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For better or worse: Young adults' opportunity beliefs and motivational self-regulation during career entry

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Abstract

Individuals' motivational self-regulatory system is challenged as they cross the transition from school to work. Using data from a longitudinal study of participants approaching and crossing university graduation ($n = 140$), we examine the ways in which individuals' motivational strategies reflect and direct their career-related opportunity field. Our findings indicate that participants' beliefs about how socioeconomic status (SES) is attained in society and how they themselves believe their own SES will be attained, are related with the degree to which they engage with or disengage from their career goals. These SES-related beliefs can be broadly organized into two patterns: the first emphasizing personal control over attaining career goals and the second emphasizing non-action-contingent control. Regarding the former, participants who viewed career goal attainment as being determined by merit (e.g., effort and ability) were more likely to engage with their career goals, and in so doing reported more rapid progress toward attaining their career goals. Conversely, participants who believed that career attainment is due to factors outside of their direct control (e.g., privilege and luck), were more likely to disengage from their career goals, and in so doing devalued the importance of attaining their career goals.

Keywords

career, motivation, opportunity beliefs, young adulthood

Young adults' pursuit of career goals during the school-to-work transition challenges their motivational self-regulation capacity. This motivational self-regulatory challenge has been compounded by social and economic changes that have produced uncertain but potentially successful prospects for career-related development (Buchholz et al., 2009). In periods of economic uncertainty with some level of perceived control, individuals' tend to respond with enhanced commitment to career-related goal pursuits and enhanced perception of opportunities for goal pursuit (Heckhausen, 1999). However, individuals' goal pursuit is generally adaptive to the extent that it is congruent with their opportunities for goal attainment (Heckhausen, Wrosch, & Schulz, 2010). How young adults perceive their career-related opportunities in a changing developmental ecology, and in turn regulate their motivational commitment to career goals, remains an open area of research. The present study addresses this by examining young adults' motivational self-regulation in response to their perceived opportunities for career-related goal attainment.

Motivational self-regulation

Individuals' motivational self-regulation can be thought of as a composite of motivational strategies and the coordination of these strategies into periods of goal engagement and goal disengagement as proposed by the Motivational Theory of Lifespan Development (Heckhausen et al., 2010). The action-phase model of developmental regulation outlines the phases of goal engagement and goal disengagement involved in a goal-pursuit cycle, beginning with individuals' decision to pursue a goal (Heckhausen, 1999; Heckhausen et al., 2010). The choice to pursue a goal is ideally unbiased, allowing individuals to accurately assess the importance of attaining the goal, the means required to attain this goal, and their own access to these requisite means for goal attainment. Once individuals choose and begin to pursue a goal, their mindset invokes enhanced perceptions of control over attaining the goal, which allows individuals to more fully commit themselves to the pursuit of the goal.

When goal engagement becomes more urgent, as in the case of approaching a developmental deadline, individuals respond by increasing their engagement toward the pursued goal (Heckhausen et al., 2010). The final stage of the action-phase model involves individuals' response to success or failure in the pursuit of their goal. In the case of successful goal attainment, individuals are expected to use this experience as a springboard toward future goal pursuits. In the case of failure, individuals are expected to use compensatory secondary control strategies to disengage from the unattainable goal in a way that preserves their self-concept and motivational resources that can then be directed toward future goal pursuits.

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Career-related motivational self-regulation in response to perceived opportunity

How young adults' perceive their opportunities for career attainment should influence the degree to which they decide to engage with, and sustain their engagement with, the pursuit of career goals. On one hand, rising levels of social inequality and labor market transformations have constrained opportunities for young adults' career attainment (Danziger & Ratner, 2010; Godofsky, Zukin, & Van Horn, 2011). On the other hand, the dominant meritocratic ideology of American society promises that individuals can attain whatever career they want, within the limits of their effort and ability (Shane & Heckhausen, 2013). This disconnect between an uncertain and unstable labor market and societal promises of opportunity tests young adults' motivational self-regulation as they navigate the school-to-work transition (Heckhausen & Shane, 2015).

Despite labor-market uncertainty (Buchholz et al., 2009; Danziger & Ratner, 2010), young adults in the USA are generally optimistic about their future career prospects (Taylor et al., 2012). Consistent with this optimism is an endorsement of meritocratic ideals related to intergenerational social mobility attained through individual merit (Shane & Heckhausen, 2013). These meritocratic beliefs may facilitate individuals' commitment to long-term developmental goals, such as the establishment and pursuit of career goals, by signaling that they have personal control over goal attainment.

Converging evidence for the importance of perceived control in individuals' choice and pursuit of goals comes from motivational theory, particularly regarding control beliefs (Lent, Brown, & Hackett, 1994; Skinner, 1996; Weiner, 1985). Of particular relevance to the present study are individuals' beliefs about the efficacy of possible means to control the environment (means-ends beliefs) and one's personal capacity to access these means to control the environment (agency beliefs) (Skinner, Zimmer-Gembeck, Connell, Eccles, & Welborn, 1998). This agent-means-ends framework proposed by Skinner and colleagues implies that goal engagement is facilitated when individuals believe that they have access to the necessary means to attain the desired goal.

The roles of individuals' control beliefs and motivational engagement in facilitating and directing their career progress is increasingly important in response to societal conditions that offer permeability between career-tracks at the expense of structured school-to-work transitions and within-organization promotion tracks (Arthur & Rousseau, 1996; Buchholz et al., 2009; Hall, 2004; Heckhausen, 2010; Heckhausen & Shane, 2015; Heinz, 2009). Empirical support from a meta-analyses examining correlates of career success indicates that individuals' who believe they have direct control over their career goals (internal locus of control; Rotter, 1966) and those who direct their motivational resources toward enacting change in their careers (e.g., proactive personality; Bateman & Crant, 1993) report higher salary and greater career satisfaction (Ng, Eby, Sorensen, & Feldman, 2005). Further research also finds that individuals' career-directed goal engagement is positively related to markers of career progress, including increased occupational prestige, salary, and career satisfaction (Converse, Pathak, Depaul-Haddock, Gotlib, & Merbedone, 2012; Seibert, Crant, & Kraimer, 1999).

While this prior research discussed above indicates a positive relationship between individuals' goal engagement and control beliefs that emphasize internal control with career success, research examining how career-related goal engagement strategies are related with career-related control beliefs is limited. One study that does examine this issue finds a reciprocal relationship between individuals' career-related control beliefs and motivational strategies, but indicates that this relationship was translated into career-related progress through individuals' goal engagement strategies (Shane, Heckhausen, Lessard, Chen, & Greenberger, 2012). Further research finds that individuals who were highly goal-engaged with work situations they felt they could not control reported adverse work-related mental and physical health effects and an inability to sustain their high levels of career-related goal engagement over the 9-year study interval (Shane & Heckhausen, 2012).

Research questions and hypotheses

Research examining how individuals coordinate their career-related goal engagement and goal disengagement strategies with their control beliefs, and the subsequent relationship between their motivational strategies and career progress is limited. The present study addresses this issue by examining (1) the relationship between young adults' career-related motivational strategies and their beliefs about socioeconomic status (SES) attainment, and (2) the relationship between young adults' career-related motivational strategies and their career-related development (see also Shane, 2014).

Regarding the first research question, participants' beliefs about SES attainment are expected to have differential effects on their decision to expend motivational resources toward or away from their career goals. Beliefs that emphasize an internal locus of control (Rotter, 1966), such as effort and ability, are inherently motivating as they signal to the individual that their goal attainment is contingent upon their own investment of time, energy, and ability. Thus, we expect that merit-oriented beliefs will be positively related to participants' career-related goal engagement strategies. Conversely, individuals who believe that their career goals will be attained through luck (illusory control; Weiner, 1985) or privilege (external locus of control; Rotter, 1966) have no reason to invest motivational resources as career attainment will or will not happen regardless of their own agentic strivings. Hence, we expect that luck and privilege-oriented beliefs will be positively related to participants' career-related goal disengagement strategies.

Turning to the second research question, participants' career-related motivational strategies are expected to be differentially associated with their career-related development. Career-related goal engagement strategies constitute individuals active attempts to control the attainment of their goals (Heckhausen et al., 2010), and we therefore expect that participants who report high levels of career-related goal engagement will also report positive progress toward attaining their career goals. On the other hand, goal disengagement strategies constitute individuals' efforts to disengage from their goals while protecting their self-concept. Thus, participants' who report high levels of career-related goal disengagement are expected to report low levels of career-related outcomes. Moreover, we expect that participants who attain less prestigious career outcomes will also tend to devalue the importance of their career goals in order to maintain a positive self-concept.

Method

Participants & procedure

We recruited 140 undergraduates from a large public university in the United States, online through the social sciences human subject pool (see also and in greater detail, Shane, 2014). Participants

completed up to three 30-minute assessments; Fall 2010, Spring 2011, and Spring 2012. The first assessment was performed in the lab, with the remainder of the assessments performed online. Participants received their choice of extra credit to allocate to the eligible class of their choice or a $5 gift certificate to amazon.com for completion of each 30-minute survey.

The sample was composed of two cohorts: 69 participants (49.3%) in the third year of university and 71 participants (50.7%) in the fourth year of university. The sample was predominately female ($n = 99$; 70.7%). The mean age was 21.56 years ($SD = 2.55$). The sample was ethnically diverse with 67 participants (47.9%) who identify as Asian, 22 participants (15.7%) who identify as Latino/a, 18 participants (12.9%) who identify as White, and 33 participants (23.6%) who identify as mixed or other ethnicity, with 33 participants (23.6%) who were born in a foreign country. The sample was socioeconomically diverse with the average parental subjective SES 5.63 ($SD = 1.80$) on a 10-point scale, the average parental income per year was 3.69 ($SD = 1.92$) on a 7-point scale with 3 = $50,000–$74,999 and 4 = $75,000–$99,999, and there were 31 participants (22.1%) whose parents' highest level of education is high school or less.

Measures

Societal beliefs: SES causation. Societal beliefs for SES causation were measured using a modified version of a scale developed by Smith and Stone (1989), and correspond to "means-ends beliefs" in Skinner and colleagues agency-means-ends control belief theory (Skinner, Chapman, & Baltes, 1988). The scale included items regarding why people have attained a high SES in American society. Participants responded to each item in the scale with 1 = *strongly disagree* and 6 = *strongly agree*. The measure included a three-item *Merit* subscale ($\alpha = .76$), comprised of the items "People at the top of the social status ladder in America are there because they . . . " (1) "have the talent and the ability to succeed," (2) "possess drive and perseverance," and (3) "are hard-working." The measure also included a three-item *Privilege/Luck* subscale ($\alpha = .67$), comprised of the items "People at the top of the social status ladder in America are there because they . . . " (1) "receive large inheritances," (2) "receive favoritism in hiring, promotions and wages," and (3) "are lucky and get breaks."

Personal agency beliefs: Social status causation. Personal agency beliefs were measured using a modified version of a scale (Shane et al., 2012; Shane & Heckhausen, 2013) based on the Control, Agency, and Means-ends Interview (CAM-I) (Skinner, Chapman, & Baltes, 1988) and corresponds to "agency beliefs" in Skinner and colleagues' agent-means-ends control belief theory (Skinner et al., 1988). Participants responded to each item in the scale with 1 = *strongly disagree* and 6 = *strongly agree*. The scale contained a four-item subscale we refer to as the *Merit subscale* ($\alpha = .77$), which was comprised of two items related to effort (e.g., "My work ethic will determine how far up the social status ladder I move"), and two items related to ability (e.g., "I have the ability to be able to move up the social status ladder"). The scale also contained a two-item *Luck* subscale ($r = .77$); (e.g., "How far up the social status ladder I move will be determined mostly by chance").

Career-related goal engagement and goal disengagement strategies. Career-related goal engagement and goal disengagement strategies were measured using a career-related version of the Optimization in Primary and Secondary control scale (OPS) (Heckhausen, Schulz, & Wrosch, 1998). The scale included an 11-item career goal engagement subscale ($\alpha = .87$), which was comprised of four selective primary control items (e.g., "I will work hard to have a good career"), four selective secondary control items (e.g., "I often remind myself how important it is for my future to have a good career"), and three compensatory primary control items (e.g., "If my career path is not going in the right direction, I will get help from others"). The career OPS scale also included a four-item career goal disengagement subscale ($\alpha = .69$), which was comprised of four compensatory secondary control items (e.g., "If I cannot attain my desired career, I will settle for the next best option"). Participants responded to each item in the scale with 1 = *strongly disagree* and 6 = *strongly agree*.

Career-related development. Career-related development items included participants' perceived expectancy of attaining their career goal ("How likely do you think it is that you will attain this career goal?" with 1 = *not at all likely* and 4 = *very likely*), perceived value of their career goal ("How important is it for you to attain this career goal?" with 1 = *not at all important* and 4 = *very important*), and satisfaction with current progress toward attaining their career goal ("How satisfied are you with your current progress toward your career goal?" with 1 = *not at all satisfied* and 4 = *very satisfied*). The career-related development items were assessed independently as outcome variables in the analyses.

Demographics. Participant's year in school at the start of the study, age, gender, ethnicity, parental subjective SES, parental income, parental education, and generational status were measured and included in the analyses. Year in school was coded dichotomously as third-year and fourth-year. Ethnicity was coded as Asian, Latino/a, White, and Mixed/Other for analyses. Parental income was a seven-point scale, ranging from "less than $25,000" to "greater than $150,000," and treated as a continuous variable. Parental education was coded dichotomously as "High School education or less" and "Attended any postsecondary schooling." Generational status was coded dichotomously as "First generation" (i.e., participant was born in a country other than the USA) and "Second or greater generation" (i.e., participant was born in the USA). Parental subjective SES was measured using a 10-point family-of-origin version of the subjective SES ladder (Adler, Epel, Castellazzo, & Ickovics, 2000; Shane & Heckhausen, 2013).

Analyses

Data were analyzed using multilevel modeling (Fitzmaurice, Laird, & Ware, 2011; Rabe-Hesketh & Skrondal, 2012) in Stata. Data had a two-level hierarchical structure, wherein survey responses (level 1) were nested within participants (level 2). The two-cohort sample design allowed for year in school to be used as the time metric for the multilevel-modeling growth curve analyses. Thus, the study had five time-points; Fall quarter third year of university ($n = 69$), Spring quarter third year of university ($n = 53$), Fall quarter fourth year of university ($n = 71$), Spring quarter fourth year of university ($n = 85$), and Spring after university graduation ($n = 34$). However, the most observations that any given participant contributed to the analyses were three.

Model building for each dependent variable proceeded in a stepwise fashion, beginning with an unconditional means model to

assess the amount of variance attributed to between-person and within-person sources. The Intraclass Correlation Coefficient (ICC) for each dependent variable suggested that a sufficient amount of within-person variation existed, necessitating the inclusion of a random intercept for each person in the sample. Next, a random intercept model was run for each dependent variable to assess the grand-mean level associations between the covariates and dependent variable. Following this, an unconditional growth model was run that included time as a covariate, but without any other covariates in the model. Finally, a conditional growth model was run that included time by covariate interactions to assess the association between the covariates and the slope of the dependent variable.

Random slopes were examined in the growth curve models, but were not reliably different from 0, and as such were dropped from the final models. Furthermore, there were no time by sociodemographic covariate interactions observed in the conditional growth models. As these interactions were not of central interest in the study, they were dropped from the final models. Time by SES-beliefs and time by career-related motivational strategies were retained in the growth curve models regardless of significance as they are of particular interest in the present study, and their inclusion allowed the calculation of the percent of between-person and within-person variance in the dependent variable accounted for by the study variables of interest.

To aid interpretation of results, all continuous independent variables were grand-mean centered and categorical variables reflected deviations from the reference group. This produced the following composite equation for the random intercept models, where y_{ij} is the observed value of the dependent variable for person i at time j, γ_{00} is the grand mean (mean of dependent variable over the entire sample and all time points), $B_2x_{2ij} + \ldots + B_px_{pij}$ are the covariates and represent the change in the dependent variable for person i with one unit increase in the covariate at time j, ζ_{0i} is the level 2 residual and represents each person-specific deviation from the grand mean, and e_{ij} is the level 1 residual and represents how much each person's mean at each time point deviated from her or his mean across all time points.

$$y_{ij} = \gamma_{00} + B_{2X_{2ij}} + ... + B_{pXpij} + \zeta_{0i} + e_{ij}$$

The growth curve models added time to the equation, as well as interactions between covariates and time. Time was centered on the fourth time-point, referencing the Spring quarter of participants' fourth year in university which both cohorts shared in common. This produced the following general equation for the growth curve models where y_{ij} is the observed value of the dependent variable for person i at time j, γ_{oo} is the sample intercept at time 0, $\gamma_{1o}(T_{ij})$ is the sample slope for person i at time j, $\gamma_{o1}B_2x_{2ij} + \ldots + \gamma_{o1}B_px_{pij}$ are covariate coefficients reflecting change in the intercept, $\gamma_{11}B_2x_{2i}{*}T_{ij} + \ldots + \gamma_{11}B_px_{pij}$ are the covariate by time interactions and represent the change in the dependent variable for person i with one unit increase in the covariate at time j, ζ_{0i} is the level 2 residual representing the person-specific deviation from the sample intercept, and e_{ij} is the level 1 residual representing how much each person's mean at each time point deviated from her or his mean across all time points.

$$y_{ij} + \gamma_{oo} + \gamma_{1o}(T_{ij}) + \gamma_{o1}B_{2X_{2ij}} + ... + \gamma_{o1}B_{pXpij} + \gamma_{11}B_{2X_{2i}} * T_{ij} + ... + \gamma_{11}B_{pXpij} * T_{ij} + \zeta_{oi} + e_{ij}$$

All models were run using robust standard errors, and were assessed for their fit to the data using the model's deviance and AIC. Additionally, pseudo R^2 were calculated to provide an estimate of the amount of between-person and within-person variance explained by including each set of predictors into the model.

Of further interest in the study was the degree to which participants' SES-personal agency beliefs mediated the relationship between their SES-societal beliefs and career-related motivational strategies, and the degree to which participants' motivational strategies mediated the relationship between their SES-personal agency beliefs and their career-related development. Mediation was assessed according to the framework proposed by Judd and Kenny (1981) using a series of random intercept models to assess the A path, B path, C path, and C' path while controlling for the other covariates in the models.

Missing data. Of the possible 140 participants with 420 observations, the analyzed samples ranged from 139 to 140 participants with 298–303 observations. Six participants (4%) had incomplete data on the study variables of interest at the first assessment, 38 participants (27%) had incomplete data on the study variables of interest at the second assessment, and 72 participants (51%) had incomplete data on the study variables of interest at the fourth assessment. All six participants who had incomplete data at the first assessment had complete data at the second assessment, three of these participants also had complete data at the third assessment, and four participants who dropped out at the second assessment had complete data at the third assessment. Thus, all participants provided at least one observation to the analyses, 103 participants provided at least two observations to the analyses, and 69 participants provided at least three observations to the analyses.

Attrition analyses indicated that participants who were male and older were more likely to not complete the second assessment, and participants who were older were more likely to not complete the third assessment. No other sociodemographic characteristics or study variables have differing rates of participant attrition. As participant attrition was not associated with the main study variables of interest, observed-sample multilevel-modeling analyses were used. This analytic technique includes all available data, unlike an ANOVA or regression approach that restricts the analyzed sample to complete cases.

Results

Descriptive analyses

Summary statistics for the study variables of interest at each time point in the study are presented in Table 1.

Paired sample *t* tests were used to assess mean-level differences in participants' SES-related beliefs and career-related motivational strategies at each wave in the study. The paired sample *t* tests were consistent across waves, and the results are presented as collapsed across the waves for clarity.

Collectively, the results suggest that participants' beliefs about SES attainment were largely consistent with the dominant meritocratic ideology in the USA, and that participants were significantly more engaged than disengaged in the pursuit of their career-related goals. Specifically, participants were significantly more likely to endorse merit-oriented causes (grand-mean = 4.69, *SD* = .79, 95% CI [4.60, 4.78]) over privilege-oriented causes (grand-mean = 4.05, *SD* = .98, 95% CI [3.94, 4.16]) for why individuals attain SES ($t[308] = 8.73$, 95% CI of difference between means [.50, .79], $p < .001$). Further, participants were significantly more

Table 1. Summary statistics for main study variables, by time.

	Time 1	Time 2	Time 3	Time 4	Time 6
Societal merit[a]	$n = 69$; 4.85 (.82) [2.33–6.00]	$n = 52$; 4.63 (.82) [2.67–6.00]	$n = 71$; 4.65(.79) [2.17–6.00]	$n = 83$; 4.62 (.77) [2.33–6.00]	$n = 34$; 4.74 (.75) [2.67–6.00]
Societal privilege/luck[a]	$n = 69$; 4.05 (.93) [1.67–6.00]	$n = 52$; 4.04 (.99) [1.00–6.00]	$n = 71$; 4.00(1.03) [2.33–6.00]	$n = 83$; 4.09 (1.00) [1.00–6.00]	$n = 34$; 4.02 (.94) [2.33–6.00]
Personal agency merit[a]	$n = 68$; 4.90 (.72) [1.75–6.00]	$n = 52$; 4.83 (.66) [3.00–6.00]	$n = 66$; 5.06(.64) [3.00–6.00]	$n = 84$; 4.84 (.68) [3.00–6.00]	$n = 34$; 4.95(.66) [3.25–6.00]
Personal agency luck[a]	$n = 68$; 2.96 (1.27) [1.00–6.00]	$n = 52$; 3.07 (1.15) [1.00–6.00]	$n = 66$; 3.01(1.21) [1.00–6.00]	$n = 84$; 3.52 (1.17) [1.00–6.00]	$n = 34$; 3.28 (1.05) [1.50–6.00]
Career-goal engagement[a]	$n = 69$; 5.19 (.53) [3.92–6.00]	$n = 52$; 5.12 (.54) [3.75–6.00]	$n = 71$; 5.25(.46) [4.00–6.00]	$n = 84$; 5.17 (.58) [3.58–6.00]	$n = 35$; 5.22 (.59) [3.72–6.00]
Career-goal disengagement[a]	$n = 69$; 3.33 (.88) [1.43–5.29]	$n = 52$; 3.53 (.78) [1.86–5.00]	$n = 71$; 3.38 (.83) [1.29–6.00]	$n = 84$; 3.46 (1.00) [1.00–5.43]	$n = 35$; 3.18(.90) [1.43–5.00]
Career-goal expectancy[b]	$n = 67$; 3.42 (.55) [2.00–4.00]	$n = 52$; 3.31 (.67) [1.00–4.00]	$n = 68$; 3.44 (.53) [2.00–4.00]	$n = 84$; 3.26 (.64) [2.00–4.00]	$n = 36$; 3.36 (.59) [2.00–4.00]
Career-goal value[c]	$n = 67$; 3.81 (.40) [3.00–4.00]	$n = 52$; 3.69 (.47) [3.00–4.00]	$n = 69$; 3.80 (.47) [2.00–4.00]	$n = 84$; 3.60 (.56) [2.00–4.00]	$n = 36$; 3.67 (.48) [3.00–4.00]
Satisfaction with career progress[d]	$n = 68$; 2.85 (.80) [1.00–4.00]	$n = 52$; 2.83 (.88) [1.00–4.00]	$n = 71$; 2.97 (.81) [1.00–4.00]	$n = 84$; 2.77 (.88) [1.00–4.00]	$n = 36$; 2.69 (.98) [1.00–4.00]

Note. n; Mean (*SD*) [Range] presented.
[a]Scale, 1 = *strongly disagree* to 6 = *strongly agree*.
[b]Scale, 1 = *not at all likely* to 4 = *very likely*.
[c]Scale, 1 = *not at all important* to 4 = *very important*.
[d]Scale, 1 = *not at all satisfied* to 4 = *very satisfied*.

likely to endorse merit-oriented causes (grand-mean = 4.91, *SD* = .68, 95% CI [4.84, 4.99]) over luck-oriented causes (grand-mean = 3.18, *SD* = 1.20, 95% CI [3.04, 3.31]) for how they themselves will attain their future SES ($t[303] = 21.84$, 95% CI of difference between means [1.58, .1.89], $p < .001$). In addition, participants reported significantly greater career-related goal engagement strategies (grand-mean = 5.19, *SD* = .54, 95% CI [5.13, 5.25]) than career-related goal disengagement strategies (grand-mean = 3.39, *SD* = .89, 95% CI [3.29, 3.49]) ($t[310] = 29.01$, 95% CI of difference between means [1.68, .1.93], $p < .001$).

Career-related motivational strategies

As expected, participants' merit-oriented SES beliefs were positively associated with their career-related goal engagement strategies, while participants' privilege/luck-oriented SES beliefs were positively associated with their career-related goal disengagement strategies. Controlling for the other covariates in the model, participants' SES-personal agency beliefs accounted for 40.2% of the between-person variance and 6.7% of the within-person variance in their career-related goal engagement strategies, and 13.8% of the between-person variance and 4.3% of the within-person variance in their career-related goal disengagement strategies. The results are presented in Table 2, and discussed further in what follows.

Career-related goal engagement. As shown in Table 2, participants' beliefs that SES is attained through merit were positively associated with their engagement toward career-related goals. This association was strongest for participants' beliefs about how they themselves will attain SES (merit-oriented personal agency beliefs), and present for both participants' grand-mean-level career-related goal engagement as assessed in the random intercept model ($\beta = .31$, 95% CI [.22, .40], $p < .001$), and the slope of participants' career-related goal engagement as assessed in the growth curve model ($\beta = .08$, 95% CI [.02, .13], $p = .009$). The relationship between participants' merit-oriented personal agency beliefs and the slope of their career-related goal engagement is depicted in Figure 1. As shown in Figure 1, participants with high levels of merit-oriented personal agency beliefs (+1 *SD*) reported consistently high levels of career-related goal engagement strategies, while participants with low levels of merit-oriented personal agency beliefs (−1 *SD*) reported consistently low levels of career-related goal engagement strategies and a significant decrease in these goal engagement strategies over time ($\beta = -.07$, 95% CI [−.12, −.01], $p = .013$).

Mediation analyses indicated that participants' merit-oriented personal agency beliefs partially mediated the relationship between their merit-oriented societal beliefs and their career-related goal engagement (A path: $\beta = .34$, 95% CI [.25, .44], $p < .001$; B path: $\beta = .31$, 95% CI [.22, .40], $p < .001$; C path: $\beta = .21$, 95% CI [.13, .29], $p < .001$; C' path: $\beta = .11$, 95% CI [.04, .19], $p = .003$).

Career-related goal disengagement. As shown in Table 2, participants' beliefs that SES is attained through luck and privilege were positively associated with their disengagement from career-related goals. This association was strongest for participants' beliefs about how they themselves will attain SES (luck-oriented personal agency beliefs), and present for both participants' grand-mean-level career-related goal disengagement as assessed in the random intercept model ($\beta = .14$, 95% CI [.06, .23], $p < .001$), and the slope of participants' career-related goal disengagement as assessed in

Table 2. Multilevel model results for participants' career-related goal engagement and disengagement strategies.

	Goal engagement			Goal disengagement		
	RIM	GCM 1	GCM 2	RIM	GCM 1	GCM 2
Intercept	5.12 [4.84, 5.39]*	5.14 [4.83, 5.46]*	5.11 [4.83, 5.39]*	3.06 [2.65, 3.48]*	2.98 [2.54, 3.43]*	2.90 [2.48, 3.32]*
Time		−.04 [−.08, −.00]*	−.02 [−.05, .02]		−.03 [−.08, .03]	−.07 [−.12, −.01]*
Personal agency merit	.31 [.22, .40]*		.39 [.27, .51]*	−.01 [−.01, .07]		.03 [−.18, .23]
Personal agency merit × Time			.08 [.02, .13]*			.04 [−.06, .14]
Personal agency luck	−.05 [−.09, .00]		−.04 [−.10, .02]	.14 [.06, .23]*		.23 [.13, .34]*
Personal agency luck × Time			−.00 [−.03, .02]			.07 [.02, .12]*
Societal merit	.11 [.04, .19]*	.21 [.10, .33]*	.07 [−.03, .18]	−.05 [−.18, .08]	−.09 [−.23, .05]	−.11 [−.28, .05]
Societal merit × time		.01 [−.03, .06]	−.03 [−.08, .02]		−.04 [−.11, .03]	−.05 [−.13, .04]
Societal privilege/luck	.04 [−.00, .09]	.02 [−.03, .07]	.03 [−.02, .08]	.10 [−.01, .21]	.19 [.05, .32]*	.10 [−.03, .24]
Societal privilege/luck × Time		−.02 [−.05, .01]	−.01 [−.04, .02]		.05 [−.01, .11]	.01 [−.05, .07]
Female	.10 [−.04, .24]	.10 [−.06, .26]	.10 [−.04, .24]	.09 [−.14, .33]	.05 [−.20, .31]	.09 [−.15, .32]
Age	.03 [.01, .05]*	.03 [.01, .06]*	.03 [.01, .05]*	−.02 [−.07, .02]	−.04 [−.09, .01]	−.03 [−.08, .02]
Ethnicity (White reference)						
Asian	−.08 [−.16, .32]	−.06 [−.33, .22]	.07 [−.17, .30]	.30 [−.07, .66]	.35 [−.02, .73]	.30 [−.05, .66]
Latino/a	.19 [−.06, .44]	.13 [−.16, .42]	.17 [−.08, .43]	.09 [−.34, .52]	.10 [−.34, .54]	.10 [−.32, .52]
Mixed/other	.14 [−.10, .37]	.14 [−.13, .41]	.13 [−.10, .36]	.10 [−.33, .52]	.09 [−.36, .53]	.10 [−.32, .52]
Not born in the USA	−.19 [−.32, −.06]*	−.23 [−.39, −.07]*	−.21 [−.34, −.08]*	−.03 [−.35, .28]	.07 [−.25, .40]	−.01 [−.32, .31]
Fourth-year cohort	.04 [−.08, .17]	.17 [.02, .33]*	.07 [−.06, .20]	.07 [−.19, .32]	.14 [−.14, .41]	.22 [−.05, .49]
Parental S-SES	.02 [−.01, .06]	.03 [−.00, .07]	.02 [−.02, .05]	.02 [−.06, .11]	.01 [−.08, .09]	.01 [−.07, .09]
Parental income	.01 [−.04, .05]	−.01 [−.06, .05]	.01 [−.03, .06]	−.04 [−.12, .05]	−.03 [−.12, .05]	−.04 [−.12, .05]
Parental education	−.10 [−.26, .05]	−.18 [−.36, .00]	−.11 [−.26, .04]	.08 [−.26, .42]	.07 [−.28, .43]	.07 [−.27, .40]
Variance components						
Between-person variance	.06 [.04, .10]	.10 [.07, .15]	.06 [.04, .10]	.32 [.22, .44]	.36 [.26, .49]	.31 [.22, .44]
Within-person variance	.10 [.07, .13]	.10 [.07, .14]	.09 [.07, .12]	.35 [.25, .49]	.34 [.25, .47]	.33 [.23, .47]
Model fit statistics						
Deviance	274.14	322.37	262.68	690.06	697.42	674.46
AIC	308.14	358.37	306.68	724.06	733.42	718.46

Note. 140 participants with 303 observations. RIM = Random Intercept Model, GCM = Growth Curve Model. β [95% CI] presented. *$p < .05$.

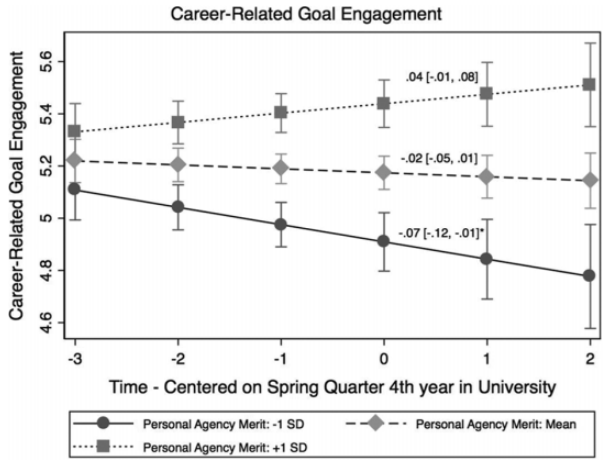

Figure 1. Participants' career-related goal engagement: predicted margins with 95% CI for time by merit-oriented personal agency beliefs interaction.

Note. Slopes (β [95% CI]) presented for the mean and $\pm$ 1 *SD* from the mean. Based on 140 participants with 303 observations. *$p < .05$.

the growth curve model ($\beta = .07$, 95% CI [.02, .12], $p = .008$). The relationship between participants' luck-oriented personal agency beliefs and the slope of their career-related goal disengagement is depicted in Figure 2. As shown in Figure 2, participants with high levels of luck-oriented personal agency beliefs (+1 *SD*) reported consistently high levels of career-related goal disengagement strategies, while participants with low levels of luck-oriented personal agency beliefs (−1 *SD*) reported consistently low levels of career-related goal disengagement strategies and a significant decrease in these goal disengagement strategies over time ($\beta = -.15$, 95% CI [−.24, −.07], $p = .001$).

Mediation analyses indicated that participants' luck-oriented personal agency beliefs fully mediated the relationship between their privilege/luck-oriented societal beliefs and their career-related goal disengagement (A path: $\beta = .33$, 95% CI [.20, .46], $p < .001$; B path: $\beta = .14$, 95% CI [.06, .23], $p = .001$; C path: $\beta = .14$, 95% CI [.03, .25], $p = .013$; C' path: $\beta = .10$, 95% CI [−.01, .21], $p = .074$).

Career-related development

As expected, the results indicated that participants' career related goal engagement strategies were positively associated

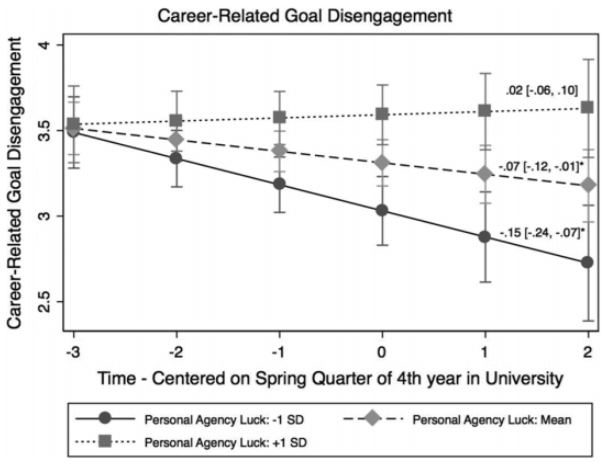

Figure 2. Participants' career-related goal disengagement: predicted margins with 95% CI for time by luck-oriented personal agency beliefs interaction.
Note. Slopes (β [95% CI]) presented for the mean and $\pm$ 1 *SD* from the mean. Based on 140 participants with 303 observations. * $p < .05$.

with their career-related development, while participants' career-related goal disengagement strategies were negatively associated with the value they placed on attaining their career goals. Controlling for the other covariates in the model, participants' motivational strategies accounted for 16.8% of the between-person variance and 3.6% of the within-person variance in their expectancy they will attain their career goals, 41% of the between-person variance and no percent of the within-person variance in the value they placed on their career goals, and 7.8% of the between-person variance and 3.1% of the within-person variance in their satisfaction with their progress toward their career goals. The results are presented in Table 3, and discussed further in what follows.

As shown in Table 3, the results of the random intercept models indicated that participants' career-related goal engagement strategies were significantly positively associated with the grand-mean-level of expectancy that they will attain their career goals ($\beta = .33$, 95% CI [.16, .50], $p < .001$), the grand-mean-level of value they placed on their career goals ($\beta = .25$, 95% CI [.10, .39], $p = .001$), and grand-mean-level of their satisfaction with their current progress toward attaining their career goals ($\beta = .37$, 95% CI [.15, .59], $p = .001$). Conversely, participants' career-related goal disengagement strategies were significantly negatively associated with the value they place on their career goals ($\beta = -.10$, 95% CI [−.15, −.04], $p = .001$). However, there were no significant motivational strategies by time interactions present in the growth curve models.

Mediation analyses indicated that participants' career-related goal engagement strategies fully mediated the relationship between their merit-oriented personal agency beliefs and their career-goal value (A path: $\beta = .31$, 95% CI [.22, .41], $p < .001$; B path: $\beta = .25$, 95% CI [.10, .39], $p = .001$; C path: $\beta = .13$, 95% CI [.03, .24], $p = .013$; C' path: $\beta = .05$, 95% CI [−.06, .16], $p > .250$). Furthermore, participants' career-related goal engagement strategies partially mediated the relationship between their merit-oriented personal agency beliefs and their career-goal expectancy (A path: $\beta = .31$, 95% CI [.22, .41], $p < .001$; B path: $\beta = .33$, 95% CI [.16, .50], $p < .001$; C path: $\beta = .24$, 95% CI [.13, .35], $p < .001$; C' path: $\beta = .13$, 95% CI [.02, .25], $p = .026$), and satisfaction with career-goal progress (A path: $\beta = .31$, 95% CI [.22, .40], $p < .001$; B path: $\beta = .37$, 95% CI [.15, .59], $p = .001$; C path: $\beta = .34$, 95% CI [.16, .51], $p < .001$; C' path: $\beta = .22$, 95% CI [.04, .40], $p = .019$).

Discussion

The study illustrates the roles that young adults' beliefs about how SES is attained society and how they themselves believe they will attain SES play in their motivational commitment to career-related goals, and how their motivational commitment is associated with subjective markers of progress toward career-goal attainment. The results are largely consistent with our two hypotheses, and indicate that participants' SES-related merit-oriented beliefs are associated with career-goal engagement, while participants' SES-related privilege/luck-oriented beliefs are associated with career-goal disengagement. In turn, participants' career-goal engagement strategies are associated with enhanced expectancy they will attain their career goals, enhanced value placed on attaining their career goals, and greater satisfaction with their current progress toward attaining their career goals. Conversely, participants' career-goal disengagement strategies are associated with a devaluing of career-goal attainment.

Career-related motivational self-regulation

Despite social and economic constraints to young adults prospects for upward social mobility (Mazumder, 2005; Silvia, Quinlan, & Seydl, 2011), study participants were generally engaged with their career-goals and endorsed SES-related beliefs largely consistent with a meritocratic ideology emphasizing the role of effort and ability in SES attainment. These results are consistent with earlier research that finds an increase through childhood in children's attributions of merit-oriented factors for other people's wealth (Leahy, 1990) that remains predominately merit-oriented in young adulthood (Christopher & Schlenker, 2000; Shane & Heckhausen, 2013). However, the present study extends these prior findings by illustrating how broader beliefs about society are channeled through complimentary beliefs about one's own agency that in turn are associated with the adoption of opportunity-congruent motivational strategies.

Specifically, the results reveal a goal engagement pathway, wherein individuals who believe that SES is attained through merit are more inclined to believe that they have the requisite merit to attain SES. These beliefs signal that individuals' SES attainment is directly controllable and contingent on their actions, and in turn that their investment of motivational resources in the pursuit of their career-related goals is called for. In contrast, the goal disengagement pathway links individuals' beliefs that SES is allocated through privilege and fate to their beliefs that luck will cause their own future SES attainment. These beliefs convey to individuals that their action is not required, and in turn that they should channel their motivational resources away from their career-related goals. Thus, the complimentary SES-related beliefs observed in the present study are motivationally beneficial, and serve as a way through which individuals can identify which goal pursuits are attainable and therefore deserve their investment of motivational resources.

Table 3. Multilevel model results for subjective markers of participants' career-related goal progress.

	Career goal expectancy			Career goal value			Satisfaction with career goal progress		
	RIM	GCM 1	GCM 2	RIM	GCM 1	GCM 2	RIM	GCM 1	GCM 2
Intercept	3.43 [3.19, 3.67]*	3.43 [3.13, 3.73]*	3.43 [3.17, 3.70]*	3.70 [3.47, 3.93]*	3.64 [3.35, 3.93]*	3.62 [3.36, 3.87]*	2.80 [2.47, 3.13]*	2.65 [2.27, 3.04]*	2.73 [2.35, 3.12]*
Time		−.00 [−.05, .05]	−.01 [−.05, .04]		−.04 [−.08, −.00]*	−.05 [−.09, −.01]*		−.06 [−.14, .03]	−.05 [−.14, .04]
Goal engagement	.33 [.16, .50]*		.30 [.11, .49]*	.25 [.10, .39]*		.22 [.04, .40]*	.37 [.15, .59]*		.22 [−.02, .46]
Goal engagement × Time			−.03 [−.12, .07]			−.00 [−.07, .07]			−.11 [−.24, .02]
Goal disengagement	−.07 [−.15, .01]		−.07 [−.16, .01]	−.10 [−.15, −.04]*		−.10 [−.16, −.03]*	.08 [−.03, .20]		.05 [−.08, .18]
Goal disengagement × Time			−.01 [−.05, .03]			.00 [−.03, .03]			−.03 [−.11, .06]
Personal agency merit	.13 [.02, .25]*	.26 [.14, .39]*	.14 [−.00, .29]	.05 [−.06, .16]	.17 [.04, .29]*	.08 [−.08, .23]	.22 [.04, .40]*	.41 [.21, .61]*	.34 [.13, .55]*
Personal agency merit × Time		.02 [−.04, .08]	.01 [−.06, .08]		.04 [−.01, .09]	.03 [−.03, .09]		.08 [−.02, .17]	.09 [−.01, .20]
Personal agency luck	.03 [−.03, .08]	−.01 [−.07, .05]	.02 [−.05, .09]	.02 [−.03, .07]	−.02 [−.08, .05]	.02 [−.05, .09]	−.03 [−.10, .05]	.00 [−.11, .11]	−.00 [−.12, .11]
Personal agency luck × Time		−.01 [−.05, .02]	−.01 [−.16, .03]		−.02 [−.05, .01]	−.01 [−.04, .02]		.00 [−.05, .06]	−.00 [−.06, .06]
Societal merit	−.04 [−.14, .07]	−.00 [−.12, .11]	−.04 [−.16, .09]	−.01 [−.09, .07]	.03 [−.09, .14]	−.00 [−.12, .11]	−.08 [−.24, .09]	−.10 [−.30, .10]	−.12 [−.31, .08]
Societal merit × Time		−.00 [−.06, .06]	.00 [−.06, .07]		.01 [−.04, .06]	.01 [−.04, .06]		−.04 [−.13, .06]	−.01 [−.10, .08]
Societal privilege/luck	−.02 [−.09, .05]	−.04 [−.11, .04]	−.04 [−.12, .04]	−.04 [−.10, .02]	−.07 [−.14, .00]	−.07 [−.14, −.00]*	−.06 [−.17, .04]	−.10 [−.25, .04]	−.11 [−.25, .03]
Societal privilege/luck × Time		−.03 [.07, .02]	−.02 [−.06, .02]		−.04 [−.07, −.01]*	−.04 [−.07, −.00]*		−.06 [−.13, .02]	−.04 [−.12, .03]
Female	.06 [−.11, .24]	.10 [−.09, .29]	.06 [−.12, .24]	−.00 [−.14, .14]	.04 [−.12, .20]	.02 [−.12, .17]	−.03 [−.28, .21]	.01 [−.26, .29]	−.03 [−.30, .24]
Age	.03 [−.00, .05]	.04 [.01, .07]*	.03 [−.00, .05]	−.01 [−.04, .02]	−.00 [−.04, .04]	−.01 [−.04, .02]	−.02 [−.08, .03]	−.01 [−.07, .04]	−.02 [−.08, .04]
Ethnicity (White reference)									
Asian	−.13 [−.34, .07]	−.13 [−.37, .10]	−.14 [−.35, .06]	.02 [−.19, .23]	−.01 [−.23, .22]	.01 [−.20, .21]	−.33 [−.61, −.05]*	−.30 [−.59, −.01]*	−.37 [−.65, −.08]*
Latino/a	−.18 [−.46, .09]	−.15 [−.43, .14]	−.20 [−.45, .06]	.21 [−.00, .42]	.22 [−.03, .46]	.19 [−.03, .40]	−.14 [−.54, .25]	−.11 [−.51, .30]	−.19 [−.58, .20]
Mixed/other	.01 [−.20, .21]	.04 [−.20, .28]	.01 [−.21, .22]	.04 [−.16, .24]	.05 [−.17, .27]	.04 [−.17, .23]	−.10 [−.42, .21]	−.05 [−.36, .25]	−.12 [−.44, .20]
Not born in the USA	−.03 [−.21, .05]	−.12 [−.29, .04]	−.05 [−.23, .11]	−.03 [−.21, .14]	−.13 [−.32, .05]	−.09 [−.26, .08]	.08 [−.20, .36]	−.04 [−.33, .25]	.02 [−.26, .30]
Fourth-year cohort	−.09 [−.23, .05]	−.08 [−.27, .11]	−.09 [−.27, .09]	−.04 [−.16, .09]	.05 [−.11, .21]	.06 [−.10, .21]	.04 [−.20, .28]	.17 [−.13, .46]	.13 [−.16, .42]
Parental S-SES	.04 [−.00, .09]	.05 [−.00, .10]	.04 [−.00, .09]	.05 [.01, .09]*	.04 [.00, .09]*	.04 [.00, .08]*	.03 [−.03, .09]	.03 [−.04, .09]	.02 [−.04, .09]
Parental income	.01 [−.03, .06]	.02 [−.03, .07]	.01 [−.04, .06]	−.00 [−.05, .04]	.01 [−.04, .05]	.00 [−.04, .04]	−.03 [−.11, .06]	−.03 [−.11, .06]	−.02 [−.11, .06]
Parental education	.03 [−.14, .19]	−.01 [−.18, .17]	.03 [−.14, .19]	.03 [−.17, .11]	−.06 [−.21, .10]	−.03 [−.17, .10]	.31 [.06, .57]*	.28 [.01, .54]*	.31 [.06, .56]*
Variance components									
Between-person variance	.08 [.04, .15]	.09 [.05, .16]	.08 [.04, .16]	.04 [.01, .12]	.06 [.03, .13]	.04 [.01, .12]	.20 [.12, .33]	.22 [.14, .36]	.20 [.12, .34]
Within-person variance	.19 [.15, .24]	.20 [.15, .26]	.19 [.15, .25]	.15 [.12, .19]	.14 [.11, .18]	.14 [.11, .19]	.42 [.34, .52]	.41 [.33, .51]	.40 [.32, .50]
Model fit statistics									
Deviance	438.05	456.03	435.63	341.83	345.51	325.93	690.46	693.93	680.85
AIC	476.05	500.03	487.63	379.83	389.51	377.93	728.46	737.93	732.85

Note. Career goal expectancy sample has 139 participants with 298 observations; Career goal value sample has 140 participants with 299 observations; Satisfaction with career goal progress sample has 140 participants with 302 observations. RIM = Random Intercept Model, GCM = Growth Curve Model. β [95% CI] presented. *$p < .05$.

Career-related development

Consistent with prior theory and research, the study findings support the idea that individuals can enact control over their career-related development through the selective channeling of their motivational resources (Converse et al., 2012; Haase, Heckhausen, & Köller, 2008; Ng et al., 2005; Shane et al., 2012; Shane & Heckhausen, 2012). In particular, the findings indicate that study participants' career-related goal engagement strategies are positively associated with the value they place on attaining their career goals, their expectancy of eventually attaining these career goals, and their satisfaction with their progress toward attaining their career goals. Furthermore, in line with compensatory motivational theory (Baltes, 1987; Baltes, 1997; Heckhausen et al., 2010), the results indicate that study participants' career-related goal disengagement strategies are associated with a devaluing of their career goals. Individuals' use of compensatory secondary control strategies can be adaptive (Wrosch, Scheier, Carver, & Schulz, 2003), and in this case, study participants' devaluing of their career goals may have a self-protective benefit by shielding their self-concept and motivational resources from the adverse effects of disengaging from a developmentally important goal, or continuing to pursue an unattainable goal.

In addition to the empirical and theoretical implications discussed above, the results of the present study have practical implications for young adults' pursuit of career-related goals. In particular, young adults' motivational self-regulation in response to perceived opportunities to attain higher SES and their own access to these opportunities provides a potential leverage point for interventions designed to help young adults adopt and pursue opportunity-congruent career goals. When opportunities are favorable, promoting individuals' adoption of merit-oriented beliefs may facilitate their pursuit of career goals. However, when opportunities are unfavorable, promoting individuals' adoption of beliefs that downplay their personal control over attaining the pursued goal may allow them to disengage from these goals while maintaining a positive self-concept and preserving their motivational resources that can then be directed toward future goal pursuits.

Limitations

The present study contains limitations, including a small sample size, which is predominately female and of Asian ethnicity, and composed of participants who were attending or recently graduated from a university in the USA. The study sample was further compromised by a high rate of participant attrition, and a partially artificial longitudinal study design. These limitations restrict the generalizability of the study findings, and prohibit reliable analyses of causality. Finally, two of the three assessments were conducted online, which limited the amount of control over when and where participants completed the assessments, and how much time they spent completing the assessments.

Future directions

Future research using larger samples of young adults from different sociodemographic backgrounds, with more longitudinal assessments and limited participant attrition is needed to address the methodological limitations of the current study. In addition, future research examining a broader range of control beliefs and reciprocal relationships between individuals' control beliefs and motivational self-regulation would provide further insight into how individuals' decide on appropriate goal pursuits, maintain commitment toward these goal pursuits, decide when to disengage from a goal pursuit, and mitigate the negative self-concept consequences of disengaging from a previously pursued goal. Other research is also needed to examine whether individuals' motivational self-regulation is related to their control beliefs in other life-goal domains (e.g., family), and the costs and benefits on other life domains when individuals devote motivational resources towards their career-goals.

Conclusion

The present study increases our understanding of young adults' motivational self-regulation in response to perceived opportunities, and in turn how their motivational strategies are associated with perceived progress toward attaining their career goals. This coordinated motivational self-regulation system allows young adults to adaptively engage with the pursuit of opportunity-congruent career goals and to disengage when these goals appear unattainable, providing the agentic pathways through which they can navigate the school-to-work transition.

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