

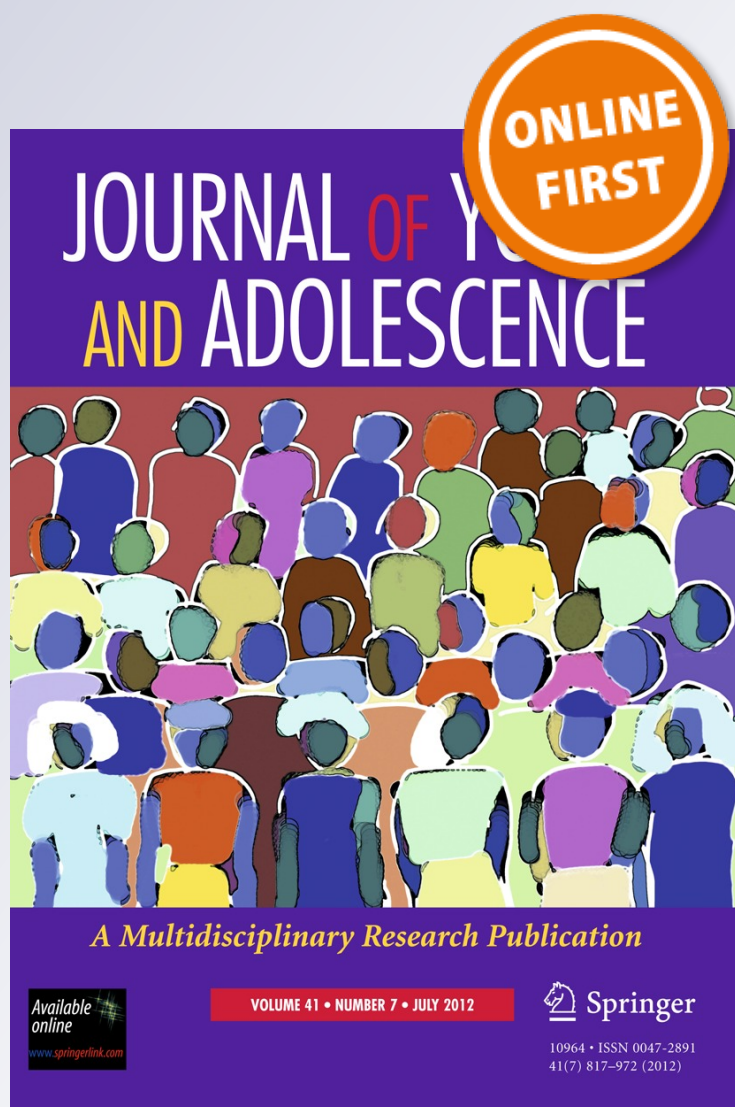
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Striving for Educational and Career Goals During the Transition After High School: What is Beneficial?

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Abstract The present study takes a motivational perspective that views youths' educational and career engagement as influential and potentially competing for the same motivational resources in the transition to adulthood. We investigated whether motivational engagement with educational and career goals in the year after high-school graduation was differentially associated with educational, career-related and subjective well-being outcomes 2 and 4 years after school graduation. Our longitudinal study of a multi-ethnic sample of Los Angeles high-school graduates followed participants 2 years ($N = 561$; 61.5 % female) and 4 years ($N = 364$; 59.8 % female) after high school graduation. The findings indicate that motivational engagement with educational goals after high school graduation predicted educational attainments and psychological well-being at follow-up 2 and 4 years after graduation, and occupational progress at 4 years after graduation. Work hours assessed shortly after high school graduation were associated with poorer educational outcomes both at 2 and 4 years after high school. Occupational goal engagement was not associated with better outcomes, but predicted less educational attainment 4 years after graduating. Thus, educational goal engagement predicted favorable outcomes, whereas career-related goal engagement for the most part was neutral with some select associations with negative educational outcomes. A strong motivational commitment to educational goals, but not to

career goals, is an important component of a successful transition to adulthood.

Keywords Transition after high school · Motivation · Work-school conflict · Educational goals · Career goals · Control striving

Introduction

The transition from high school to college and work is critical for the long-term life-course trajectories of young people. Social change associated with the globalized economy has elevated the role of postsecondary education as a determinant of social mobility, especially for the younger generation (Blossfeld et al. 2005; Bynner 2005; Norris 2010; Schoon 2007; Schoon and Silbereisen 2009). Without significant postsecondary education, today's youth face a future of downward mobility, social marginalization, and even exclusion (Bynner and Parsons 2002). With a multitude of potential paths and the high risks of becoming marginalized in society without adequate education and occupational training, a successful transition to adulthood depends on how much a youth invests in postsecondary education after graduating from high school.

Motivational Commitment to Age-Appropriate Developmental Goals

The motivational theory of life-span development addresses individuals' goal engagement and disengagement at various times in the life span (Heckhausen and Schulz 1995; Heckhausen et al. 2010; Schulz and Heckhausen 1996). The theory proposes that successful life-span development is a function of the degree to which the

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individuals effectively exert control over their environment and their own development across the life span. Exerting primary control is proposed to be a function of the degree to which individuals are engaged with appropriate goals and strive to attain them. Appropriate goals are those goals that are attainable under given developmental and social circumstances (i.e., principle of congruence between control striving and controllability of goal), and that bring about favorable consequences for other domains and/or long-term developmental outcomes. Substantial evidence has supported the theory's proposition that development-directed goal engagement, in order to be successful, should utilize phases of the life-span that hold particularly rich opportunities for relevant goal pursuit (i.e., congruence principle) and avoid those phases that hold impoverished opportunities for the goal in question. For example, research on the goal of child-bearing has shown that at ages before the developmental deadline for child-bearing (i.e., biological clock around age 40) women's well-being and mental health benefitted from remaining highly engaged with their childbearing goal (Heckhausen et al. 2001). In contrast, after passing the deadline at ages above 40 years of age, women who remained engaged with a wish for a child suffered depressive symptoms, whereas those who disengaged from the futile goal benefitted in avoiding depressive symptoms and achieving more positive affect. Analogous findings have been obtained in studies about searching for a partner early versus late in adulthood (Wrosch and Heckhausen 1999). Relevant evidence is also available regarding the transition to adulthood. In a longitudinal study of German youth who were navigating the transition from middle-tier high-school (after grade 10) and vocational training positions (i.e., apprenticeships), we found that stronger motivational engagement with the goal of finding an apprenticeship throughout the final school year predicted whether girls had found an apprenticeship by 6 months after graduation and for both girls and boys superior psychological well-being (Haase et al. 2008). Thus, motivational engagement with important developmental goals is effective if it can utilize opportunities for personal control, particularly during important developmental transitions in the life course.

A related proposition of the motivational theory of life-span development, is that in order to be effective, motivational engagement needs to be focused selectively on a given goal and avoid distractions or diffusion of efforts by other goal domains (Heckhausen and Schulz 1995; Heckhausen et al. 2010). This should be particularly true under conditions of challenge during a developmental transition. So far, empirical studies have not addressed this proposition, maybe with the exception of a study on the transition of German youth into vocational training under conditions of enduring a very stressful recent life event (i.e., death of a

family member, divorce of parents). Only those youth who utilized strategies directed at protecting and enhancing their motivational commitment to find a suitable vocational training position managed to keep up their goal engagement and active search for an apprenticeship. However, no study to date has addressed the potential detrimental effect of being engaged in multiple goals that can constrain the motivational commitment to either of the goals.

The transition after high school, with its high stakes for long-term paths into adulthood, is a case in point (Heckhausen 2002). Given the decisive role of education for opening up future career paths, the transition after high school is likely to depend on the young person's timely motivational commitment and selective focus on reaching his/her goals for post-secondary education. However, the lives of young adults are complex. Many youth spend a substantial number of hours per week working in jobs that allow them to have some income of their own, even though typically at low pay and with minimal benefits or promotion prospects (e.g., Kalleberg et al. 2000; Mortimer et al. 2008). Some young adults work in jobs that pay little but have potential beneficial effects on attaining their long-term career goals (e.g., internships). Other young people try to earn as much as possible at odd jobs in order to prepare for college expenses. The extensive research on the effect of teenage work on academic achievement and other developmental outcomes is relevant here (e.g., Greenberger and Steinberg 1986; Mortimer and Finch 1986), although the present study focuses on an older age group, youth in the several years after they have graduated from high school.

Previous Research on the Effects of Work on Education and Development

We will review the conceptual debate and empirical work on high school students' work first and then discuss the much smaller literature on the effects of work on post-secondary students' academic and psychological outcomes. The question we address in this research is whether the effects of investment of time, effort and motivational commitment in occupational and career matters benefits or detracts from successful engagements with goals for post-secondary education. The motivational theory of life-span development would predict that alternative goal engagements during a life-course phase when focused goal engagement is imperative should have detrimental consequences for goal attainment. Applying this perspective to the transition after high school, being motivationally engaged with one's job and career should usurp much-needed motivational resources for pursuing postsecondary educational goals. Moreover, working many hours in a job could tie up time otherwise needed for striving for post-secondary educational goals.

Empirical Evidence Regarding Consequences of Teenage Work

Three conceptual models of the teenage work and school interface have been in competition over the past three decades. One influential model that could be labeled the “school/work competition model” assumes that educational engagement and career engagement share the same basic resources of time, effort and motivational commitment. Therefore, splitting these resources between two domains, education and work, implies that less resources will be invested in *either* of the domains (Finn 1989; Greenberger and Steinberg 1986; Marsh 1991). An alternative *skills-building model* claims that being involved in paid work builds skills and attitudes that are important for a reliable worker (Mortimer and Finch 1986; Schoenhals et al. 1998). A combination of the school/work competition and the skills-building model is what some refer to as a *threshold model* (Greenberger and Steinberg 1986; Marsh and Kleitman 2005), according to which work is conducive to education and development in the lower range of hours invested, but detrimental at more than 20 h of work per week. Looking back over three decades of empirical work and drawing on more recent analyses of large-scale longitudinal data sets (NELS), Marsh and Kleitman (2005) conclude: First, paid employment during high school has negative effects on a wide range of desirable outcomes (achievement, course work selection, educational and occupational aspirations and college attendance, staying out of trouble, developing positive habits); second, these negative effects are present even at lower levels of employment (less than 10 h a week); and third, negative effects become more pronounced as the number of hours at work increases, following a linear relationship, except among those students who work to save money for college. Thus there is strong empirical support for the school/job competition model. At the same time, the finding that working in order to financially prepare for college is beneficial suggests that there is more going on than simply time spent on a job displacing time spent studying. In sum, previous research on the consequences of teenage work suggests that paid work and education-related activities compete not only for time but also for motivational resources, with detrimental effects on educational outcomes.

Several authors have interpreted these and similar findings as an effect of investment in school (Greenberger and Steinberg 1986), commitment to school (Marsh 1991), and psychological orientation towards school versus towards work (Warren 2002). Warren (2002) conducted detailed analyses of time trade-offs between paid work, academic work, and leisure activities and was able to show that the negative effect of intensity of employment on academic achievement was not accounted for by a simple trade-off between time spent at work versus at school. We would argue

that motivational commitment—not just sheer time commitment to either educational goals or occupational goals—may play a key role in explaining the above-noted differences in achievement and developmental outcomes. Motivation can be expected not only to affect the time spent on academic work, but also the degree of effort and therefore likely the quality of academic products and learning progress.

Empirical Evidence Regarding the Consequences of Working During College

Over the past decade, a growing percentage of college students must work to support themselves (National Center for Education Statistics 2011). Concomitantly, researchers have become increasingly interested in studying the consequences of paid work during the college years. In an extensive review of empirical research about the relationship between paid work and college student academic performance and attrition, Riggert and his colleagues concluded that findings are inconsistent: some studies show positive relationships and others negative, and yet others non-significant relationships (Riggert et al. 2006). For instance, Butler (2007) reports that the effects of paid work on college educational outcomes depend on job characteristics, with those jobs that are congruent in content with the major pursued and/or offering substantial control over work activities having a positive effect on academic outcomes, whereas other jobs with high burdens of work hours and demands exerting a negative influence on these outcomes. Converging with this pattern is the finding that among a large sample of college students, full-time work increases the risk of dropping out, whereas part-time work reduces this risk (Martinez et al. 2009).

Effects of Working: Not only Competing for Hours but also for Motivation

The literature on the effect of paid work on academic achievement in high school and college holds some clues that negative effects may result not only from a competition for the youth's time, but also from the negative consequences of dispersed attention and divided motivational commitment. For example, as noted earlier, Marsh and Kleitman (2005) found that the only beneficial effect of paid work during high school was when students worked to save for college, thus using work as a means to a long-term educational goal. Moreover, the very large-scale Monitoring the Future study, with over 300,000 8th, 10th, and 12th graders, showed that individual preferences for part-time over full-time work were stronger predictors of school grades, college plans, and enrollment in college-preparatory high-school programs than actual work hours (Bachman et al. 2003). Students' work preferences (part-time vs. full-time) also showed stronger associations with educational

disengagement and problem behaviors than actual work hours. Finally, in Butler's (2007) study, job-school congruence along with control over work underlay the facilitation effects of jobs for college education. Based on these findings, it seems reasonable to expect that not only hours of employment during the college years, but also long-term commitment to educational goals, are associated with educational outcomes in the school-to-work transition.

Rationale of Present Study

The present study takes a motivational perspective that views educational and career engagement as potentially competing for the same motivational resources in this critical transition to adulthood. In this study, we identify not only the effect of hours spent working on jobs, but also the effect of motivational commitments to education and to occupational career, by including self-reported motivational engagements for educational and career goals. Predictor variables were assessed immediately after high-school graduation, whereas outcome variables were assessed at follow-up 2 or 4 years after high-school graduation.

Our first hypothesis focuses on the potential positive relationship between educational goal engagement and educational outcomes. We predict that educational goal engagement immediately after graduating from high school should positively predict educational attainment in post-secondary educational institutions (2- and 4-year colleges) 2 and 4 years after high school. This relationship should hold even when taking into account individual differences in time spent in paid employment.

Our second hypothesis focuses on the potential negative relationship between occupational career goals and educational outcomes. We predict that motivational engagement with occupational career goals immediately after graduating from high school should show a negative association with educational attainment 2 and 4 years later. Again, we expect that this relationship should remain significant even when taking into account the time spent at work.

Our third hypothesis expands the investigation of the positive relationship between educational goal engagement and career-related outcomes. We predict that educational goal engagement immediately after high-school graduation should be related positively with one's progress towards career goals as indicated by occupational prestige and satisfaction with one's current job, and to one's psychological adjustment as indicated by life satisfaction and less depressive symptoms 2 and 4 years later. These relationships should remain significant even when including work hours as a potential predictor of outcomes.

Our fourth hypothesis expands the investigation of the outcome-relationship of career-related goal engagement to

career-related outcomes and proposes that it is weaker than the relationship involving educational goal engagement. We predict that compared to educational goal engagement, occupational goal engagement assessed immediately after high-school graduation should have no relationship, or a weaker relationship, to one's career progress (occupational prestige, satisfaction with one's current job) and one's psychological adjustment (life satisfaction, depressive symptoms) 2 and 4 years after graduation.

Methods

Sample and Procedures

Participants were 1,183 high school seniors from four schools in Los Angeles with student populations from ethnically diverse working and lower middle-class neighborhoods. At the time of the first assessment, students were within 1 month of high school completion in the spring of 2002 (Time 1, or T1) and targeted for reassessment every year thereafter for 4 years. Average sample age at T1 was 17.71 ($SD = .55$). Underage students were required to have signed parental consent forms, which were distributed a few days prior to the in-class survey, in order to participate. Due to our interest in the transition years after high school, this study is based on two longitudinal subsamples that used the 1 year after high school follow up (Time 2, or T2) as the baseline ($N = 754$). The 1-year ($T2 \rightarrow T3$) longitudinal subsample included those who participated in the baseline (T2) as well as a phone interview 2 years after high school (Time 3, or T3; $N = 610$; 81 % of the baseline sample). The 3-year ($T2 \rightarrow T5$) longitudinal subsample included those who participated at baseline and a phone interview conducted at the end of 2006 (Time 5, or T5; $N = 401$; 53 % of the baseline sample), 4 years after graduating from high school. Two longitudinal subsamples were used in order to include as many participants as possible. Procedures and attrition analyses for the mailed survey 1 year after high school are detailed in Chang et al. (2010).

Phone interviews at both follow-ups were conducted by a team of trained research assistants who contacted participants and who administered a structured interview (i.e., 5–10 min depending upon youth's school and work status) at T3. Those who participated in the phone surveys were compensated by entry into a raffle for various gift cards (valued from \$50 to \$100) to popular book, music, and electronic stores.

The inclusion criterion for the current study was the completion of occupational and educational goal engagement scales at T2 (2 and 7 % of the sample did not complete the goal engagement scale in occupation and

education, respectively). A series of *t* tests confirmed that participants who did not complete the goal engagement measures did not differ on key criterion variables (school enrollment, prestige of job held, depressed mood, and life satisfaction) at T2 and T3. The final sample for the 1-year longitudinal sample (T2 → T3) was 561 participants and for the 3-year longitudinal sample (T2 → T5) 364 participants. A majority of the T2 baseline sample was enrolled in either a 2- or 4-year college (48 and 38 %, respectively); 7 % were enrolled in a vocational school; and 8 % were not enrolled in any type of postsecondary school. Very few participants were married (1 %; $N = 11$) or had children (2 %; $N = 26$). See Table 1 for sample characteristics of the participants in both longitudinal subsamples. Within each longitudinal subsample, a comparison of participants with those participants lost to attrition indicated that no differences existed on psychological variables at baseline (i.e., occupational and educational goal engagement, and depressed mood, and life satisfaction). The only significant difference emerged in the 3-year longitudinal dataset. Youth who had parents with higher educational attainment ($M = 3.36$; $SD = 1.24$) were more likely to be interviewed at T5 compared to participants who were not interviewed at T5 ($M = 3.12$; $SD = 1.29$; $t(700) = 2.53$, $p < .05$).

Measures

Demographic Characteristics

All demographic variables were collected during high school senior year (T1). In addition to reporting their gender (1 = *female*; 0 = *male*), age, and ethnic background, students reported the highest educational attainment level of their parent(s)/guardian(s) on a 5-point scale (1 = *Junior high school*; 2 = *High school graduate*; 3 = *Some college*; 4 = *4-year college degree*; 5 = *Master's or professional degree*). The educational level of the parent/guardian with the most education (or in single-parent households, that parent's educational attainment) was treated as an approximate indicator of adolescents' socioeconomic status. Youth also indicated their ethnic background, from which three dummy variables were created, each using European Americans as the reference group: Latino Americans, Asian Americans, and Others (including African Americans, Middle Eastern, and multi-ethnic youth). See Table 1 for a breakdown of sample characteristics for each longitudinal sample.

Educational Goal Engagement

At T2, participants completed the Optimization in Primary and Secondary Control scale (OPS; Heckhausen and Tomasik 2002) for educational goals (11 items), which was adapted for

Table 1 Sample characteristics

	1-year longitudinal sample (T2 → T3) $N = 561$		3-year longitudinal sample (T2 → T5) $N = 363$	
	<i>N</i>	%	<i>N</i>	%
Gender				
Male	214	38.5	145	40.2
Female	342	61.5	216	59.8
Ethnicity				
European American	133	23.8	96	26.4
Latino American	165	29.6	97	26.7
Asian American	112	20.1	75	20.7
Other	148	26.5	95	26.2
School enrollment status at T2				
Not enrolled ^a	59	11.0	50	13.8
Enrolled in 2-year college ^b	222	41.5	80	22.0
Associate of Arts (A.A.)	11	2.1	20	5.5
Enrolled in 4-year college	243	45.4	130	35.8
Bachelor of Arts (B.A.)	0	0.0	83	22.9

^a Inclusive of participants who said they were enrolled but left school without a degree

^b Includes participants who were also in vocational programs

use among US high school youth. The scale, originally worded for getting an apprenticeship in a German school-to-work transition setting, was changed to refer to educational goals (i.e., career, good job) in general. Previous studies have shown this measure to have adequate measurement properties and validity (Heckhausen and Tomasik 2002; Haase et al. 2008; Poulin and Heckhausen 2007). Educational goal engagement consisted of selective primary control, compensatory primary control, and selective secondary control strategies (1 = *Strongly disagree*; 5 = *Strongly agree*). For example, 3 items reflected investment of behavioral effort, or selective primary control (i.e., “I try to put time and effort into my education whenever I can”); 4 items reflected compensatory primary control strategies (i.e., “If my education is not going in the right direction, I try to get help from others”), and 4 items reflected cognitive strategies, or selective secondary control (i.e., “I often imagine that I will be happy if I earn good grades in school”). Internal consistency was high ($\alpha = .83$).

Occupational Goal Engagement

The OPS Control scale also was adapted for occupational goals (11 items) and measured at T2 as well. Similar to the description of educational goal engagement, items consisted of selective primary control, compensatory primary control and selective secondary control strategies (1 = *Strongly disagree*; 5 = *Strongly agree*). Three items reflected

investment of behavioral effort for occupational goals (i.e., “If my career opportunities become worse, I will try harder”); 4 items reflected compensatory primary control strategies (i.e., “If my efforts to get a good job don’t work, I will try other ways to get one”); and 4 items reflected cognitive strategies of selective secondary control (i.e., “I often imagine how overjoyed I would be if I found a good job”). Internal consistency was also high in this sample ($\alpha = .83$).

Work Hours

Youth were asked at T2 to indicate whether they worked for pay and if they did, to indicate the total number of work hours worked per week. A variable of *work hours* was created, which ranged from 0 h (39 % of participants reported that they did not work in both samples) to 61 h a week in both samples.

Postsecondary Educational Status

Youth were questioned about their enrollment in school, the type of institution in which they were enrolled, and whether they earned a degree at T3 and at T5. Responses to these questions were taken together to create a 5-level variable of *postsecondary school status* at T3 and T5: 1 = *currently not enrolled*; 2 = *enrolled in a 2-year college or vocational program*; 3 = *earned a 2-year degree or technical degree (i.e., A.A., license, certificate)*; 4 = *enrolled in a 4-year college*; 5 = *earned a 4-year degree (i.e., B.A. or B.S.)*.

Occupational Goal Progress

Objective and subjective assessments of youth’s progress towards their occupational goals were included.

Job Prestige The job prestige of one’s current employment at T3 and at T5 was coded using responses to open-ended questions about their regular job (i.e., the name of the employer, what the employer does, and what the participant’s duties are on the job). Responses were coded according to the Nakao and Treas (1994) occupational prestige scale, which ranges from 0 to 100 with higher scores representing more prestigious occupations. Coders were two graduate research assistants who were selected because of their knowledge of the occupational positions in the US labor market. Inter-rater agreement was 88 % between coders, with differences resolved by the senior researchers. Coded responses ranged from 19.5 (e.g., car-wash attendant, newspaper peddler) to 65 (e.g., auditor).

Job Satisfaction Satisfaction with one’s current job was assessed at T3 and at T5 by youths’ responses to the

question, “How satisfied are you overall with your main current job?” on a 4-point scale (1 = *Very dissatisfied*; 4 = *Very satisfied*).

Career Satisfaction Satisfaction with one’s career was assessed at T5 by responses to the question, “How satisfied are you today with your progress toward your career goals?” on the 4-point scale (1 = *Very dissatisfied*; 4 = *Very satisfied*).

Psychosocial Well-Being

At 2 and 4 years after high school, positive and negative indicators of psychosocial adjustment were measured.

Depressed Mood Depressed mood during the past month was assessed by a 10-item shortened version of the Center for Epidemiological Studies of Depression scale (Radloff 1977; Lorig et al. 2001), with responses indicated on 4-point scale (1 = *Rarely or none of the time*; 4 = *Most or all of the time*).

Life Satisfaction

Satisfaction with one’s life was measured with 3 items taken from the Satisfaction with Life Scale (Diener et al. 1985) and responded to on a 4-point scale (1 = *Strongly disagree*; 4 = *Strongly agree*).

As can be seen in Tables 2 and 3, the different dependent variables had only little-to-moderate overlap with each other (r s ranged from .00 to .44) within each longitudinal sample.

Plan of Analysis

Hierarchical linear regressions were conducted to examine the predictive relationship between the independent variables of educational goal engagement and occupational goal engagement assessed at T2 and the dependent variables of postsecondary school status, job prestige, job satisfaction, depressed mood, and life satisfaction assessed at T3 and T5. Career satisfaction was included as an additional dependent variable at T5. A total of 11 regressions were conducted, 5 for T3, and 6 for T5. Preliminary analysis indicated that multicollinearity was not a problem (all VIFs <10 and Tolerance >.10). For each regression model, social demographic factors (i.e., gender, ethnic background, and parental educational attainment) were entered on Step 1; educational and occupational goal engagement variables were entered on Step 2; and T2 work hours were entered on Step 3. The latter step was included in order to examine whether hypothesized relationships between goal engagement and dependent variables would hold even when taking into account time spent in paid employment. To explore any demographic

Table 2 Intercorrelations among key variables in the 1-year longitudinal sample

	2	3	4	5	6	7	8	9	10
1. Gender	-.11*	.16***	.09*	-.01	.09*	.01	.02	-.03	-.05
2. Parent educ. status ^a	1	-.06	-.03	-.08	.27***	.17**	.11*	-.04	.14**
3. T2 EGE ^b		1	.55***	.03	.06	-.00	.05	-.11*	.10*
4. T2 OGE ^c			1	.00	.02	.04	-.02	-.02	.03
5. T2 work hours				1	-.18***	.09	-.03	-.06	-.05
6. T3 posteduc. progress					1	.03	.16**	-.01	.16***
7. T3 Nakao-Treas job prestige						1	.15**	.00	.02
8. T3 job satisfaction							1	-.17**	.25***
9. T3 depressed mood								1	-.40***
10. T3 life satisfaction									1
<i>M (SD)</i>	3.30 (1.28)	4.26 (.52)	4.32 (.50)	16.80 (16.38)	1.82 (1.13)	35.78 (8.69)	3.33 (.76)	1.76 (.47)	3.11 (.55)

* $p < .05$; ** $p < .01$; *** $p < .001$

^a 1 less than high school, 2 high school graduate, 3 some college, 4 4-year degree, 5 Master's or professional degree

^b EGE Educational goal engagement at T2

^c OGE Occupational goal engagement at T2

variations in our findings, we computed interaction terms between the significant goal engagement variable with a demographic variable (i.e., gender, dummy codes for Latin Americans, Asian Americans, and “Other” Americans, and parental educational attainment) on Step 4. Thus, for every significant goal engagement finding, 5 interaction terms were each tested separately.

Results

The results section is organized according to the dependent variables assessed at T3 and T5: postsecondary educational status, indicators of occupational goal progress, and indicators of psychological adjustment.

Predicting Postsecondary Educational Status

Our first set of regressions addressed the first two hypotheses. We examined whether educational status at T3 and T5 was associated positively with educational goal engagement at T2 (Hypothesis 1) and negatively with occupational goal engagement at T2 (Hypothesis 2).

As summarized in Table 4, the complete model predicting T3 postsecondary status accounted for 15.1 % of the variance. Sociodemographic factors in Step 1 explained a major proportion of the variance in postsecondary educational status 2 years after high school (12.1 %; $R^2 = .121$, Adj. $R^2 = .112$; $F(5,482) = 13.30$, $p < .001$). As can be

seen in Table 4, youth's gender and parental educational background were related significantly to T3 postsecondary educational status, with females and also youth whose parents had completed more education reporting higher levels of postsecondary school enrollment. As hypothesized, educational goal engagement was related significantly and positively to postsecondary educational status. However, the addition of educational and occupational goal engagement in Step 2 of the regression analysis did not contribute significantly to predicting differences in T3 postsecondary status ($\Delta R^2 = .007$; $\Delta F(2,480) = 1.95$, ns). Analyses with number of work hours at T2 introduced on Step 3 indicated that youth who worked more hours at T2 reported lower postsecondary educational status ($\Delta R^2 = .023$; $\Delta F(2,479) = 12.95$, $p < .001$). Thus, contrary to hypotheses 1 and 2, motivational goal engagements with education or work immediately after high school graduation were not associated with educational status 1 year later, but actual time spent on the job was related negatively to this outcome. We also tested separately in Step 4 whether the effect of educational goal engagement varied by sociodemographic differences and found only one such interaction that was significant—the one between ethnicity and educational goal engagement. Follow-up contrasts revealed that educational goal engagement benefited European Americans' T3 postsecondary educational status more than that of Asian Americans: $B = -.77$ (SE = .27), $\beta = -.12$, $p < .01$.

Youth's T5 postsecondary educational status, or 4 years after high school, was regressed according to the same

Table 3 Intercorrelations among key variables in the 3-year longitudinal sample

	2	3	4	5	6	7	8	9	10	11
1. Gender										
2. Parent educ. attainment ^a	-.11*	.12*	.07	.00	.13*	.03	.03	-.06	-.01	.02
3. T2 EGE ^b	1	-.06	-.04	-.12*	.28***	.15*	.15*	.15**	-.01	.20***
4. T2 OGE ^c		1	.51***	.05	.04	.00	.14*	.16***	-.11*	.16***
5. T2 work hours			1	.02	-.09	-.02	.11	.02	-.07	.16***
6. T5 posteduc. status				1	-.17***	.11	.09	-.02	-.13*	.04
7. T5 Nakao-Treas job prestige					1	.19***	.11	.20***	-.05	.20***
8. T5 job satisfaction						1	.23***	.04	-.10	.16***
9. T5 career satisfaction							1	.31***	-.27***	.41***
10 T5 depressed mood								1	-.18***	.44***
11. T5 life satisfaction									1	-.42***
M (SD)	3.39 (1.30)	4.29 (.48)	4.32 (.49)	16.43 (16.07)	2.32 (1.40)	41.06 (10.26)	3.35 (.71)	3.37 (.72)	1.73 (.49)	3.28 (.58)

Correlations between variables 1 through 5 are slightly different from correlations reported in Table 2 due to the different longitudinal samples

* $p < .05$; ** $p < .01$; *** $p < .001$

^a 1 less than high school, 2 high school graduate, 3 some college, 4 4-year degree, 5 Master's or professional degree

^b EGE educational goal engagement at T2

^c OGE occupational goal engagement at T2

regression model as used for T3 outcomes but using the 3-year longitudinal sample (T2 → T5) instead. As can be seen in Table 5, the complete model predicting T5 postsecondary status accounted for significant variance with sociodemographic factors in Step 1 explaining a majority of the variance ($R^2 = .141$; Adj $R^2 = .127$; $F(5, 328) = 10.73, p < .001$). As found in the previous regression at T3, females and youth with more highly educated parents reported higher levels of postsecondary education (see Table 5). Additionally, Latino Americans reported significantly lower levels of postsecondary progress when compared to European Americans. The addition of goal engagement variables contributed significantly to explaining variance in T5 postsecondary status ($\Delta R^2 = .018$; $\Delta F(2,326) = 3.46, p < .05$). Consistent with hypotheses 1 and 2, educational goal engagement was related significantly and positively, whereas occupational goal engagement was related negatively, to T5 postsecondary status. Consistent with our hypotheses of “on-time” goal engagement, the more youth were engaged with their educational goals, the higher their levels of postsecondary education, whereas the more youth were engaged with occupational goals, the less education they obtained. The addition of T2 work hours in Step 3 was related significantly to postsecondary educational status at T5, such that those who worked more hours at T2 reported lower levels of postsecondary educational status ($\Delta R^2 = .015$; $\Delta F(1,325) = 5.92, p < .05$). Moreover, as can be seen in Table 5, the addition of T2 work hours did not change the direction or significance of the goal engagement variables and partially confirms hypotheses 1 and 2. In Step 4, we tested separately for interactions between goal engagement and sociodemographic differences and again found only one difference, involving ethnic group. Educational goal engagement benefited Latino Americans’ T5 postsecondary educational status more than that of European Americans: $B = .80$ ($SE = .35$), $\beta = .12, p < .05$.

Predicting Occupational Goal Progress

The third and fourth hypotheses predicted that educational and occupational goal engagement would be consequential for occupational goal progress. To test our hypotheses, hierarchical regressions were conducted in the same design as above for the following dependent variables at T3 and T5: occupational prestige of current job, and satisfaction with current job. An additional outcome was added at T5, satisfaction with one’s career progress.

Occupational Prestige

Results from regression models predicting occupational prestige of current job at T3 indicated that the complete

Table 4 Hierarchical regression analyses predicting educational, occupational, and psychosocial adjustment 2 years after high school

Step 3	Postsecondary educational status (<i>N</i> = 488)		Job satisfaction (<i>N</i> = 334)		Depressed mood (<i>N</i> = 481)		Life satisfaction (<i>N</i> = 506)	
	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β
Gender	.22 (.10)	.09*	.02 (.09)	.01	-.03 (.05)	-.03	-.06 (.05)	-.06
Parental ed.	.21 (.04)	.24***	.06 (.04)	.10	-.02 (.02)	-.05	.06 (.02)	.13**
Latino Am.	-.32 (.15)	-.12*	-.18 (.13)	-.11	.07 (.07)	.07	-.07 (.08)	-.05
Asian Am.	.16 (.15)	.06	-.20 (.13)	-.10	.16 (.07)	.14*	-.13 (.07)	-.09
Other	-.29 (.13)	-.12*	-.31 (.11)	-.19**	.12 (.06)	.11*	-.12 (.07)	-.10
T2 EGE ^a	.23 (.11)	.11*	.16 (.09)	.12	-.17 (.05)	-.18**	.23 (.06)	.22***
T2 OGE ^b	-.10 (.11)	-.04	-.08 (.10)	-.05	.03 (.05)	.03	-.05 (.06)	-.05
T2 work hours	-.01 (.00)	-.16***	-.00 (.00)	-.02	-.00 (.00)	-.04	-.00 (.00)	-.05
<i>R</i> ²	.151***		.046*		.045**		.063***	
Adj. <i>R</i> ²	.137***		.023*		.029**		.048***	

Coefficients reported are reflective of the final step (i.e., Step 3)

* $p < .05$; ** $p < .01$; *** $p < .001$

^a EGE educational goal engagement at T2

^b OGE Occupational goal engagement at T2

model accounted for a modest but significant amount of variance ($R^2 = .060$; Adj. $R^2 = .036$; $F(8,314) = 2.50$, $p < .05$) with sociodemographic variables contributing 2.7 % of the variance (Adj. $R^2 = .027$; $F(8,314) = 2.50$, $p < .05$). The only independent predictor was parental educational attainment. Youth reporting higher levels of parental educational attainment also worked at jobs with higher occupational prestige ($B = .98$; $SE = .44$; $\beta = .15$, $p < .05$). The addition of goal engagement variables did not account for significantly more variance, but the addition of T2 work hours in Step 3 was significant ($\Delta R^2 = .013$; $\Delta F(1,314) = 4.26$, $p < .05$). Youth working more hours at T2 at their job were likely to be working at higher prestige jobs at T3 ($B = .06$; $SE = .03$; $\beta = .12$, $p < .05$).

The model predicting T5 occupational prestige accounted for a non-significant amount of variance. In sum, hypotheses 3 and 4 were not confirmed for occupational prestige of youth's jobs 2 or 4 years after high school.

Job Satisfaction

Results from regression models predicting youth's satisfaction ratings of their job at T3 indicated that a significant but modest amount of variance was explained by the complete model (see Table 4). Contrary to hypotheses 3 and 4, the addition of goal engagement variables in Step 2 and T2 work hours in Step 3 did not change R^2 significantly, and all three additional independent variables were found to be non-significant.

In contrast to predicting job satisfaction at T3, the complete model predicted more variance in youth's job satisfaction ratings at T5 (see Table 5) and, as was hypothesized,

the addition of T2 goal engagement variables accounted for significantly more variance ($\Delta R^2 = .043$; $\Delta F(2,268) = 6.29$, $p < .01$) whereas T2 work hours did not. As can be seen on Table 5, youth who were higher in educational goal engagement 1 year after high school were more satisfied with their current job 4 years after high school, which was consistent with hypothesis 3. Contrary to our predictions in hypothesis 4, occupational goal engagement was neither significant nor negative in direction.

Career Satisfaction

The complete model accounted for a significant amount of variance in youth's satisfaction with career progress 4 years after high school (see Table 5). Sociodemographic variables explained 4.2 % of the variance (Adj. $R^2 = .042$; $F(5,328) = 3.91$, $p < .01$). The Asian American ethnic dummy variable was significant, indicating that Asian Americans were less satisfied than their European American counterparts with progress towards their career goals ($B = -.33$; $SE = .11$, $\beta = -.19$, $p < .01$). This effect remained significant after Step 2 and Step 3 was added. The addition of goal engagement variables on Step 2 confirmed hypothesis 3 regarding the positive associations between educational goal engagement and career satisfaction even after considering the time spent working. Hypothesis 4 was not confirmed for the outcome variable "career satisfaction."

Predicting Psychological Adjustment

The third and fourth hypotheses predicted that educational and occupational goal engagement would be consequential

Table 5 Hierarchical regression analyses predicting educational, occupational, and psychosocial adjustment 4 years after high school

Step 3	Postsecondary educational status ($N = 336$)		Job satisfaction ($N = 276$)		Career satisfaction ($N = 334$)		Depressed mood ($N = 334$)		Life satisfaction ($N = 334$)	
	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β
Gender	.39 (.15)	.14**	.01	.01	-.11 (.08)	-.08	-.01 (.06)	-.00	.01 (.07)	.00
Parental ed.	.20 (.07)	.19**	.11	.11	.06 (.03)	.11	-.01 (.03)	-.01	.10 (.03)	.21**
Latino Am.	-.67 (.23)	-.21**	-.16*	-.16*	-.20 (.12)	-.12	.09 (.09)	.08	-.04 (.10)	-.03
Asian Am.	.08 (.21)	.02	-.17*	-.17*	-.37 (.11)	-.22**	.10 (.08)	.08	-.09 (.09)	-.06
Other	-.29 (.19)	-.09	-.12	-.12	-.06 (.10)	-.04	.15 (.07)	.13*	-.06 (.08)	-.05
T2 EGE ^a	.40 (.17)	.14*	.16*	.16*	.34 (.09)	.24***	-.10 (.07)	-.10	.17 (.08)	.14*
T2 OGE ^b	-.40 (.17)	-.14*	.08	.08	-.11 (.09)	-.08	-.04 (.06)	-.04	.09 (.07)	.07
T2 work hours	-.01 (.00)	-.13*	.05	.05	-.00 (.00)	-.04	-.00 (.00)	-.11	.00 (.00)	.04
R^2	.171***		.090**		.098***		.038		.079**	
Adj. R^2	.151***		.063**		.076***		.014		.057**	

Coefficients reported are reflective of the final step (i.e., Step 3)

* $p < .05$; ** $p < .01$; *** $p < .001$

^a EGE educational goal engagement at T2

^b OGE occupational goal engagement at T2

for psychological adjustment both in the short and long term. Thus, hierarchical regressions were conducted in the same design as used in previous analyses for depressed mood and life satisfaction at T3 and at T5.

Depressed Mood

For the model predicting T3 depressed mood, demographic variables did not explain significant variance, but the addition of goal engagement variables on Step 2 was significant ($\Delta R^2 = .026$; $\Delta F(2,473) = 6.53$, $p < .01$). As predicted by hypothesis 3, youth who reported higher levels of educational goal engagement at T2 reported less frequent depressive symptoms at T3 (see Table 4). The addition of work hours in Step 3 did not explain significantly more variance in depressed mood at T3 and did not affect the significance of educational goal engagement. As can be seen in Table 4, occupational goal engagement was not significant, contrary to hypothesis 4.

In contrast, the complete 3-step model did not predict significant variance in depressed mood at T5 (see Table 5).

Life Satisfaction

Table 4 also shows that the complete model accounted for a significant amount of variance in life satisfaction 2 years after high school. Demographic variables entered on Step 1 accounted for a significant but modest amount of variance ($R^2 = .024$; Adj. $R^2 = .014$, $F(5,500) = 2.48$, $p < .05$), particularly due to parental educational attainment. Youth with parents with higher levels of educational attainment reported higher levels of life

satisfaction at T3 ($B = .06$; $SE = .02$; $\beta = .14$, $p < .01$). However, goal engagement variables entered in Step 2 accounted for additional variance ($\Delta R^2 = .037$; $\Delta F(2,498) = 9.71$, $p < .001$). Consistent with hypothesis 3, educational goal engagement was related positively to life satisfaction 2 years after high school, which was not affected by the addition of T2 work hours in Step 3 (see Table 4). As can be seen in Table 4, T2 work hours in Step 3 did not significantly predict T3 life satisfaction ($\Delta R^2 = .002$; $\Delta F(1,497) = 1.20$, $p > .05$).

Table 5 shows that the complete model also accounted for a significant amount of variance in life satisfaction 4 years after high school. Sociodemographic variables in Step 1 accounted for half of the explained variance in T5 life satisfaction ($R^2 = .044$, Adj. $R^2 = .030$, $F(5,328) = 3.05$, $p = .01$). Similar to results predicting T3 life satisfaction, parental educational attainment was a significant and positive predictor of T5 life satisfaction and remained so with the addition of Step 2 and 3 (see Table 5). The addition of goal engagement variables in Step 2 was significant and accounted for significant additional variance ($\Delta R^2 = .033$, $\Delta F(2,326) = 5.90$, $p < .01$). As predicted by hypothesis 3, educational goal engagement was related significantly and positively to T5 life satisfaction (see Table 5), indicating that youth who had higher educational goal engagement at T2 reported higher levels of life satisfaction at T5, even after controlling for the effects of T2 work hours on Step 3. Occupational goal engagement also showed a positive relationship to life satisfaction at T5 but, as predicted, it was weaker than the relationship between educational goal engagement and life satisfaction.

Discussion

The present study addressed the predictive relationships between motivational engagement with educational and occupational goals and important outcomes in the transition from high school to college and work during the first several years after high-school graduation. In accordance with the motivational theory of life-span development (Heckhausen et al. 2010), we predicted that strong motivational engagement with educational goals would be associated with desirable outcomes in educational attainment, subjective well-being, and even with important indicators of career progress. Going beyond previous research, which had demonstrated the important role of goal engagement (Haase et al. 2008), we set out to investigate whether such goal engagement is more effective if it is focused selectively on educational goals instead of spread between educational and occupational goals. Motivational engagement with work and career-related goals as well as hours spent in paid employment were expected to diffuse the motivational focus on education and have no beneficial and even some detrimental relationships with various outcomes 2 and 4 years after high-school graduation. These hypotheses were confirmed as discussed in the following paragraphs.

Positive Relationship Between Educational Goal Engagement and Transition Outcomes

The results supported our first and third hypotheses regarding the proposed positive relationships between focusing on educational goals shortly after graduating from high school and outcomes attained 2 or 4 years after graduation. Educational goal engagement assessed shortly after high-school graduation predicted educational status and life satisfaction both at 2 years and at 4 years after graduation as well as depressed mood 2 years after graduation. It is worth noting that these effects held up even when the variable “hours spent in paid employment” was taken into account. This implies that the effect of motivational engagement is not just one of competition for time, but a genuine motivational effect. Considered in the context of our previous work (Haase et al. 2008) on the effects of goal engagement in the transition after high school, the present study shows a more consistent effect on the goal-relevant outcome (here, educational attainment) across both young women and young men. In addition, it is noteworthy that educational goal engagement reached beyond its own turf of educational attainment and showed significant predictive relationships to well-being outcomes, and even to indicators of perceived career attainment such as job satisfaction 2 and 4 years after graduation and satisfaction with one's career progress 4 years after graduation.

Weak or Negative Relationship Between Occupational Goal Engagement and Transition Outcomes

Hypothesis 2 predicted a negative association between an early, strong engagement with occupational goals and educational attainment after graduation. The present study's findings support this hypothesis in showing a negative relationship of early occupational goal engagement on educational attainment 4 years after high school. It is important to keep in mind that this significant effect was found after the variance explained by educational goal engagement was already accounted for. One can expect that individual differences in the capacity and willingness to engage with goals will produce a substantial overlap between educational and occupational goal engagement, and indeed their correlation was .55 in the 1-year sample and .51 in the 3-year sample. Thus, the negative association with educational attainment 4 years after graduation found for occupational goal engagement is specifically due to motivational engagement with career-related goals.

Similarly, the number of work hours youth spent in paid employment in the year after high school had a negative association with educational outcomes, both in the short and the long run. Previous research has been conflicted about the role of paid work for high-school students' achievement and development and promoted either of three models, the “skills-building model” predicting positive effects (Mortimer and Finch 1986; Schoenhals et al. 1998), the “school/work competition model” predicting linearly negative effects (Finn 1989; Greenberger and Steinberg 1986; Marsh 1991), and the “threshold model” predicting non-linear negative effects around a threshold of about 20 work hours per week (Greenberger and Steinberg 1986; Marsh and Kleitman 2005). Our findings clearly reject the possibility of a positive effect of occupational goal engagement and time commitment to paid work. Because educational attainment is not scaled continuously, our data cannot favor either of the two models (i.e., linear or threshold) that propose a negative association between occupational engagement and educational attainment.

Hypothesis 4 predicted that occupational goal engagement would show weaker (than educational goal engagement) or absent associations to career-related outcomes and indicators of subjective well-being. This hypothesis was confirmed also. It is noteworthy that early engagement with occupational goals was not associated with better occupation-related outcomes such as job prestige and job satisfaction, whereas early engagement with educational goals was. This finding contrasts with the finding in the German study (Haase et al. 2008) where the occupation-related goal of attaining an apprenticeship did have associations with a goal-specific outcome at least for young women. However, the societal and educational systems are different and

therefore afford a very different action field for German middle-tier high school graduates and American high-school graduates. In the US, career-related opportunities are ever closer tied to post-secondary educational attainments, whereas in Germany many vocational careers are based on vocational training. Early engagement with career goals actually had only one positive association, namely a relatively modest relationship ($\beta = .07^*$) with life satisfaction 4 years after high school.

Limitations

A constraint of our longitudinal study was that we did not have a large enough sub-sample of youth who participated in all three measurement points in this study, 1, 2 and 4 years after graduation. We therefore had to create two different longitudinal sub-samples, a 1-year and a 3-year sub-sample. The necessity of using two longitudinal sub-samples somewhat compromises our ability to draw conclusions across the entire longitudinal span of the study.

Another limitation of our study is the fact that our findings regarding the predictive relationships between motivational variables and outcomes indicate relatively small amounts of additional explained variance, ranging in size between .013 and .037, once the contribution of demographic and other factors have been taken into account. Although these R^2 -change sizes seem small at first glance, they need to be interpreted judiciously. When evaluating the size of these coefficients, one should take into account that these are not R^2 -values, but R^2 -change values, so they reflect what a given variable adds in explaining variance in the outcomes of interest to those variables already entered in the regression. Educational and occupational goal engagements are inter-correlated and thus overlap in accounting for variance in the various outcomes. Moreover, examination of the standardized beta coefficients in Tables 4 and 5 reveals that the effects of educational goal engagement typically are similar in magnitude to, and in several cases greater than those of other variables in the model. For example, educational goal engagement 1 year post-high school had a stronger effect on life satisfaction or depressive symptoms measured a year later than did any of the demographic variables gender, parental educational status, and ethnicity (see Table 4). Similarly for career satisfaction assessed 4 years after high school, educational goal engagement 1 year post high school was a stronger predictor than any of the demographic variables (see Table 5). In addition, one should keep in mind that the outcomes predicted are real-world outcomes, as in having attained an educational degree and in having made progress towards a career goal. Such outcomes are influenced strongly by contextual factors, such as current labor market conditions, family SES,

financial aid, etc. Thus, any psychological variable that surfaces as a significant independent contributor to predicting such outcomes is noteworthy. Another reason to treat these associations as meaningful is that they are predicted theoretically and not necessarily in an obvious manner (e.g., educational engagement predicts career-related outcomes better than career-related engagement). For all these reasons, the importance of educational goal engagement in the transition after high school is significant and meaningful and should not be underestimated.

Conclusions

Overall, the findings allow some important conclusions. First, the motivational pathways to better educational and career outcomes are enhanced by an early engagement—that is, within the first year after high school graduation—with post-secondary educational goals. Engagement of this nature involves persistent and focused striving towards educational goals, even in the face of difficulty. This effect is found even when controlling for hours worked, thus demonstrating the importance of motivational commitment to the goal of earning a post-secondary degree. Second, an early focus on occupational goals has either no effect or is related negatively to educational outcomes. Thus, when they first graduate from high school, youth should avoid investing their motivational resources into work and instead focus on completing their education, especially in a system where careers more and more build on post-secondary education as in the United States rather than specialized vocational training (as e.g., in Germany, Haase et al. 2008). Mortimer et al. (2008) discuss two potential pathways into subjectively satisfying careers, one via enhancing one's human capital by earning a post-secondary degree, and the other via early investment in work experience. Our findings suggest a cautionary view of the latter pathway. Particularly in the recent economic downturn with its severe increases in youth unemployment (Pew Research Center 2012), the pathway to a satisfying career via early work experience has become a less feasible alternative to a post-secondary college or professional/vocational education.

Our finding that early occupational goal engagement is not helpful for educational and career outcomes does not contradict other findings about the importance of having a somewhat crystallized career goal early in the transition after high school to plan for appropriate education (see Schneider and Stevenson 1999). Previous research has shown that young adults with unclear career ambitions were less likely to complete college (Zimmer-Gembeck and Mortimer 2007) and ended up earning lower wages in adulthood (Staff et al. 2010). Knowing which career one is striving for does not necessarily imply that one is currently

investing motivational commitment in this occupational goal. Instead, young adults who sequence their motivational commitments by focusing on postsecondary education first, and subsequently on how to turn the educational attainment into a successful career-entry, are better off in their long-term educational attainments and career-related satisfaction.

A motivational focus on earning a post-secondary degree is also conducive to a more positive outlook on one's future, as indicated by fewer depressive symptoms and higher life satisfaction. Moreover, a more positive mood may be an important buffer against discouragement and despair for young adults who are encountering more adverse career entry conditions than recent previous cohorts (Pew Research Center 2012). The 2012 Pew poll shows that many youth are unsatisfied with their current jobs, but also expect a better career trajectory in the future. On the other hand, to the extent that such optimism is unrealistic and not informed by specific plans for a path to a successful career entry, there is the risk that educational investment may end up as a dead-end (Vuolo et al. in press). This is especially likely when young adults end up initially pursuing but then not completing a degree.

Focused motivational goal engagement with education is the critical psychological process that influences short- and longer term outcomes of the transition to adulthood, not just in terms of educational attainment itself, but also with regard to gaining a footing in one's desired career and enjoying greater psychological well-being. Programs and policies that encourage and enable youth to invest in education in the immediate post-high school years are of great importance. Such programs start with high-school counseling and colleges' outreach efforts to high-school seniors, but also should include stepping-stone or bridge institutions such as community colleges and their articulation with 4-year college curriculum requirements. Finally, the financial burdens of post-secondary education have become increasingly prohibitive in the US at exactly the time when they instead need to be rendered more bearable.

In conclusion, the longer-term predictive effects of setting out one's after high-school life with a motivational focus on education were shown in all three areas of outcomes educational attainment, psychological well-being, and perceived satisfaction with one's job and career progress. It is important to note that this was not simply due to being able to spend more time on education, because the effect of motivational engagement was found even when work hours were included in the regression model. In short, enhanced educational attainment, psychological well-being, and satisfaction with job and career progress is selectively due to the *motivational commitment* guiding youth's experiences and behavior during their transition into adult life.

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