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Latent Profiles of Work Motivation in Adolescents in Relation to Work Expectations, Goal Engagement, and Changes in Work Experiences

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Abstract

Motivation plays a key role in successful entry into working life. Based on a cross-sectional and a one-year longitudinal study, we used a person-centered approach to explore work-related motivation (i.e., autonomous goals, positive affect, and occupational self-efficacy) among 577 students in 8th grade (Study 1) and 949 adolescents in vocational training (Study 2). Based on latent profile analysis, in both studies we identified four groups that were characterized by different levels of overall motivation and one group characterized by low positive affect and mean levels in autonomous goals and self-efficacy. Profiles characterized by high levels of motivation showed the highest levels of positive work expectations and goal engagement and the lowest levels of negative work expectations in Study 1 and the highest levels of person-job fit, work engagement, and job satisfaction in Study 2. Moreover, latent difference score analysis showed that motivational profiles predicted changes in person-job fit and work engagement across one year but not in job satisfaction. The results imply that career counselors should be aware of characteristic motivational patterns of clients that may require specific counseling approaches.

Keywords: work motivation; adolescent career; latent profile analysis; latent difference score

Introduction

Motivation is broadly considered one of the most important predictors of successful entry into working life (Dietrich, Parker, & Salmela-Aro, 2012; Hirschi, 2009; Salmela-Aro, Mutanen, Koivisto, & Vuori, 2009). Researchers have advocated for using integrative approaches to motivation with models composed of several dimensions and/or based on different theoretical approaches (Ford, 1992; Kehr, 2004; Parker, Bindl, & Strauss, 2010; Pintrich, 2003). Such integrative models may be of special relevance in various career transitions, for example, from school to work, because they can provide insight into the structure and the variation in motivation among individuals engaged in career transitions. The multidimensional character of integrative models of motivation makes person-centered statistical approaches particularly pertinent. These approaches allow for the variation between motivational variables to be reflected in specific groups with quantitatively and qualitatively differing motivational profiles (Morin & Marsh, 2015; Wang & Hanges, 2011). Recently, research examining work motivation using person-centered approaches (Moran, Diefendorff, Kim, & Liu, 2012; Van den Broeck, Lens, De Witte, & Van Coillie, 2013) corroborated the usefulness of these approaches for studying work motivation. We are not aware, however, of studies that have explored motivation for work in a career transition context using a person-centered approach.

In our studies, we aim to explore profiles of work-related motivation as indicated by autonomous goals, positive affect, and occupational self-efficacy (Parker et al., 2010; Valero, Hirschi, & Strauss, 2015) using latent profile analysis among adolescents shortly before entering working life and in adolescents in vocational education and training (VET). Our first aim is to explore which distinct motivational profiles can be identified in these groups. Second, we aim to relate the different profiles of work-related motivation to relevant career correlates; to negative/positive work expectations and goal engagement in students; and to positive work experiences in VET apprentices. Doing so will allow us to evaluate the generalizability of the motivational profiles across nonworking and working adolescents and to examine their utility in explaining success in an early career transition. Third, we investigate whether the motivational profiles can facilitate changes in work experiences across one year in VET, assessing the predictive validity of the motivational profiles identified. Overall, our studies advance a more integrated view of work-related motivation, shed light on distinct motivational profiles that may be found in populations shortly before and after an important career transition, and determine the usefulness of these profiles in describing the state and development of early attitudes and experiences towards work.

An Integrative Model of Work Motivation

Motivation can be described as the force that drives the selection, intensity, and persistence of behavior (Seo, Barrett, & Bartunek, 2004). Applied to the organizational domain, work-related motivation can be described as "a set of energetic forces that originate both within and beyond an individuals' being, to initiate work behavior, and to determine its form, direction, intensity, and duration" (Pinder, 2008, p. 11). Integrative models of motivation combine motivational constructs, often from different research streams. These models propose that combinations of these aspects can lead to qualitatively differing motivational patterns that are related to specific behavioral correlates and outcomes. The advantage of considering motivation as a multi-faceted construct is that it increases the explanatory power of motivation because the combined motivational variables may each contribute incremental validity. Consequently, this approach enables higher precision and differentiation by allowing the study of "patterns" of different motivational variables (e.g., Ford, 1992; Kehr, 2004).

The integrative model of work-related motivation that we apply is based on Parker, Bindl, and Strauss' (2010) model of proactive motivation. The

researchers proposed three motivational states that interact to explain goal-directed behavior: reason to, energized to, and can do. Reason to reflects the valence component of the model, or why an individual engages in a behavior and is similar to value (or utility) assessments in expectancy-value theories (Eccles et al., 1983) and related to the concept of autonomous motivation in self-determination theory (Gagné & Deci, 2005). Autonomous motivation concerns "acting with a sense of volition and having the experience of choice" (Gagné & Deci, 2005, p. 333) and is related to goals that are pursued because they are perceived as being interesting, enjoyable, or important, instead of obligatory (Sheldon & Elliot, 1999). Energized to motivation represents the influence of affective experience on goal-directed behavior (Parker et al., 2010; Seo et al., 2004). Positive affect can broaden individuals' thought–action repertoire (Fredrickson, 2001) and is likely to provide individuals with a sense of energy and an approach mindset (Seo et al., 2004), particularly in the case of high activated positive affect (Bindl, Parker, Totterdell, & Hagger-Johnson, 2012). Can do motivational states reflect individuals' expectations about how successful they may be when engaging in a specific goal-directed behavior (Eccles et al., 1983). Can do motivation includes self-efficacy beliefs "about whether one can produce certain actions" (Bandura, 1997, p. 20). In the work context, self-efficacy is expressed as occupational self-efficacy and refers to an individual's conviction that work-related tasks can be successfully fulfilled (Rigotti, Schyns, & Mohr, 2008).

Person-Centered Approach on Motivation

Previous research involving integrative models of motivation based on goals, affective experience, and self-efficacy beliefs (Hirschi, Lee, Porfeli, & Vondracek, 2013; Pintrich & de Groot, 1990; Valero et al., 2015; Wolters & Pintrich, 1998) focused on variable-centered approaches that describe how variables function across individuals. A person-centered approach, on the other hand, identifies subgroups within a population that show specific combinations (profiles) of variables (e.g., autonomous goals, positive affect, and occupational self-efficacy). By identifying subgroups, this approach centers on how variables function within individuals. A person-centered approach thus facilitates the detection of complex interactive patterns between the motivational variables, which cannot be discerned using a variable-centered approach (Wang & Hanges, 2011). The procedure used here is latent profile analysis (LPA). LPA identifies groups with specific profiles determined by a series of continuous indicators. The resulting profiles can typically be described as "level" or "shape" profiles (Morin & Marsh, 2015). Level profiles denote groups of individuals who are characterized by overall high, intermediate, or low levels of the studied indicators. Shape profiles denote groups that are characterized by differing levels across the different indicators and indicate a different quality of motivation (Morin & Marsh, 2015). Our research question aims to explore what groups of individuals with distinctive patterns of motivation may be found in our study populations.

Research Question 1: Which quantitatively and qualitatively distinctive profiles of work-related motivation (autonomous goals, positive affect, and occupational self-efficacy) exist in adolescents shortly before and after the transition into working life?

Correlates and Outcomes of Motivational Profiles

LPA allows for the examination of the relationship between profiles with external correlates, helping to substantiate the relevance, theoretical meaning, and validity of the identified profiles (Wang & Hanges, 2011). We selected work experience expectations (Porfeli, Lee, & Weigold, 2012) and goal engagement regarding one's future career (Haase, Heckhausen, & Köller, 2008) as specific correlates that should be related to motivational profiles of students before the transition into working life. Work experience expectations pertain to the expected typical experiences related to success, failure, interest, satisfaction, or social interactions at work and can be

separated into two distinct dimensions of positive and negative work expectations (Porfeli et al., 2012). Motivated adolescents (i.e., those having more autonomous goals and expecting more positive emotions and self-efficacy at work) should also report more positive overall expectations regarding working life. Goal engagement regarding one's future career is characterized by a strong volitional focus and the investment of effort in pursuing career goals (Haase et al., 2008). Goal engagement is an area-specific representation of primary control, as introduced in Heckhausen and Schulz's (1995) control theory. Because motivation drives direction and persistence in behaviors (Pinder, 2008), work-related motivation should be positively related to goal engagement. We hence propose the following:

Hypothesis 1: Students in profiles of high or favorable motivation will have (a) lower levels of negative work experience expectations, (b) higher levels of positive work experience expectations, and (c) stronger goal engagement compared with students in profiles of low or unfavorable motivation.

For adolescents who are already working, we propose person-job fit, work engagement, and job satisfaction as indicators of a successful career transition that should be related to motivational profiles. Perceived person-job fit denotes an individual's perception that his/her work is in line with his/her abilities, needs, knowledge, and vocational aspirations (Saks & Ashforth, 2002). The autonomous goals component of motivation should facilitate the experience of work as facilitating one's needs and aspirations; feeling self-efficacious should enhance the experience of work as being well matched to one's abilities and knowledge; and finally, experiencing positive affect at work should be related to an overall evaluation of one's job as an environment that is well matched to the self. Motivation should thus be positively related to person-job fit. Work engagement denotes the experience of dedication, vigor, and absorption at work (Schaufeli, Bakker, & Salanova, 2006). Motivated individuals show more effort and persistence in their work behavior. As such, they should experience higher dedication, vigor, and absorption at work and thus should be more engaged. Job satisfaction denotes "an evaluative state that expresses contentment with and positive feelings about one's job" (Judge & Kammeyer-Mueller, 2012, p. 341). Job satisfaction should be related to motivation because the positive experience that emerges from motivation (viewing work as a setting for the fulfillment of personal goals, feeling competent, and feeling good) should lead to a generally more positive evaluation of the job that enables these positive experiences. We thus propose the following:

Hypothesis 2: Apprentices in profiles of high or favorable motivation will have higher levels of (a) person-job fit, (b) work engagement, and (c) job satisfaction compared with apprentices in profiles of low or unfavorable motivation.

Going beyond investigating the correlations between motivational profiles and work experiences within time, we also assessed the predictive validity of motivational profiles for changes in work experiences across time. Autonomous goals, positive affect, and occupational self-efficacy, as indicators of being motivated for work, can be understood as resources because they are "entities…valued in their own right...or act as a means to obtain centrally valued ends" (Hobfoll, 2002, p. 307). According to the conservation of resources theory, existing resources lead to further accumulation of resources (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). Motivation may lead to more job crafting, the "physical and cognitive changes individuals make in the task or relational boundaries of their work" (Wrzesniewski & Dutton, 2001, p. 179), and thereby enhance person-job fit, work engagement, and job satisfaction. Moreover, the persistence, direction, and duration aspects of motivation should further enhance the commitment of individuals to their apprenticeship and the experience of vigor,

dedication, and absorption (i.e., work engagement). Motivation is further related to the experience of enjoyment (Peters, Poutsma, Van der Heijden, Bakker, & de Bruijn, 2014) and to higher performance (Cerasoli, Nicklin, & Ford, 2014), which should both induce a more positive evaluation of one's work and consequently lead to increases in job satisfaction and person-job fit. In contrast to this gain mechanism, low levels of resources should lead to further loss of resources, because individuals with low resources are more vulnerable to stressful situations, which will place a strain on available resources (Hobfoll, 2002). Unmotivated individuals should experience lower work engagement and engage in less job crafting – thus making them more exposed to tasks that may be uninspiring and require greater volitional effort to accomplish. Moreover, their lower motivation should be tied to lower performance (Cerasoli et al., 2014) and may consequently negatively affect the evaluations of their job (Judge, Thoresen, Bono, & Patton, 2001). Overall, these effects should lead to decreasing levels of perceived person-job fit, work engagement, and job satisfaction for individuals showing low motivation. This reasoning leads to our third hypothesis:

Hypothesis 3: Apprentices in profiles of high or favorable motivation will experience increases in (a) person-job fit, (b) work engagement, and (c) job satisfaction over time, whereas apprentices in profiles of low or unfavorable motivation will experience decreases in these variables.

Overview of Present Studies

We conducted our studies in Switzerland, where 70% of students end compulsory school after nine years and enter one of over 200 different VET programs for a specific profession (Federal Office for Professional Education and Technology, 2015). During the next three to four years, they work as apprentices in an organization and go to school one or two days per week. The strong focus on work-related training and education makes the Swiss context particularly apt for studying work-related motivation and its correlates among adolescents. We studied profiles of work-related motivation in two samples: students in their last school year, shortly before entering a VET (Study 1), and adolescents in VET who have been working for one year (Study 2). Participants of Study 2 were assessed again one year after their first participation to evaluate whether motivational profiles could predict changes in work experiences across one year.

Adolescents shortly before and after the transition into working life are still underrepresented in work motivation research when compared to students transitioning from college or university to work in their twenties (Blustein, Phillips, Jobin-Davis, Finkelberg, & Roarke, 1997; Ling & O'Brien, 2013). Individuals transitioning to working life as teenagers and those who transition in their twenties (e.g., after college or university studies) face different developmental tasks (Salmela-Aro, 2009), have differing goals (Roberts, O'Donnell, & Robins, 2004) and should also find different conditions in the labor market. It is thus important to specifically assess the structure and role of motivation in teenage school-to-work transition samples.

Study 1: Motivational Profiles in Students before the Transition to Working Life

Methods

Participants and procedure. We sampled 21 schools in the German-speaking part of Switzerland. School principals asked classes in their final year (around one year before finishing school) to participate in our study. This procedure led to 842 students who filled out the questionnaire provided. The data were collected during class hours in the schools' computer room via an online survey. Students were supervised by their teachers during participation and were free to decline participation. All participating students were given the option of entering a prize drawing for 21 gift vouchers with a total value of approximately 800 USD. We excluded 190 (23%) students who indicated that they were planning to attend further schooling after compulsory

education and were thus unlikely to enroll in VET. We further excluded 70 (8%) students without data for at least one of the used motivational variables (i.e., autonomous goals, positive affect, or occupational self-efficacy). Missing data in the other variables were estimated using the default full information maximum likelihood (FIML; see e.g. Graham, 2009) procedure in Mplus. Because outliers can bias the results of multivariate analyses, we checked for multivariate outliers using the Mahalanobis distance for the three motivational variables, with a *p*-value of .001 used as a cutoff, and excluded another five (< 1%) cases (Tabachnik & Fidell, 2013). We obtained a final sample of 577 students: 262 (45%) were female, 304 (53%) male, and 11 (2%) did not indicate their gender. The mean age of the participants was 15.00 years (*SD* = .72, median = 15).

Measures. Means, standard deviations, Cronbach's alpha and intercorrelations of all study variables are presented in Table 1.

Motivation. *Autonomous goals* were assessed with Little's (1983) personal project analysis, which asked participants to indicate three goals for their professional future using an open format question. For each stated goal, we asked participants four questions from Sheldon and Elliot (1999) to assess whether these goals where pursued for intrinsic ("You pursue this striving because of the fun and enjoyment it provides you"), identified ("You pursue this striving because you really believe it's an important goal to have"), introjected ("You pursue this striving because you would feel ashamed, anxious or guilty if you didn't"), and extrinsic (i.e., "You pursue this striving because somebody else wants you to or because the situation demands it") reasons. The participants stated their answers using seven-point Likert scales that ranged from 1 *(not at all for this reason)* to 7 *(completely for this reason).* In accordance with Sheldon and Elliott (1999), we aggregated the scores into a composite score of autonomous goal pursuit by subtracting the introjected and extrinsic scores from the intrinsic and identified scores. Such a composite score was related to proactive career behaviors (Hirschi, Lee, Porfeli, & Vondracek, 2013) and to goal attainment and job satisfaction (Judge, Bono, Erez, & Locke, 2005) among employees.

Positive affect was assessed as high activated positive affect with the corresponding subscale from the multi-affect indicator reported by Warr, Bindl, Parker, and Inceoglu (2014). Participants were asked to imagine what it will be like when they work in a VET program and to indicate the extent they expected to feel "enthusiastic", "excited", "inspired", and "joyful" using a seven-point scale that ranged from 1 *(never)* to 7 *(always).* This measure showed positive correlations with proactivity, extra-role performance, and work proficiency in working adults (Warr et al., 2014). We obtained a low Cronbach's alpha value of .66. We observed that the item "excited" did not fit the overall scale well. We thus excluded the item "excited" and obtained an alpha of .70.

We measured *occupational self-efficacy* with the six-item short occupational self-efficacy scale by Rigotti and colleagues (Rigotti, Schyns, & Mohr, 2008). Participants were asked to imagine what it will be like when they work in a VET program and responded to six items (e.g., "When I am confronted with a problem in my job, I can usually find several solutions") using a six-point scale ranging from 1 *(not at all true)* to 6 *(completely true).* The scale showed positive correlations with career engagement, career decidedness, and proactive personality among young German employees (Hirschi et al., 2013).

Work expectations. Negative and positive work experience expectations were assessed by asking participants to imagine how often "certain things will happen when you become an adult… doing your job" and assessed negative (e.g., "Have a job that holds you back in life") and positive (e.g., "Get recognized for your work") work expectations each with seven items reported by Porfeli, Lee, and Weigold (2012) using a five-point scale ranging from 1 *(never)* to 5 *(always).* The authors of the scale report significant correlations with career exploration, work approach,

Table 1

Means, Standard Deviations, Cronbach's Alpha Values, and Intercorrelations of the Variables in Study 1 and Study 2

		M	*SD*	*α*	1	2	3	4	5	6	7	8
Study 1												
1	Autonomous goals	5.99	3.40	.80	-							
2	Positive affect	5.48	0.96	.70	.28**	-						
3	Occupational self-efficacy	4.34	0.64	.77	.24**	.34**	-					
4	Negative work expectations	2.00	0.67	.85	-.22**	-.30**	-.30**	-				
5	Positive work expectations	4.13	0.54	.86	.21**	.26**	.39**	-.41**	-			
6	Goal engagement	4.21	0.69	.87	.23**	.29**	.39**	-.25**	.47**			
Study 2												
1	Autonomous goals T1	4.43	3.46	.77	-							
2	Positive affect T1	4.74	1.28	.84	.24**	-						
3	Occupational self-efficacy T1	4.45	0.64	.77	.25**	.37**	-					
4	Person-job fit T1	3.73	0.67	.81	.17**	.56**	.40**	-				
5	Work engagement T1	4.81	1.14	.93	.21**	.67**	.45**	.66**	-			
6	Job satisfaction T1	3.90	0.62	.79	.11**	.50**	.32**	.61**	.60**	–		
7	Person-job fit T2	3.76	0.68	.82	.16*	.44**	.30**	.60**	.49**	.47**	–	
8	Work engagement T2	4.83	1.11	.93	.14*	.51**	.24**	.48**	.62**	.35**	.66**	–
9	Job satisfaction T2	3.92	0.67	.77	.06	.36**	.14*	.46**	.44**	.49**	.64**	.65**

Note. The upper half values are for Study 1 with $N = 577$ students. The lower half values are for Study 2 with $N = 949$ working adolescents, $N = 215$ for correlations involving T2 variables.

* $p < .05$, ** $p < .001$

Table 2

Means in Motivational Variables across Profiles for Study 1 and Study 2

			Autonomous		Positive affect		Occupational self-	
	n	*Pct.*	*M*	*SE*	*M*	*SE*	*M*	*SE*
Study 1		*n*						
Low positive affect	25	4%	4.24	.86	2.91	.11	4.26	.09
Unmotivated	54	9%	4.11	.53	4.15	.11	3.92	.09
Slightly unmotivated	173	30%	5.51	.31	5.03	.07	4.30	.07
Moderately motivated	245	42%	6.24	.24	5.89	.05	4.48	.04
Motivated	80	14%	7.92	.43	6.73	.05	4.94	.08
Study 2								
Low positive affect	110	12%	3.84	.46	3.00	.13	4.67	.07
Unmotivated	54	6%	2.75	.51	2.41	.20	3.50	.11
Slightly unmotivated	215	23%	3.08	.29	4.41	.22	3.94	.10
Moderately motivated	512	54%	5.01	.34	5.35	.08	4.61	.07
Motivated	58	6%	7.45	.64	6.44	.10	5.49	.16

Note. n = Final profile membership based on most likely latent profile, *Pct.* = Percentage of overall sample, *M* = Mean score of the motivational variable for the mentioned profile. *SE* = Corresponding standard error.

Table 3

Comparison of Correlates across Profiles for Study 1 and Study 2

Study 1			Profile			
	Low positive	Unmotivated (B)	Slightly	Moderately	Motivated (E)	Overall effect
Negative work expectations	2.25_{E}	$2.44_{D,E}$	2.13_{E}	$2.00_{B,E}$	$1.51_{A,B,C,D}$	56.66*
Positive work expectations	3.79_{E}	$3.87_{D,E}$	4.05_{E}	$4.16_{B,E}$	$4.42_{A,B,C,D}$	24.85*
Goal engagement	$3.71_{C,D,E}$	$3.78_{C,D,E}$	$4.08_{A,B,D,E}$	$4.32_{A,B,C,E}$	$4.53_{A,B,CD}$	49.36*
Study 2			Profile			
	Low positive	Unmotivated (B)	Slightly	Moderately	Motivated (E)	Overall effect
Person-job fit T1	$3.35_{B,D,E}$	$2.60_{A,C,D,E}$	$3.50_{B,D,E}$	$3.95_{A,B,C,E}$	$4.60_{A,B,C,D}$	302.99*
Work engagement T1	$3.94_{B,D,E}$	$2.78_{A,C,D,E}$	$4.20_{B,D,E}$	$5.32_{A,B,C,E}$	$6.51_{A,B,C,D}$	666.65*
Job satisfaction T1	$3.43_{B,D,E}$	$2.71_{A,C,D,E}$	$3.56_{B,D,E}$	$3.87_{A,B,C,E}$	$4.45_{A,B,C,D}$	95.66*

Note. N = 577 for Study 1, *N* = 949 (T1) for Study 2. Analyses were performed with the BCH procedure in MPlus 7.3. The indicated values are scale means. The overall significance is a Chi-square value with *df* = 4. Subscripts designate profiles that differ significantly at $p < .05$. * $p < .001$

and work avoidance in a sample of high-school students (Porfeli et al., 2012).

Goal engagement. Engagement regarding one's future career was assessed with four items (e.g., ''I invest all my energy in order to have a good occupational future") reported by Haase, Heckhausen, and Köller (2008). Participants answered using a five-point scale that ranged from 1 *(strongly disagree)* to 5 *(strongly agree).* The authors report significant correlations with school achievement and positive affect among German students (Haase et al., 2008).

Results and Discussion

Confirmatory factor analyses. Using confirmatory factor analyses, we first evaluated the empirical distinctness of our study variables. We assessed model fit using the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Values near and above .95 for CFI and TLI and below .08 for RMSEA and SRMR indicate a good fit (Hu & Bentler, 1999). We used the MLR estimator with robust standard errors in Mplus for all our analyses and compared nested models using the Satorra-Bentler corrected Chi-square values (Satorra & Bentler, 2001). First, we tested the three motivational measures (i.e., autonomous goals, positive affect regarding work, and occupational self-efficacy). The proposed three-factor model showed a good fit ($\chi^2 = 71.70$, $df = 51$, $p = .03$, CFI = .98, TLI = .98, RMSEA = .03, SRMR = .03), fitting the data significantly better than a one-factor model or different two-factor models combining two motivational constructs into one factor (all $p < .001$). Finally, we confirmed the adequate model fit of a six-factor model comprising all study variables ($\chi^2 = 403.74$, $df = 260$, $p < .001$, CFI = .95, TLI = .95, RMSEA = .03, SRMR = .04).

Latent profile analysis. We addressed Research Question 1 by performing LPA using autonomous goals, positive affect, and occupational self-efficacy beliefs as latent profile indicators. To determine the optimal number of latent profiles, we employed a stepwise approach, starting with a solution of two profiles (Nylund, Asparouhov, & Muthén, 2007) and successively adding profiles. In each step, we examined (a) the sample-adjusted Bayesian information criterion (SABIC), (b) the bootstrapped likelihood-ratio test and its significance level (BLRT), (c) the posterior classification probabilities for each profile, and (d) the number of cases attributed to each profile. A good latent profile solution is characterized by a minimum SABIC value and a significant BLRT-value, which indicates that the last added profile increases model fit. High posterior classification probabilities indicate that the single cases can easily and correctly be attributed to the correct latent profile. The absence of small profiles underlines the practical relevance of the profiles identified and ensures statistical power in follow-up analyses. Finally, the selected solution should be theoretically coherent (Marsh, Lüdtke, Trautwein, & Morin, 2009).

We investigated the fit statistics for solutions with two to seven profiles and chose the five-profile solution because it attained a low SABIC (5605.25) and the last significant BLRT-value (16.35, $p < .05$) before BLRT-values became nonsignificant. The high posterior classification probabilities and latent profile sizes provided additional support for this solution. Table 2 reports the mean values, and Figure 1 depicts the standardized means of the autonomous goals, positive affect, and occupational self-efficacy scales for the five profiles. The first profile, with 25 (4%) participants, was characterized by average autonomous goals and occupational self-efficacy and the lowest score in positive affect. We labeled this profile *low positive affect*. The second profile, with 54 (9%) participants, was characterized by low values in all three motivational variables. We labeled it the *unmotivated* profile. The third profile, with 173 (30%) participants, was characterized by below-average scores in all three motivational variables. We labeled it the *slightly unmotivated* profile. The fourth profile,

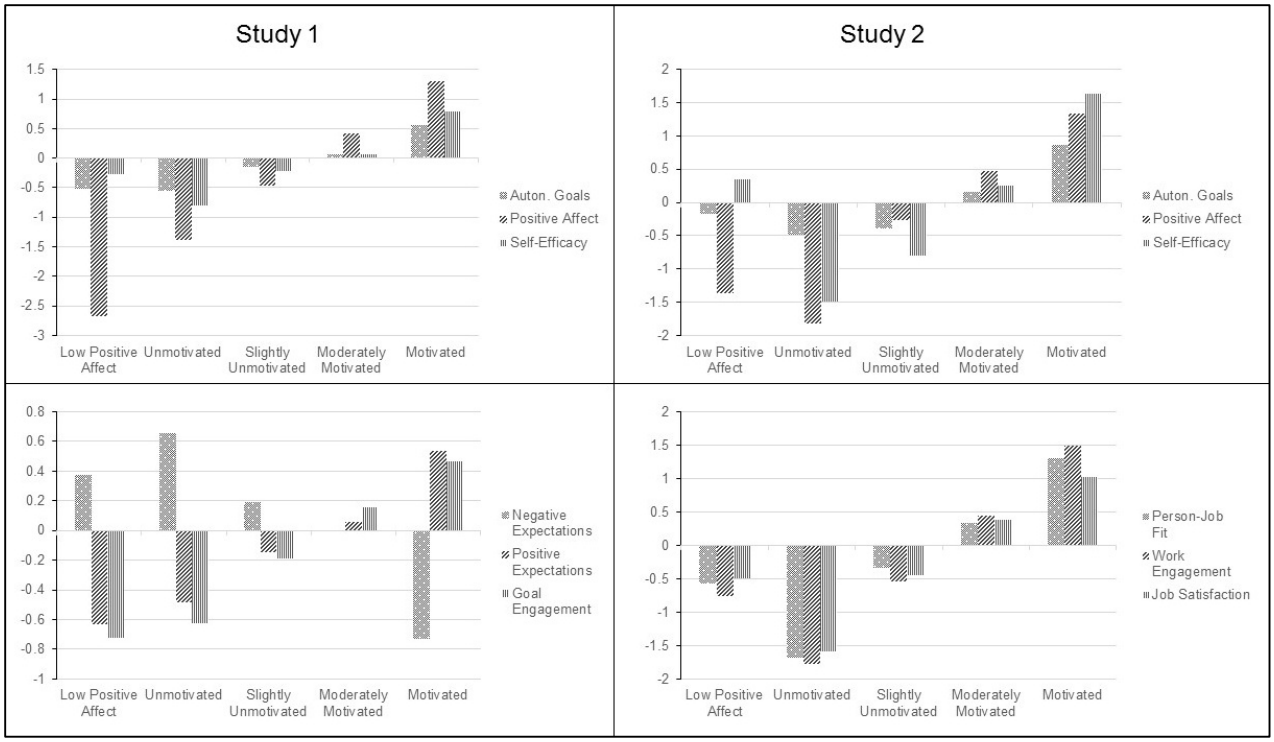

Figure 1. The top-left diagram shows the standardized means of latent profiles and the bottom-left diagram the standardized means of the correlates by motivation profile in Study 1. The top-right diagram shows the standardized means of latent profiles and the bottom-right diagram the standardized means of the correlates by motivation profile in Study 2 (at T1).

with 245 (42%) participants, was characterized by above-average scores in all three motivational variables. We labeled it the *moderately motivated* profile. The fifth profile, with 80 (14%) participants, was characterized by the highest values in all three motivational variables, thus representing the *motivated* profile. To answer our Research Question 1, we could find motivational profiles that indicated different levels of motivation and one profile (low positive affect) that did differ from the other profiles in terms of shape (i.e., qualitatively).

Correlates of motivational profiles. To address Hypothesis 1, we modeled negative and positive work expectations and goal engagement as auxiliary variables using the BCH command in Mplus. The BCH command compares mean levels across profiles and tests for significant differences in the correlates using Wald tests (Bakk & Vermunt, 2016). The results showed significant differences across the five motivational profiles (Table 3 and Figure 1). Specifically, the profiles indicating higher work-related motivation showed lower negative work expectations and higher positive work expectations and goal engagement compared with the profiles indicating low motivation. Unfavorable levels of work expectations and goal engagement characterized the low positive affect profile, similar to the unmotivated profile. These results suggest that motivational profiles are differently related to positive and negative work expectations and goal engagement, with more favorable motivational profiles being related to more favorable expectations and higher goal engagement, supporting Hypotheses 1a, 1b, and 1c.

Study 2: Motivational Profiles as Predictors of Work Experiences in Working Adolescents

Study 2 aimed at exploring profiles of motivation in a sample of working youth and comparing these profiles with those found in the non-working sample from Study 1. Moreover, we were interested in examining how motivational profiles were related to work experiences in terms of person-job fit, work engagement, and job satisfaction. Finally, we investigated not only cross-sectional associations but also how motivational profiles were related to changes in work experiences across one year.

Methods

Participants and procedure. We sampled apprentices in 10 VET schools in German-speaking Switzerland towards the end of their first year in VET. Data were collected during class hours in the schools' computer rooms via an online survey. Apprentices were supervised by their teachers during participation and were free to decline participation. All participants were given the option of entering a prize drawing for 21 gift vouchers with a total value of approximately 800 USD. In the first measurement wave (T1), 1,030 apprentices filled out our survey. We excluded 75 (7%) participants with missing data in at least one of the three motivational variables. Missing data for other variables were estimated using the FIML procedure. Another six participants (< 1%) were identified as multivariate outliers using Mahalanobis distance (p < .001) and excluded. The final sample was composed of 949 apprentices: 333 (35%) were female, 558 (59%) male, and 58 (6%) chose to not indicate their gender. Their mean age was 18.08 (SD = 2.59, median = 17) years. Of the 949 participants, 833 (88%) indicated correct e-mail or postal mail contact details and were asked to participate in a second survey approximately one year later (T2). Participants could again take part in a prize drawing of approximately 800 USD, and 215 participants (26%) responded to three work experiences scales (person-job fit, work engagement, and job satisfaction). The median age of this subsample at T1 was 18.14 years (SD = 3.45, median = 17) and thus similar to the mean age of the overall sample. Female (n = 101, 47%) and male (n = 108, 50%) participation was balanced (six persons [3%] did not indicate their gender). Overall, the Study 2 sample showed a greater variance in participants' age, with a portion of the sample (9%) being aged over 20. This reflects that an apprenticeship may also be started some time after finishing school, for example after a gap year, a previous vocational education, or after dropping out from a college-bound track. We compared the values of all assessed variables at T1 (autonomous goals, positive affect, occupational self-efficacy, person-job fit, work engagement, and job satisfaction) between the T2 responders and nonresponders using Bonferroni-corrected t-tests. The two groups differed only in person-job fit, which was higher at T1 among the T2 responders than among the nonresponders (Mean difference = -0.25, p < .001).

Measures. Means, standard deviations, Cronbach's alpha, and intercorrelations for all study variables are presented in Table 1.

Motivation. *Autonomous goals, positive affect,* and *occupational self-efficacy* were assessed with the same measures reported in Study 1. Because participants in Study 2 were already active in working life, positive affect, and occupational self-efficacy were assessed in relation to their actual work situation. To assess high activated positive affect, participants were asked to state how they felt during the preceding week. In the positive affect scale, we excluded the item "excited" to parallel the procedure used in Study 1. The exclusion of this item led to an increase in the scale's alpha from .79 to .84.

Work experiences. We assessed *person-job fit* with four items (e.g., "To what extent do your knowledge, skills, and abilities match the requirements of the job?") reported by Saks and Asforth (2002). The items were rated on a five-point scale ranging from 1 *(to a very little extent*) to 5 *(to a very large extent).* The scale showed strong

relationships with occupational self-efficacy and work engagement among a sample of young German employees (Hirschi, 2012).

Work engagement was assessed with the short Utrecht work engagement scale (Schaufeli, Bakker, & Salanova, 2006). The scale contains nine items (e.g., "When I get up in the morning, I feel like going to work") rated on a seven-point scale ranging from 0 *(never)* to 6 *(always – every day).* Among a sample of young Dutch employees, work engagement was related to work-related competencies such as work exploration and career control (Akkermans, Schaufeli, Brenninkmeijer, & Blonk, 2013).

Job satisfaction was assessed with seven items modeled after the main areas of job satisfaction identified by Neuberger and Allerbeck (1978; colleagues, superior, activities, work conditions, organisation and management, development opportunities, pay) (e.g., "How satisfied are you with your working conditions?"). Participants rated these items on a five-point scale ranging from 1 *(not satisfied)* to 5 *(very satisfied).*

Results and Discussion

Confirmatory factor analysis. As in Study 1, we first evaluated the empirical distinctness of the study variables. First, we tested the three motivational measures (i.e., autonomous goals, positive affect at work, and occupational self-efficacy). A three-factor model fit the data well ($\chi^2 = 81.25$, $df = 51$, $p = .005$, CFI = .99, TLI = .98, RMSEA = .03, SRMR = .03) and was superior to a one-factor model and any of three possible two-factor models combining two motivational constructs into one factor (all $p < .001$). Moreover, a model including all six variables assessed at T1 (motivational indicators, person-job fit, work engagement, and job satisfaction) fit the data well ($\chi^2 = 931.39$, $df = 449$, $p < .001$, CFI = .96, TLI = .95, RMSEA = .03, SRMR = .04).

Latent profile analysis. We paralleled the analyses performed in Study 1 using the Study 2 T1 data. We investigated the fit statistics for latent profile solutions with two to seven profiles and chose the five-profile solution because it attained the lowest SABIC (9777.12) and the last significant BLRT-value (47.99, $p < .05$) before the BLRT became nonsignificant. The posterior classification probabilities and latent profile sizes provided further support for the solution with five profiles. The mean values for the motivational variables across profiles are presented in Table 2, and Figure 1 illustrates the standardized means of the autonomous goals, positive affect, and occupational self-efficacy scales for the five profiles. The five profiles correspond to the ones found in Study 1: The first profile, with 110 (12%) participants, was characterized by average autonomous goals and occupational self-efficacy and the lowest score in positive affect; in accordance with Study 1, we labeled it *low positive affect* profile. The second profile, with 54 (6%) participants, was characterized by low values in all three motivational variables, the *unmotivated* profile. The third profile, with 215 (23%) participants, was characterized by below-average scores in all three motivational variables; the profile was labeled *slightly unmotivated*. The fourth profile, with 512 (54%) participants, was characterized by above-average scores in all three motivational variables, corresponding to the *moderately motivated* profile. The fifth profile, with 58 (6%) participants, was characterized by the highest values in all three motivational variables, representing the *motivated* profile. To address Research Question 1, the profile solution in Study 2 confirmed the findings from Study 1 and showed that profiles mainly differed in the levels of overall motivation with one profile, that with low positive affect, showing a qualitatively differing profile. We again performed Wald tests using the BCH procedure (Bakk & Vermunt, 2016) and evaluated the differences in person-job fit, work engagement, and job satisfaction at T1 across the five profiles (Table 3 and Figure 1). We found that the unmotivated profile was related to the lowest values in the three work experiences, whereas the motivated profile was related to the highest values. The low positive affect

profile did not significantly differ in the correlates' values compared with the slightly unmotivated profile. The moderately motivated profile showed values in the correlates that were significantly distinct and lay between the values reported by the individuals in the slightly unmotivated, the low positive affect and the motivated profile. These results are in line with Hypotheses 2a, 2b, and 2c.

Motivational profiles as predictors of work experiences. Before addressing Hypothesis 3, we examined the longitudinal invariance of the person-job fit, work engagement, and job satisfaction measures at T1 and T2 by comparing models of increasing invariance constraints (Vandenberg & Lance, 2000). Our data reached configural, factor loading, and scalar (intercept) invariance. The data thus warrant comparisons across the two measurement points because the change in the constructs is not caused by differences in how the manifest indicators are linked to the latent variables at the two time points. Fit information on longitudinal invariance tests can be obtained from the corresponding author.

Latent difference score analysis. We modeled the latent difference scores of person-job fit, work engagement, and job satisfaction from T1 to T2 (i.e., the difference in the latent scale scores at T1 and T2 for each individual). We chose this procedure because it can estimate latent changes in a variable across time with only two measurement points while taking into account measurement error, thereby avoiding low reliability of manifest difference scores (McArdle, 2009). At T2, we had available data for 215 participants; we estimated the missing data points for person-job fit, work engagement, and job satisfaction at T2 for the remainder of the original sample using the T1 data and the FIML procedure. This procedure counteracts the biasing effects of missing data and yields accurate estimates even for relatively large amounts of missing data (Graham, 2009). We first explored an unconditional model in which the latent changes from T1 to T2 in the assessed work experiences were estimated without additional predictor or control variables (χ^2 = 1366.95, *df* = 745, $p < .001$, CFI = .94, TLI = .94, RMSEA = .03, SRMR = .08).

Table 4

Standardized Regression Coefficients from Latent Difference Score Analysis With Dummy Variables in Study 2

	Coefficient	*SE*	*p*
Person-job fit (latent difference score)			
Low positive affect	-0.14	0.12	.115
Unmotivated	-0.15**	0.05	.002
Slightly unmotivated	-0.14*	0.08	.034
Motivated	0.05	0.08	.275
Work engagement (latent difference score)			
Low positive affect	-0.19**	0.08	.001
Unmotivated	-0.08	0.11	.237
Slightly unmotivated	-0.03	0.08	.369
Motivated	0.13***	0.05	< .001
Job satisfaction (latent difference score)			
Low positive affect	-0.14	0.10	.076
Unmotivated	-0.16	0.14	.150
Slightly unmotivated	0.01	0.07	.472
Motivated	0.03	0.06	.319

Note. N = 949. We used the moderately motivated profile as baseline comparison profile. One-sided significance tests were applied. Model fit was acceptable (χ^2 = 1556.36, *df* = 881, $p < .001$, CFI = .94, TLI = .94, RMSEA = .03, SRMR = .07). * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Over the whole sample, only person-job fit showed a significant change from T1 to T2, decreasing significantly (Δ = -.19, p = .03). The levels of work engagement and job satisfaction remained fairly stable across time (Δ = -.06, p = .38 and Δ = -.08, p = .31, respectively). The fact that these variables did not change over time *on average* does, however, not exclude the possibility that individual differences in change over time are present and that such differences are meaningfully related to motivational profiles. In a next step, we therefore regressed the latent profiles on the latent difference scores (Table 4) using four dummy variables for the latent profiles: One denoted the low positive affect profile, one the unmotivated profile, one the slightly unmotivated profile, and one the highly motivated profile. Because the moderately motivated profile was the largest profile, we used it as a reference profile. The regression of dummy variables on latent difference scores bears resemblance to an ANOVA using latent difference scores as dependent variables (McArdle, 2009). The results showed that belonging to the unmotivated or the slightly unmotivated profile was related to decreases in person-job fit across one year. Belonging to the low positive affect profile was related to decreases in work engagement, whereas belonging to the motivated profile was related to increases in work engagement. Changes in job satisfaction were not predicted by any specific motivational profile. Hypotheses 3a and 3b can thus be partly affirmed. Hypothesis 3c, pertaining to job satisfaction, was not supported.

As a post-hoc test, we evaluated whether the relationship of motivational profiles with changes in work experiences could be an artifact of the common relation of motivation and work experiences with more basic personality traits. We consequently controlled for the effects of core self-evaluations (CSE) on the latent profiles and the latent difference scores. CSE refer to the "basic, fundamental appraisal of one's worthiness, effectiveness, and capability as a person" (Judge, Erez, Bono, & Thoresen, 2003, p. 304). We used the scale by Judge, Erez, Bono, and Thoresen (2003; e.g.; I am confident I get the success I deserve in life) with 12 items rated on a scale from 1 (*strongly agree*) to 7 (*strongly disagree*) and an alpha of .83 in our sample. Previous research has shown that CSE are positively related to motivation (Erez & Judge, 2001), to person-job fit, work engagement (Hirschi, 2012), and job satisfaction (Judge et al., 2003). However, the inclusion of CSE did not alter the nature of the profiles or the relation between the profiles and the difference scores. For better interpretability and statistical power, we thus decided to report all our analyses without controlling for CSE.

General Discussion

Profiles of Work-Related Motivation in Students and Apprentices

We set out to determine which profiles of work-related motivation, as indicated by autonomous goals, positive affect regarding/at work, and occupational self-efficacy, could be found among adolescent samples shortly before and after the school-to-work transition. We further explored whether these motivational profiles are related to positive/negative work expectations among students (Study 1) and perceived person-job fit, work engagement, and job satisfaction across one year among VET apprentices (Study 2). In both studies, we found the same five latent profiles of work-related motivation (i.e., *low positive affect, unmotivated, slightly unmotivated, moderately motivated,* and *motivated)*, suggesting that the structure of motivation is similar across both groups, although the student sample had no or very little (e.g., from job shadowing) personal work experience and their work-related motivation thus stemmed from *expectations* regarding working life. This finding confirms the observation that even young adolescents and children have clear and differentiated expectations regarding working life (Loughlin & Barling, 2001; Porfeli, Wang, & Hartung, 2008).

Most profiles that we found could be placed on a continuum of increasing motivation because they

were characterized by covarying levels in all three motivational indicators (autonomous goals, positive affect, and occupational self-efficacy), thus denoting different levels in the *quantity* of motivation or *level profiles* (Morin & Marsh, 2015). Only the low positive affect profile showed a distinct motivational pattern, with average levels of autonomous goals and occupational self-efficacy and low levels of positive affect. The profile can be characterized as a *shape* profile that denotes a *qualitatively* differing form of work-related motivation (Morin & Marsh, 2015). The low positive affect profile was not only qualitatively distinct but also small in size – accounting for only 4% (student sample) and 12% (apprentice sample) of participants. Thus, the profile would likely not have been detected using a variable-centered approach (Wang & Hanges, 2011) and exemplifies the advantage of using a person-centered approach in our analyses. The difference in the size of the low positive affect profile compared with the student and apprentice samples suggests that it may be more likely to have low levels of work-related positive affect after starting working life than before. This finding suggests that a portion of the apprentices in the low positive affect profile may have become frustrated once in working life – as expressed by low positive affect at work. It is possible, for example, that the organizations where these apprentices work are not making an effort to socialize the apprentices into working life, which may lead to a lower experience of positive affect (Saks & Gruman, 2011). An alternative explanation could be that the individuals in this group realized they dislike the content of their chosen job and thus experience low positive affect at work but maintain their autonomous goals and occupational self-efficacy relatively intact. However, the low positive affect profile may also be affected by broader personality variables such as general affectivity or neuroticism or by an individual's mental health status. It may even be a reflection of comorbid depression in some individuals. Despite these reservations, it is unlikely that the low positive affect profiles are a mere representation of personality, affectivity, or depression. Prevalence rates of clinical level depressive disorders in youth are estimated around 1.7 to 3.9% (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015). This falls short of the 4% individuals in the low positive affect profile in the student sample, respectively 12% in the apprentice sample. Moreover, if the low positive affect profiles were unrelated to the participants' situation outside of the work environment, we would probably not have found the difference of eight percentage points in profile size when comparing students and apprentices. Nevertheless, future research should more thoroughly consider personality, affectivity, and mental health variables in order to estimate the degree to which profiles of work motivation characterized by low positive affect may originate in the work environment itself or within personality and mental health conditions. Such research would align into the previous literature that explored the relationship of motivation in the transition to working life with personality (Shulman & Nurmi, 2010), and with affectivity and mental health (Haase, Heckhausen, & Silbereisen, 2012; Nurmi & Salmela-Aro, 2002). Regarding the link between motivational profiles with goal engagement and work experience expectations, students with lower level motivational profiles reported less positive work experience expectations and goal engagement and higher levels of negative work experience expectations. The opposite was the case for the moderately motivated and motivated profiles. These results show that work-related motivation is important already before starting working life. The relationship between motivational profiles and positive and negative work expectations illustrates that motivation may be indicative of the general appraisal that an adolescent has in view of his/her future working life. This result is important because work expectations may inhibit or foster youths' vocational development (Porfeli et al., 2012). The relationship between motivational profiles and goal engagement further illustrates the

relevance of the motivational profiles for entry into working life because active engagement in establishing a successful career was found to be positively related to finding an apprenticeship and well-being (Haase et al., 2008).

In the apprentice sample, individuals with low-level motivation profiles indicated lower levels of person-job fit, work engagement, and job satisfaction, whereas the opposite was the case for the moderately motivated and motivated profiles. These clear relationships between motivational profiles and the assessed work-related experiences further substantiate the validity of the five identified profiles. The finding that the low positive affect profile was related to disadvantageous levels of work experiences despite intermediate levels of autonomous goals and occupational self-efficacy suggests that affect may play a pivotal role in determining the impact of motivation on work-related attitudes and experiences. This finding is in line with theoretical accounts that have proposed that the role of affect in determining work-related motivation is crucial and has largely been underestimated (e.g., Seo, Barrett, & Bartunek, 2004).

Motivational Profiles as Predictors of Change in Work Experiences

The results of the latent difference score analysis using motivational profiles as predictor variables revealed that unfavorable profiles at T1 (i.e., low positive affect, unmotivated, slightly unmotivated) were related to decreases, and that the favorable, motivated profile was related to increases in person-job fit and work engagement across one year when compared with the moderately motivated profile. These results corroborate the validity and relevance of the motivational profiles we identified. Our finding that the motivated profile is related to increases in work engagement across one year is in line with conservation of resources theory, which proposes a gain spiral of resources. Having resources (e.g., motivation) facilitates further accumulation of additional resources (Hobfoll, 2002). Such cumulative effects have been previously found for work engagement (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009) and also suggested for person-job fit (Kristof-Brown & Jansen, 2007). For example, positive affect at work (a part of our motivational model) may be a resource that, because of a tendency to form evaluations consistent with one's affective experience at work, may lead to increases in fit perceptions (Yu, 2009). We further found support for the notion that unfavorable motivational profiles can harm the development of work experiences across time because the low positive affect profile was related to decreases in work engagement whereas the unmotivated and slightly unmotivated profiles predicted decreases in person-job fit. This loss cycle of resources (Hobfoll, 2002) has been previously illustrated in the organizational literature with respect to perceived control and emotional exhaustion (Vander Elst, Van den Broeck, De Cuyper, & De Witte, 2014) and for burnout, decreases in job resources, and increases in perceived job demands (ten Brummelhuis, ter Hoeven, Bakker, & Peper, 2011). In contrast to the results obtained for person-job fit and work engagement, changes in job satisfaction could not be predicted by the motivational profiles. This (non)finding may be explained by the nature of job satisfaction. The state/variable fraction of job satisfaction is most strongly related to changing environmental factors (i.e., work design variables) instead of personal factors (Dormann, Fay, Zapf, & Frese, 2006) such as motivation. On a more general note, we found a significant decrease in perceived person-job fit across the assessed year for the overall sample. This finding is in line with research demonstrating that positive job attitudes generally decrease among organizational newcomers, after the initial "honeymoon effect" wears off and the evaluations about one's job become more realistic (Boswell, Shipp, Payne, & Culbertson, 2009; Van Maanen, 1975).

Limitations

Our studies face a series of limitations that must be taken into account in future research. In Study 2, we had a high dropout rate from T1 to T2, which may have been caused by the study design because participation took place in schools at T1 and invitations were sent via e-mail and postal mail one year later at T2. Nevertheless, the response rate is in line with the rates commonly encountered in longitudinal research (Baruch & Holtom, 2008). Moreover, we used the FIML procedure to estimate missing data, which yields accurate estimates even for large amounts of missing data (Graham, 2009). A second limitation was that our data was assessed via self-reports, which could lead to common-method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Future studies may include other-ratings from teachers or supervisors in order to enrich the results and avoid potential bias. A third limitation of our study is the specificity of the sample: We studied adolescents at the transition from school to work in the Swiss educational context. The age of the participants and the local educational system and economic situation call for caution when transferring our findings to other populations and educational systems. For this reason, future research should explore profiles of work-related motivation in samples from educational systems where the transition from school to work typically takes place later or in countries where visiting college is the norm for the majority of youth. Moreover, the motivational profiles identified herein should also be replicated with non-adolescent samples in different career transitions, such as entering the workforce after college or organizational newcomers, as well as with employee samples without a transition-context. Fourth, research conducted in the context of academic motivation has shown that individuals may change profile membership across time (e.g., Hayenga & Corpus, 2010). With our data, we could not evaluate changes in profile membership. Thus, future research may examine changes in membership in profiles of work-related motivation across time to gain further insight not only into the frequency of changes but also into these changes' predictors and consequences. Finally, our research should be extended to study designs contemplating a longer period of time and featuring more measurement points to more fully investigate questions of temporal precedence and to evaluate nonlinear trajectories.

Practical Implications

The use of an integrative model for describing motivation in students and apprentices is relevant to practices in career counseling, coaching, and human resources management. Professionals in these fields may use the integrative model applied here as a reference (Ford, 1992) to assess work-related motivation in clients. The profiles of motivation we identified reflect groups of motivational patterns during the important developmental task of transitioning into working life. Because the motivational profiles refer to a broad, within-person observation of individuals and how different variables interplay within them (Bergman & Andersson, 2010), it is important to equally address the whole individual in interventions targeted at the improvement of unbeneficial motivational profiles. A strict career perspective may not be enough in order to produce positive change in motivational profiles. Instead, a more holistic counseling approach targeting the person as a whole and his or her previous development should be more appropriate in order to improve motivational patterns. In view of the shape profile with low positive affect in particular, career counselors should be aware that among their clients there may be individuals who at first appear inconspicuous regarding their motivation for work but expect/experience remarkably low levels of positive affect regarding work. Because of their qualitatively different motivational conditions, these individuals may require counseling techniques that are specially targeted at fostering the experience of positive affect and that differ from the techniques that may be used for individuals with profiles of

motivation that are characterized by similar levels of autonomous goals and occupational self-efficacy. Such counseling interventions could focus on reflecting upon positive experiences at work and identifying aspects (task, social interaction, environments) of work that promote positive affect.

References

Akkermans, J., Schaufeli, W. B., Brenninkmeijer, V., & Blonk, R. W. B. (2013). The role of career competencies in the Job Demands - Resources model. *Journal of Vocational Behavior, 83*(3), 356-366. doi:10.1016/j.jvb.2013.06.011

Bakk, Z., & Vermunt, J. K. (2016). Robustness of stepwise latent class modeling with continuous distal outcomes. *Structural Equation Modeling, 23*(1), 20-31. doi:10.1080/10705511.2014.955104

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.

Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations, 61*(8), 1139-1160. doi:10.1177/0018726708094863

Bergman, L. R., & Andersson, H. (2010). The person and the variable in developmental psychology. *Zeitschrift für Psychologie, 218*(3), 155-165. doi:10.1027/0044-3409/A000025

Bindl, U. K., Parker, S. K., Totterdell, P., & Hagger-Johnson, G. (2012). Fuel of the self-starter: How mood relates to proactive goal regulation. *Journal of Applied Psychology, 97*(1), 134-150. doi:10.1037/A0024368

Blustein, D. L., Phillips, S. D., Jobin-Davis, K., Finkelberg, S. L., & Roarke, A. E. (1997). A theory-building investigation of the school-to-work transition. *Counseling Psychologist, 25*(3), 364-402. doi:10.1177/0011000097253002

Boswell, W. R., Shipp, A. J., Payne, S. C., & Culbertson, S. S. (2009). Changes in newcomer job satisfaction over time: Examining the pattern of honeymoons and hangovers. *Journal of Applied Psychology, 94*(4), 844-858. doi:10.1037/a0014975

Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin, 140*(4), 980-1008. doi:10.1037/a0035661

Dietrich, J., Parker, P., & Salmela-Aro, K. (2012). Phase-adequate engagement at the post-school transition. *Developmental Psychology, 48*(6), 1575-1593. doi:10.1037/A0030188

Dormann, C., Fay, D., Zapf, D., & Frese, M. (2006). A state-trait analysis of job satisfaction: On the effect of core self-evaluations. *Applied Psychology - An International Review, 55*(1), 27-51. doi:10.1111/j.1464-0597.2006.00227.x

Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L., & Midgley, C. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motivation*. San Francisco, CA: Freeman.

Erez, A., & Judge, T. A. (2001). Relationship of core self-evaluations to goal setting, motivation, and performance. *Journal of Applied Psychology, 86*(6), 1270-1279. doi:10.1037//0021-9010.86.6.1270

Federal Office for Professional Education and Technology. (2015). Vocational and professional education in Switzerland - Facts and figures 2015. Retrieved from http://www.sbfi.admin.ch/aktuell/medien/00483/01323/?lang=en

Ford, M. E. (1992). *Motivating humans: Goals, emotions, and personal agency beliefs*. Newbury Park, CA: Sage.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218-226. doi:10.1037/0003-066x.56.3.218

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26*(4), 331-362. doi:10.1002/Job.322

Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology, 60*, 549-576. doi:10.1146/Annurev.Psych.58.110405.085530

Haase, C. M., Heckhausen, J., & Köller, O. (2008). Goal engagement during the school-work transition: Beneficial for all, particularly for girls. *Journal of Research on Adolescence, 18*(4), 671-698. doi:10.1111/j.1532-7795.2008.00576.x

Haase, C. M., Heckhausen, J., & Silbereisen, R. K. (2012). The interplay of occupational motivation and well-being during the transition from university to work. *Developmental Psychology, 48*(6), 1739-1751. doi:Doi 10.1037/A0026641

Hayenga, A. O., & Corpus, J. H. (2010). Profiles of intrinsic and extrinsic motivations: A person-centered approach to motivation and achievement in middle school. *Motivation and Emotion, 34*(4), 371-383. doi:10.1007/s11031-010-9181-x

Heckhausen, J., & Schulz, R. (1995). A life-span theory of control. *Psychological Review, 102*(2), 284. doi:10.1037/0033-295X.102.2.284

Hirschi, A. (2009). Career adaptability development in adolescence: Multiple predictors and effect on sense of power and life satisfaction. *Journal of Vocational Behavior, 74*(2), 145-155. doi:10.1016/j.jvb.2009.01.002

Hirschi, A. (2012). Callings and work engagement: Moderated mediation model of work meaningfulness, occupational identity, and occupational self-efficacy. *Journal of Counseling Psychology, 59*(3), 479-485. doi:10.1037/a0028949

Hirschi, A., Lee, B., Porfeli, E. J., & Vondracek, F. W. (2013). Proactive motivation and engagement in career behaviors: Investigating direct, mediated, and moderated effects. *Journal of Vocational Behavior, 83*(1), 31-40. doi:10.1016/J.Jvb.2013.02.003

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*(4), 307-324. doi:10.1037//1089-2680.6.4.307

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit Indexes in covariance structure analysis: Conventional criteria versus

new alternatives. *Structural Equation Modeling, 6*(1), 1-55. doi:10.1080/10705519909540118

Judge, T. A., Bono, J. E., Erez, A., & Locke, E. A. (2005). Core self-evaluations and job and life satisfaction: The role of self-concordance and goal attainment. *Journal of Applied Psychology, 90*(2), 257-268. doi:10.1037/0021-9010.90.2.257

Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). The core self-evaluations scale: Development of a measure. *Personnel Psychology, 56*(2), 303-331. doi:10.1111/J.1744-6570.2003.Tb00152.X

Judge, T. A., & Kammeyer-Mueller, J. D. (2012). Job attitudes. *Annual Review of Psychology, 63*, 341-367. doi:10.1146/annurev-psych-120710-100511

Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127*(3), 376-407. doi:10.1037/0033-2909.127.3.376

Kehr, H. M. (2004). Integrating implicit motives. explicit motives, and perceived abilities: The compensatory model of work motivation and volition. *Academy of Management Review, 29*(3), 479-499. doi:10.5465/AMR.2004.13670963

Kristof-Brown, A. L., & Jansen, K. J. (2007). Issues of person-organization fit. In C. Ostroff & T. A. Judge (Eds.), *Perspectives on organizational fit* (pp. 123-154). New York, NY: Lawrence Erlbaum.

Ling, T. J., & O'Brien, K. M. (2013). Connecting the forgotten half: The school-to-work transition of noncollege-bound youth. *Journal of Career Development, 40*(4). doi:10.1177/0894845312455506

Little, B. R. (1983). Personal projects: A rationale and method for investigation. *Environment and Behavior, 15*(3), 273-309. doi:10.1177/0013916583153002

Loughlin, C., & Barling, J. (2001). Young workers' work values, attitudes, and behaviours. *Journal of Occupational and Organizational Psychology, 74*(4), 543-558. doi:10.1348/096317901167514

Marsh, H. W., Lüdtke, O., Trautwein, U., & Morin, A. J. S. (2009). Classical latent profile analysis of academic self-concept dimensions: Sinergy of person- and variable-centered approaches to theoretical models of self-concept. *Structural Equation Modeling, 16*(2), 191-225. doi:10.1080/10705510902751010

McArdle, J. J. (2009). Latent variable modeling of differences and changes with longitudinal data. *Annual Review of Psychology, 60*, 577-605. doi:10.1146/annurev.psych.60.110707.163612

Moran, C. M., Diefendorff, J. M., Kim, T. Y., & Liu, Z. Q. (2012). A profile approach to self-determination theory motivations at work. *Journal of Vocational Behavior, 81*(3), 354-363. doi:10.1016/j.jvb.2012.09.002

Morin, A. J. S., & Marsh, H. (2015). Disentangling shape from level effects in person-centered analyses: An illustration based on university teachers' multidimensional profiles of effectiveness. *Structural Equation Modeling, 22*, 39-59. doi:10.1080/10705511.2014.919825

Neuberger, O., & Allerbeck, M. (1978). *Messung und Analyse von Arbeitszufriedenheit: Erfahrungen mit dem'Arbeitsbeschreibungsbogen (ABB) [Measurement and analysis of job satisfaction: Experiences using the job description sheet]*. Bern, Switzerland: Hans Huber.

Nurmi, J. E., & Salmela-Aro, K. (2002). Goal construction, reconstruction and depressive symptoms in a life-span context: The transition from school to work. *Journal of Personality, 70*(3), 385-420. doi:10.1108/00400911011058343

Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling, 14*(4), 535-569. doi:10.1080/10705510701575396

Parker, S. K., Bindl, U. K., & Strauss, K. (2010). Making things happen: A model of proactive motivation. *Journal of Management, 36*(4), 827-856. doi:10.1177/0149206310363732

Peters, P., Poutsma, E., Van der Heijden, B. I. J. M., Bakker, A. B., & de Bruijn, T. (2014). Enjoying new ways to work: An HRM-process approach to study flow. *Human Resource Management, 53*(2), 271-290. doi:10.1002/hrm.21588

Pinder, C. C. (2008). *Work motivation in organizational behavior*. New York, NY: Psychology Press.

Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology, 95*(4), 667-686. doi:10.1037/0022-0663.95.4.667

Pintrich, P. R., & de Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*(1), 33-40. doi:10.1037/0022-0663.82.1.33

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903. doi:Doi 10.1037/0021-9101.88.5.879

Polanczyk, G. V., Salum, G. A., Sugaya, L. S., Caye, A., & Rohde, L. A. (2015). Annual Research Review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *Journal of Child Psychology and Psychiatry, 56*(3), 345-365. doi:10.1111/jcpp.12381

Porfeli, E. J., Lee, B., & Weigold, I. K. (2012). A multidimensional measure of work valences. *Journal of Vocational Behavior, 80*(2), 340-350. doi:10.1016/j.jvb.2011.09.004

Porfeli, E. J., Wang, C., & Hartung, P. J. (2008). Family transmission of work affectivity and experiences to children. *Journal of Vocational Behavior, 73*(2), 278-286. doi:10.1016/j.jvb.2008.06.001

Rigotti, T., Schyns, B., & Mohr, G. (2008). A short version of the occupational self-efficacy scale: Structural and construct validity across five countries. *Journal of Career Assessment, 16*(2), 238-255. doi:10.1177/1069072707305763

Roberts, B. W., O'Donnell, M., & Robins, R. W. (2004). Goal and personality trait development in emerging adulthood. *Journal of Personality and Social Psychology, 87*(4), 541-550. doi:10.1037/0022-3514.87.4.541

Saks, A. M., & Ashforth, B. E. (2002). Is job search related to employment quality? It all depends on the fit. *Journal of Applied Psychology, 87*(4), 646-654. doi:10.1037//0021-9010.87.4.646

Saks, A. M., & Gruman, J. A. (2011). Getting newcomers engaged: The role of socialization tactics. *Journal of Managerial Psychology, 26*(5), 383-402. doi:10.1108/02683941111139001

Salmela-Aro, K. (2009). Personal goals and well-being during critical life transitions: The four C's-Channelling, choice, co-agency and compensation. *Advances in Life Course Research, 14*(1-2), 63-73. doi:Doi 10.1016/J.Alcr.2009.03.003

Salmela-Aro, K., Mutanen, P., Koivisto, P., & Vuori, J. (2009). Adolescents' future education-related personal goals, concerns, and internal motivation during the "Towards Working Life" group intervention. *European Journal of Developmental Psychology, 7*(4), 445-462. doi:10.1080/17405620802591628

Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika, 66*(4), 507-514. doi:10.1007/Bf02296192

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire - A cross-national study. *Educational and Psychological Measurement, 66*(4), 701-716. doi:10.1177/0013164405282471

Seo, M.-G., Barrett, L. F., & Bartunek, J. M. (2004). The role of affective experience in work motivation. *Academy of Management Review, 29*(3), 423-439. doi:10.5465/AMR.2004.13670972

Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology, 76*(3), 482-497. doi:10.1037//0022-3514.76.3.482

Shulman, S., & Nurmi, J. E. (2010). Dynamics of goal pursuit and personality make-up among emerging adults: Typology, change over time, and adaptation. *New Directions for Child and Adolescent Development, 2010*(130), 57-70. doi:10.1002/cd.281

Tabachnik, B. G., & Fidell, B. G. (2013). *Using multivariate statistics*. Boston, MA: Pearson.

ten Brummelhuis, L. L., ter Hoeven, C. L., Bakker, A. B., & Peper, B. (2011). Breaking through the loss cycle of burnout: The role of motivation. *Journal of Occupational and Organizational Psychology, 84*(2), 268-287. doi:10.1111/j.2044-8325.2011.02019.x

Valero, D., Hirschi, A., & Strauss, K. (2015). Hope in adolescent careers: Mediating effects of work motivation on career outcomes in Swiss apprentices. *Journal of Career Development, 42*(5), 381-395. doi:10.1177/0894845314566866

Van den Broeck, A., Lens, W., De Witte, H., & Van Coillie, H. (2013). Unraveling the importance of the quantity and the quality of workers' motivation for well-being: A person-centered perspective. *Journal of Vocational Behavior, 82*(1), 69-78. doi:10.1016/j.jvb.2012.11.005

Van Maanen, J. (1975). Police socialization: A longitudinal examination of job attitudes in an urban police department. *Administrative Science Quarterly, 20*(2), 207-228. doi:10.2307/2391695

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods, 3*(1), 4-70. doi:10.1177/109442810031002

Vander Elst, T., Van den Broeck, A., De Cuyper, N., & De Witte, H. (2014). On the reciprocal relationship between job insecurity and employee well-being: Mediation by perceived control? *Journal of Occupational and Organizational Psychology, 87*(4), 671-693. doi:10.1111/joop.12068

Wang, M., & Hanges, P. J. (2011). Latent class procedures: Applications to organizational research. *Organizational Research Methods, 14*(1), 24-31. doi:10.1177/1094428110383988

Warr, P., Bindl, U. K., Parker, S. K., & Inceoglu, I. (2014). Four-quadrant investigation of job-related affects and behaviours. *European Journal of Work and Organizational Psychology, 23*(3), 342-363. doi:10.1080/1359432X.2012.744449

Wolters, C. A., & Pintrich, P. R. (1998). Contextual differences in student motivation and self-regulated learning in mathematics, English, and social studies classrooms. *Instructional Science, 26*, 27-47. doi:10.1023/A:1003035929216

Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review, 26*(2), 179-201. doi:10.5465/Amr.2001.4378011

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior, 74*(3), 235-244. doi:10.1016/j.jvb.2008.11.003

Yu, K. Y. T. (2009). Affective influences in person-environment fit theory: Exploring the role of affect as both cause and outcome of P-E fit. *Journal of Applied Psychology, 94*(5), 1210-1226. doi:10.1037/a0016403