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The role of future work goal motives in adolescent identity development: A longitudinal mixed-methods investigation

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ABSTRACT

Theories of adolescent identity development often emphasize the importance of adolescents' future work goals, yet these theories rarely distinguish the *self-oriented* motives (enjoying or being a good fit for one's work) from the *beyond-the-self-oriented* motives (having a positive impact on the world beyond the self) that underlie them. The present article explored the impact and development of both types of motives. Using longitudinal, mixed-methods data from middle school and high school students ($N = 99$), the present article found that: (1) adolescents generated both self-oriented and beyond-the-self-oriented motives for their future work goals, often simultaneously; (2) adolescents who held both self-oriented and beyond-the-self-oriented motives for their work goals were more likely to experience higher levels of purpose and meaning over a 2-year period than those who held neither; (3) school assignments that asked students to reflect on their work goals were positively related only to the development of self-oriented motives for work goals among middle school students; and (4) support from friends was positively related only to the development of self-oriented motives for work goals among high school students.
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1. Introduction

Adolescent identity formation has largely been conceptualized as adolescents' answer to the questions "Who am I?" and "What kind of person do I want to be?" (see, e.g., LaGuardia, 2009). Within this broad question, identity researchers emphasize that one central aspect of identity development is vocational identity, or young people's answers to the question "What do I want to be when I grow up?" (e.g., Eccles, 2009; Skorikov & Vondracek, 1998). Although these questions are essential to understanding adolescent identity development, we emphasize a broader conceptualization of adolescent identity development that includes adolescents' answers to another fundamental question: "*Why* am I?" That is, we believe that not only are adolescents compelled to discover what kind of person they are and what kind of work they would like to do, but they are also interested in understanding why they are here and what their place is in the world (Yeager & Bundick, 2009). We argue that both self-oriented and beyond-the-self-oriented motives for life goals are important components of how adolescents construct their identities and of how these identities promote optimal development.

Indeed, past theories have suggested that adolescents' identity development is driven, in part, by a need to "matter" to others in life, in addition to more self-focused motives (Damon, 2008; Damon, Menon, & Bronk, 2003; Eccles, 2009; Frankl, 1959; Marshall, 2001; Rosenberg & McCullough, 1981; Schieman & Taylor, 2001). Although Erikson's (1968) landmark theory of identity development has been primarily operationalized in terms of one's self-oriented interests, values, skills and desires, it also emphasized the importance of beyond-the-self considerations. According to Erikson (1968) one's identity integrates childhood identifications, pulling together the things one has found out about oneself through observation of one's behaviors and characteristics –– that is, the "Me" described by James (1890). Yet identity also incorporates the future hopes, wishes, and dreams for the kind of person one wants to be (c.f. Higgins, 1987; Markus & Nurius, 1986) and the future contributions one wants to make to the world beyond the self (Damon, 2008; c.f. McAdams & de St. Aubin, 1992). In this regard, a developing identity is for some students the coming together of the "who I am" with the "what role I want to play in the world" (see also McAdams, 1993). Such a synthesis can serve as a precursor to the development of a satisfying life purpose (Damon, 2008). Surprisingly, few empirical studies have explicitly investigated the development of *both* self-oriented and beyond-the-self-oriented components of adolescent identity. Still fewer studies have examined how schools can impact in the development of these different components.

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In this context, we conducted a 2-year longitudinal, mixed-methods investigation of adolescents' identity development as it relates to the development of self-oriented and beyond-the-self motives for their future work goals in school. In doing this research, we first asked whether different motives for work goals will have differential relations with *eudaimonic well-being*, which refers to the meaning and purpose people derive from living their lives in accordance with their "true" selves (Waterman, 1993; see also Deci & Ryan, 2000). In the second half of this paper, we asked which school-related factors might promote the development of motives for work goals over a 2-year period.

In this research we do not focus on whether students have committed to a specific work role, like a doctor or an engineer. We do not think professions are objectively self-oriented or beyond-the-self-oriented. Rather, we think they are subjectively construed by students as oriented toward oneself or others, and it is these construals that determine the effects of work goals on developmental outcomes. Therefore we seek to understand whether and in what way adolescents have thought about *the reasons why* they aspire to future work roles—that is, their *motives* for their goals (for a related discussion of goal content, see Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004).

1.1. Work goal motives and adolescent identity development

Recent research on identity development has emphasized that the roles available in the 21st century job market are uncertain and that this has shaped the identity formation process for adolescents and emerging adults. It is difficult for adults—let alone adolescents—to predict what kinds of jobs will be available in the future and what kinds of skills will be required for those jobs (Arnett, 2000; Flum & Kaplan, 2006). Under these circumstances, it may be unrealistic and even maladaptive for adolescents to commit to a career at a young age, both because a desired job may either be unavailable or require different skills when they eventually enter the market. Moreover, it may be developmentally inappropriate to commit to or foreclose on a vocational identity in the absence of a considered exploration of possible future selves. However, when adolescents engage in identity exploration they may better equip themselves to develop motives for the vocational goals that match their own skills, talents, interests and desired contributions. As a result, they may be more prepared to adapt to the changing job market, while also finding their daily activities more meaningful (Flum & Kaplan, 2006). Because one's current identity can serve to organize one's present commitments and activities, then adolescents' motives underlying their goals for future work may predict current well-being and motivation, independent of whether they actually achieve their ultimate career goal later in life.

What types of goal motives might signal identity development and predict positive outcomes during adolescence? In past research, Yeager and Bundick (2009) used theory and data to classify adolescents' motives for their work goals. As expected, this research first found that many adolescents stated that *extrinsic* motives, such as making money, gaining fame, or having high status, were important to them. However, such extrinsic motives are for many students psychologically quite distant from their current activities in school (Oyserman, Bybee, & Terry, 2006). When considering only extrinsic motives, school may be seen as relevant to students merely to the extent that they would eventually need to exchange their educational credentials for a job at some undetermined time in the future. This process may seem opaque and uncertain to them and may not be motivating. Moreover, extrinsic motives do not necessarily require that students master or find meaning in their current schoolwork—only that they do well enough to move on to college and a career (Labaree, 1997). Consistent with this idea, Yeager and Bundick (2009) found that extrinsic motives for work goals were unrelated to greater concurrent well-being and to the meaningfulness of current schoolwork in a sample of high school adolescents—even when students hoped to earn money to serve a prosocial cause such as giving to charity (for related research on college students, see Kasser & Ryan, 1993; Sheldon & Kasser, 1998; Vansteenkiste, Duriez, Simons, & Soenens, 2006). For this reason, in the present research we do not think of extrinsic motives as evidence of the type of identity development that will predict greater well-being.

Yeager and Bundick (2009) also found that many adolescents expressed motives for work goals that were *intrinsic* to the work to be done, and these varied in terms of their self- or beyond-the-self orientation. Some of these motives were *self-oriented*, such as the idea that a job is a match for one's skills, interests, and desires. Other intrinsic motives were *beyond-the-self* oriented, such as the idea that a job would allow one to make a positive contribution to something larger than oneself. When adolescents express intrinsic motives for their goals, they may see their current activities as a preparation for work they want to do, and hence construe these activities as more meaningful. Accordingly, Yeager and Bundick (2009) found that beyond-the-self-oriented intrinsic motives (but not self-oriented intrinsic motives) predicted greater meaningfulness in life and in schoolwork, a finding that resonates with past research on adults (Kasser & Ryan, 1993; Sheldon & Kasser, 1998; Vansteenkiste et al., 2006). However, Yeager and Bundick's (2009) conceptualization was limited in that it did not test whether, when combined, self-oriented and beyond-the-self-oriented motives would predict greater well-being. Indeed, a great deal of theory suggests that it is normative for prosocial motivations to also be seen as beneficial to the self (Batson, 1987)—as when students say they would personally enjoy making a contribution. Intuitively, then, if an adolescent expects to both enjoy the challenge of a job and have a positive impact on the world by doing it, then his or her daily strivings toward those ends may seem especially worthwhile.

1.2. Developmental differences in vocational identity development

Past research on the development of an identity would suggest that the consequences and predictors of motives for work goals might differ for younger adolescents in middle school as compared to those in high school. Erikson's (1968) theory suggested that initially, the content of one's identity might include childhood identifications, perhaps gleaned from admired adults. Later in adolescence, however, one's identity development may draw on more experience having watched one's own behaviors—that is, there is more "data" on one's true interests, skills and desires. In this way, younger and older adolescents may both endorse the same intrinsic motive for a work goal, but the process that led them to hold that goal may have been qualitatively different.

Whether these different processes lead to different consequences is, however, as yet unknown. The educational context may play an important role in promoting exploration of the types of motives adolescents' have for their future goals (Flum & Kaplan, 2006). Indeed, to the extent that the formation of middle school students' goals is likely to result from less time and opportunity for identity explorations—as well as a different school environment relative to high school students—they may be less stable over a 2-year period, less predictive of longitudinal outcomes, and better predicted by different school contextual factors, compared to high school adolescents' goals. Alternatively, it may be the case that adolescents who start thinking earlier about their intrinsic motives, even if their formulations are only nascent, have more identity-related "raw material" to develop their vocational identity over time. Therefore, we asked: will motives for work goals be less

or more predictive of well-being for middle school versus high school adolescents?

1.3. The present investigation

Building on past theories and findings, we conducted the present 2-year longitudinal mixed-methods investigation. First, we sought to extend the work of Yeager and Bundick (2009), which found a concurrent positive relationship between intrinsic motives for work goals and well-being. We did this by testing for similar relationships over a 2-year period, this time also testing for the potential impact of having both self-oriented and beyond-the-self-oriented work goal motives. Second, we turned to the question of how schools can help to promote these motives for work goals. Specifically, we focused on two factors: support from friends and support from school assignments. We investigated the development of these motives for work goals using both quantitative and qualitative analyses. Notably, this study was unique in testing for developmental differences between middle school students and high school students when addressing each of these questions.

2. Method

2.1. Participants

To select the participants, about 700 6th, 9th and 12th grade students were randomly selected from the class rosters of two high schools and two middle schools in the San Francisco Bay Area. One middle school and one high school were selected because they served mostly low-to-middle income families, and the other two schools were selected because they served middle and high-income families. Students were invited to complete an online survey during school hours in return for a chance to win a $25 gift certificate, and slightly more than 80% did so, with a parent's consent. From this group, 25% were randomly selected to be invited to complete a 45-minute interview with a trained research assistant during school hours in return for a $25 gift certificate, and nearly all ($N = 148$) did so. Ninety-nine (67%) of the 148 adolescents who participated in the original data collection (at Time 1) agreed to participate in a longitudinal follow-up. Of these 99 participants, four were only interviewed and not surveyed in the follow-up, and 15 were only surveyed and not interviewed in the follow-up.

Forty were 6th graders at the time of the original data collection, 34 were 9th graders at Time 1, and 25 were 12th graders at Time 1. At the time of the follow-up data collection 18–24 months later (Time 2), all Time 1 6th and 9th graders were still in the same middle and high schools and matriculated into the grade two grade-levels higher (8th and 11th grades, respectively); All of the 25 Time 1 12th graders were enrolled in at least one college course.

Sixty percent of participants were female; 6% self-identified as African American, 30% as Asian American, 23% as Latino, and 41% as White. Participants were socioeconomically diverse: at Time 1, 46% lived in census tracts with average family incomes in the year 2000 of US$60,000-US$79,999; 20% lived in higher income areas (US$100,000+), and 3% lived in lower income areas (US$20,000-US$39,999). At Time 2 33% reported receiving "mostly As" in school, 33% reported "mostly Bs," 25% reported "mostly Cs," and 9% reported "mostly Ds or below."

2.2. Procedure

Surveys and interviews described by Yeager and Bundick (2009) were administered 18–24 months after Time 1 data collection. All participants were contacted via e-mail and phone and invited to participate in a follow-up study, with incentives of US$40 gift certificates to a popular online retailer. Students spent a median of 30 min for the survey and 43 min for the interview, which was audiotaped, transcribed, and coded from typed transcripts.

2.3. Interview measures

2.3.1. Interview protocol

To explore adolescent work goals, we used a semi-structured interview, using the same protocol at Time 1 and Time 2. The interview was designed to elicit the most important things in the young person's life and the associated explanations for them, and did not include questions that asked specifically about work or career. Nevertheless, as expected, nearly all participants discussed their future work at some point during the interview when asked about their life goals. Interviewers were blind to the objectives of the present study, and were trained to ask open, non-leading questions in an effort to limit socially desirable responding.

The interview protocol began by asking, "What is important to you?" and "What matters to you?" Over the course of the interview, all participants spontaneously provided at least one career-related response (such as "to become a doctor" or "get a good job"). These responses prompted the interviewer to ask the participant to explain why that work goal was important to him or her. The cases where participant responses did not provide a complete or well-considered reasoning, this question was followed up with other "why" probes until the interviewer was satisfied such reasoning was uncovered—if it existed. The protocol covered young people's short- and long-term life goals, their hopes and dreams, their values, and the kinds of people they wanted to become. An early version of the interview protocol can be found in Damon (2008).

2.3.2. Coding motives for work goals

Independent coders reliably categorized each student's motives for his or her specific work goals at each time point, and in a reliability comparison we found that they placed the motives into the same category over 90% of the time (Cohen's $\kappa > .85$).

Categorization was first conducted based on two dimensions: whether it was *extrinsic* or *intrinsic*, and whether the intended beneficiary of the specific work goal was the self or some aspect of the world beyond the self (i.e., either *self-oriented* or *beyond-the-self-oriented*). Motives underlying one's work goals were coded as intrinsic to the work role when they were related to the specific work to be done in a job (such as "I would enjoy working with people") and extrinsic to the work role when the motive was an extrinsic benefit that might come from a job, unrelated to the daily work (such as "make money"). Our analysis was designed to focus on differences in intrinsic goals, therefore we did not code the intended beneficiary of the extrinsic motives (e.g., making money for myself versus to give away to others). When students named multiple intrinsic motives or multiple work goals (as 62.0% of those who had a work goal did), all were coded. As a final check on our coding, we identified all participants who appeared to have "lost" a type of motive for a work goal from Time 1 to Time 2, and coders re-checked their interviews for potential coding errors. No errors were found.

2.3.2.1. Self-oriented motives. An intrinsic motive for a work goal was coded as being self-oriented when the student's motive exclusively reflected intended benefits to him- or herself, by meeting his or her interest or skill, or because he or she would enjoy the work. For example, one student stated that she wanted to be a fashion designer "because it's a fun thing to do. I really enjoy doing it, and I think what's important about a career that you decide to do for the rest of your life is something that you really enjoy doing,

Table 1
Examples of intrinsic motives provided for work goals during semi-structured interviews.

Type of intrinsic motive for work goal	Example [including work goal mentioned, participant's gender, and age group]
Self-oriented only	[Business management, Male, Middle school] I like to be with people, like, making deals and stuff. I think it's fun
	[Fashion designer, Female, High school] Because it's a fun thing to do... I think that what's important about a career that you decide to do for the rest of your life is something that you really enjoy doing
	[Therapist, Female, High school] I cannot picture myself being a scientist or a mathematician or a doctor... I don't think those things will really make me happy ... I think in the future, I want to do something that I actually enjoy
Beyond-the-self-oriented only	["Good job," Male, Middle school] I could become someone with a little bit of influence, which could result in a million different things for people... positive things
	[Doctor, Female, Middle school] To help people out...Maybe finding a cure for something
	[Pastor, Male, High school] You just make a living helping out other people.... Helping is just the way I am. It's how I was raised because I'm helping other people just being there. It was probably in middle school where I said to myself, "I can make a difference if I become a pastor."
Both self- and beyond-the-self-oriented	[Pediatrician, Female, Middle school] I like to work with younger kids. I like to help them, and so being a pediatrician helps me work with younger kids... Also, actress – I love doing drama. I'm taking drama right now, and I like to write stories and be creative
	[Marine biologist, Male, High school] If I was a marine biologist, I would so push [to] keep everything clean. I would volunteer as much as I can. I would... pick a certain place and go help that place out, like the fish and everything.... And I've always loved having fish tanks and fish because they get to swim and it's like free. It's like flying underwater or something. I'm really good at it too, so I like it
	[Doctor, Male, High school] I've been thinking also of something with being a doctor or helping people because I like doing that... I really enjoy doing it, and I think that what's important about a career that you decide to do for the rest of your life is something that you really enjoy doing, and that's really important for me.

and that's really important for me" (see rows 1–3 of Table 1 for more examples).

2.3.2.2. Beyond-the-self-oriented motives. An intrinsic motive for a work goal was coded as being beyond-the-self-oriented (BTS-oriented) when the motive reflected an intention to benefit some part of the world, such as helping others, contributing to society or discovering something new about the world. For instance, a student wanted to be a doctor in order to, "help people out...Maybe find a cure of something for something" (see rows 4–6 of Table 1).

Some students mentioned at least one self-oriented as well as at least one beyond-the-self-oriented motive for their work goal(s). These included rationales that both mentioned how one's work goal would be enjoyable or a match for one's skills and how it could be used to make a positive impact on others or on the world. For example, one student had a dual motivation for his career goal of becoming a marine biologist, saying that he wanted to "go help that place out,"—reflecting beyond-the-self orientation—but then also said he "always loved having fish tanks and fish because they get to swim"—a self-oriented rationale (see rows 7–9 of Table 1).

2.3.2.3. Categorization of participants. We conducted person-centered analyses, and in order to do so students were placed into mutually-exclusive categories based on the intrinsic motives for their work goals. Students were categorized into the "Self only" group if they mentioned at least one self-oriented intrinsic motive regarding any of the work goals they mentioned in the interview and did not mention any beyond-the-self-oriented motives. Students were categorized into the "BTS only" group if they mentioned at least one beyond-the-self-oriented motive regarding any of the work goals and did not mention an intrinsic self-oriented motive. Finally, they were placed into the "Self + BTS" group if they mentioned both types of motives at any point in the interview, regardless of whether these motives were in reference to the same work goal or to different work goals. For example, if an adolescent mentioned that he or she wanted to be a fire-fighter to help others and an engineer because he or she liked science, that young person would be categorized in the "both" group.

One of our primary research questions was how adolescents with these distinct profiles of intrinsic motives differed from those with no intrinsic motives. Therefore, in regression analyses we compared adolescents with an intrinsic motive for a work goal with those in the "no intrinsic motive" category, which included those without a work goal and those with a work goal but no intrinsic motives.

2.3.3. Coding interviews for themes regarding the development of motives for work goals

After coding motives for work goals, we searched the interviews for themes regarding the origin of membership in the Self + BTS group. To do so, we identified participants who had gained at least one beyond-the-self-oriented motive for their work goals between Time 1 and Time 2 and generated a list of themes that characterized their interviews. Next, we identified participants who gained at least one self-oriented motive for their work goals in the interim period between Time 1 and Time 2 and did the same.

2.4. Survey measures

At Time 2, we used the same online survey administered at Time 1 (Yeager & Bundick, 2009) and added several items thought to predict the development of work goal motives. For ease of interpretation, all variables in the presence of meaning and purpose in life analyses were *z*-scored (with a mean of 0 and standard deviation of 1) before entering them into regression models. Correlations between these variables for the middle school and high school age groups are presented in Table 2.

2.4.1. Measures of eudaimonic well-being

In the present study, three measures related to eudaimonic well-being were included.

2.4.1.1. Presence of meaning in life. The Meaning in Life Questionnaire –– Presence subscale (Steger, Frazier, Oishi, & Kaler, 2006) as designed to assess the degree to which one experiences a sense of meaning in one's life, as derived from having established a life purpose. Five items (e.g., "I have a good sense of what makes my life meaningful") were rated from 1 (strongly agree) to 7 (strongly disagree); item ratings were averaged and reverse-coded, so that higher values corresponding to a greater presence of meaning in life. Previous research has documented acceptable psychometric properties for the measure (Steger & Kashdan, 2007; Steger et al., 2006). The raw means for this scale for the two administrations were: at Time 1, $M = 5.10$, $SD = 1.18$; at Time 2, $M = 5.02$, $SD = 1.29$. For middle school participants, internal consistency at Time 1 was low ($\alpha = .64$) and higher at Time 2 ($\alpha = .82$); for high

Table 2
Zero-order correlations among eudaimonic well-being indicators at Time 1 and Time 2.

	1	2	3	4	5	6
(1) Time 1 presence of meaning in life	(*.61*/*.86*)	0.37*	0.37*	0.30†	0.02	0.13
(2) Time 2 presence of meaning in life	0.72*	(*.84*/*.89*)	0.29†	0.61*	0.27†	0.31†
(3) Time 1 sense of purpose in life	0.60*	0.55*	(*.64*/*.78*)	0.30†	0.15	−0.06
(4) Time 2 sense of purpose in life	0.53*	0.61*	0.68*	(*.82*/*.84*)	0.44*	0.10
(5) Time 1 meaningfulness of schoolwork	0.17	0.29*	0.27*	0.42*	–	0.21
(6) Time 2 meaningfulness of schoolwork	0.28*	0.20	0.35*	0.31*	0.11*	–

Note: Correlations above diagonal are for the middle school sample only ($n = 38$); correlations below diagonal are for the high school sample only ($n = 57$). The figures on the left side of the diagonal represent Cronbach's alphas for the middle school sample only; the figures on the right side of the diagonal represent Cronbach's alphas for the high school sample only. Presence of meaning in life scale at Time 1 and Time 2 was squared, meaningfulness of schoolwork scale at Time 1 and Time 2 was dichotomized.
† $p < .10$.
* $p < .05$.

school participants, internal consistency at Time 1 ($\alpha = .78$) and Time 2 ($\alpha = .85$) were acceptable (in the analysis phase we tested whether the conclusions drawn when analyzing all of the Time 1 scales were different for middle school students than for high school students, and we found that they were not).

The presence of meaning in life scale exhibited significant negative skew, so it was transformed by squaring (transformed scale means and standard deviations: Time 1 $M = 27.43$, $SD = 11.33$; Time 2 $M = 26.90$, $SD = 12.13$). This transformed scale, however, exhibited significantly abnormal kurtosis. Instead of implementing further transformations, these violations were addressed in the analysis phase using robust regression (described below).

2.4.1.2. Sense of purpose in life. The purpose in life subscale of Ryff's (1989) Scales of Psychological Well-Being was designed to assess the degree to which one has a general sense of purpose, meaning, and goal-directedness in one's life. Nine items (e.g., "Some people wander aimlessly through life, but I am not one of them") were rated from 1 (strongly agree) to 7 (strongly disagree); item ratings were averaged and reverse-scored, with higher values corresponding to a greater sense of purpose. Previous research has documented the psychometric properties of this measure (Ryff, 1989; Ryff & Keyes, 1995). For middle school participants, internal consistency was moderate at Time 1 ($\alpha = .64$) and better at Time 2 ($\alpha = .82$); for high school participants, internal consistency at both Time 1 ($\alpha = .78$) and Time 2 ($\alpha = .85$) were acceptable (as above, we found that conclusions drawn with analyses of this Time 1 measure were no different across age groups). Kurtosis, but not skew, was violated at both time points, and so the variable was not transformed, although robust regression techniques were used (see below). Raw means and standard deviations were: Time 1 $M = 4.96$, $SD = 0.93$; Time 2 $M = 4.94$, $SD = 1.05$.

2.4.1.3. Meaningfulness of schoolwork. One item addressed domain-specific meaning of schoolwork. Participants were asked to rate the item "How meaningful is this activity to you? Studying/doing homework for class" on a full-labeled five-point scale from "Not at all meaningful" to "Extremely meaningful." Some motivational theories suggest that adolescents who can connect their schoolwork with their future work role might find their daily work more meaningful and be more motivated to learn (e.g., Eccles, 2009; LaGuardia, 2009; Renninger, 2009; Roeser & Peck, 2009). Consistent with this idea, and in support of the concurrent validity of this item, in a pilot study conducted with diverse high school students attending an urban school we found that meaningfulness of schoolwork was positively correlated with a mastery orientation toward schoolwork (Elliot & McGregor, 2001; $r = .62$, $N = 93$, $p < .05$).

In the present sample, this measure's distribution was highly positively skewed (the percentage of respondents rating it a 5 on a 5-point scale was 37% at Time 1 and was 40% at Time 2). Therefore, we dichotomized the scale (1 = high meaningfulness of schoolwork [rating of 5], 0 = lower meaningfulness of schoolwork [rating of 4, 3, 2 or 1]).

2.4.2. Measures predicting the development of motives for work goals

In this exploratory analysis, two constructs were measured to investigate the ways in which schools might contribute to the development of self-oriented and beyond-the-self-oriented motives for work goals. These variables were normally distributed and were not transformed.

2.4.2.1. Support from friends for development of interests. If support from friends can help adolescents to explore their ideas about work goals, then schools might facilitate these conversations by structuring opportunities for them. Therefore, we measured support from friends for the development of one's interests, adapted from a subscale of Benson and Scales's (2009) Thriving Orientation Survey. Participants rated how much they agreed or disagreed with four statements on a fully-labeled seven-point scale, each beginning with the stem "My friends ...". These statements were: "Talk with me about my interests," "Help me to learn more about my interests," "Notice when I'm interested in something," and "Encourage me to develop my interests." In an exploratory factor analysis with maximum likelihood estimation, all four items loaded on a common factor with a loading above .60, and they formed a scale with acceptable internal consistency reliability ($\alpha = .87$). We took their un-weighted average, with higher scores corresponding to more support from friends for development of interests ($M = 5.36$, $SD = 1.20$).

2.4.2.2. Support from school for development of purpose in life. A measure was created to explore whether school assignments that lead students to reflect on their primary life goals can also promote the development of motives for work goals. This new measure first asked adolescents to rank a series of 17 different "purposes" (e.g., be successful, support family and friends, do the right thing, make the world a better place) defined for them as "the most important goal in your life." Next, it asked them to indicate whether "School assignments require me to reflect on my #1 ranked purpose." Third, it asked respondents to indicate on a five-point scale (from "not at all" to "extremely") how important it is to them that school assignments require them to reflect on their #1 purpose. Responses to the "happened" and "importance" questions were combined, yielding a nine-point scale (4 = Extremely important and happened in school, 0 = Not at all important, regardless of whether it happened, −4 = Extremely important and did not happen in school; $M = -.05$, $SD = 2.29$, *Range* −4, 4). This item was not correlated with the friends support scale, $r = -.05$, *n.s.*

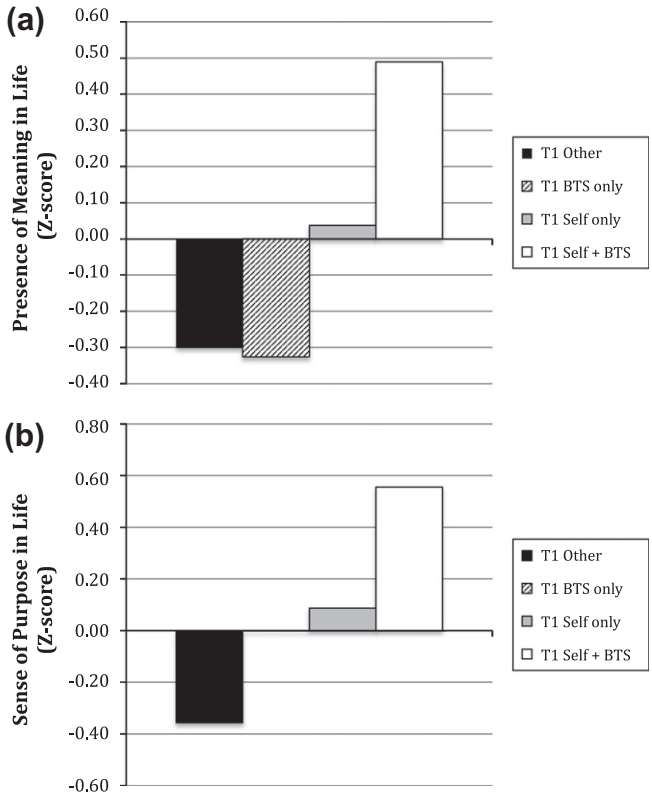

Fig. 1. Time 2 eudaimonic well-being by Time 1 intrinsic motives for work goals (predicted values from Model 1 regressions in Table 3); (a) presence of meaning in life; (b) sense of purpose in life. T1 = Time 1; Other = No work goal mentioned or no intrinsic motive for work goal mentioned; BTS = Beyond-the-self-oriented intrinsic motive(s) for work goal(s); Self = Self-oriented intrinsic motive(s) for work goal(s).

2.5. Analysis plan

2.5.1. Predicting Time 2 eudaimonic well-being with Time 1 motives for work goals

Robust regressions were conducted for models predicting presence of meaning and sense of purpose with work goal motive category. Robust regression was conducted to correct for non-normal distributions in the dependent variables as well as for multivariate non-normality and multiple outliers.[1] The regression coefficients from robust regressions can be interpreted in the same way as coefficients from OLS regression models. Logistic regressions were conducted to predict meaningfulness of schoolwork (because that variable was dichotomized), and odds ratios are reported.

Two regression models were conducted for each of the three survey measures. Model 1 regressed the purpose and meaningfulness variables measured at Time 2 on the categories of work goal motives measured at Time 1, controlling for gender and race. This analysis addressed the question of whether students with various work goal motives at Time 1 still manifested higher levels of eudaimonic well-being 2 years later. These models were then used to estimate the covariate-adjusted values presented in Fig. 1a and 1b. Model 2 was identical except that it controlled for Time 1 (baseline) levels of the dependent variable. This analysis allowed us to test whether, regardless of initially higher levels of well-being and meaningfulness, adolescents with various types of motives for their work goals also had greater gains. In addition, this provided a stricter test of the causal direction of this relationship. In conducting these analyses, we also tested whether the impact of motives for work goals on well-being varied across age groups.

2.5.2. Exploration of the development of motives for work goals

Three analyses were conducted to explore the development of motives for work goals. First, we inspected change and stability in motives for work goals across the 2-year interim period between interviews, and observed whether trends were different for middle school students than for high school students. Second, we conducted multinomial logistic regressions to test whether support from friends and school predicted development of motives for work goals. This regression explored which factors predicted membership in each of the three intrinsic work goal motive categories (BTS only, Self-oriented, or Self + BTS), compared to the "other" group. During analyses, however, we found that due to small cell size for the BTS only group, the model did not converge. Therefore we only present results predicting membership in the Self only and Self + BTS groups. Finally, we searched for themes from the qualitative interviews that helped explain the changes in work goal motives across development.

3. Results

3.1. Preliminary analyses

3.1.1. Attrition analyses

We compared those who stayed in the study to those who dropped out in terms of 197 variables measured on the Time 1 survey by conducting *t*-tests and χ^2 tests. Of these comparisons, only three (1.5%) were significant, which is fewer than would be expected by chance alone (at $p < .05$).[2] Importantly, there were no differences between those who dropped out of the study and those who stayed in terms of the eudaimonic well-being variables we analyzed.

3.1.2. Missing data

Missing data comprised less than 1% of each wave and were imputed with expectation maximization single imputation (using the LISREL 8.80 software package; Jöreskog & Sörbom, 2006) only for the sample of non-attritors in the study. No data were imputed for attritors, who were not included in analyses.

3.2. Do motives for work goals at Time 1 predict eudaimonic well-being at Time 2?

3.2.1. Presence of meaning in life

In robust regression analyses, we found that only adolescents in the Self + BTS motives for work goals category had significantly higher presence of meaning at Time 2, relative to those with no intrinsic motives for their work goals (see row 4, Model 1 of Table 3). Hence, adolescents with *both* self-oriented and beyond-the-self-oriented motives for their work goals had higher overall well-being 2 years later. This finding is depicted in Fig. 1a.

[1] Robust regressions create lower weights for each outlying case by iteratively comparing the distribution of the data to target distributions (in this case, the Huber and Bisquare weight functions; Kutner, Natchtshein, Neter, & Li, 2005). Robust regression is an appropriate model when there are a number of outlying cases, and is preferred to the traditional approach of simply deleting outliers, which can mask their potentially valid impact and reduce power.

[2] Those with higher grades were significantly more likely to stay in the study; 45% of subjects staying in the study had mostly A's while only 27% of attritors made mostly "A's," a significant difference. Twelfth graders had a 71% attrition rate versus an attrition rate of 31% and 35% for 6th and 9th grade students, respectively. Therefore, we combined all high school students together in analyses comparing across age groups. We did not conduct analyses separately by different high school age groups due to limited sample size, which is an important qualification for our results. Finally, White participants made up 37% of the subjects who stayed in the study versus only 23% of those who dropped out. Therefore, attritors were significantly more likely to be non-white than white. These trends qualify our findings somewhat, but, as noted, it is difficult to know whether these differences occurred due to chance alone.

Table 3
Regressions predicting Time 2 eudaimonic well-being with intrinsic motives for work goals provided in the Time 1 Interview (18–24 months earlier).

	Model 1		Model 2	
	β	95% CI	β	95% CI
Time 2 presence of meaning in life				
Age (0 = *Middle school*; 1 = *High school*)	0.00	−0.22, 0.22	0.06	−0.11, 0.23
Time 1 self-oriented motives only	0.17	−0.07, 0.41	0.06	−0.13, 0.25
Time 1 BTS-oriented motives only	−0.02	−0.28, 0.25	−0.17	−0.38, 0.04
Time 1 both self- and BTS-oriented motives	0.34*	0.11, 0.58	0.16†	−0.03, 0.34
Female (1 = *Yes*; 0 = *No*)	0.02	−0.20, 0.24	0.03	−0.14, 0.20
White (1 = *Yes*; 0 = *No*)	−0.12	−0.34, 0.09	−0.07	−0.24, 0.10
Time 1 presence of meaning in life	–	–	0.61*	0.44, 0.79
Constant	0.00	−0.21, 0.21	0.16	−0.15, 0.18
Adjusted R^2	*0.12*		*0.41*	
Time 2 sense of purpose in life				
Age (0 = *Middle school*; 1 = *High school*)	0.22*	0.01, 0.43	0.16†	−0.01, 0.32
Time 1 self-oriented motives only	0.24*	0.00, 0.47	0.15	−0.03, 0.34
Time 1 BTS-oriented motives only	0.09	−0.16, 0.34	0.17†	−0.03, 0.38
Time 1 both self- and BTS-oriented motives	0.39*	0.16, 0.61	0.28*	0.10, 0.46
Female (1 = *Yes*; 0 = *No*)	0.08	−0.13, 0.29	0.01	−0.15, 0.18
White (1 = *Yes*; 0 = *No*)	0.18†	−0.02, 0.40	0.03	−0.14, 0.20
Time 1 sense of purpose in life	–	–	0.57*	0.40, 0.74
Constant	0.02	−0.18, 0.22	0.03	−0.13, 0.19
Adjusted R^2	*0.20*		*0.41*	
	OR		*OR*	
Time 2 Meaningfulness of schoolwork (1 = Highly meaningful, 0 = Less meaningful)				
Age (0 = *Middle school*; 1 = *High school*)	0.38*	0.15, 0.97	0.38*	0.15, 0.99
Time 1 self-oriented motives only	2.82†	0.93, 8.50	3.05†	0.99, 9.42
Time 1 BTS-oriented motives only	1.05	0.09, 12.36	1.38	0.11, 16.77
Time 1 both self- and BTS-oriented motives	4.11*	1.26, 13.45	3.78*	1.15, 12.40
Female (1 = *Yes*; 0 = *No*)	1.32	0.52, 3.29	1.31	0.52, 3.33
White (1 = *Yes*; 0 = *No*)	1.16	0.44, 3.00	1.10	0.42, 2.87
Time 1 meaningfulness of schoolwork	–	–	1.85	0.73, 4.72
McFadden's R^2/AIC	*0.08/1.35*		*0.10/1.36*	

Note: BTS = beyond-the-self, β = Standardized coefficient from robust regression model, *OR* = Odds ratio from logistic regression, AIC = Akaike Information Criterion. *N* = 95. Base outcome is "No intrinsic motives" group.
† $p < .10$.
* $p < .05$.

We next tested whether this association was significantly moderated by age. We did this by conducting the same regression shown in Model 1 in Table 3, except we added three terms representing the interaction between work goal motive group and age (main effects were z-scored before calculating the interaction terms). We found that all three of the Middle School Age Group × Motives for Work Goals Group interactions were non-significant, *ps* > .10. This indicated that the Self + BTS work goal motive category was equally predictive of meaningfulness of schoolwork over this time period for both middle school and high school students.

When baseline levels of presence of meaning were included in the model, students in the Self + BTS category were not found to have significantly greater gains over the time period (see row 4, Model 2 in Table 3). However, there was a non-significant trend ($p < .10$) in that direction.

3.2.2. Sense of purpose in life

Those in the Self-only category and those in the Self + BTS category at Time 1 were more likely to have a higher sense of purpose at Time 2 (see rows 13 and 15 of Table 3). This result is depicted in Fig. 1b. As above, this result was not moderated by age group when we conducted parallel regressions predicting sense of purpose in life (interaction term *ps* > .10). Only the Self + BTS category, however, had significantly greater gains in a sense of purpose in life in the model that controlled for baseline levels (see row 15, Model 2 of Table 3).

3.2.3. Meaningfulness of schoolwork

A similar pattern of results emerged for the meaningfulness of schoolwork outcome. Only those in the Self + BTS category at Time 1 were significantly more likely to find their schoolwork highly meaningful at Time 2 (see row 27, Model 1 of Table 3), and this result was also significant when controlling for baseline levels (see row 27, Model 2 of Table 3).

When we tested whether the relationship was different across age groups, we found a developmental difference. For middle school students, motives for work goals at Time 1 did not predict meaningfulness of schoolwork at Time 2. In fact, overall, about half of middle school students said they found their homework highly meaningful at Time 2, in 8th grade, while for high school students, only those in the Self + BTS category said schoolwork was highly

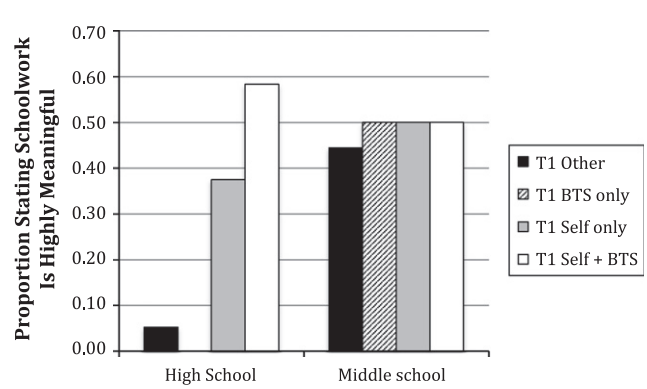

Fig. 2. Proportion of adolescents stating that schoolwork is meaningful at Time 2, by motives for work goals and age group (raw means). T1 = Time 1; Other = No work goal mentioned or no intrinsic motive for work goal mentioned; BTS = Beyond-the-self intrinsic motive(s) for work goal(s); Self = Self-oriented intrinsic motive(s) for work goal(s).

meaningful at Time 2 at the rate of middle school students (see Fig. 2). This age difference was significant. In a logistic regression predicting the meaningfulness of schoolwork, a Middle School Age Group × Self + BTS Category interaction was significant, odds ratio = 1.45, $p < .05$. In the same regression, the Middle School Age Group × Self-only Category interaction approached but did not reach significance, odds ratio = 1.76, $p < .10$. Hence, these results indicate that intrinsic motives predicted increased meaningfulness of schoolwork *only* for high school students and not for middle school students.

3.3. What predicts the development of motives for work goals?

Having found that the combination of both self-oriented and beyond-the-self-oriented motives for work goals appeared to be most consistently optimal in terms of associations with adolescents' eudaimonic well-being, across analytic methods, we turned to the question of how schools might promote these work goal motives. Below, we investigate several predictors of the development of these motives: age, friends, and school assignments.

3.3.1. Age trends

Raw age trends are presented in Table 4. First, it is interesting to note that the overall difference between age groups in terms of the distribution of motives at Time 2 was significant, (i.e., comparing rows 9 and 18 of Table 4), $\chi^2(3) = 9.87$, $p < .05$. It appeared that high school students were about three times more likely to have an intrinsic motive for their work goal(s) (compare column 1, rows 9 and 18, in Table 4). This result is consistent with established identity theories, which would suggest that with development adolescents learn more about themselves and about the kind of work that they would like to do, thus leading them to be able to express that they have connected their aspirations with their identity (Erikson, 1968). Interestingly, this trend appeared to be mostly driven by the development of intrinsic self-oriented motives: middle school students were no more or less likely to have a beyond-the-self-oriented motive at Time 2 than high school adolescents.

The majority of middle school students with no intrinsic motive still had no intrinsic motive at Time 2 (63%), whereas the majority of high school students with no intrinsic motive at Time 1 had one at Time 2. BTS-oriented motives also appeared to be less stable among middle school students. None of the three students with a BTS-oriented only motive in middle school had any BTS-oriented motive at Time 2 (see row 5 of Table 4), suggesting that those motives may have been fleeting because they were not connected to younger adolescents' interests or skills, and perhaps explaining why that work goal motive category was not predictive of eudaimonic well-being over time.

Table 4
Types of Intrinsic Motives for Work Goals Mentioned in an Interview at Time 1 and Time 2, by Age Group (percentages are row percentages).

Time 1 motives	Time 2 motives (18–24 months after Time 1)				Total
	No intrinsic motive	Self-oriented only	BTS-oriented only	Both self- and BTS-oriented	
Students who were in middle school at Time 1					
No intrinsic motive					
n	10	4	1	1	16
%	63	25	6	6	100
Self-oriented only					
n	3	4	2	2	11
%	27	36	18	18	100
BTS-oriented only					
n	1	2	0	0	3
%	33	67	0	0	100
Both self- and BTS-oriented					
n	2	1	2	3	8
%	25	13	25	38	100
Total					
n	16	11	5	6	38
%	42	29	13	16	100
Students who were in high school at Time 1					
No intrinsic motive					
n	2	9	2	1	14
%	14	64	14	7	100
Self-oriented only					
n	1	12	0	8	21
%	5	57	0	38	100
BTS-oriented only					
n	1	0	1	2	4
%	25	0	25	50	100
Both self- and BTS-oriented					
n	3	1	3	4	11
%	27	9	27	36	100
Total					
n	7	22	6	15	50
%	14	44	12	30	100
All students					
Total					
n	23	33	11	21	88
%	26	38	13	24	100

Note: BTS = Beyond-the-self.

3.3.2. Support from friends for development of interests

As noted, we conducted a multinomial logistic regression predicting membership in the three intrinsic motive categories at Time 2 (with the "no intrinsic motives" group being the base group), controlling for sex, race, and work goal motive groups at Time 1. In this model, support for one's interests from friends was not significantly related to the development of self-oriented motives for work goals in the full sample.

This finding was qualified, however, by a significant interaction with age group. In separate multinomial logistic regressions, middle school students were *less* likely to be in the Self only category if their friends supported their interests, odds ratio = .14, $p < .05$, while high school students were much *more* likely to be in the Self only category if their friends supported their interests, odds ratio = 7.06, $p < .05$, High School Age Group × Friends Support odds ratio = 13.74, $p < .05$. Similarly, having more support from friends for interest development was significantly negatively associated with membership in the Self + BTS category among middle school students, odds ratio = .16, $p < .05$, while the opposite was true for high school students odds ratio = 5.61, $p < .05$ (although the interaction failed to reach significance, High School Age Group - × Friends Support odds ratio = 8.88, $p < .10$).

In this exploratory analysis, we expected that talking about one's interests and skills with one's friends would help students to develop intrinsic motives for one's future work goals, regardless of their age. It is interesting that this trend was only found for high school students, something we explore in the qualitative data below.

3.3.3. Support from school assignments

In the same full-sample multinomial logistic regression discussed above, school assignments that require one to reflect on one's purpose in life were positively related to being in the Self only category at Time 2, odds ratio = 1.55, $p < .05$. In separate multinomial regressions, this appeared to be stronger for middle school students, odds ratio = 2.82, $p < .05$, than for high school students, odds ratio = 1.39, *n.s.*, although the High School Age Group × School Assignments interaction failed to reach significance, odds ratio = .41, $p < .10$. Similarly, there was no significant main effect of school assignments on membership in the Self + BTS category in the full sample, but this result was qualified by a significant interaction with age group. Among middle school students, assignments requiring reflection on one's top purpose in life had a significantly positive relationship with being in the Self + BTS category at Time 2, odds ratio = 2.30, $p < .05$. This relationship was significantly smaller, however, among high school students, odds ratio = 0.18, $p < .05$, High School Age Group × School Assignments odds ratio = 0.36, $p < .05$.

3.3.4. Qualitative data

Qualitative analyses explored why support from friends was a positive predictor of the development of self-oriented motives for work goals among high school students, but not among middle school students. We found that middle school students often viewed support from their friends as instable and transient. In response to the question, "What is it about your family that is important to you?" one male student said, "I can talk to them about almost anything. They always cheer me up. I know they're always there. Friends come and go, but my family is always there." It seemed that friends' advice was seen as less reliable for middle school students. Several middle school students emphasized that when it comes to one's most important goals, friends were seen as a less-helpful source of ideas. Among middle school students, friends seemed transient but family was constant, and this perception may lead adolescents to value their friends' advice about their own goals less at that age.

High school students, on the other hand, often mentioned that they rely on support from friends to talk about their interests. For example, one high school male stated that, "The majority of the time I'm at school or with my friends during the whole week and even on the weekends. I'm always out with them, so I guess choose my friends a little more of like – only like advice-wise and talking-wise over [my family]." Thus, high schools might promote identity development by structuring activities that lead to (productive) conversations between friends about their interests and goals.

Themes from interviews of adolescents who developed a beyond-the-self-oriented motive for a work goal between Times 1 and 2 suggest that self-oriented motives for work goals, and not beyond-the-self-oriented motives, may be more affected by school factors. While self-oriented motives for work goals were often explained by the influence of family, friends or school, beyond-the-self-oriented motives and general purpose in life were often reported by subjects to have developed autonomously. They were thought of as self-determined rather than influenced by external forces, or as originating in church, not school. For example, one high school student described her work goal: "[It] just came. Like I really don't know how to explain it. But I just kinda feel the need to help other people." In response to the follow-up question, "Did your parents tell you to feel this way or is it your decision?" she replied, "It's definitely my decision." This student could not pinpoint a precise external influence for the beyond-the-self-oriented motive; rather, she attributed the motive to a decision made on her own. Another high school male, who talked about his work goals and purpose in life synonymously, said, "It's not like you came into this world and someone told you what your purpose was, or something told you what your purpose was, or you realized what your purpose was. You kind of decide what your purpose is." In addition to this seemingly self-generated source of beyond-the-self-oriented motives, many other students named church or religion as origins for their prosocial aims.

Interestingly, the qualitative data revealed a few cases that diverged from this result. For example, one middle school student stated that school helped him develop a beyond-the-self-oriented motive for his work goal. He stated that "I'm in the leadership classes, and we go down to [a local volunteer organization for children] every other week and just do games with them and stuff. Just because I never really thought about how people treat them now because we see them at lunch and sometimes people just give them a bad time." The leadership classes exposed this student to an often-mistreated population and fostered beyond-the-self thinking regarding his future work goals. This suggests the possibility that a well-crafted school experience could promote the empathy and perspective taking that, under some circumstances, can serve as the foundation for beyond-the-self motives. Hence, a potential reinterpretation of our survey findings is that school activities *can* promote beyond-the-self motives, but that the activities students were reporting on in our survey were not of the quality described by the student above during the interview.

4. Discussion

In the popular media, adolescents are often characterized as primarily self-focused. In contrast to that intuition, when students in the present study were asked to talk about what was most important to them in life, over 36% mentioned doing work that could contribute in some way to the world beyond themselves. Importantly, most of these students also said that these work roles would be enjoyable or a match for their talents. Thus, many students simultaneously thought about their own enjoyment of their future career and the impact that career will have on others.

When students did mention both self-oriented and beyond-the-self-oriented motives for their work goals, they consistently manifested higher levels of eudaimonic well-being 2 years later relative to adolescents with no intrinsic work goals. Specifically, they:

(1) had scores on the *presence of meaning in life* measure that were .34 standard deviations higher at Time 2;
(2) had scores on the *sense of purpose in life* measure that were .39 standard deviations higher at Time 2;
(3) and, among high school students, were 11.08 times more likely to say that their *schoolwork was highly meaningful* at Time 2 (a similar trend was not found among middle school students).

Interestingly, we found no significant positive effects of only beyond-the-self-oriented motives. One explanation for this result is that the statistical tests were limited by sample size, as very few students had only beyond-the-self-oriented motives for work goals at Time 1 (see Table 4). Another explanation that resonates with our qualitative analyses and with previous theories (Erikson, 1968; McAdams, 1993), is that some of the beyond-the-self-oriented motives for work goals were not accompanied by the self-reflection necessary to incorporate them into their broader identity development. For instance, the examples of beyond-the-self-only motives presented in rows 4–6 of Table 1 suggest that they were less well-defined than the examples from the self- and beyond-the-self-oriented motives category (rows 7–9 of Table 1). Adolescents in the Self + BTS category had both thought about the impact of the work on the world *and* about how making that impact is a match for their interests, skills or desires. This may indicate more mature identity development. Hence, the effects of a beyond-the-self-oriented motive for one's future goals may only predict well-being when it is tied to a more developed view of one's self. On the other hand, the benefits of knowing one's skills and interests appear to be magnified when an adolescent also has a work goal that includes a beyond-the-self aspiration.

Our sample was highly diverse in terms of both race/ethnicity and income. Interestingly, we found no moderation by income or race/ethnicity. In addition, white students and high-income students were no more likely to be in the Self + BTS category. Thus, the processes documented here appear to generalize across these group differences, at least in the sample included in this investigation. However, in future research it will be important to continue to test how the very real constraints imposed by community resources or by social identities might affect identity development and well-being (c.f. Oyserman et al., 2006).

Overall, theories of identity that focus exclusively on the promotion of thinking about one's own interests, skills or desires or by a thinking only about one's desired contributions might be improved by emphasizing ways to connect that self-oriented thinking with beyond-the-self-oriented thinking. Our findings are consistent with past research on human happiness, which has suggested that self-oriented ego satisfactions alone are limited in their long-term effects on happiness, and may be boosted by a focus on more prosocial aims (e.g., Kasser & Ryan, 1993; Lyubomirsky, 2007). We qualify this line of thinking by suggesting that combining both self- and other-oriented aims may be optimal.

What factors can predict whether adolescents develop these intrinsic motives for their work goals? And what can be done in schools to assist this development? Our exploratory analyses found that high school students were more likely than middle school students to exhibit intrinsic motives for their work goals—both self-oriented and beyond-the-self-oriented ones. This finding is consistent with extant theories of identity and vocational identity development (Erikson, 1968; Marcia, 1966; see also Skorikov & Vondracek, 1998) in that it suggests that with life experience adolescents better understand themselves and their desired roles in society.

Next, we found that certain factors that may be impacted by schools—such as assignments related to one's most important purposes in life or discussion about interests with friends (which can be facilitated by schools)—related to the development of intrinsic motives for work goals. Interestingly, these factors did so differentially for middle school and high school students. While support from friends was positively predictive of the development of self-oriented motives for work goals for high school students, it did not show the same positive association among middle school students. School assignments related to one's purpose showed the opposite trend: they were positively predictive of the development of self-oriented motives for work goals for middle school students and not positively predictive for high school students.

These results are interpretable in light of the need for autonomy: the development of career aspirations is a highly personal and identity-relevant endeavor, and advice and help from friends may seem less controlling and more autonomy-supportive than tasks mandated by a classroom teacher. In high school, these autonomy concerns may be heightened relative to middle school, perhaps in part due to the increase in perceived pressure to commit to a career path.

In order to support students' autonomy, it may be that the goal for identity development in school contexts is not that it be the *origin* of beyond-the-self-oriented intrinsic goals and the motives behind them, but rather to encourage adolescents to *reflect on* and *apply* the motives for the goals, in particular the work goals that are already manifest in their daily lives. Indeed, some compelling experimental research suggests that beyond-the-self motives can be encouraged in schools, leading to powerful effects, even if the motives themselves originate from students. For example, Hulleman and Harackiewicz (2009) randomly assigned high school adolescents either to a treatment group in which they wrote about the ways in which they could use the week's science lesson to achieve important personal goals; or to a control group in which they wrote about the usefulness or utility of the course material in their own lives. Although the authors did not emphasize beyond-the-self motives in their materials or theory, many of the participants in Hulleman and Harackiewicz's (2009) study wrote about beyond-the-self-oriented motives for their use of science, such as being a doctor that helped others, in addition to self-oriented motives, such as enjoying one's job. The authors found that this brief writing exercise, when repeated 3–5 times, had a dramatic positive effect on achievement: an increase of .80 grade points at the end of the school year among students who had the lowest expectations for their success. Note that in this experiment the authors did not *tell* students who to become or how to contribute. Instead, they simply asked students to complete exercises that *reminded* them of their existing identity commitments and they explicitly connected them to their schoolwork. Similarly, Bundick (2011) randomly assigned college student participants to complete a one-hour interview about their most important goals in life—covering both self-oriented and beyond-the-self-oriented topics—or to a comparison group who did not complete the interview. Nine months later, those who completed the interview demonstrated increases in a sense of purpose in life and, in part because of this, increases in life satisfaction. These two studies, in addition to suggesting avenues for translating the present study's findings into effective interventions, provide some support for the causal direction suggested by our longitudinal study's correlational findings.

More generally, identity development by its very nature is laden with a desire for autonomy and self-determination. These are key concerns for adolescents. Too much pressure from adults or other outside forces may undermine internalization of new ideas about one's identity. Therefore, it may be prudent to consider "stealthier"

methods (Robinson, in press), such as those used by Hulleman and Harackiewicz (2009) and Bundick (2011) that remind adolescents of their value to society without seeming too heavy-handed (see also Yeager & Walton, 2011). Similarly, previous randomized field experiments from a Self Determination Theory perspective suggest that it is possible in schools to promote motives for goals in a way that does not threaten adolescents' autonomy (e.g., Vansteenkiste, Simons, Lens, Sheldon, et al., 2004; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005; Vansteenkiste, Simons, Lens, Soenens, et al., 2004 c.f. Vansteenkiste, Simons, Lens, Soenens, et al., 2004). We look forward to extending the use of these methods into studies that more explicitly promote the development of self- and beyond-the-self-oriented thinking about adolescents' future work goals.

4.1. Limitations and future directions

It is important to point out that the presence of self-oriented and beyond-the-self-oriented motives for work goals did not suggest that the participants had fully-developed vocational identities. Instead, we think they are evidence of nascent identity development. For instance, on the basis of the quotes presented in Table 1, it is clear that many students are not talking about their future careers in sophisticated ways, and they have not demonstrated deep knowledge of the professional field that they want to enter—nor would we normatively expect this of middle school and high school students. It is interesting, then, that even this relatively rough measure significantly predicts both higher levels of eudaimonic well-being and increases in well-being over a 2-year period. Our relatively low threshold for detecting an intrinsic motive for a work goal may have captured students who have explored their vocational identity enough to have developed important values that give them a sense that their lives matter, but not so much that they have foreclosed on all future career-related opportunities.

5. Conclusion

Past researchers (e.g., Flum & Kaplan, 2006; Kaplan & Flum, 2009) have suggested that schools can and should promote exploration of one's identity. This is an important aim, and one that is supported, albeit in a qualified fashion, in the present research. However, the evidence presented here suggests that focusing attention only on an adolescent's skills, desires, and interests may be too narrow in scope. These data show that when adolescents' identity development integrates a focus on ways in which they might contribute to the world beyond the self, a more fulfilling life is likely to follow. If we want young people to develop greater meaning and purpose in their lives, schools and parents ought not only help them to find answers to the questions "Who am I?" and "What do I want to be when I grow up," but also the question "Why am I?"

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