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Swiss Adolescents' Career Aspirations:
Influence of Context, Age, and Career Adaptability

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Abstract

This study investigated the content, realism, stability, and coherence of the career aspirations of 262 students in seventh grade in Switzerland (ages 13 to 15 years). The content analysis revealed that 82% of the participants named at least one realistic career aspiration and aspirations showed clear resemblance to existing opportunities in the environment. Quantitative analyses confirmed the hypotheses that realism and stability of aspirations over a 10 months period could better be predicted by individual degree of career adaptability as measured by planfulness and exploration than by chronological age when grade level was controlled for. Coherence of aspirations was not related to age or adaptability. Students attending basic scholastic requirements school tracks reported more adaptability but not more realistic, stable, or coherent aspirations compared to students in advanced requirements tracks.

Keywords: career decision-making, career aspirations, career development, counseling psychology

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Career preparation in adolescence is an important precursor for successful career development across the life-span (Super, 1990) and is closely related to adolescent adjustment and well-being (Skorikov, 2007). During adolescence, developing a vocational identity is a central developmental task (Erikson, 1968). One's vocational identity or occupational self-concept is typically reflected in a person's expressed career aspirations (Super). Career aspirations refer to an individual's expressed career related goals or intentions and also include motivational components which are not present in mere interests (Silvia, 2001). Research indicated that adolescents' career aspirations are among the most useful predictors of eventual occupational choices made in adulthood (Schoon & Parsons, 2002; Trice & McClellan, 1993).

Traditional theories of career development proposed that career aspirations develop in specific stages through childhood and adolescence. For example, Ginzberg (1952) assumed that young adolescents from 11 to 14 years of age had tentative choices based on their interests, but with little attention to realistic constraints. Super (1990) and Ginzberg further proposed that starting at 14 until 24 years old, adolescents are in the exploration stage with a progressive narrowing of career options from identifying tentative options to making final decisions regarding career choice. L. S. Gottfredson's (1981, 2002) theory asserts that after age 14 students begin to adjust their career aspirations to factors of the personal self and compromise their aspirations according to more realistic factors. In previous stages students would base their aspirations on factors such as perceived gender, prestige, and power of vocations. Although all of these theories make suggestions about the influence of the environment, they propose a rather circumscribed sequence of stages in adolescent career development which are largely determined by chronological age.

Conversely, concepts of career development based on a developmental-contextual approach have stressed that context is an essential component of career development. According to this approach, career development can only be understood as a dynamic interaction of person and context which is an important theoretical advancement compared to classic stage models of development (Vondracek, 2001; Vondracek, Lerner, & Schulenberg, 1983, 1986). Empirical studies showed that the specific demands of the environment had a profound influence on timing and content of adolescent career aspiration development that went beyond influence of chronological age (Heckhausen & Tomasik, 2002; Reitzle, Vondracek, & Silbereisen, 1998; Schmitt-Rodermund & Silbereisen, 1998; Vondracek, Silbereisen, Reitzle, & Wiesner, 1999).

To enrich our understanding of adolescent career development, there is a need for studies which investigate core aspects of career development in a context-sensitive manner and which apply research designs that allow differentiating between effects of chronological age and specific adaptations of adolescents to environmental demands.

Present Study

I explored degree and content of adolescent career aspiration development among predominantly non-college bound Swiss adolescents in seventh grade. Similar to the dual system in Germany (cf. Heinz, 2002), in Switzerland, about two-thirds of adolescents continue to vocational education and training (VET) in one of over 200 existing vocational apprenticeships after finishing compulsory school in ninth grade. In most places, students in secondary schools are divided into different school tracks. This separation is mainly based on the general scholastic achievement of a student in elementary school. School-types with advanced requirements open up more vocational possibilities and allow students to attend general high schools after taking an entry examination which directly prepares them for later college education. Students in classes with basic requirements are limited to directly entering

VET and non college-bound high schools; however, it is possible to earn additional degrees, including college degrees, after finishing VET.

Students are basically free to apply to the vocation(s) of their choice, but the available vocations differ markedly in availability and personal requirements. This results in a circumscribed choice since students have to apply to private firms for apprenticeships much like in an ordinary job market where supply and demand have to meet. In contrast to students of similar age and grade level in the U.S. and many other countries, this implies that career decision-making was a more imminent developmental task for the present study participants which supposedly would have an impact on their career aspiration development.

Specifically, I investigated (a) how the specific context affects the content of adolescents' career aspirations, (b) to what extent the degree of adolescent career aspiration development is related to chronological age and to individual degree of career adaptability, and (c) whether attending different school-tracks affects degree of career adaptability and career aspiration development. A critical issue when assessing the relation between age and career development is controlling for grade level. As cautioned by other researchers (Low & Rounds, 2007; Patton & Creed, 2001), the specific transitions which different educational systems impose on students depending on grade level are very likely exhibiting a considerable influence on career development variables. If grade level is not controlled for, any inferences about the effects of age on career development variables might in fact equally well be attributed to the effect of grade level itself. For this purpose, I assessed students within one grade, but with different chronological ages.

It was hypothesized that:

1. Even in early adolescence students would show a clear appreciation of the environmental opportunities and limitations when naming career aspirations and would not just be focused on fantasy, prestige, gender, or power. Existing research with U.S. children also implied that even in sixth grade students named only a few purely fantasy aspirations and most already possessed at least one realistic aspiration (Trice & Hughes, 1995). Another study by Helwig (2001) showed that among U.S. students in eighth grade, about 40% of boys and up to 20% of girls held occupational aspirations that could be classified as fantasy. Based on these studies, it was expected that no more than 30% of all students within the present Swiss sample would only report fantasy vocations or have no realistic idea about a possible career at all. It was also expected that their aspirations would reflect the existing opportunities in their specific environment in terms of available educational, work, and training positions.

2. The degree of career aspiration development would be significantly predicted by the individual degree of career adaptability, but not by chronological age when controlling for grade level. According to Savickas (1997) career adaptability refers to the readiness to cope with the career decision-making task and results from person-environment interactions and adaptations. Savickas, Super (1990) and others (Phillips & Blustein, 1994) have noted that planfulness and active career exploration are two of the most fundamental aspects of career adaptability, which has been supported by numerous empirical studies (e.g., Creed, Patton, & Prideaux, 2007). I investigated the degree of career aspiration development by coherence, stability, and realism of aspirations which according to Crites (1976), are core components of career choice content. Due to the fact that stability can only be estimated longitudinally, I applied a panel design with a 10 month follow-up measure to assess aspiration stability.

3. Students in basic requirement school tracks would show an accelerated degree of career adaptability and career aspiration development compared to students in advanced tracks. Since basic track students are confronted with more circumscribed choices and no possibility of extending their general, non-vocational education, they should be more engaged in the process of career preparation.

Method

Participants

Students from a rural area in the German speaking part of Switzerland at the beginning of the second semester in seventh grade participated in the study. The 269 students that participated in the study came from 5 different school districts and 12 different school classes.

The age range was from 12 to 16 years old. Of the participants, 1 student was 12 years old, 17.8% were 13 years old, 61.0% 14 years old, 18.6% 15 years old, and 2.2% 16 years old. The normative age of this grade was 14 years old, but attendance of students one year older or younger was quite frequent due to the cut-off date of first school attendance in the summer of each year and some variability of when students started kindergarten and subsequent first grade. However, students 12 and 16 years old were outside of the norm as indicated by the frequencies within the present sample. These students possibly differed markedly on variables of social behavior or scholastic achievement which may have had a confounding influence on age and career aspirations which was not intended to be measured in the present study. As a result, I decided to exclude these 7 students from the sample in order not to possibly bias the results in an unrepresentative manner. This also made it more plausible to generalize the results to 13 to 15 year old students than it would have been the case for 12 to 16 year old students.

The remaining sample consisted of 262 students (50.4% female) with a mean age of 14.01 (SD = 0.61) years. Most students had a Swiss nationality (82.4%). The majority of the remaining 46 students were from South-Eastern Europe. The majority (64.9%) of the students attended a school-type with advanced academic requirements. The others attended a school-type with basic requirements.

Measures

Career adaptability. The individual degree of adaptability of a student was measured by career planning and career exploration. According to Super's model of vocational maturity (Super & Overstreet, 1960) the two dimensions together represent the attitudes component of a person's degree of career development. Both constructs were assessed with the Career Development Attitudes Scales from the German adaptation of the Career Development Inventory (Seifert & Eder, 1985; Super, Thompson, Lindeman, Jordaan, & Myers, 1981). Planning was assessed with 22-items and students were asked to indicate on a five-point Likert scale how much they thought about different activities concerning career planning, how much time they had invested in thinking about career relevant questions in comparison to classmates, and how much knowledge about preferred occupations they possessed. Answers ranked from very few to a lot with higher scores indicating more engagement in career planning. Career exploration was measured with 26 items where students indicated on a five-point Likert scale whether they would consult different sources of information for their career development (e.g., my father, my teacher, job-shadowing) and how much useful information they have already obtained from these sources. Answers ranked from none to very much with higher scores indicating more active career exploration. This inventory has been widely used in international research and different studies with the German language adaptation supporting the content and criterion validity of the scales. For example, the scales correlated positively with career decidedness, knowledge about the world-of-work, obtaining an apprenticeship after school, or realizing an aspired major in university (Seifert, 1993; Seifert, Bergmann, & Eder, 1987; Seifert & Eder, 1991). The mean value of the z-transformed career planning and career exploration scale was taken as the score for a student's degree of career adaptability where higher values indicated more adaptability. The two scales were significantly related ($r = .381$, $p < .001$) which provided support for the notion of two related

yet distinct measures of a common underlying construct (i.e., career adaptability). The internal stability (Cronbach's Alpha) in the present sample was .86 for career planning, .73 for career exploration, and .91 for the complete career adaptability scale.

Career aspirations. In order to measure a student's aspirations or goals about his or her vocational future without urging them to circumscribe or compromise these goals according to existing or perceived restrictions in reality, each student was asked to name the specific VET or continuing school that he or she was currently considering to eventually pursue after ninth grade. Students could name as many aspirations as they wanted in a free-listing format. Students named between 0 and 9 ($M = 2.6$, $SD = 1.5$) career aspirations at T1 and between 0 and 12 ($M = 2.96$, $SD = 1.6$) aspirations at T2. Most students (T1 55%, T2 61%) named 2 or 3 aspirations at both measurement points.

Realism. For the purpose of the present study, realism was defined as the degree to which an adolescent's career aspirations corresponded to existing possibilities in the environment, taking into account the availability of the option in terms of frequency and scholastic requirements. The applied measure took advantage of the fact that the existing VETs and high schools which could be pursued after ninth grade in Switzerland are clearly defined in number and requirements. For example, the five most available VETs in terms of apprenticeship sites in the larger region of the participants were in descending order from office clerk, retail salesperson, car mechanic, furniture and construction carpenter, and cook. Each provided between 1,917 and 259 apprenticeship places with a total of 10,463 sites. As a reflection of this, the strongest industries in the larger region were business and retail sales, mechanic and electronic industry, and crafts and construction work. Based on these restrictions, realism was calculated using two criteria:

1. Correspondence to one of the 233 actual types of VETs or existing advanced schools which can be pursued directly after finishing school from the specific school-type of the student (certain kinds of VETs and advanced schools can only be pursued when finishing a school-type with advanced requirements). One point was assigned if the aspiration fulfilled these requirements and zero points were assigned if it did not.

2. Number of possible companies for vocational apprenticeships in that particular vocation within the Canton (State) of residence. For this criterion between one to four points for each aspiration were assigned (1 point for 1-3 possible places for apprenticeships in the Canton; 2 point for 4-33 possible places; 3 points for 34-330 possible places; 4 points for 331-3330 possible places and for general high-school). A logarithmic function was applied because the number of places was extremely positively skewed with most vocations providing only few places and only some many. The values from criteria (1) and (2) were multiplied resulting in a total value for the realism of this career aspiration ranking from 0 to 4 points. An average realism score for all aspirations was then calculated for each student which ranged from 0 to 4 ($M = 2.3$, $SD = 1.3$).

For example, the aspiration of computer specialist would be assigned 0 points in the first step of the calculation for a student from a class with basic requirements, but 1 point for a student from a class with advanced requirements since this vocation is an existing VET after ninth grade, but can only be pursued after finishing a class with advanced requirements. In the second step of the calculation the aspiration would receive 3 points for availability since there were 197 possible places for apprenticeships in the Canton of residence at the time of data collection. This would result in a realism score for computer specialist of 0 for the basic requirements student and 3 for the advanced requirements student.

Coherence. Coherence is a measure of psychological similarity between different occupations (Holland, 1997). For simplification of analysis, coherence was calculated for up to the first four career aspirations of a student which included all aspirations for 92% of the participants. Coherence could be calculated for 68% of all participants in the present study.

For the remaining students, no coherence measure could have been calculated because they did not name at least two aspirations (27.2% of all students) and no RIASEC code was assigned to the popular aspiration general high-school because it does not correspond to a specific interest pattern. Therefore, those students had to be excluded from the analyses regarding coherence, but were still included in all other analyses. Students without this measure were more likely to be male, $\chi^2(1) = 14.99$, $p < .001$, $\varphi = .231$, but did not differ in their distribution of nationality, attended school type, age, career adaptability, aspiration realism, or stability from the remaining students. Each aspiration was assigned a three-letter RIASEC code based on the list provided by Jörin, Stoll, Bergmann, and Eder (2004) which is a Swiss Dictionary of Occupational Codes (cf. Gottfredson & Holland, 1996) based on the RIASEC types taxonomy proposed by Holland. Coherence scores for each pair of the first four aspirations of a student were calculated with the C-index (Brown & Gore, 1994) which takes into account all three letters, is based on their similarity according to the RIASEC hexagon, and has an underlying normal distribution for its values, which ranges from 0 to 18 with higher scores indicating more coherence. The mean score for the up to six coherence scores was taken as the degree of aspiration coherence of a student ($M = 11.2$, $SD = 3.4$).

Stability. Stability of career aspirations was calculated by comparing the named aspirations at T1 to those obtained at T2. The research examined the amount of changes that occurred in the named aspirations with stability calculated as the number of aspirations that were named at both T1 and T2, divided by the number of aspirations that disappeared at T2 plus the aspirations that were newly named at T2 plus a constant of one (cf. Equation 1). For example, a student who kept 2 out of 3 aspirations stable over time while dropping 1 received a score of 1.0. This measure produced a score where higher scores indicated more stability over time and which was relatively independent from the average number of named aspirations ($r = .101$, $p = .134$)[1].

$$stability = \frac{number\ of\ stable\ aspirations}{(number\ of\ disappeared\ aspirations + number\ of\ additional\ aspirations) + 1} \quad (1)$$

Procedure

Teachers of the classes in seventh grade in the five school districts were contacted and asked if they would participate with their classes in the study. All agreed to do so and passive parental consent was obtained by informing parents/guardians with a letter that their child would participate in a study on adolescent career development. Data collection took place in the class under the supervision of the author or the classroom teacher. Participation of the students was voluntarily and but all students present at the time completed the questionnaire. The questionnaire asked students to indicate their name, age in years, gender, school-type and whether they were Swiss or other nationality. Names were obtained to ensure the matching of the data at T1 and T2. However, strict confidentiality was ensured. Students were then asked to name their current career aspirations and then completed the measure for career planning and career exploration in this order. The first data collection at T1 took place at the beginning of the second semester in seventh grade. The second data collection was conducted about 10 months later at the end of the first semester in eighth grade (T2). This time, students again received a questionnaire on which they stated their name and were asked to list their current career aspirations. Data collection was again completed in classes under the supervision of the classroom teacher.

Results

Analysis of Missing Cases at T2

At the second measurement point (T2) 38 students (14.5%) did not complete the questionnaire. Some students did not attend class on the day of data collection; however, most did not participate because they repeated one grade and were thus no longer in the same participating class. Chi-square tests showed that students from school classes with basic requirements were over represented in the missing cases, $\chi^2(1) = 15.341, p < .001, \varphi = .242$, but no systematic drop-out occurred according to gender, $\chi^2(1) = 0.161, p = .688, \varphi = .025$, or nationality, $\chi^2(1) = 1.153, p = .283, \varphi = .066$. No significant differences between students who did not participate at T2 and the remaining students occurred at T1 in age, $t(260) = 1.06$, $p = .289, d = 0.20$, measured career aspiration coherence, $t(171) = 0.72, p = .470, d = 0.17$, or career adaptability, $t(260) = 1.71, p = .088, d = 0.30$. However, missing students reported less realism in their career aspirations at T1, $t(246) = 2.239, p = .026, d = 0.40$.

Preliminary Analysis of Correlation Data

The correlations among the applied measures in Table 1 showed that students with Swiss nationality had more stable aspirations than students with other nationalities. Students in schools with basic requirements were more likely to be of non-Swiss nationality, older age, and reported more career adaptability than students in advanced school-types while showing no difference in the career aspiration variables. Age did not correlate significantly with career adaptability or any of the three career aspiration measures. Adaptability was also not significantly related to the career aspiration variables. Stability was positively related with realism and coherence, but coherence was not significantly related to realism.

Content Analysis of Career Aspirations

To test the hypothesis that even students in seventh grade show career aspirations which are largely adapted to the existing opportunities in their environment, a content analysis of the most frequently named aspirations at T1 was conducted. Of all students, 8.4% had no idea what they would like to do after leaving school. An additional 9.2% had no career aspiration(s) which corresponded to an existing option that they could pursue after leaving school. This means that 82.4% of all students named at least one career aspiration which corresponded to an existing and basically realistic option when they would leave school.

The five most frequently named aspirations among male students were general high-school (26.9% of all boys), office clerk (12.7%, ranked first in availability in the Canton of residence), car mechanic (11.9%, ranked third in availability), computer specialist (11.9%, ranked 10th in availability), and cook (9.7%, ranked fifth in availability). Girls aspired most often to general high-school (37.8%), office clerk (28.1%), teacher (14.1%, not a VET), hair dresser (13.3%, ranked sixth in availability), physician's assistant (10.4%, ranked 13th in availability) and kindergarten teacher (10.4%, not a VET). Among the most aspired 20 occupations within the whole sample, 7 did not correspond to an actual occupation education available after the ninth grade. Some of them (e.g., professional athlete and artist, both named by approximately 5% of all students) could be labeled as "fantasy" occupations defined as highly competitive, possessing a high degree of glamour, representing miniscule numbers in the paid labor market, and being highly visible (Helwig, 2001). However, 10 (including general high-school) out of the 20 most aspired occupations corresponded to one of the 20 most frequently selected and thus also most available VETs in Switzerland (Bundesamt für Berufsbildung und Technologie, 2006).

There were expected gender differences in career aspirations with male students aspiring to more realistic and technical professions while girls preferred artistic and social

occupations. However, attending a general high-school which prepares for later college education after compulsory school and learning the vocation of office clerk were clearly the two most frequently named aspirations for both genders. Also evident was the influence of the rural area on the career aspirations of male students. For example, farmer, agricultural machine mechanic, and gardener ranked among the 20 most frequently aspired occupations for boys.

Overall, the first analysis supported the hypothesis that the vast majority of the participating students in seventh grade possessed aspirations about what they want to do when leaving school which were already adapted to the existing structure of the environment.

Analysis of Influence of Age and Adaptability on Career Aspirations

To evaluate how well career aspiration, coherence, stability, and realism could be predicted by age and career adaptability, respectively, separate hierarchical regression analyses were conducted for each of the dependent variables (cf. Table 2). Gender, school-type, and nationality were controlled for by entering them first into the equations. In a next step, age was entered into the equations to account for its effect on the outcome measures above the other control variables. In a third step, career adaptability in terms of conducted career exploration and career planning was entered to examine its predictive effect on the outcome measures controlling for age, gender, school type, and nationality.

Realism. Table 2 shows that the control variables (gender, attended school-type, and nationality) did not significantly predict average career aspiration realism, $\Delta F(3, 258) = 1.0$, $p = .388$. Age explained an additional amount of 2.6% variance in realism above and beyond the control variables which was not significant, $\Delta F(1, 257) = 3.7$, $p = .055$. As expected, however, adaptability in career decision-making explained a small, but significant 1.8% variance above and beyond age and the other three control variables, $\Delta F(1, 256) = 4.8$, $p = .029$. The fact that adaptability was not significantly related to realism when looking at the bivariate correlation, but emerged as a significant predictor in the regression analysis can be explained by a suppression effect. Attending scholastically advanced classes was comparatively strongly negative related to adaptability, but moderately positive related to realism. If attended school type was controlled for in the regression, adaptability emerged as significantly positive related to realism.

Stability. The stability of a student's career aspirations over the 10 month interval was significantly predicted by the first three control variables, $\Delta F(3, 218) = 2.6$, $p = .047$, but no single significant predictor emerged among them (Table 2). Age could not explain a significant amount of additional variance, $\Delta F(1, 217) = 0.0$, $p = .644$. However, as was expected, the degree of career adaptability was a significant predictor and explained 2.3% variance above and beyond age and the other control variables, $\Delta F(1, 216) = 5.4$, $p = .021$. The nonsignificant bivariate correlation of adaptability and stability but the significant relation in the regression model can again be explained by a suppression effect of school-type.

Coherence. Coherence of career aspirations was not significantly predicted by the first three control variables, $\Delta F(3, 174) = 1.4$, $p = .241$, age, $\Delta F(1, 173) = 0.0$, $p = .990$, or adaptability, $\Delta F(1, 172) = 0.6$, $p = .445$. This disconfirmed the predicted relation of adaptability and coherence (Table 2).

Differences According to School Track

A multivariate analysis of covariance (MANCOVA) was applied to investigate whether students in advanced school tracks differ in degree of career planning and exploration (career adaptability) from students in basic tracks when gender, nationality, and age were controlled for. The result showed a significant difference between the two groups, $F(2,255) = 4.796$,

$p = .009$, $\eta^2 = .036$, in the two career adaptability measures confirming the hypothesis that students in basic classes showed higher career adaptability.

The same procedure was applied to assess possible differences in the three career aspiration development variables by taking realism, stability, and coherence as the dependent variables and age, gender, and nationality as covariates. The results of the MANCOVA showed no significant overall difference in those three measures between the school tracks, $F(3,146) = 1.649$, $p = .181$, $\eta^2 = .033$. Post-hoc univariate analyses of covariance showed that students form advanced tracks showed slightly more stability, $M = 0.30$, $SD = 0.41$ vs. $M = 0.18$, $SD = 0.23$, $F(1,219) = 3.90$, $p = .050$, $\eta^2 = .017$, more realism, $M = 2.02$, $SD = 1.22$ vs. $M = 1.74$, $SD = 1.23$, $F(1,257) = 4.03$, $p = .046$, $\eta^2 = .015$, but no difference in coherence, $M = 10.74$, $SD = 3.55$ vs. $M = 11.07$, $SD = 2.92$, $F(1,173) = 0.80$, $p = .371$, $\eta^2 = .005$. Thus, although the overall differences were not large enough to be statistically significant for this sample size, contradicting the hypotheses, attending an advanced school track was slightly *positively* related to the career aspiration measures in two out of three analyses.

Discussion

The goals of this study were to assess the degree to which career aspirations of Swiss adolescents in seventh grade reflected the opportunity structure in the respective environment and whether chronological age, individual degree of career adaptability, or attended school track would predict degree of career aspiration development in terms of realism, stability, and coherence. Following a developmental-contextual view of career development (Vondracek, Lerner, & Schulenberg, 1983; Vondracek & Reitzle, 1998), I tested the hypotheses that (a) even students in seventh grade can possess largely adapted career aspirations in terms of specific environmental opportunities, (b) individual degree of career adaptability, as measured by planning and exploration, but not chronological age would predict degree of aspiration development when grade level is controlled for, and (c) attended school track would affect degree of career adaptability and career aspiration development.

The results showed that fantasy occupations, such as artist or professional athlete, are still common across the sample of students in seventh grade. However, less than 20% of all students had no realistic aspirations at all and 10 of the 20 most frequently named aspirations corresponded to one of the 20 most frequently available VETs in Switzerland. Supporting a developmental-contextual view of adolescent career development (Vondracek et al., 1986), these young students showed a remarkable degree of reality orientation in their career aspirations and were already strongly influenced by the existing possibilities in their environment.

The results also confirmed the assumption that the individual degree of engagement in the career preparation task and not chronological age, determines the degree of career aspiration development in adolescence (Vondracek & Reitzle, 1998). As expected, age did not emerge as a significant predictor of career aspiration stability or realism, whereas individual degree of adaptability could explain a small, but significant amount of variance in both measures. However, contrary to what was expected, coherence of career aspirations was not only unrelated to age, but also unrelated to degree of career adaptability. Confirming Holland's (1997) assumption, coherence was positively related to aspiration stability.

As expected, students in lower achievement tracks showed a higher degree of career adaptability than their peers in advanced tracks. This supports the hypothesis that those students are more engaged in career preparation due to the imminence and importance of their early career decision. However, no clear differences emerged between students in different tacks regarding the career aspiration measures. That is, students from basic tracks could not transform their advanced state of career adaptability development into more developed career aspirations in terms of realism, coherence, and stability. This is possibly due to the increased

restrictions for students from basic tracks in the Swiss VET system. Those students are forced to change their aspirations more frequently and have greater difficulty in finding career goals which are supported by the environmental structure.

Finally, differences in career aspiration development also emerged based on nationality, with Swiss students reporting more stable aspirations than their classmates from other countries. Previous research in Switzerland showed that students with an immigration background faced much more difficulty in mastering the school-to-work transition due to discrimination in the selection process of small and medium sized firms (Haeberlin, Imdorf, & Kronig, 2004). The results of the present study may suggest that they also face a greater challenge in coming to terms with the existing possibilities and restrictions in the Swiss VET system which makes them change their aspirations more profoundly during the career decision-making process.

Limitations

Limitations of the study lie in its regionally circumscribed convenience sample of students who came from one rural area in Switzerland. While the participating students showed representative distributions in terms of gender, school-type, and nationality for Switzerland, the sample cannot be considered as representative for Switzerland in general.

Furthermore, although the measured independent variables could explain a significant amount of variance for the dependent variables for degree of career aspiration development in terms of stability and realism, the amount was rather small. This implies that other aspects which were not assessed in this study might also be very influential in determining the state of career aspiration development. Potential variables might be actual knowledge of the world-of-work, state of general identity development, or social support which are all significantly related to adolescent career development (e.g., Helwig, 2004). Also, career adaptability was measured with just two indicators. Other variables could be included to construct a multivariate measure of career adaptability. Likewise, future studies could apply more complex designs including both within and between grade level comparisons to the address the research questions.

The measures applied for degree of career aspiration development relied on established procedures (e.g., the C-index for coherence) whenever possible. However, there are no established measures of realism that are relevant to this population. In order to achieve an objective measure, realism was determined according to the correspondence of an aspiration to existing vocational and educational opportunities for this population. Although this measure is objective, quantifiable, and relevant to this specific population, it is not without limitations. For example, a student who aspires to become a lawyer could still be realistic in the long run, but was not coded as such within the herein applied definition of realism. Thus, it has to be acknowledged that any objective measure of realism can naturally not do justice to the individual situation of all students. However, the measure of realism used in this study may still serve as a useful model for future research on the realism of career aspirations.

Implications for Practice

The results of the present study support the notion that adolescent career development can be best understood as the result of a dynamic interaction of person and environment. This implies that counselors should pay more attention to the specific contextual demands regarding career development for adolescents instead of focusing on age or grade level to determine appropriate career interventions. The results also showed that large individual differences exist both within grade and age cohorts as to how students adapt to an environmentally imposed career decision-making task. For practice, this implies that the ability to adapt to this task has to be promoted by taking the individual needs of a student into

account and counselors cannot assume that all students of a given age or within a given grade require the same degree of assistance. As the study shows, the specific proximity and complexity of the career choice for a student has to be assessed and career interventions should be tailored accordingly. For example, the results show that students facing limited career opportunities are also actively engaged in career preparation but can somehow not translate this into more adaptive career aspirations. Counselors may therefore not need to help these students simply do more exploration or planning but do different and more focused career preparation by providing extra help identifying, planning for and exploring realistic aspirations.

Policy implications include the need to individualize the offered assistance in career guidance on an organizational level in schools. Also, some flexibility in the timing of important educational/vocational transitions could be promoted. For example, in Switzerland the possibility to voluntarily attend a tenth grade of school before starting VET and training has grown increasingly in demand among adolescents and enables more flexibility as to when this important transition has to be made.

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Table 1.
Correlations among the Assessed Variables

	1	2	3	4	5	6	7	8
1. Gender	-	-.054	.037	.075	.089	.022	.120	-.060
2. School-type		-	.186**	-.213**	-.288***	.081	-.056	.126
3. Nationality			-	-.044	-.100	.026	.110	.173*
4. Age				-	.076	.094	.007	-.049
5. Adaptability					-	.098	.067	.095
6. Realism						-	.077	.243***
7. Coherence[1]							-	.176*
8. Stability[2]								-

Note. Correlations for variables 1 to 3 are Spearman, all other Pearson; $N = 262$,[1] $n = 173$; [2] $n = 224$

Codings: Gender: 0 = female, 1 = male; Nationality: 0 = foreign, 1 = Swiss; School-type: 0 = basic, 1 = advanced

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

Table 2

Hierarchical Regression Analyses for Degree of Career Aspiration Development

	Realism (*N* = 262)				Stability (*n* = 222)				Coherence (*n* = 173)			
	B	*SE (B)*	*β*	*R²*	*B*	*SE (B)*	*β*	*R²*	*B*	*SE (B)*	*β*	*R²*
Step 1												
Gender	0.020	0.152	.008		0.099	0.053	.127		0.459	0.509	.068	
School-type	0.265	0.162	.103		-0.008	0.048	-.011		-0.478	0.526	-.070	
Nationality	0.056	0.203	.017	.012	0.166	0.066	.118	.036*	1.112	0.662	.129	.024
Step 2												
Age	0.245	0.127	.122	.026	-0.019	0.041	-.032	.037	-0.005	0.421	.000	.024
Step 3												
Adaptability	0.171	0.078	.139*	.044*	0.071	0.031	.160*	.060*	0.201	0.263	.059	.027

Note. Variable coding: male gender = 1, female = 0; advanced requirements school-type = 1, basic requirements = 0; Swiss Nationality = 1, Other = 0

Variable values are for when first entered into the equation

* $p < .05$

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[1] An alternative approach to measure stability as proposed by a reviewer of this manuscript would be to divide the number of stable aspirations over time by the student's number of named career aspirations at T1 (plus a constant of 1 to prevent dividing by zero). The two measures would not produce significantly different results in the statistical analyses as presented in the results section.