estimated the proportion of within-person variance in (intrinsic relative to extrinsic) aspirational content of goals relative to the proportion of between-person variance. The intra-class correlation coefficient (ICC) indicated that 24% of the total variance in goal aspirational content was accounted for by differences at the between-person level, while 76% of the total variance was accounted for by differences at the within-person level (between goals).

Next, we examined our hypothesis that over-arching life aspirations would predict aspirational content of time-framed personal goals. We entered gender and life aspirations index as fixed predictors in the random intercept two-level mixed model with goal aspirational content as the dependant variable in the model. Gender was marginally related to goal-specific intrinsic aspirational content, such that women tended to pursue goals more intrinsic in aspirational content than men (unstandardized $b = .28$, $SE = .16$, $t = 1.77$, $p < 0.1$, *95% CI* $= -.03, .59$). Life aspirations index was significantly positively related to relative intrinsic aspirational content of goals ($b = .37$, $SE = .04$, $t = 8.40$, $p < 0.001$, 95% $CI = .28, .46$).

#### 2.2.4. Progress and achievement

Secondly, we tested our hypothesis that within-person variation in intrinsic aspirational content of goals would be positively related to goal progress. With goal progress in December (T2) as the dependant variable, we entered person-centered intrinsic aspirational content of the goal as a fixed predictor. Goal aspirational content was significantly positively related to goal progress on that goal ($b = 1.94$, $SE = .91$, $t = 2.06$, $p < 0.05$, *95% CI* $= .09, 3.78$)[3]. Gender was unrelated to goal progress. We also tested for random effects of goal aspirational content, however, the fixed model was a superior fit.

We conducted a second two-level mixed model analysis in order to contrast the relationship between goal-specific aspirational content with over-arching life aspirations on goal progress. We entered life aspirations index, and person-centered intrinsic aspirational goal content at T1 as fixed predictors, with reported goal progress in December as the

[2] Interrater reliability was calculated between the two raters for participants' first goal ($n = 240$), producing a Cohen's Kappa of 0.85, $p < 0.001$, indicating good reliability between the raters.

[3] The ICC for goal progress was .06, indicating that 6% of the variance in goal progress was accounted for by between person differences in how much progress people make on their goals on average, while 94% was goal specific.

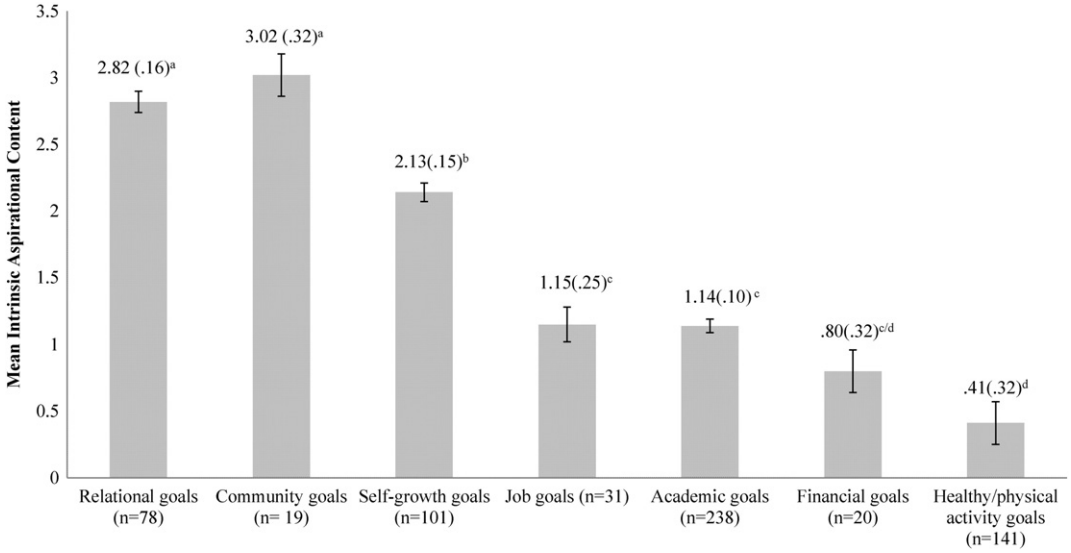


**Fig. 1.** Mean intrinsic aspirational content by type of time-framed personal goal. Different subscripts (a, b, c, and d) indicate that the means of intrinsic aspirational content of the different types of goals are significantly different from each other, $p < 0.05$. Results obtained from MIXED model with pair-wise contrasts, and adjusted for non-independence of goal data.

dependent variable. The results for goal aspirational content were unchanged from the previous analysis, while life aspirations were unrelated to goal progress ($b = .39$, $SE = .83$, $t = .48$, *ns*, *95% CI* $= -1.23, 2.02$. We also ran another analysis where we added the interaction term between life aspirations and goal aspirational content in predicting goal progress to the above model. The interaction was non-significant ($b = -.15$, $SE = .66$, $t = -.22$, *ns*, *95% CI* $= -1.44, 1.14$).

Next, we conducted a two-level mixed model logistic regression analysis in order to examine the effects of goal aspirational content and over-arching life aspirations on the likelihood of actually achieving one's goals. We recoded the goal standing variable into a binary variable with responses of "achieved" coded as 1, indicating that the goal was achieved, and all other responses (abandoned, failed, or some progress made) coded as 0, indicating that the goal was not achieved. We entered life aspirations index, person-centered intrinsic aspirational goal content, and gender as fixed predictors, with reported goal achievement (0 or 1) in December as the binary dependant variable. Aspirational content of each goal in September was significantly related to achievement of the goal in December ($b = .19$, SE $= .07$, $t = 2.66$, $p < 0.01$, $OR = 1.22$, *95% CI* $= 1.05, 1.41$), while the life aspirations index was marginally related to goal achievement ($b = .4$, $SE = .06$, $t = .58$, $p < 0.1$, $OR = 1.04$, *95% CI* $= .92, 1.18$). Gender was unrelated to goal achievement.

### 2.3. Brief discussion

In study 1, we found that the majority of variance (76%) in relative intrinsic aspirational content of goals was accounted for by differences at the within-person level (between goals), rather than differences at the between-person level. This highlights the importance of considering the intrinsic content of individual goals within participants, as opposed to aggregating across goals in order to investigate outcomes related to relative intrinsic aspirational content. It seems that the intrinsic aspirational content of a goal is largely tied to the unique goal, rather than a product of stable individual differences.

However, there was still a significant relationship between participants' over-arching life values, and the content of the personal goals they chose to pursue. MLM analyses revealed people's general life aspirations (relative prioritization of intrinsic to extrinsic aspirations) were significantly positively related to the aspirational content of goals, such that people who generally endorsed the importance of intrinsic over extrinsic aspirations were more likely to set goals which would help them attain intrinsic outcomes. Women were also somewhat more likely to pursue personal goals that were endorsed as high in relative intrinsic aspirational content.

We found preliminary support for our central hypothesis that participants would make more progress when pursuing specific goals that were higher in intrinsic aspirational content, compared to their other goals. In our study, participants tended to make more progress on their goals that were high in intrinsic aspirational content. Participants were also more likely to report having achieved these goals at the end of the semester. Entered in the same analytic models, participants' overarching life aspirations were unrelated to goal progress, and only marginally related to likelihood of goal achievement. The self-regulatory benefits (in terms of goal progress) of intrinsic aspirations seem to be more powerful at the level of the goal (e.g., how intrinsic the particular goal is), rather than at the level of personality (e.g., how much the person values intrinsic aspirations overall). As suggested by Cantor and Blanton (1996), certain goals may aid self-regulation through the "natural incentives" that accompany pursuing the goal. It may be that pursuing goals high in intrinsic aspirational content results in greater goal progress, because such goals are more connected to "natural incentives" in daily life.

We found no support for an interaction between over-arching life aspirations and goal-specific aspirational content in predicting goal progress. While one may argue that goal pursuit would be enhanced when a person's goals are matched to his or her values (e.g. someone who really values financial success over close relationships may put in more effort and make more progress on a goal related to procuring money), in our sample pursuing intrinsic goals led to increased progress for everyone, regardless of participants' life aspirations.

## 3. Study 2

Study 2 had two primary aims. The first aim was to replicate the findings of study in a second longitudinal study on an independent sample. The second aim was to elaborate on these findings by probing for affective consequences of pursuing goals that are intrinsic in content at the level of the goal. Specifically, we wondered whether participants might feel more alive and energized ("vital") about pursuing goals that are relatively higher in intrinsic aspirational content. We thought that this would likely be the case because such intrinsic goals connect with natural incentives (Cantor & Blanton, 1996), and so may feel more natural and energizing to pursue. Related to this, we expected that only the progress made on goals higher on intrinsic content

would result in increased feelings of vitality, while making progress on extrinsic goals would not lead people to experience increased vitality.

### 3.1. Method

#### 3.1.1. Participants and procedure

One hundred and fifty nine (72% female, M age = 18; SD = 1.04) freshmen students attending a major university in Canada were recruited for a large study on personal goals from university classes, classified ads, and residences. As part of the larger study[4], participants completed the initial survey in a laboratory (T1 in September), as well as two 15–20 minute follow-up online surveys six weeks apart, in October and December (T2, T3). One hundred participants completed all three assessments and were used in the analyses below. Independent samples t-tests revealed no difference on demographic variables and study variables (e.g., Aspiration Index) for participants who were retained for the full study, and those who were not.

#### 3.1.2. Materials

*3.1.2.1. Personal goals.* Using the same methodology as study one, participants were asked to identify four goals they would be pursuing that semester. Participants were reminded of these four goals at later follow-ups. Aspirational content of each goal was measured at T1 using the same items as in study 1.

*3.1.2.2. Goal progress.* For each goal, participants rated three statements related to goal progress on a 7-point Likert scale, from *strongly disagree* to *strongly agree*. The three statements were "I have made a lot of progress towards this goal," "I feel like I am on track with my goal plan," and "I feel like I have achieved this goal." A mean score was computed for progress on each of the four goals at each time point. Goal progress was measured at T2 and T3.

*3.1.2.3. Goal vitality.* Participants were asked to rate the item "this goal makes me feel alive and vital" for each goal on a 1 to 7 likert scale from *strongly disagree* to *strongly agree.* Goal vitality was measured at T2.

### 3.2. Study 2 results

#### 3.2.1. Life aspirations and goal content

As with study 1, multilevel (MLM) analyses were conducted using SPSS 20. First, we examined the relationship between life aspirations (a level-2, person level variable) and goal content of the four time-framed goals (a level-1, goal-specific variable). We entered gender and life aspirations index as fixed predictors in the random intercept two-level mixed model with goal aspirational content as the dependant variable in the model. Women were marginally more likely to pursue goals which they rated as related to intrinsic aspirational content ($b = .29$, SE = .17, $t = 1.69$, $p < 0.1$, *95% CI* = −.05, .63). Life aspirations index was significantly positively related to goal aspirational content ($b = .27$, SE = .05, $t = 5.14$, $p < 0.001$, *95% CI* = .18, .38).

#### 3.2.2. Life aspirations, goal content, and goal progress

Next, we examined the impact of the aspirational content of specific goals (compared to overall life aspirations) in predicting goal progress over the semester. As in study 1, we person-centered (e.g., Nezlak, 2012) the aspirational content of each goal around each participant's mean across their four goals in order to examine whether people made more progress on goals that are more intrinsic (compared to the person's other goals).

We conducted a two-level mixed model analysis with goal progress in October (T2)[5] as the dependent variable and both goal aspirational content (level-1) and life aspirations (level-2) measured at T1 as the predictors. Goal aspirational content was significantly related to goal progress ($b = .14$, SE = .05, $t = 3.05$, $p < 0.01$, *95% CI* = .05, .23), while life aspirations index of each person was unrelated to goal progress ($b = .01$, SE = .05, $t = .26$, *ns*, *95% CI* = −.09, .12). Gender was unrelated to goal progress.

We repeated the model, this time examining goal progress in December (T3) as the dependent variable. Both goal aspirational content ($b = .24$, SE = .05, $t = 4.48$, $p < 0.001$, *95% CI* = .14, .35), and life aspirations index were positively related to goal progress reported in December ($b = .13$, *SE* = .06, $t = 2.15$, $p < 0.05$, *95% CI* = .01, .24). There was no interaction between aspirational content of each goal and over-all life aspirations in predicting goal progress at T2 or T3.

#### 3.2.3. Goal vitality

As we were interested in effects of life aspirations (level-2, person level variable) and goal aspirational content (level-1, within-person, between goals variable) on feelings towards that goal, we examined a two-level mixed model with goal vitality[6] ("this goal makes me feel alive and vital") measured at T2 as the dependent variable, and life aspirations and person-centered relative intrinsic aspirational content of each goal as the predictors. Aspirational content of each goal ($b = .25$, *SE* = .05, $t = 4.99$, $p < 0.001$, *95% CI* = .15, .34), and life aspirations index of each person ($b = .12$, *SE* = .06, $t = 2.15$, $p < 0.05$, *95% CI* = .00, .24) were both significantly positively related to feelings of vitality towards that goal at T2. Gender was unrelated to goal vitality.

#### 3.2.4. Interaction between goal content and goal progress

We also wondered whether the aspirational content of each goal and progress on that goal might interact to predict feelings of vitality for that goal. Specifically, we expected that greater goal progress would be related to greater feelings of vitality towards that goal, but only for goals that are more intrinsic in aspirational content (e.g., more related to meaningful relationships, self-growth, and community contribution, than financial success, popularity, and beauty). To test the hypothesis that aspirational content would moderate the relationship between goal progress and vitality, we ran a two-level model (goals nested within-person) with goal vitality as the dependent variable, and person-centered goal progress (at T2), goal aspirational content (at T1), and the interaction term between goal progress and aspirational goal content as the predictors.

There were two main effects, both goal aspirational content ($b = .23$, *SE* = .05, $t = 4.69$, $p < 0.001$, *95% CI* = .14, .33) and goal progress ($b = .16$, *SE* = .05, $t = 2.96$, $p < 0.01$, *95% CI* = .05, .27) were significantly positively related to reported vitality for that goal at T2. The interaction between goal aspirational content and goal progress was also significant ($b = .10$, *SE* = .04, $t = 2.23$, $p < 0.05$, *95% CI* = .01, .18).

Examining the interaction (see Fig. 2) it can be observed that for goals that are more intrinsic in aspirational content (relative to the person's mean aspirational content across the four goals), making greater goal progress on that goal after six weeks of goal pursuit (T2) is related to greater feelings of vitality towards that goal, compared to making low levels of goal progress. However, for goals that are less intrinsic in aspirational content, there is no relationship between making goal progress and feeling more vital towards that goal. For relatively more extrinsic goals, it does not seem to matter whether goal progress is

[4] The study also included two weeks of ecological momentary assessment on participants' smartphones, as well as the collection of numerous other measures not considered in the present manuscript. Other research with this sample has examined the experience of trait self-compassion (Hope, Koestner & Milyavskaya, 2014), perfectionism (Harvey et al., 2015), and fear of missing out (Milyavskaya, Saffran, Hope, & Koestner, submitted for publication). Two other manuscripts look at goals, one focusing on the effects of momentary temptation, self-control, and ego-depletion on goal progress (Milyavskaya & Inzlicht, submitted for publication), and the other at goal motivation, desire and self-control (Milyavskaya, Inzlicht, Hope & Koestner, 2015). There is no overlap between the content and the hypotheses of the present study with the aforementioned studies.

[5] The ICC for goal progress in October was .13, while it was .08 in December.

[6] The ICC for goal vitality was .18.

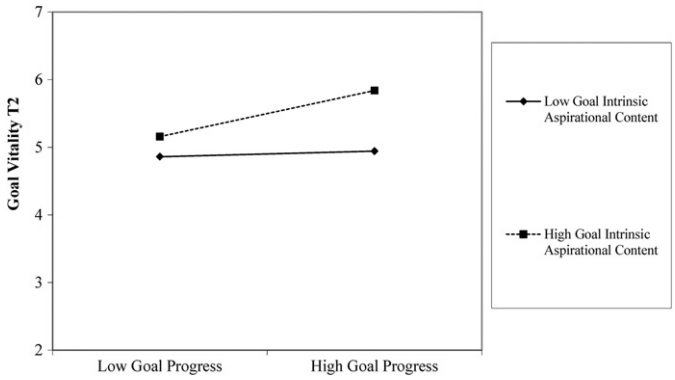


**Fig. 2.** Interaction between intrinsic aspirational content of specific goal and goal progress to predict feelings of vitality. Making progress on more intrinsic goals was associated with greater feelings of vitality, while making progress on less intrinsic goals was not.

made, with lower levels of vitality reported whether progress is made or not.

Simple slopes analyses revealed that the slope between goal progress and vitality for that goal is not significant at the low (−1SD) level of goal aspirational content ($b = .064$, $t = .871$, *ns*), but is significant at the mean level ($b = .162$, $t = 2.949$, $p < 0.01$) and high level (+1SD; $b = .259$, $t = 3.819$, $p < 0.001$) of goal aspirational content.

### 3.3. Brief discussion

As with study 1, we found support for our hypothesis that people make more progress on goals that were more intrinsic in content compared to their other goals both six-weeks and 12-weeks after setting those goals. We also found that having generally more intrinsic life aspirations was related to making more progress on goals 12-weeks later, but not six-weeks later. Once again, we also found that general life aspirations were significantly positively related to the aspirational content of individual personal goals. That is, participants who tended to prioritize intrinsic aspirations over extrinsic aspirations were also more likely to identify time-framed goals that they were pursuing as being more related to intrinsic aspirations than people who prioritized extrinsic aspirations. Women were marginally more likely to pursue time-framed goals connected to intrinsic aspirations than men.

Unique to study 2, we found that participants felt more vital when pursuing those goals that were higher in aspirational content compared to their other goals, and also that people who generally held more intrinsic life aspirations felt more vital during goal pursuit. Moreover, we found a significant interaction between goal aspirational content and goal progress in predicting goal vitality. It seems that making progress on a goal is only related to greater vitality towards that goal when the goal is in the medium to high range for intrinsic aspirational content, compared to their other goals. In contrast, making progress on a goal low in aspirational content (i.e., a more extrinsic goal) did not lead to greater vitality.

## 4. General discussion

In two longitudinal studies, we found support for our hypothesis that participants would make more progress on specific goals that were higher in intrinsic aspirational content, relative to their other goals. That is, specific goals that were tied to personal growth, close relationships, and community contribution were more likely to be achieved than those tied to fame, wealth, and physical image. In study 2, we also found that goal aspirational content and individual differences in life aspirations were positively related to later feelings of goal vitality. These findings contribute support to the growing body of evidence that goal content matters (Ryan et al., 1996) and that selecting intrinsic personal goals confers significant benefits, including greater well-being over time (Sheldon & Kasser, 1998; Sheldon et al., 2004; Niemiec et al., 2009; Sheldon & Kasser, 1995). However, these two studies are unique in investigating self-regulatory outcomes of pursuing intrinsic goals at the level of the specific goal (i.e., goal progress and goal vitality), rather than person-level outcomes.

Extending previous research on the well-being outcomes of goal pursuit (e.g. Diener, Suh, Lucas, & Smith, 1999; Koestner, Lekes, Powers, & Chicoine, 2002), we found that goal-specific feelings of vitality were higher only when progress was made on goals more intrinsic in aspirational content. It appears that making progress on goals low in intrinsic relative to extrinsic aspirational content (e.g., more related to financial outcomes than building close relationships outcomes) is not anymore beneficial for fostering feelings of being enlivened and energized by the goal, then not making progress on such goals. As suggested by Cantor and Blanton (1996) it is possible that certain motivational pursuits, such as pursuing intimacy in close relationships, confer greater "natural reinforcements" along the way, compared to other motivational pursuits, such as pursuing wealth.[7]

One advantage of this investigation was the use of a multi-level modeling (MLM) approach for data analyses. By nesting goals within participants, we were able to examine both within-person, goal-specific aspirational content (does a person tend to make more progress in pursuing their goals that are more intrinsic compared to their goals that are less intrinsic in content?) and between person differences in life aspirations (do people who value intrinsic over extrinsic life values make more progress on their goals?) in predicting goal progress. A within-person (between goals) analytic approach is important in investigating factors related to goal progress, especially given the large proportion of variance in progress that is goal-specific (in our two studies, 94% and 92% of the variance). Without such an approach, findings can only be generalized to individual differences, and cannot get to the heart of the question "are all goals created equal?" (e.g., as asked by Ryan, Sheldon, Kasser, & Deci, 1996).

We found that regardless of overall differences in values, participants tended to make more progress on their goals that were higher in relative intrinsic aspirational content, compared to their other goals. An optimistic interpretation of this is that perhaps even those who pursue extremely extrinsic life aspirations are not doomed to fail at their personal goals, since they too are more likely to make more progress at those goals that are relatively more intrinsic (compared to their other goals). While we found a relation between participants' overarching life aspirations and the aspirational content of specific goals, the majority of variance in goal content was not accounted for by individual differences in personality or goal-setting tendencies, and was instead tied to the unique nature of the specific goal. It seems that even individuals who are generally extrinsic in their life aspirations do set some intrinsic goals. Furthermore, these more extrinsic individuals tend to experience more success on their more intrinsic goals, compared to their more extrinsic goals.

We also found in both studies that women were somewhat more likely to pursue goals connected to intrinsic aspirations then men. Reviewing the literature on aspirations, we have seen a gender difference emerge in some other studies. For example, Kasser and Ryan (1996; study 2) found that female participants rated the importance of intrinsic aspirations as well as likelihood of attaining these aspirations as higher than male participants, while males rated the importance of extrinsic aspirations higher than female participants. We suggest that these differences may be due to differences in socialization of males as compared to females, with women being oriented towards "responsible nurturance" more than men (Helgeson, 1994). Socialization towards

[7] Of course, it is likely that making progress on extrinsic goals does lead to certain adaptive outcomes, such as instrumental help towards other goals.

communal behavior and responsible nurturance may make intrinsic aspirations and goals more salient for women.

Why did participants make more progress on their more intrinsic goals? Future research is warranted to examine these potential mechanisms of the effects to better understand the reasons for greater successful attainment of intrinsic goals. We can think of three possibilities. First, as we have suggested, goals that are relatively more intrinsic in content may be more amenable to natural reinforcements from the environment (e.g., pursuing greater intimacy with a best friend may lead to immediate feelings of connectedness and social support), enabling greater goal engagement and goal progress. A second possibility, not irreconcilable with the first, is that intrinsic goals may be more compatible with inherent growth tendencies, also called organismic functioning (Deci & Ryan, 2000; Sheldon & Kasser, 1995). Sheldon and Kasser (1995) propose that the content of an individual's goals is an important source of organismic functioning. Specifically, the authors suggest that goals intrinsic in content (e.g., related to close relationships, community contribution, or personal growth) are more aligned with organismic functioning than extrinsic goals. Extending this theory to the findings of the present study, the alignment of certain goals with inherent growth tendencies may have propelled participants to experience greater self-regulatory success on these goals, compared to their other goals. Supporting this interpretation, we found that participants in the present study experienced greater vitality for these goals, which has been proposed as an indicator of organismic wellness (Ryan and Frederick, 1997). A final possibility is that extrinsic goals may be harder to fulfill or satiate (e.g., it is easy to make progress on a goal related to volunteering in the community, than it is to procure substantial sums of money), leading to reports of lower goal progress.

In summary, we have found evidence that all goal contents are not created equally (e.g., Ryan, Sheldon, Kasser & Deci, 1996), and that certain goals may contribute to better self-regulatory outcomes than others. It seems that participants' more intrinsic goals were significantly more likely to meet success (greater goal progress), while the same participants' more extrinsic goals were more likely to be thwarted (less goal progress). Furthermore, participants experienced more vitality for relatively intrinsic goals, and this level of vitality increased as they made progress on intrinsic goals, while it plateaued regardless of goal progress for their relatively extrinsic goals.

## Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: data collection for this manuscript was supported by Grant 435-2014-0671 from the Social Sciences and Humanities Research Council (SSHRC) of Canada.

## Appendix A

Table 1. Person-level descriptive statistics for study 1.

| Variable | M | SD | N |
|---|---|---|---|
| Life aspirations index (T1) | 2.24 | 1.52 | 240 |
| Mean intrinsic aspirational content across three goals (T1) | 4.65 | 1.04 | 240 |
| Mean extrinsic aspirational content across three goals (T1) | 3.21 | 1.21 | 240 |
| Mean relative intrinsic aspirational content across three goals (T1) | 1.45 | 1.19 | 240 |
| Mean goal progress across three goals (T2) | 62.4 | 18 | 212 |
| Mean goal standing across three goals (T2) | 1.98 | .48 | 212 |

*A.1. Model specifications for primary results, study 1.*

The model for goal aspirational content was specified as follows:

Level 1: goal aspirational content$_{ij} = \beta_{0j} + e_{ij}$

Level 2: $\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{gender})_j + \gamma_{02}(\text{life aspirations index})_j + U_{0j}$

The first model for goal progress was specified as:

Level 1: goal progress$_{ij} = \beta_{0j} + \beta_1$(person-centered goal aspirational content)$_{ij} + e_{ij}$
Level 2: $\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{gender})_j + U_{0j}$

The second model for goal progress was specified as:

Level 1: goal progress$_{ij} = \beta_{0j} + \beta_1$(person-centered goal aspirational content)$_{ij} + e_{ij}$
Level 2: $\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{gender})_j + \gamma_{02}(\text{life aspirations index})_j + U_{0j}$

The model for goal achievement was specified as:

Level 1: probability (goal achievement$_{ij} = 1|\beta_i) = \phi_{ti}$
$\log[\phi_{ij} / (1 - \phi_{ij})] = \eta_{ij}$
$\eta_{ij} = \beta_{0j} + \beta_{1j}$ (person-centered goal aspirational content)$_{ij} + e_{ij}$
Level 2: $\beta_{0j} = \gamma_{00} + \gamma_{01}$ (gender)$_j + \gamma_{02}$ (life aspirations index)$_j + U_{0j}$

Note: notation employed follows the style of Raudenbush & Bryk (2002).

Table 2. Person-level descriptive statistics for study 2.

| Variable | M | SD | N |
|---|---|---|---|
| Life aspirations index (T1) | 2.01 | 1.45 | 159 |
| Mean intrinsic aspirational content across four goals (T1) | 5.08 | .88 | 159 |
| Mean extrinsic aspirational content across four goals (T1) | 3.18 | 1.1 | 159 |
| Mean relative intrinsic aspirational content across four goals (T1) | 1.89 | 1.05 | 159 |
| Mean goal progress across four goals (T2) | 4.11 | .87 | 122 |
| Mean goal vitality across four goals (T2) | 3.25 | 1.01 | 122 |
| Mean goal progress across four goals (T3) | 4.26 | .86 | 100 |

## References

Cantor, N., & Blanton, H. (1996). Effortful pursuit of person goals in daily life. In P. M. Gollwitzer, & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 338–360). Guilford Press.
Cantor, N., Norem, J., Langston, C., Zirkel, S., Fleeson, W., & Cook-Flannagan, C. (1991). Life tasks and daily life experience. *Journal of Personality*, *59*(3), 425–451.
Deci, E. L., & Ryan, R. M. (2000). The "what" and " why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry*, *11*(4), 227–268.
Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*(2), 276.
Harvey, B., Milyavskaya, M., Hope, N., Powers, T., Saffran, M., & Koestner, R. (2015). Affect variation across days of the week: Influences of perfectionism and academic motivation. *Motivation and Emotion*, *39*, 521–530.
Helgeson, V. S. (1994). Relation of agency and communion to well-being: Evidence and potential explanations. *Psychological Bulletin*, *116*(3), 412.
Hope, N., Koestner, R., & Milyavskaya, M. (2014). The importance of self-compassion in times of transition: Investigating the role of self-compassion in goal pursuit and well-being amongst university freshmen. *Self and Identity*, *13*(5), 579-–593.
Hope, N. H., Milyavskaya, M., Holding, A. C., & Koestner, R. (2014). Self-growth in the college years: Increased importance of intrinsic values predicts resolution of identity and intimacy stages. *Social Psychological and Personality Science*, *5*(6), 705–712.
Judge, T. A., Bono, J. E., Erez, A., & Locke, E. A. (2005). Core self-evaluations and job and life satisfaction: The role of self-concordance and goal attainment. *Journal of Applied Psychology*, *90*(2), 257.
Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, *65*(2), 410.
Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, *22*(3).
Kasser, T., Ryan, R. M., Couchman, C. E., & Sheldon, K. M. (2004). *Materialistic values: Their causes and consequences.*
Kasser, T., Rosenblum, K. L., Sameroff, A. J., Deci, E. L., Niemiec, C. P., Ryan, R. M., ... Hawks, S. (2014). Changes in materialism, changes in psychological well-being: Evidence from three longitudinal studies and an intervention experiment. *Motivation and Emotion*, *38*(1), 1–22.
Kim, Y., Kasser, T., & Lee, H. (2003). Self-concept, aspirations, and well-being in South Korea and the United States. *The Journal of Social Psychology*, *143*(3), 277–290.

Koestner, R., Lekes, N., Powers, T. A., & Chicoine, E. (2002). Attaining personal goals: Self-concordance plus implementation intentions equals success. *Journal of Personality and Social Psychology*, *83*(1), 231.

Koestner, R., Powers, T. A., Milyavskaya, M., Carbonneau, N., & Hope, N. (2015). Goal internalization and persistence as a function of autonomous and directive forms of goal support. *Journal of Personality*, *83*(2), 179–190.

Lekes, N., Gingras, I., Philippe, F. L., Koestner, R., & Fang, J. (2010). Parental autonomy-support, intrinsic life goals, and well-being among adolescents in China and North America. *Journal of Youth and Adolescence*, *39*(8), 858–869.

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist*, *57*(9), 705.

Maas, C. J., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, *1*(3), 86–92.

Milyavskaya, M. (2015). *A meta-analysis of between and within person influences on goal pursuit.* (Manuscript in preparation).

Milyavskaya, M., & Inzlicht, M. (2015). *What's so great about self-control? Examining the importance of effortful self-control and temptation in predicting real-life depletion and goal attainment.* (Manuscript submitted for publication).

Milyavskaya, M., Harvey, B., Koestner, R., Powers, T., Rosenbaum, J., Ianakieva, I., & Prior, A. (2014a). Affect across the year: How perfectionism influences the pattern of university students' affect across the calendar year. *Journal of Social and Clinical Psychology*, *33*(2), 124–142.

Milyavskaya, M., Nadolny, D., & Koestner, R. (2014b). Where do self-concordant goals come from? The role of domain-specific psychological need satisfaction. *Personality and Social Psychology Bulletin*, *40*(6), 700–711.

Milyavskaya, M., Inzlicht, M., Hope, N., & Koestner, R. (2015). Saying "no" to temptation: Want-to motivation improves self-regulation by reducing temptation rather than by increasing self-control. *Journal of Personality and Social Psychology*, *109*(4), 677–693.

Milyavskaya, M., Saffran, M., Hope, N., & Koestner, R. (2015). *Fear of Missing Out: Prevalence, dynamics, and consequences of experiencing FOMO.* (Manuscript submitted for publication).

Nezlak, J. B. (2012). Multilevel modeling analyses of diary-style data. In M. R. Mehl, & T. S. Conner (Eds.), *Handbook of research methods for studying daily life* (pp. 357–-383). New York: Guilford Press.

Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The path taken: Consequences of attaining intrinsic and extrinsic aspirations in post-college life. *Journal of Research in Personality*, *43*(3), 291–306.

Nurmi, J., Salmela-Aro, K., & Aunola, K. (2009). Personal goal appraisals vary across both individuals and goal contents. *Personality and Individual Differences*, *47*, 498–503.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods.* London: Sage.

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, *57*(5), 749.

Ryan, R. M., & Frederick, C. (1997). On energy, personality, and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality*, *65*(3), 529–565.

Ryan, R. M., Sheldon, K. M., Kasser, T., & Deci, E. L. (1996). All goals are not created equal: An organismic perspective on the nature of goals and their regulation. In P. M. Gollwitzer, & J. A. Bargh (Eds.), *The Psychology of Action: Linking Cognition and Motivation to Behavior* (pp. 7–26). New York: Guilford Press.

Ryan, R. M., Chirkov, V. I., Little, T. D., Sheldon, K. M., Timoshina, E., & Deci, E. L. (1999). The American dream in Russia: Extrinsic aspirations and well-being in two cultures. *Personality and Social Psychology Bulletin*, *25*(12), 1509–1524.

Schmuck, P., Kasser, T., & Ryan, R. M. (2000). Intrinsic and extrinsic goals: Their structure and relationship to well-being in German and US college students. *Social Indicators Research*, *50*(2), 225–241.

Sheldon, K. M. (2005). Positive value change during college: Normative trends and individual differences. *Journal of Research in Personality*, *39*(2), 209–223.

Sheldon, K. M., & Kasser, T. (1995). Coherence and congruence: Two aspects of personality integration. *Journal of Personality and Social Psychology*, *68*(3), 531.

Sheldon, K. M., & Kasser, T. (1998). Pursuing personal goals: Skills enable progress, but not all progress is beneficial. *Personality and Social Psychology Bulletin*, *24*(12), 1319–1331.

Sheldon, K. M., & Kasser, T. (2001). Getting older, getting better? Personal strivings and psychological maturity across the life span. *Developmental Psychology*, *37*(4), 491.

Sheldon, K. M., & Kasser, T. (2008). Psychological threat and extrinsic goal striving. *Motivation and Emotion*, *32*(1), 37–45.

Sheldon, K. M., & Krieger, L. S. (2004). Does legal education have undermining effects on law students? Evaluating changes in motivation, values, and well-being. *Behavioral Sciences & the Law*, *22*(2), 261–286.

Sheldon, K. M., & McGregor, H. A. (2000). Extrinsic value orientation and "The tragedy of the commons". *Journal of Personality*, *68*(2), 383–411.

Sheldon, K. M., Ryan, R. M., Deci, E. L., & Kasser, T. (2004). The independent effects of goal contents and motives on well-being: It's both what you pursue and why you pursue it. *Personality and Social Psychology Bulletin*, *30*(4), 475–486.

Thayer, R. E. (1996). *The origin of everyday moods.* New York: Oxford University Press.