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Autonomous Versus Controlled Goal Motivation Differentially Predicts Goal Progress and Well-Being Through Emotion Regulation Styles

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This study examined whether autonomous versus controlled goals differentially predict goal progress, well-being, and goal attainment through integrative emotion regulation versus suppressive emotion regulation, respectively. In Study 1, 264 students reported on their academic goals with respect to midterm exams, their goal motivations, emotion regulation styles, goal progress, and positive and negative affect. Three questionnaires were completed at 2-week intervals before exams, and one questionnaire was completed a month afterward. Study 2 was a daily diary study, in which 154 students completed the same questionnaires 10 days before an exam. We analyzed the data using multilevel structural equation modeling. In both studies, autonomous goal motivation predicted integrative emotion regulation, which in turn positively predicted goal progress/attainment and well-being. However, only in Study 1 did controlled goal motivation predict suppressive emotion regulation and goal progress/attainment. In both studies, however, controlled goal motivation positively predicted negative affect, and suppressive emotion regulation negatively predicted goal progress and positively predicted negative affect. This research supports and extends previous findings on the benefits of autonomous goal motivation and integrative emotion regulation for goal pursuit, as well as the costs of controlled goal motivation and suppressive emotion regulation. In addition, both studies indicate that there is an autonomous path to goal pursuit, but the evidence for a controlled path to goal pursuit is inconclusive.

Keywords: goal pursuit, autonomous goal motivation, controlled goal motivation, integrative emotion regulation, suppressive emotion regulation

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People pursue personal goals on a daily basis. Students strive to learn course material in order to pass an exam, dieters aim to eat more healthy foods, and workers strive to meet important deadlines and deliver a high-quality product. When making progress toward their goals, people thrive and experience well-being (Emmons, 1986; Klug & Maier, 2015; Milyavskaya & Werner, 2018). Yet, many goals that people set are not attained. What differentiates goals that are successful from those that are not? This paper will examine this question, focusing on emotion regulation processes, driven by goal motivation.

Goal Motivation: Autonomous and Controlled Goals

Personal goals are defined as future-oriented representations of what people are striving for in their current life situations, and what they try to attain or avoid in various life domains (Brunstein et al., 1999). These are the goals people set for themselves and by themselves, often on a daily basis. According to self-determination theory (Ryan & Deci, 2017), the motivation underlying a goal can contribute to the extent to which people attain their goal. Specifically, the theory differentiates between two types of motivation: autonomous and controlled (Koestner et al., 2008; Sheldon & Elliot, 1998; Werner & Milyavskaya, 2019).

Autonomous motivation occurs when goals truly represent personal values and interests and/or because their pursuit provides fun or enjoyment. Controlled goal motivation, on the other hand, refers to goals endorsed due to external pressure or feelings of obligation. For instance, students often endorse the goal of “learning course material.” A student with an autonomous goal motivation might tell herself, “I want to learn the material because it’s interesting,” but a student with a controlled goal motivation might tell himself, “I want to learn the material because others expect me to excel.” Although theoretically the two types of motivation are two ends of one continuum, research on motivation in goal pursuit shows that they have separable effects (Koestner et al., 2008).

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Moti Benita gathered the data, developed the theoretical framework, performed the statistical analyses, and took the lead in writing the manuscript; Reout Arbel performed the statistical analyses, helped develop the theoretical framework, and commented on the drafts; Marina Milyavskaya helped develop the theoretical framework and commented on the drafts.

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Autonomous goal motivation is related to making greater progress toward goals and greater goal attainment (e.g., Downie et al., 2006; Gaudreau et al., 2012; Koestner et al., 2008; Powers et al., 2007; Sheldon & Elliot, 1998; Smith et al., 2007), and to greater well-being (e.g., Koletzko et al., 2015; Sanjuán & Ávila, 2019; Sheldon et al., 2004; Sheldon & Elliot, 1999). On the other hand, controlled goal motivation is typically either unrelated or negatively related to goal progress (e.g., Gaudreau et al., 2012; Koestner et al., 2008; Powers et al., 2007) and negatively predicts well-being (e.g., Sheldon et al., 2004; Smith et al., 2007).

From Goal Setting to Goal Striving: The Role of Emotion Regulation

Goal pursuit is a multistage process (Diefendorff & Lord, 2008). According to several theoretical models (e.g., Gollwitzer, 1999; Lewin et al., 1944; Webb & Sheeran, 2006; Zimmerman, 2002), goal pursuit begins with a *goal-setting* phase, in which people identify or select a goal. During this phase, the motivation behind the goal, autonomous or controlled, is determined. The second stage of goal pursuit is *goal striving*, whereby people engage in behaviors that aim to achieve their goals.

During goal striving, many people encounter setbacks. Several studies explored whether goal motivation predicts the type of coping strategies people use when encountering goal-related setbacks (Amiot et al., 2004; Gaudreau et al., 2012; Ntoumanis et al., 2014; Sanjuán & Ávila, 2019; Smith et al., 2011). These studies showed that autonomous goal motivation predicts the use of adaptive coping strategies aimed at actively solving the problem, whereas controlled goal motivation predicts less adaptive coping strategies aimed at avoiding the problem or disengaging from goal pursuit.

We extend this line of research by exploring whether goal motivation predicts the type of emotion regulation strategies people use when encountering setbacks. In the face of setbacks, people often experience negative emotions, such as sadness, anxiety, embarrassment, or guilt (Carver, 2004; Carver & Scheier, 2011). Unpleasant emotions associated with the setback can interfere with goal pursuit, especially when it requires effort and concentration (Aarts et al., 2007), and can even cause individuals to disengage from a goal (Louro et al., 2007). It is therefore essential for people to manage their negative emotions in a way that still enables them to reach their goals.

Importantly, unpleasant or negative emotions do not just interfere with goal pursuit. Emotions carry important information, including about the goal and the goal pursuit process (Carver & Scheier, 2011; Frijda & Mesquita, 1994; Tamir, 2021). They can inform people about the source of a setback and induce behaviors aimed at improving the situation. For example, Louro et al. (2007) showed that, in some cases, negative emotions experienced during goal pursuit can prompt increased goal pursuit efforts.

Thus, effective emotion regulation strategies during goal striving should balance the need to use the emotion in the service of the goal pursuit on the one hand while not being overwhelmed by it on the other. In other words, if during goal pursuit people aim their emotion regulation efforts solely toward alleviating negative emotions, they might lose the useful function these emotions can play in achieving a goal. To address this concern, we used self-determination theory's conceptualization of emotion regulation (Roth & Benita, 2023).

Emotion Regulation During Goal Pursuit: The Benefits of Integrative Emotion Regulation and Costs of Emotional Suppression

The self-determination theory conceptualization of emotion regulation differentiates between two qualitatively distinct ways of regulating emotions. The first is *integrative emotion regulation* (Roth & Benita, 2023; Roth et al., 2019), defined as intentional exploration of emotions as they arise. Integrative emotion regulation is considered an autonomous and therefore adaptive way to manage emotions. It is based on self-determination theory's organismic metatheory, viewing emotions as providing important informational inputs that potentially guide action and growth. Integrative emotion regulation does not necessarily mean immediate reduction of emotions; in fact, it can even involve their short-term elevation. Yet, the volitional nature of this interest-taking allows people to adaptively manage their emotional experiences in the long run (e.g., Roth et al., 2014, 2018). In contrast, efforts to ignore thoughts about an emotion or to avoid expressing an emotion when it arises are termed *suppressive emotion regulation*. Suppressive emotion regulation is considered controlled and therefore maladaptive. It is targeted mainly at eliminating negative emotions and is considered maladaptive (Benita et al., 2020; Roth et al., 2014).

Integrative and suppressive emotion regulation are assumed to have distinct effects on goal pursuit. Intentional interest-taking can enable people to use emotions as useful guides during goal pursuit processes. Contrarily, avoiding goal-related emotions may prevent people from using them as guides. Based on this understanding, Benita et al. (2021) have recently shown that integrative emotion regulation positively predicts goal progress through goal-related effort, while suppressive emotion regulation negatively predicts goal progress through goal-related depressed mood. In a separate examination, Low et al. (2017) similarly found that emotional suppression, a concept similar to suppressive emotion regulation, impedes goal pursuit.

Integrative and suppressive emotion regulation are also differentially related to well-being. Several studies have found that integrative emotion regulation is positively related to well-being indicators, such as self-esteem, satisfaction with life, and psychological well-being, while suppressive emotion regulation is negatively related to well-being (Benita et al., 2020; Brenning et al., 2015; Houle & Philippe, 2020).

How Control and Autonomy Experiences Spread From Goal Setting to Goal Striving: Different Paths of Goal Pursuit

People use the aforementioned emotion regulation strategies differently under different circumstances. Specifically, previous research has shown that adolescents whose parents support their autonomy are more likely to use integrative emotion regulation, while adolescents whose parents are controlling are more likely to use suppressive emotion regulation (Brenning et al., 2015; Roth et al., 2009). This suggests there are two paths involving healthy or unhealthy emotion regulation: an *autonomous path* and a *controlled path*. In the autonomous path, autonomy supportive contexts predict autonomous emotion regulation (i.e., integrative emotion regulation), which then predicts optimal adjustment. In the controlled path, autonomy suppressive contexts predict controlled emotion regulation (i.e., suppressive emotion regulation), which then predict to

less-than-optimal adjustment and to less-than-optimal adjustment (for a similar claim, see Benita, 2020).

Our research follows these claims and suggest there are two equivalent pathways to goal pursuit. The “autonomous path” would start with autonomous goal setting and continue to autonomous emotion regulation efforts during goal striving. Specifically, we suggest that because autonomously motivated people are less likely to be defensive when experiencing setbacks (Hodgins et al., 2006), they are more likely to allow themselves to explore their negative emotions when they arise during goal striving, to try to understand the source of these emotions, and to use this knowledge to overcome obstacles to goal pursuit. Thus, we expect that autonomous goal motivation would predict greater use of integrative emotion regulation during goal striving, which in turn would predict optimal goal pursuit processes, evident in increased goal progress/attainment and well-being.

In contrast, the “controlled path” would start with controlled goal motivation and continue to controlled emotion regulation efforts during goal striving. Specifically, we suggest that because people endorsing goals with controlled motivation typically do so to please others, they are likely to experience conflict about their goals and be defensive about them, especially when obstacles arise. Thus, when encountering setbacks, they may not admit these difficulties in goal pursuit to themselves and others. As a result, they might prefer to conceal their negative emotions or try to avoid thinking about them (i.e., use suppressive emotion regulation). Given that encountering obstacles is ubiquitous during the goal striving process, we expected that controlled goal motivation would predict greater use of suppressive emotion regulation, which in turn would predict non-optimal goal pursuit, evident in reduced goal progress/attainment and well-being.

We further suggest that the emotion regulation strategy selected during goal striving would relate to goal-related outcomes both concurrently, during goal striving, and prospectively, at the third stage of goal pursuit, namely goal evaluation. For example, successful emotion regulation efforts can contribute in the short term to a smoother goal striving process, manifested by a greater experience of progress toward the goals and greater well-being during the process. Successful emotion regulation efforts can also contribute to long-term goal evaluation by promoting a subjective experience of goal attainment. In this research, we examined both processes.

The Present Research

We report on two studies, a short-term longitudinal study (Study 1), and a daily diary study (Study 2), examining the mediating role of emotion regulation in the relation between goal motivation and goal progress and well-being. Our hypothesized model is presented in Figure 1.¹ As can be seen in the figure, our hypotheses were as follows:

Hypothesis 1: Autonomous goal motivation will predict integrative emotion regulation during goal pursuit (Hypothesis 1a) and controlled goal motivation will predict suppressive emotion regulation (Hypothesis 1b).

Hypothesis 2: Autonomous goal motivation will positively predict goal progress and well-being (heightened positive affect and lowered negative affect) during goal striving and will positively predict goal attainment at goal evaluation (Hypothesis

2a). Controlled goal motivation will negatively predict goal progress and well-being during goal striving and goal attainment at goal evaluation (Hypothesis 2b).

Hypothesis 3: Integrative emotion regulation will positively predict goal progress and well-being (heightened positive affect and lowered negative affect) during goal striving and will positively predict goal attainment at goal evaluation (Hypothesis 3a). Suppressive emotion regulation will negatively predict goal progress and well-being during goal striving and goal attainment at goal evaluation (Hypothesis 3b).

Hypothesis 4: We expect integrative emotion regulation and suppressive emotion regulation would differentially mediate the relations between autonomous and controlled goal motivations and the outcome variables. Specifically, we expect integrative emotion regulation will mediate the positive relation of autonomous goal motivation with goal progress, well-being, and goal attainment (i.e., autonomous path; Hypothesis 4a), and suppressive emotion regulation will mediate the negative relation of controlled goal motivation with goal progress, well-being, and goal attainment (i.e., controlled path; Hypothesis 4b).

Of the four hypotheses, Hypotheses 2 and 3 are already supported by previous research. Therefore, our goal in these hypotheses was to replicate previous findings. However, Hypotheses 1 and 4 were unique to this study and were at the focus of our investigation.

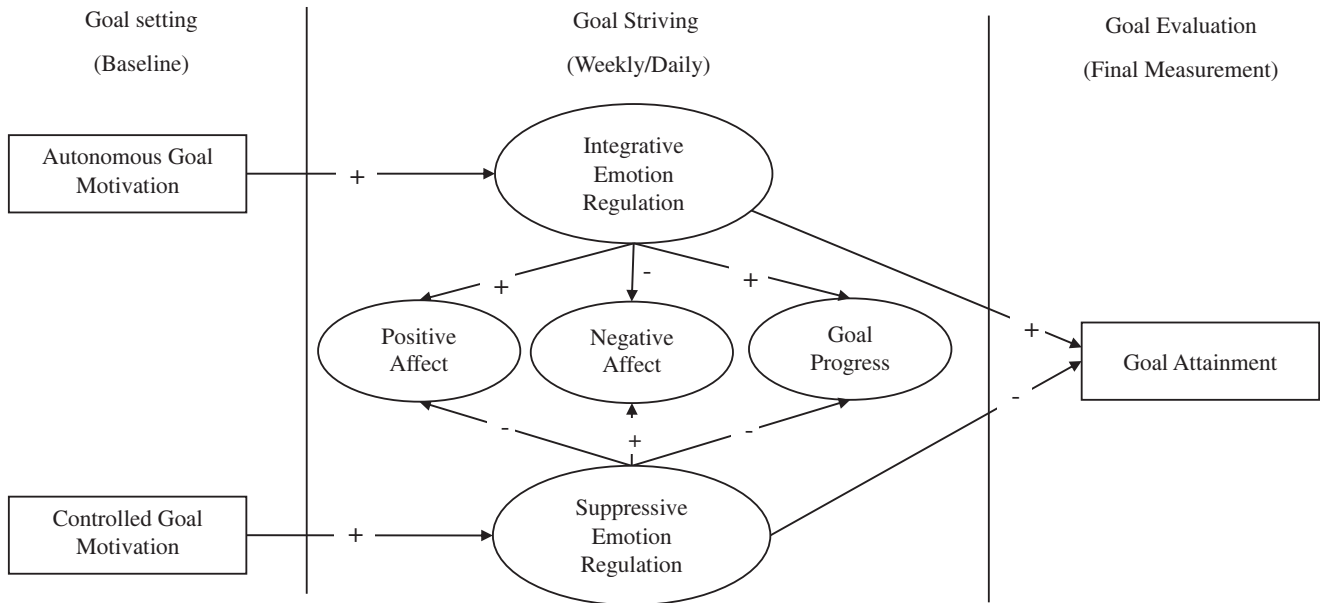
Statement of Transparency

The data for the two studies were initially collected as part of a larger study on goal pursuit. Related measures not analyzed in the present study included a measure of students’ achievement goals, goal stress, goal-related effort, and goal-related depressed mood. All study materials (including all measures from the larger study) and statistical output are available on the open science framework (project link: <https://osf.io/bjum2>).

Study 1

Study 1 was a short-term longitudinal study conducted among Israeli university students. We focused on the academic domain, where the preparation for exams elicits negative emotions among most university students and emotion regulation is thus required. The study was conducted in Israel. A typical academic year in Israel’s universities is divided into two semesters, each lasting about 3 months, followed by an exam season, which typically lasts 1 month. Four weeks before exams began (T1, or the goal-setting phase), participants were asked about three academic goals for the upcoming exam season (example goals participants generated were: to really understand the material; to pass all exams with high grades; to finish all assignments on time; to gain new knowledge) and their motivation for the goals. Then, at 2-week intervals

¹ At a reviewer’s suggestion, we ran an additional analysis with a direct path between progress and attainment. However, the resulting model was not easily interpretable, likely because of suppressor effects (in Study 1) and multicollinearity (in Study 2). The results are in the online supplemental material.

Figure 1*Conceptual Model*

Note. Autonomous and controlled paths to goal pursuit. Variables in rectangles are observed variables measured only at one time point (baseline or at the final measurement). Variables in ellipses are latent variables, measured two times in 2-week intervals (Study 1) or 10 times in daily intervals (Study 2), and therefore contain both within-participant and between-participant variance.

(T2 and T3, or the goal striving phase) participants reported on their emotion regulation styles when facing setbacks, their goal progress, and their well-being (positive and negative affect). A month after the exam season started (T4 or the goal evaluation phase), we asked participants to rate the degree to which they attained their goals. Because all three goals were in the same academic domain, questionnaire items referred to the three goals in combination, instead of each goal separately.

Method

Participants and Procedure

Participants ($N = 264$, 72% female, $M_{\text{age}} = 24.74$) were Israeli students recruited through online advertisements; 88% were undergraduate students, and 12% were graduate students. Participants were from different departments: 21% studied education, 20% psychology, 18% engineering, 8% natural sciences, 7% economics, and the rest studied other miscellaneous degrees (e.g., medicine, architecture, political science, literature, philosophy). To determine whether our sample size was adequate to infer our observed effect sizes, we conducted sensitivity analyses using G*Power (Faul et al., 2009) following the recommendations of Murayama et al. (2022) for calculating power in multilevel designs. We used a desired power of .80, an alpha level of .05, and four predictors (as in our model). Sensitivity analysis indicated our sample was sufficient to detect a level 2 small effect of .02 (Cohen, 1992).

Of the 264 participants who participated in Time 1, 231 participated in Time 2, 201 participated in Time 3, and 204 participated in Time 4. We included all participants in our analysis because our multilevel analytic strategy balances missing data by weighting

the contribution of each participant's data to the overall effects according to the relative number of available data points (Raudenbush & Bryk, 2002). We handled missing data using maximum likelihood estimation. All study procedures were approved by the Human Subjects Research Committee at Ben-Gurion University (Request Number: 2320).

Measures

All questionnaires were administered in Hebrew, the language of instruction at the university. Responses were on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*) except where indicated. Table 1 presents descriptive statistics. Geldhof et al. (2014) recommend using a confirmatory factor analysis framework to compute reliability in multilevel designs. However, because we had a very small cluster size, this could result in biased reliability estimates. We, therefore, report McDonald's omega (ω) reliability estimates for each time point separately. For scales including only two items, we calculated Spearman-Brown reliability estimates.

Autonomous and Controlled Goal Motivation. We used Sheldon and Elliot's (1998) measure of autonomous and controlled goal pursuit, the most common measure to assess this construct. Participants were asked to rate their motivation for pursuing the goals using four items: assessing external ("Because somebody else wants me to, or because I'll get something from somebody if I do"), introjected ("Because I would feel ashamed, guilty, or anxious if I did not—I feel that I ought to strive for these goals"), identified ("Because I really believe these are important goals to have—I endorse them freely and value them wholeheartedly"), and intrinsic ("Because of the fun and enjoyment the goals will provide me—the primary reason is simply my interest in the experience itself")

Table 1*Study 1: Descriptive Statistics, Intraclass Correlations, and Intercorrelations of Study Variables*

Variable	<i>M</i> (<i>SD</i>)	ICC	1	2	3	4	5	6	7	8
1. Autonomous goal motivation	4.43 (1.03)	—	—	—	—	—	—	—	—	—
2. Controlled goal motivation	3.25 (1.30)	—	-.21**	—	—	—	—	—	—	—
3. Weekly integrative emotion regulation	3.74 (1.30)	.66	.24**	-.02	—	.09	.20*	.13	.04	—
4. Weekly suppressive emotion regulation	3.19 (1.19)	.68	-.08	.28**	.07	—	-.23**	-.21**	.21**	—
5. Goal progress	4.21 (.99)	.54	.39**	-.40**	.18	-.23**	—	.40**	-.25**	—
6. Positive affect	3.07 (.71)	.67	.46**	-.26**	.42**	-.18**	.61**	—	-.19*	—
7. Negative affect	2.52 (.73)	.76	-.20**	.31**	.09	.32**	-.43**	-.33**	—	—
8. Goal attainment	3.94 (.84)	—	.23**	-.25**	.25**	-.04	.68**	.42**	.24**	—

Note. Integrative emotion regulation and suppressive emotion regulation represent averages of the variables assessed at each time point. Within-person correlations are presented above the diagonal, and between-person correlations are presented below the diagonal. ICC = intraclass correlations.

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

reasons for goal pursuit. We computed an “autonomous goal motivation” composite by averaging the intrinsic and identified scores and a “controlled goal motivation” composite by averaging the external and introjected scores; Spearman–Brown reliabilities were .50 and .59, for autonomous and controlled goal motivations, respectively. To ensure the appropriateness of the scales, we conducted principal axis factor analysis with an oblique rotation. This analysis indicated that a two-factor model explained 68% of the variance, with intrinsic ($\lambda = .78$) and identified ($\lambda = .84$) motivation loading on autonomous motivation and introjected ($\lambda = .87$) and extrinsic ($\lambda = .81$) motivation loading on controlled motivation. All secondary loadings were lower than .07.

Integrative and Suppressive Emotion Regulation. As per Benita et al. (2021), five items assessed the degree to which participants used integrative emotion regulation or suppressive emotion regulation over the past 2 weeks (weekly integrative and suppressive emotion regulation). Two items assessed weekly integrative emotion regulation (“Over the past two weeks when I felt negative emotions about my goal... [I tried to understand why I feel this way]; [I tried to observe my emotions and understand what they indicate about my situation]”); Spearman–Brown reliabilities were .77 and .77 for Time 2 and Time 3, respectively. Three items assessed weekly suppressive emotion regulation (“Over the past two weeks when I felt negative emotions about my goal... [I tried to hide my thoughts and feelings from people around me]; [I kept my negative emotions to myself]; [I tried to control or suppress any negative emotions]”); $\omega_{T2} = .79$, $\omega_{T3} = .79$.

Goal Progress. We used Koestner et al.’s (2002) goal progress measure (“I have made a lot of progress toward this goal”; “I feel like I am on track with my goal plan”; “It feels like I am close to achieving this goal”); $\omega_{T2} = .90$, $\omega_{T3} = .90$.

Positive and Negative Affect. To measure well-being, we used the Positive and Negative Affect Scale (PANAS; Watson et al., 1988). The PANAS contains two 10-item subscales designed to assess positive affect (active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, and strong; $\omega_{T2} = .88$, $\omega_{T3} = .88$) and negative affect (afraid, ashamed, distressed, guilty, hostile, irritable, jittery, nervous, scared, and upset; $\omega_{T2} = .89$, $\omega_{T3} = .89$). For each of the 20 emotion-related words, participants used a 5-point scale ranging from 1 (*very slightly* or *not at all*) to 5 (*extremely*) to rate the extent to which they felt each state over the past 2 weeks.

Goal Attainment. Two items, based on Koestner et al.’s (2002) scale, assessed goal attainment (“I am satisfied with how I worked

toward my goals and with the results I got”; “I feel like I have achieved my goals”); $\alpha = .81$.

Data Analysis

The analytic plan was identical in both studies. All analyses were conducted in Mplus Version 8.6 (Muthén & Muthén, 2007). We first examined correlations between the study variables. Given the multi-level structure of the data, whereby measurements of integrative emotion regulation, suppressive emotion regulation, goal progress, and positive and negative affect were nested within students (two measurements per student), we calculated the intraclass correlations (ICCs) for these variables. The ICC represents the homogeneity of measurement within clusters (i.e., participants). Values of 5% or above for ICC indicate reasonable homogeneity, justifying multi-level modeling (Gavin & Hofmann, 2002).

Next, we performed our main analysis, using a multilevel structural equation modeling (MSEM) framework (Preacher et al., 2011) with maximum likelihood estimation and robust standard errors. MSEM provides an accurate estimation of indirect effects by decomposing the variance into two components: within-participant and between-participant (Muthén & Asparouhov, 2011). As can be seen in Figure 1, autonomous and controlled goal motivation (predictors) and goal attainment were measured only once, so they had only between-participant variance. Therefore, these variables were assessed only at level 2. However, the mediator and outcome variables—integrative emotion regulation, suppressive emotion regulation, and positive and negative affect—were measured twice and therefore had both a within-participant and a between-participant variance. These variables were entered simultaneously at level 1 and level 2 to parcelate the variation between and within clusters (individuals). As we were predominantly interested in the effects of autonomous and controlled goal motivation (level 2 variables) on the outcomes, only predictors at level 2 were included. We finally examined the significance of indirect effects using the delta method test (the Mplus default).

Results

Correlations Among Variables

Table 1 presents correlations for the within-participant (above the diagonal) and between-participant (below the diagonal) levels. Autonomous goal motivation was positively related to weekly integrative emotion regulation, goal progress, goal attainment, and positive affect and negatively related with negative affect. Controlled goal

motivation was positively associated with weekly suppressive emotion regulation and negative affect and negatively related to goal progress, positive affect, and goal attainment. Weekly integrative emotion regulation was positively related to positive affect and goal attainment at the between-participant level but was related with goal progress only at the within-participant level. Contrary to our hypotheses, weekly integrative emotion regulation was unrelated with negative affect and with positive affect at level 1. Weekly suppressive emotion regulation was positively associated with negative affect at both levels, and negatively associated with goal progress and positive affect at both levels. Contrary to our hypothesis, weekly suppressive emotion regulation was unrelated with goal attainment.

Multilevel Model

The ICCs are presented in Table 1. As can be seen, all ICCs were above .54, indicating that more than 54% of the variance in the mediating and outcome variables reflected differences between participants. It was therefore appropriate to use multilevel modeling.

Table 2 presents the MSEM results. Autonomous goal motivation positively predicted weekly integrative emotion regulation, goal progress, positive affect, and goal attainment and negatively predicted negative affect. Controlled goal motivation negatively predicted goal progress, positive affect, and goal attainment and positively predicted negative affect. Weekly integrative emotion regulation positively predicted goal progress, positive affect, and goal attainment. It did not predict negative affect. In addition, weekly suppressive emotion regulation negatively predicted positive affect and goal progress, and positively predicted negative affect. However, it did not predict goal attainment.

Table 3 presents the indirect effects. The indirect paths from autonomous goal motivation to positive affect and goal attainment through weekly integrative emotion regulation were significant. The direct path from autonomous goal motivation to positive affect was significant. In addition, the direct path from autonomous goal motivation to goal attainment was nonsignificant. Second, the indirect paths from controlled goal motivation to positive and negative affect through weekly suppressive emotion regulation were also significant. The direct paths from controlled goal motivation to positive and negative affect were both significant. All other indirect paths were nonsignificant.

Collectively, these variables explained 34%, 42%, 20%, and 14% of the between-level variance in goal progress, positive affect, negative affect, and goal attainment, respectively.

Summary of Results

Overall, the results supported our hypotheses, with a few exceptions. In line with Hypotheses 1 and 2, autonomous and controlled goal motivations differentially predicted weekly integrative emotion regulation and suppressive emotion regulation and differentially predicted goal progress, positive and negative affect, and goal attainment. Hypothesis 3 was partially supported. As expected, weekly integrative emotion regulation predicted goal progress, positive affect, and goal attainment, but (contrary to expectations) did not predict negative affect. Weekly suppressive emotion regulation negatively predicted goal progress and positive affect and positively predicted negative affect; it was unrelated to goal attainment. Finally, Hypothesis 4 was partially supported. In line with Hypothesis 4a, weekly integrative emotion regulation was a mediator between

Table 2
Study 1: Multilevel Meditation Models to Predict Goal Progress, Well-Being, and Goal Attainment From Emotion Regulation Strategies and Goal Motivation

Predictors	Estimate (LLCI, ULCI) [p]					
	Weekly integrative emotion regulation	Weekly suppressive emotion regulation	Goal progress	Positive affect	Negative affect	Goal attainment
Autonomous goal motivation	.24 (.11, .38), [$<.001$]	—	.27 (.11, .42), [.001]	.32 (.20, .45), [$<.001$]	-.16 (-.30, -.02), [.021]	.13 (-.02, .28), [.090]
Controlled goal motivation	—	.28 (.13, .43), [$<.001$]	-.28 (-.47, -.09), [.004]	-.12 (-.25, .01), [.062]	.20 (.06, .33), [.004]	-.22 (-.36, -.09), [.001]
Weekly integrative emotion regulation	—	—	.20 (.01, .38), [.036]	.39 (.24, .54), [$<.001$]	.12 (-.03, .27), [.125]	.21 (.07, .35), [.003]
Weekly suppressive emotion regulation	—	—	-.22 (-.44, -.01), [.043]	-.20 (-.35, -.05), [.010]	.29 (.14, .44), [$<.001$]	.02 (-.14, .18), [.822]
R^2 (τ_{00})	.06	.08	.34	.42	.20	.14

Note. All coefficients are standardized betas. Significant coefficients appear in bold. 95% confidence intervals are presented in round brackets. LLCI = lower level confidence intervals; ULCI = upper level confidence intervals

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Table 3
Indirect Effects

Path	Estimate	SE	<i>p</i>
Study 1: Weekly			
Autonomous goals → Weekly integrative emotion regulation → Goal progress	.03	.02	.074
Autonomous goal motivation → Weekly integrative emotion regulation → Positive affect	.06	.02	.005
Autonomous goal motivation → Weekly integrative emotion regulation → Negative affect	.02	.01	.142
Autonomous goal motivation → Weekly integrative emotion regulation → Goal attainment	.04	.02	.035
Controlled goal motivation → Weekly suppressive emotion regulation → Goal progress	-.04	.02	.084
Controlled goal motivation → Weekly suppressive emotion regulation → Positive affect	-.03	.01	.042
Controlled goal motivation → Weekly suppressive emotion regulation → Negative affect	.05	.02	.010
Controlled goal motivation → Weekly suppressive emotion regulation → Goal attainment	.00	.02	.822
Study 2: Daily			
Autonomous goal motivation → Daily integrative emotion regulation → Goal progress	.05	.02	.021
Autonomous goal motivation → Daily integrative emotion regulation → Positive affect	.08	.03	.014
Autonomous goal motivation → Daily integrative emotion regulation → Negative affect	.05	.03	.116
Autonomous goal motivation → Daily integrative emotion regulation → Goal attainment	.08	.03	.016
Controlled goal motivation → Daily suppressive emotion regulation → Goal progress	-.01	.01	.209
Controlled goal motivation → Daily suppressive emotion regulation → Positive affect	.00	.03	.822
Controlled goal motivation → Daily suppressive emotion regulation → Negative affect	.04	.03	.155
Controlled goal motivation → Daily suppressive emotion regulation → Goal attainment	.00	.01	.923

Note. Estimates are indirect effects. Significant estimates appear in bold.

autonomous goal motivation and both positive affect and goal attainment, and in line with Hypothesis 4b, weekly suppressive emotion regulation was a mediator in the negative relation of controlled goal motivation with positive affect, and the positive relation of controlled goal motivation with negative affect. However, contrary to Hypothesis 4, neither weekly integrative emotion regulation nor suppressive emotion regulation mediated the relation of goal motivation with goal progress.

Study 2

In Study 2, we explored the same hypotheses with a daily diary design. This design has several benefits. First, unlike the retrospective self-report technique (“over the past 2 weeks”) used in Study 1, daily diary studies use a momentary self-report technique in which participants report on their experiences and behaviors for the same day (emotion regulation strategies, goal progress and well-being, in the case of our study). Whereas retrospective self-reports reflect reconstructed memories, tapping people’s “remembered self” (Singer & Salovey, 1993), momentary self-reports address people’s more immediate episodic memory networks, tapping their “experiencing self” (Conner & Barrett, 2012). Thus, an advantage of momentary self-reports is that they are considered less biased by memory than retrospective reports (Kahneman & Snell, 1992).

Even more importantly, as many psychological phenomena fluctuate from day to day, daily diary methods enable researchers to “capture life as it is lived” (Bolger et al., 2003). This is especially relevant for goal pursuit. For example, when studying toward an exam, some students can procrastinate on a given day but then compensate the day after by increasing their efforts. As a result, experiences of goal progress and well-being can change from one day to another (e.g., Hope et al., 2014). Similarly, emotion regulation strategies can also fluctuate from day to day (e.g., Koval et al., 2023) and influence daily experiences of goal progress and well-being, as well as long-term goal attainment. Retrospective self-reports cannot tap such fine-grained day-to-day fluctuations.

Method

Participants and Procedure

Participants ($N = 154$, 59% female, $M_{\text{age}} = 23.70$, $SD = 2.25$) were Israeli university students recruited through online advertisements. Among these participants, 86% were Jewish (the rest were Muslims, Christians, or Atheists), 98.1% were undergraduates (others were in their masters), and 86% were studying engineering (the rest studied computer science, pharmacy, and economics and accounting). As in Study 1, we conducted a sensitivity analysis using G*Power (Faul et al., 2009) following the recommendations of Murayama et al. (2022) for calculating power in multilevel designs. We used a desired power of .80, an alpha level of .05, and four predictors (as in our model). Sensitivity analysis indicated our sample was sufficient to detect a level 2 small effect of .04 (Cohen, 1992).

Participants completed online questionnaires using Qualtrics. First, they filled out a demographic questionnaire, including various details about their age, gender, employment, and degree. In this questionnaire, participants were asked to indicate the date of their most important or stressful exam. Ten days before the exam, participants were sent questionnaires as follows: At first, they received a baseline questionnaire, in which they were asked to indicate two goals they would like to achieve toward that exam (sample goals generated by participants: To really understand the material; to get a good grade; to summarize all lectures). At baseline, they were also asked to report on their motivation (autonomous or controlled) to attain these goals. During the next 10 days, they received daily links at noon with a questionnaire to complete during the day. If they did not complete the questionnaire by 6 p.m., they received a reminder email.

One hundred and seventy-nine students completed the baseline assessment, and 154 of them completed at least one daily report and were therefore included in the study. Compliance was high: 81 participants (52.6%) completed all 10 days, 17 (11%) completed 9 days, seven (4.5%) completed 8 days, six (3.9%) completed 7 days, two (1.6%) completed 6 days, one (0.6%) completed 5 days, five (3.2%) completed 4 days, four (2.6%) completed

3 days, eight (5.2%) completed 2 days, and 23 (14.9%) completed 1 day. One week after the exam, participants were given another questionnaire in which they reported on their goal attainment; 119 participants filled out this questionnaire. As in Study 1, we included all participants in our analyses. We handled missing data using maximum likelihood estimation. All study procedures were approved by the Human Subjects Research Committee at Ben-Gurion University (Request Number: 2420).

Measures

The same measures as in Study 1 were used in this study, with few exceptions, as can be seen below. As in Study 1, all questionnaire items referred to the two goals in general, not to each goal separately. Table 4 presents the descriptive statistics for all variables. For the daily variables, we assessed multilevel reliability using the syntax provided by Geldhof et al. (2014). For scales including two items (goal motivation, goal progress, daily integrative emotion regulation, and goal attainment), we used Spearman–Brown reliability estimates. For scales including three items or more (daily suppressive emotion regulation, positive affect, and negative affect), we calculated McDonald's omega.

Autonomous and Controlled Goal Motivation. As in Study 1, we used Sheldon and Elliot's (1998) measure of goal motivation. Spearman–Brown = .50 and .49, for autonomous and controlled goal motivation, respectively. As in Study 1, to ensure the appropriateness of the scales, we conducted principal axis factor analysis with an oblique rotation. This analysis indicated that a two-factor model explained 67% of the variance, with intrinsic ($\lambda = .91$) and identified ($\lambda = .69$) motivation loading on autonomous motivation and introjected ($\lambda = .74$) and extrinsic ($\lambda = .85$) motivation loading on controlled motivation. All secondary loadings were smaller than 1.271.

Integrative and Suppressive Emotion Regulation. We used the same scale as in Study 1 (Benita et al., 2021), adapted for daily use. Spearman–Brown_w = .61, Spearman–Brown_b = .98, for integrative emotion regulation, and $\omega_w = .56$, $\omega_b = .91$, for suppressive emotion regulation.

Goal Progress. We used the same scale as in Study 1 (Koestner et al., 2002), adapted for daily use. To ease participants' burden, we used two items instead of three. Spearman–Brown_w = .71, Spearman–Brown_b = .89.

Positive and Negative Affect. We used the 10-item PANAS (Watson et al., 1988). The short PANAS contains two 5-item subscales designed to assess positive affect (inspired, alert, determined,

enthusiastic, and excited; $\omega_w = .81$, $\omega_b = .91$) and negative affect (afraid, distressed, irritable, scared, and upset; $\omega_w = .83$, $\omega_b = .95$). For each of the 10 emotion-related words, participants used a 5-point scale ranging from 1 (*very slightly* or *not at all*) to 5 (*extremely*) to rate the extent to which they felt each state over the past day.

Goal Attainment. The same two items used in Study 1 were used in this study, Spearman–Brown = .92.

Results

Correlations Among Variables

Table 4 presents correlations for within-participant (above the diagonal) and between-participant (below the diagonal). Overall, the results were in line with our hypotheses, but there were several differences from Study 1. Autonomous goal motivation was positively related to daily integrative emotion regulation, goal progress, and positive affect, and controlled goal motivation was negatively related to goal progress and positively related to negative affect. Unlike Study 1 (and Hypothesis 1), controlled goal motivation was unrelated with daily suppressive emotion regulation. In addition, unlike Study 1, autonomous goal motivation was unrelated with negative affect and with goal attainment, and controlled goal motivation was unrelated with positive affect and goal attainment. Like Study 1, daily integrative emotion regulation was positively related to goal progress and positive affect at both levels, and also with goal attainment at the between-participant level. Daily suppressive emotion regulation was positively associated with negative affect at both levels, but unrelated with goal attainment. Contrary to Hypothesis 3a (and Study 1), daily integrative emotion regulation was positively related to negative affect at level 2. In addition, unlike Study 1 (and Hypothesis 3b), daily suppressive emotion regulation was unrelated with goal progress and positive affect at both levels.

Multilevel Model

Table 4 presents the ICCs, which were all above .38, indicating that more than 38% of variance was explained by differences between participants. It was therefore appropriate to use multilevel modeling.

Table 5 presents the MSEM results. Autonomous goal motivation positively predicted daily integrative emotion regulation, goal

Table 4

Study 2: Descriptive Statistics, Intraclass Correlations, and Intercorrelations of Study Variables

Variable	<i>M (SD)</i>	ICC	1	2	3	4	5	6	7	8
1. Autonomous goal motivation	4.44 (.94)	—	—							
2. Controlled goal motivation	3.07 (1.14)	—	-.24**	—						
3. Daily integrative emotion regulation	2.49 (1.09)	.61	.29**	-.04	—					
4. Daily suppressive emotion regulation	2.34 (.97)	.70	.01	.14	.26**	—				
5. Goal progress	3.16 (.92)	.38	.39**	-.25**	.30**	-.14	—			
6. Positive affect	2.59 (.89)	.54	.26**	-.16	.39**	.06	.59**	—		
7. Negative affect	2.77 (1.11)	.70	-.01	.20**	.25**	.43**	-.37**	-.33**	—	
8. Goal attainment	3.37 (1.22)	—	.08	.00	.23**	.07	.26**	.15	-.11	—

Note. Coefficients above and below the diagonal represent within-participant and between-participant intercorrelations, respectively. Daily measures represent averages of the variables assessed at each time point. ICC = intraclass correlations.

** $p < .01$.

Table 5
Study 2: Multilevel Mediation Models to Predict Goal Progress, Well-Being, and Goal Attainment From Emotion Regulation Strategies and Goal Motivation

Predictors	Estimate (<i>LLCI</i> , <i>ULCI</i>), [<i>p</i>]		
	Daily integrative emotion regulation	Daily suppressive emotion regulation	Goal attainment
Autonomous goal motivation	.29 (.15, .43), [$<.001$]	—	—
Controlled goal motivation	—	—	—
Daily integrative emotion regulation	.14 (−.04, .32), [.133]	.12 (−.05, .30), [.171]	−.03 (−.20, .14), [.737]
Daily suppressive emotion regulation	—	−.12 (−.28, .04), [.147]	.14 (−.01, .29), [.067]
	—	.28 (.11, .45), [.001]	.17 (−.04, .38), [.117]
	—	−.19 (−.35, −.03), [.024]	.38 (.23, .54), [.000]
R^2 (τ_{00})	.08	.29	.21
		.02	.05

Note. All coefficients are standardized betas. Significant coefficients appear in bold. 95% confidence intervals are presented in round brackets. *LLCI* = lower level confidence intervals; *ULCI* = upper level confidence intervals

progress, and positive affect. Controlled goal motivation positively predicted negative affect. Daily integrative emotion regulation positively predicted goal progress, positive affect, and goal attainment. As in Study 1, it did not predict negative affect. In addition, daily suppressive emotion regulation negatively predicted goals progress, and positively predicted negative affect.

Table 3 presents the indirect effects. The indirect paths from autonomous goals to goal progress, positive affect, and goal attainment through daily integrative emotion regulation were significant. All other indirect paths were nonsignificant. Collectively, these variables explained 29%, 22%, 21%, and 5% of the between-level variance in goal progress, positive affect, negative affect, and goal attainment, respectively.

Summary of Results

The results supported some of our hypotheses but not others. Hypothesis 1 was partially supported. In line with Hypothesis 1a, autonomous goal motivation predicted daily integrative emotion regulation, but contrary to Hypothesis 1b, controlled goal motivation did not predict daily suppressive emotion regulation. Hypothesis 2 was also partially supported. In line with Hypotheses 2a and 2b, autonomous goal motivation predicted goal progress and positive affect, and controlled goal motivation predicted negative affect. However, contrary to Hypotheses 2a and 2b (and Study 1), autonomous goal motivation did not predict goal attainment, and controlled goal motivation did not predict goal progress, positive affect, and goal attainment. In line with Hypothesis 3a, daily integrative emotion regulation predicted goal progress, positive affect, and goal attainment. As in Study 1, it did not negatively predict negative affect. In line with Hypothesis 3b, daily suppressive emotion regulation negatively predicted goal progress and positively predicted negative affect. However, as in Study 1, it did not negatively predict goal attainment. Finally, Hypothesis 4a was supported. Daily integrative emotion regulation mediated the positive relations of autonomous goal motivation with goal progress, positive affect, and goal attainment. Hypothesis 4b was not supported.

Discussion

In two studies, we examined whether autonomous and controlled goal motivations differentially predict integrative emotion regulation and suppressive emotion regulation during goal pursuit, and whether integrative emotion regulation and suppressive emotion regulation in turn differentially predict goal progress/attainment and well-being during goal pursuit. Most of our hypotheses were supported. In both studies autonomous goal motivation predicted integrative emotion regulation, which in turn positively predicted goal progress/attainment and well-being. Accordingly, both studies indicate that there is an autonomous path to goal pursuit. However, only in Study 1 did controlled goal motivation predict suppressive emotion regulation and goal progress/attainment. Therefore, the evidence for a controlled path to goal pursuit is inconclusive. In both studies, however, controlled goal motivation positively predicted negative affect, and suppressive emotion regulation negatively predicted goal progress and positively predicted negative affect.

The Autonomous Path to Goal Pursuit

Our results confirm previous findings that the pursuit of a goal with autonomous motivation is highly effective, predicting both goal progress/attainment and well-being (for a review, see Werner & Milyavskaya, 2018). Specifically, our findings extend previous studies that showed that goal motivation predicts the quality of coping strategies used when encountering goal-related setbacks (Amiot et al., 2004; Gaudreau et al., 2012; Ntoumanis et al., 2014; Sanjuán & Ávila, 2019; Smith et al., 2011). The focus of the present research on emotion regulation enriches the understanding of how people manage setbacks during goal striving.

Anchored in self-determination theory's emotion regulation framework (Roth & Benita, 2023), our results suggest that the regulation of goal-related emotions is another important aspect of autonomous goal pursuit. Specifically, our results suggest that when goals are endorsed with autonomous motivation, individuals are likely to take a keen interest in negative emotions that arise during goal pursuit and derive important information from them to promote goal pursuit in the long term. In other words, the results suggest that setting a goal with autonomous motivation paves the way to a higher quality goal pursuit process that involves handling emotional experiences in an open and nondefensive manner.

Our findings also join recent evidence stressing the role that emotion regulation processes play during personal goal pursuit. Specifically, we replicate Benita et al.'s (2021) study by showing that integrative emotion regulation is positively related to goal progress. We further extend that study by showing that integrative emotion regulation is positively related to positive affect during goal pursuit. In addition, our results show that using integrative emotion regulation during goal pursuit benefits autonomous goals both in the short term (during goal striving) and the long term (at goal evaluation). These findings join the accumulating evidence showing the benefits of integrative emotion regulation with regard to various outcomes (Benita, 2020; Roth & Benita, 2023).

There were several differences between the results of Study 1 and Study 2. First, only in Study 2 did autonomous goal motivation explain goal progress through integrative emotion regulation (in Study 1, this indirect effect was marginal). Study 1's lack of significant mediation effect may be due to the nonsignificant, yet positive ($r = .18$), between-person correlation between integrative emotion regulation and goal progress in Study 1. Note that the within-person correlation between integrative emotion regulation and progress was significant (as were both within and between-person correlations in Study 2), supporting prior results on the role of integrative emotion regulation in goal progress (Benita et al., 2021). Considering this, we assume this was not the case in Study 1 because the effect of integrative emotion regulation on goal progress was more salient at the within-participant level than at the between-participant level.

A second difference between the two studies is that unlike Study 1, in Study 2 autonomous goals did not predict goal attainment by themselves, but only through integrative emotion regulation. This difference might be explained by several differences between studies. First, whereas in Study 1 participants were asked to report on the attainment of their general goals during the exam season, in Study 2 participants reported on their attainment of their goal in a specific exam. Second, Study 2 participants were mostly engineering students, where exams are usually difficult, scores are low, and attrition is high (Geisinger & Raman, 2013). Because success or failure in such exams

can be influenced by several factors, including the difficulty of the course or exam, autonomous goal setting alone may not suffice to achieve the goal. Rather, our results suggest that perceived success in such an exam is more a function of the quality of processes occurring during goal striving, specifically how people regulate emotions during setbacks. Furthermore, our results suggest autonomous goals are beneficial for the attainment of such goals because they give rise to optimal goal striving processes.

The Controlled Path to Goal Pursuit

Our hypothesis that a controlled path to goal pursuit would emerge was only supported in Study 1. Only in this study did controlled goal motivation predict suppressive emotion regulation and negatively predicted goal progress, goal attainment, and positive affect. As a result, only in Study 1 did suppressive emotion regulation mediate the relation between controlled goal motivation and goal-related outcomes. In Study 2, the effect of controlled goal motivation on negative affect disappeared after we controlled for the effect of daily suppressive emotion regulation.

These findings suggest that in Study 2 controlled goal motivation was not as detrimental as it was in Study 1 (although it was not beneficial either). Although many previous studies, including Study 1, showed controlled goal motivation negatively relates to goal progress and goal attainment (for a review, see Werner & Milyavskaya, 2018), several studies failed to find such relations (e.g., Koestner et al., 2008; Milyavskaya et al., 2015). Specifically, Milyavskaya et al.'s (2015) study found that controlled goal motivation has a null relation to goal attainment but a positive relation to effort. This greater effort invested in attaining control-motivated goals can explain why, for some individuals, controlled goals give rise to increased goal attainment. This greater effort, as ours and other results suggest, comes at the expense of quality of engagement and well-being during goal pursuit.

It is also possible that the different designs used in each study accounted for the differences between the studies. Specifically, in Study 1, participants generated three academic goals for their studies in general (not in a specific course). However, in Study 2, participants generated two goals pertaining to a specific exam in one course. Thus, in Study 1, some goals were more likely to compete with one another (e.g., striving to read the material in one course and at the same time studying for an exam in another). If such goals are controlled, people are more likely to experience increased goal conflict (Werner & Milyavskaya, 2019). Goal conflict, in turn, may hinder goal pursuit (Gray et al., 2017). Thus, it is likely that participants in Study 1 experienced greater goal conflict than those in Study 2. The former were also more likely to use maladaptive emotion regulation strategies to overcome the greater conflict they experienced. Future research should explore this possibility.

In both studies, suppressive emotion regulation predicted maladaptive outcomes, as it was negatively related to goal progress and positively related to negative affect during goal pursuit. This supports previous findings (Benita et al., 2021; Low et al., 2017) demonstrating that suppressive emotion regulation impedes goal pursuit. Importantly, however, in both of our studies, suppressive emotion regulation was unrelated to long-term goal attainment. These results suggest that although suppressive emotion regulation users do not necessarily fail to attain their goals, they do suffer adversity when pursuing them, making goal pursuit a painful

process for them. Furthermore, it is possible that to impede long-term goal attainment suppressive emotion regulation needs to interact with other self-regulatory processes occurring throughout goal striving, such as the experience of action crises that naturally occur when people face setbacks while pursuing their goals (Brandstätter et al., 2013). For example, it is possible that during an action crisis, when people hesitate whether to continue pursuing a goal or abandoning it, suppressive emotion regulation can deter people from choosing strategies aimed at actively solving the crisis or sharing their hesitation with others. As a result, they are more likely to select disengaging from the goal instead of persisting pursuing it. Future research should explore this assumption.

Another difference between the studies was that only in Study 1 did suppressive emotion regulation negatively predict positive affect. This difference might have resulted from the different method we used to assess suppressive emotion regulation and well-being in each study (momentary vs. retrospective), which tap different types of self-knowledge (i.e., the experiencing self vs. the remembering self, respectively; Conner & Barrett, 2012; Kahneman et al., 1999). In our studies, negative relation between suppressive emotion regulation and positive affect emerged when participants used retrospective self-reports, but not when they used momentary self-reports. This suggests that on a daily level, when participants addressed their experiencing self using momentary self-reports, suppressive emotion regulation was sometimes related to positive affect because such people avoided experiencing negative emotions. On the other hand, when participants recollected their past 2 weeks of positive affect and suppressive emotion regulation (addressing their remembering self), those high on suppressive emotion regulation recollected experiencing overall reduced positive affect.

Limitations

Admittedly, the studies had a few limitations. First, despite the prospective design used in both studies, we cannot infer causality, and different causal chains and even reciprocal effects are highly plausible. Future research should seek to establish causality between the variables using experimental designs or correlational designs that can be used to explore causal effects (e.g., Grosz et al., 2020; Hamaker et al., 2015). Second, we relied solely on self-reports, thus increasing the risk of shared-method bias. Other work could use more objective measures of goal progress and emotion regulation styles, such as other reports, behavioral measures, or experimental manipulations. Note, however, that recent research on behavioral measures of goal progress finds discrepancies between self-reported progress and objective measures (grades and weight lost), suggesting they represent conceptually distinct constructs and should not be used interchangeably (Smyth et al., 2022).

Third, the reliabilities of the scales assessing autonomous and controlled goal motivation in both studies were mediocre, as well as the within-participant reliability of the scale assessing suppressive emotion regulation in Study 2. Such low reliability estimates may explain why some correlations were low and nonsignificant, as measurement error attenuates the size of observed correlations between variables (relative to the true values). One reason for the low reliabilities is that we used relatively short scales to ease participant burden, so reliability estimates were likely biased. Second, and specifically

regarding the goal motivation questionnaire (Koestner et al., 2002), a possible reason for the low reliability is that each of its four items refers to a different construct on the self-determination continuum (external regulation, introjected regulation, identified regulation, and intrinsic regulation; Ryan & Connell, 1989). On theoretical grounds, we combined the items tapping external and introjected regulation to form the controlled motivation construct and the items tapping identified and intrinsic regulation to form the autonomous motivation construct. Therefore, low reliabilities were expected, not necessarily due to measurement error, but due to combining two different, yet theoretically linked constructs. As demonstrated above, our principal component factor analysis, yielding two separate components for autonomous and controlled motivation, supports this assumption.

Another limitation of our studies is that in both studies we collapsed the goals and asked students to report about goal motivation for all three goals together. Although in both studies all goals were in the same domain (academics), it is likely that goal motivation varies between different academic goals. For example, some students can be autonomously motivated to complete the readings, but their motivation for reviewing the material may be more controlled. Therefore, our goal motivation measures were more general than specific and likely reflected general motivations toward their schoolwork rather than motivation for any one particular academic goal or activity. Future research should address this limitation by asking students about their motivation for each goal separately, as well as about their emotion regulation strategies used in pursuing each goal. This will enable a more fine-grained view of the effect of different goal types on the emotion regulation strategies used during goal pursuit.

Finally, our research assumes that integrative emotion regulation enables people to use emotions in the service of goal pursuit. However, we did not test this hypothesis directly, as we only tested a positive relationship between integrative emotion regulation and optimal goal pursuit outcomes. Nevertheless, future research should explore this hypothesis. It is possible, for example, to ask students if their emotions helped them achieve their goals or overcome setbacks when they applied integrative emotion regulation.

Conclusion

These studies are the first to explore the mediating role of emotion regulation processes in the relations between goal motivation, goal progress, and well-being. By introducing the recently developed self-determination theory-based emotion regulation model (Benita, 2020; Roth & Benita, 2023) into the study of goal motivation, we suggest a comprehensive goal pursuit model that differentiates autonomous from controlled goal pursuit. The inclusion of emotion regulation processes in the relation between goal motivation and goal-related outcomes is especially important, given the somewhat ironic effect of emotions, especially negative ones, during goal pursuit. Negative emotions can be experienced as unpleasant, and people may wish to avoid them, but if they do so, they may miss out on their functional utility. As our results suggest, optimal emotion regulation while pursuing goals is characterized by the ability to access an emotion and employ it in the service of goal pursuit while not being overwhelmed by it. This is facilitated by more autonomous motivation.

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