

*Running Head: POSITIVE CAREER DEVELOPMENT*

This is an unedited manuscript published in the  
*Career Development Quarterly*  
Please note that the published version has undergone minor additional editing in  
style and content.

Please cite as

Hirschi, A. (2010). Positive adolescent career development: The role of intrinsic and  
extrinsic work values. *Career Development Quarterly*, 58(3), 276-287.

**Positive Adolescent Career Development:  
The Role of Intrinsic and Extrinsic Work Values**

Andreas Hirschi

Leuphana University of Lüneburg

Author note

Correspondence concerning this article should be addressed to Andreas Hirschi, Leuphana  
Universität Lüneburg, Institute for Strategic HR Management Research and Development  
(SMARD), Wilschenbrucher Weg 84, D-21335 Lüneburg, Germany, Phone +49 4131 6 777  
776, Fax +49 4131 6 777 935, Email: andreas.hirschi@leuphana.de

### Abstract

This longitudinal study, spanning across eighth grade, investigated the relation of intrinsic and extrinsic work values to positive career development in terms of deciding, planning, and exploring among 268 Swiss adolescents. The results showed that girls reported more intrinsic and less extrinsic work values compared to boys. Students with immigration background reported more extrinsic values than students with Swiss nationalities. Controlling for gender, nationality, and scholastic achievement, more general work value endorsement was a significant predictor of an above-average increase in career development over the course of the school-year. Specifically, endorsement of more intrinsic but not extrinsic work values related to positive career development.

### Positive Adolescent Career Development:

#### The Role of Intrinsic and Extrinsic Work Values

The career development process in adolescence is related to better social-adjustment and well-being and sets the stage for later career development across the life span (Skorikov & Vondracek, 2007; Super, 1990). For the purpose of the present study, positive career development was operationalized by achievement over time in three aspects: deciding, planning, and exploring. These three components are commonly regarded as some of the most fundamental characteristics of career adaptability and career choice readiness (Phillips & Blustein, 1994; Savickas, 1997).

For career development practice it is essential to know what factors are predictive of such positive development in order to conduct specifically tailored interventions. Although many studies investigated factors influencing the career decision-making process in adolescence, work values as a potentially important influence on young adolescent's career development have not yet received much empirical attention. Despite some recent advancements (e.g., Porfeli, 2007) values remain a largely understudied field within vocational psychology compared to, for example, vocational interests. This is despite the fact that several prominent theories of vocational choice and development (e.g., Brown, 1996; Dawis & Lofquist, 1984; Super, 1990) regard values as one of the most important influences on career development, choice, and satisfaction.

According to Schwartz and Bilsky (1987) values can be defined as concepts or beliefs about desirable end states or behaviors that transcend specific situations, guide the selection or evaluation of behavior and events and are ordered by their relative importance. Brown (1996) defined work values as the values that individuals believe should be satisfied as a result of their occupational work. As such, they are different from other frequently studied concepts in vocational psychology like personality traits or vocational interests, due to their

evaluative nature about what is desirable and their important role in justifying behaviors and goals (Hitlin & Piliavin, 2004).

Supporting the general importance of work values for positive career development, Schulenberg, Vondracek and Kim (1993) showed that general work value endorsement can be seen as a general positive orientation to work. They reported that U.S. adolescents who showed more endorsement of different work values also displayed a higher degree of career development in terms of more career decidedness.

Different studies distinguish between different sets of work values and there is no single established classification. However, many empirical studies and theories (e.g., Degenais, 1998; Ros, Schwartz, & Surkiss, 1999) distinguish between intrinsic and extrinsic work values. Extrinsic work values refer to values regarding the outcome or external factors of work whereas intrinsic work values refer to the actual content of work (George & Jones, 1997). Lee (1997) and Post-Kammer (1987) investigated the relationship of extrinsic/intrinsic work values and state of career maturity as an indicator of positive career development among college and high-school students, respectively. They found some significant positive correlations for intrinsic values and negative correlations for extrinsic values to career maturity but reported no strong relationship among the two. However, the studies did not investigate the influence of work values on career development in early adolescence longitudinally. There is an extensive research literature in psychology (see Eccles & Wigfield, 2002, for a review) which shows that intrinsic goals generally promote higher achievement in different domains compared to extrinsic goals because of their more adaptive promotion of learning and motivational processes. Values can be seen as enduring goals (Roberts & Robins, 2000) and it is therefore plausible that intrinsic but not extrinsic work values are positively related to achievement in terms of career development.

### *Present Study*

The purpose of the present study was to investigate the relation of work values and positive career development. The study was conducted in Switzerland, where young adolescents have to master a first important career decision-making process in eighth grade due to the strong focus on vocational education and training. At the end of eighth grade/beginning of ninth grade, they are required to apply for an apprenticeship with a private firm in one of over 200 available vocational educational opportunities. Within the Swiss educational system this is a major education/vocational transition for most students because only about one-third of Swiss adolescents continue to general high-school which prepares for a future college education (Bundesamt für Berufsbildung und Technologie, 2007). The present study traced the career development process during this crucial time period.

To account for potential alternative influences on career development and work values, gender, nationality, and scholastic achievement were also assessed and controlled for. Research indicated that those factors correlate with career development (e.g., Creed, Patton, & Prideaux, 2007; Hirschi & Läge, 2007; Patton & Creed, 2001) and work values (e.g., Duffy & Sedlacek, 2007; Johnson, 2002; Rottinghaus & Zytowski, 2006). Most research showed that girls, non-immigration youth, and students with higher scholastic achievement score higher in career development variables and are also more likely to endorse intrinsic versus extrinsic work values compared to boys, students with immigration background, and lower achieving students.

### Method

#### *Participants*

Two hundred eighty six students from a region in the German speaking part of Switzerland participated in the study. At the first time of measurement students were at the beginning of the eighth grade, at the second measurement point at the end of the eighth grade.

Seventeen students (6%) did not complete the measures at the second time due to their absence from class at the time of data collection. The missing students did not differ from the remaining ones on any of the measures assessed at the first time or in their distribution of gender, age, or nationality. Of the remaining 268 students (51% girls) 82% had a Swiss nationality, the others had nationalities mainly from South-Eastern Europe with only 3% coming from non-European countries. At the first time of measurement their ages ranged from 12 to 16 years ( $M = 14.06$ ,  $SD = 0.70$ ).

### *Measures*

*Scholastic achievement.* Students were asked to report their obtained scores in a standardized scholastic achievement test which is applied at the beginning of the second semester in the eighth grade through their Canton (State) of residence (see [www.stellwerk-check.ch](http://www.stellwerk-check.ch)). The test is a web-based adaptive testing system which assesses competencies in Mathematics, Science, German, French, and English. For the purpose of this study, only the scores in Mathematics and German language were obtained because these two subjects are considered core competencies for the school-to-work transition (Moser, 2004). The sum-score of the two subjects was taken as the indicator of a student's scholastic achievement.

*Work values.* Each student was presented a list of five intrinsic (variety at work, helping other people, independence at work, leadership and responsibility, interesting work) and five extrinsic work values (high income, job security, fast and easy entry to job, leisure time besides work, prestigious work) and instructed to indicate how important they rate each for their future work role on a 4-point Likert scale ranging from *not important* to *very important*. The selection of the ten included values was in reference to the values proposed by Katz (1993) but also showed close analogy to other established work value taxonomies (e.g., Dawis & Lofquist, 1984). The retrieved answers ranged in mean from 2.68 to 3.38 ( $M = 3.0$ ,  $SD = 0.24$ ) for the ten values. A confirmatory factor analysis showed that the assignment of

the values to the two factors intrinsic and extrinsic provided an acceptable fit to the data ( $\chi^2(32, N = 268) = 79.6, p < .001$ ;  $GFI = .947, CFI = .819, RMSEA = .073; SMRS = .068$ ). Cronbach's alphas were .47 for intrinsic and .60 for extrinsic values. Lower reliability estimates can be expected due to small number of items and because the different value items represent different aspects regarding contents or outcomes of work which by themselves do not need to be highly related (cf. Schmitt, 1996). As such, low alpha does not need to be critical for the validity of the measure which attempts to differentiate between more endorsement of one set of values over the other. The results in Table 1 present some support for the construct validity of the measures regarding their meaningful relation to career development variables.

*Career decidedness.* The German language adaptation of the *Career Maturity Inventory* (Crites, 1973; Seifert & Stangl, 1986) *Career Decidedness/Commitment Scale* was administered to participants. The scale consists of 12 items (e.g., "I don't know exactly what to do in order to choose the right occupation") and answers are indicated on a 4-point scale ranging from *not true* to *true*. For the present study scale scores were inverted so that higher scores indicate more career decidedness and commitment. Supporting the construct validity of the scale, studies showed a significant relationship to vocational identity (Hirschi & Läge, 2007), positive career attitudes, more active application for an apprenticeship after school, and more success in actually finding an apprenticeship (e.g., Bergmann, 1993, 1993). The Cronbach alpha of the scale within the present sample was .87 at the first measurement point and .88 at the second measurement point.

*Career planning.* The German language adaptation of the *Career Development Inventory* (Seifert & Eder, 1985; Super, Thompson, Lindeman, Jordaan, & Myers, 1981) *Career Planning Scale* was used. The scale consists of 22-items tapping time and efforts invested in career planning and knowledge about preferred occupations (e.g., "Talking about

career plans with an adult who knows something about me”). Answers are given on a 5-point Likert scale ranging from *very few* to *a lot* with higher scores indicating more career planning. Studies supporting the construct validity of the scale showed, for example, positive relations to career knowledge and decidedness, or likelihood to obtain an apprenticeship after school (e.g., Seifert, 1993; Seifert & Eder, 1985). Cronbach alphas were .89 and .90, respectively.

*Career exploration.* At the first measurement point the *Career Exploration Scale* from the German language adaptation of the CDI (Seifert & Eder, 1985; Super, et al., 1981) was used. The scale consists of 26 items representing sources for gaining information regarding career development (e.g., my father, my teacher, job-shadowing). Answers to these items are given on a 5-point Likert scale ranging from *no information* to *very much information* with higher scores indicating more favorable career exploration attitudes. Studies supporting the construct validity of the scale showed positive relations to career knowledge and decidedness, and to realizing the major one aspires in university (e.g., Seifert, 1993; Seifert & Eder, 1985). The Cronbach alpha was .84. At the second measurement point the amount of conducted career exploration during the career decision-making process was assessed with the *Career Choice Exploration Scale* which captures self- (e.g., “reflecting about personal interests and skills”) and environmental exploration (e.g., “collecting information about different vocational options”), with answers indicating degree of engagement in these activities ranging from *seldom/few* to *very much/a lot* on a 5-point Likert scale. Supporting the construct validity, Hirschi (in press) reports significant relations to the CDI Career Exploration Scale, as well as to other personality and career development measures. The Cronbach alpha was .90. The rationale for applying two different exploration scales was that it seemed more appropriate to assess exploration in terms of favorable attitudes at the

beginning of the career decision-making process where not much actual exploration behavior could yet have been conducted but assess such behavior specifically at the end of the process.

*Degree of career development.* A principal component score for the three career development variables was calculated for each measurement point and study participant by using principal component factors analysis. The factor analysis confirmed the existence of one factor at both measurement points explaining 60% and 69% variance among the three measures, respectively. A principal component score is the linear combination of the observed variables that maximizes the variance of each participant's component score. This score has the advantage of providing a more parsimonious and possibly more reliable measure for degree of career development than three separate measures and also controls for increased possibility of Type I error in the analyses.

#### *Procedure*

All students completed the questionnaires during regular school-hours in their school classes under the supervision of their classroom teacher. At the first measurement point they indicated their gender, age, and nationality and received the measures for decidedness, career planning, and career exploration (CDI). At the second measurement point they indicated their Math and German test scores, and completed the questionnaires tapping values, decidedness, planning, and the Career Choice Exploration scale.

#### *Plan of Analysis and Data Preparation*

The research question of the present study was: What is the residualized gain effect of extrinsic and intrinsic work values on positive career development, taking into account socio-demographic variables?

To estimated residualized gains in career development, a multiple hierarchical regression analysis with the principal component score of degree of career development at T2 as the dependent variable was conducted. In a first step, the principal component score for

degree of career development at T1 was entered to control for the autoregressive effect of the measures and the stability of degree of career development over time. All variables entered in subsequent models thus assessed residualized gains or interindividual change in degree of career development. This means the variables in subsequent models were assessed to what degree they are related to change in positive career development above or below what would be expected given the average change of the participant group over time. This analysis was preferred to simple change scores since it was expected that all students in the group would show some increase in the career development variables over time given the environmentally imposed career developmental task which took place in the eighth grade.

Gender, nationality, and scholastic achievement were included in the second model to act as control variables. In a third model, extrinsic work values were added to estimate their relation to career development. In the last model, intrinsic value endorsement was entered to assess the effect of intrinsic value endorsement above and beyond the already included variables. By controlling for the effect of extrinsic values when assessing intrinsic values, the analysis also accounts for the fact that value ratings promote positive relations among different values which can be addressed by controlling for the individual level of general value endorsement (see Hitlin & Piliavin, 2004).

Missing values due to incomplete or incorrect answers on single scales were analyzed using the procedures in SPSS 16 which showed a random pattern of missing values. Missing scores were replaced with the expectation maximization method.

## Results

### *Relation of Values and Career Development to Control Variables*

Table 1 shows the correlations, means and standard deviations of the applied measures and control variables. As expected, boys, non-Swiss, and students with lower scholastic achievement scored higher on extrinsic values than girls, Swiss, and higher

achieving students. Girls also scored higher in intrinsic values than boys and Swiss students and lower achieving students showed more general work value endorsement than non-Swiss and higher achieving ones. No gender differences emerged regarding the career development variables but Swiss students scores higher in career decidedness and exploration at T1 and higher in decidedness and planning at T2 compared to non-Swiss students. Higher scholastic achievement was negative related to career exploration at both measurement points.

### *Test of the Research Question*

As shown in Table 2, the measure at T1 significantly predicted career development at T2 indicating significant interindividual stability of the career development variables over time. The control variables predicted 4% variance,  $\Delta F(3,263) = 5.1, p = .002$ , in the change in career development with Swiss nationality and lower achievement being significantly related to an increase over time. Extrinsic work value endorsement did not predict significant additional variance,  $\Delta R^2 = .006, \Delta F(1,262) = 2.2, p = .142$ . As expected, more intrinsic values explained a statistically significant additional amount of 3.3% variance above and beyond extrinsic work value endorsement and the control variables,  $\Delta F(1,261) = 12.8, p < .001$ . Supporting the importance of general work value endorsement, extrinsic and intrinsic values combined explained approximately 4% variance in positive career development above and beyond the control variables,  $\Delta F(2,261) = 7.5, p = .001$ . The presented values for  $R^2$  are indicators of effect size and practical significance, indicating a modest effect of work values.

[Insert Table 2 about here]

### Discussion

The goal of the present longitudinal study was to investigate whether intrinsic and extrinsic work value orientation has an influence on positive career development in early adolescence as measured by career decidedness, career planning, and career exploration. In line with other findings in the U.S. which report a positive relation of value endorsement and

career certainty (Schulenberg, et al., 1993), the present study shows that overall level of importance to various work values is a significant predictor of more positive career development. As the results further show, this can be mainly attributed to the endorsement of intrinsic work values. This finding is in line with prior research which shows a positive relation of intrinsic values and motivation with various domains of functioning and achievement (e.g., Eccles & Wigfield, 2002). However, previous similar studies could not always confirm this relation (cf. Post-Kammer, 1987) but they did not assess the development of career variables longitudinally.

In addition, higher scholastic achievement negatively affected positive career development possibly due to negative relations with career exploration. This might be explained by the fact that lower achieving students mostly attend different classes than the high achieving ones where more focus is given to career preparation and more guided career exploration activities are offered by the teachers.

Another finding is that students with immigration background showed less progress which indicates that they have more difficulties in reaching a high state of career preparation, possibly due to general increased difficulties in adjusting to educational structures and demands in their new country.

Gender related significantly to work values with girls endorsing more intrinsic but less extrinsic values compared to boys. However, gender was not strongly related to the career development variables, supporting the finding of other studies (see Patton & Creed. 2001, for a review).

Overall, the findings imply that young adolescents who place greater importance on various work values in general and to intrinsic values in particular show more positive career development prior to a major career/educational transition point. Although the effects were not large by conventional standards it has to be noted that adolescent career development is

influenced by a vast number of different factors. The finding that the single aspect of work value endorsement explains significant variance in its development above and beyond a number of socio-demographic variables is therefore certainly of some practical significance.

### *Strengths and Limitations*

One major strength of the present study is that it applied a longitudinal design which complements previous cross-sectional studies. As such, it was possible to relate work value endorsement to the development of career variables over time which generally provides more meaningful insight into the relation of variables than what is possible with cross-sectional designs. Also, the study applied a multivariate measure of positive career development and work values which expands previous research.

Some limitations should be considered when interpreting the findings. First, the work value measure showed only limited reliability which calls for subsequent research to replicate these results with more established and reliable work value measures. However, the fact that despite low reliability significant relations to career development were found supports the validity of the findings and of the work values measure of this study. Second, due to organizational reasons, work values could only have been assessed at the end of the process. Work values are clearly conceptualized as more stable and fundamental constructs than the assessed developmentally conceived aspects of career development. However, the research design theoretically cannot rule out the possibility that the career decision-making process had by itself influenced work values. Hence, caution has to be applied on any causal interpretation of the results. Third, the use of different scales for career exploration at the two measurement points does not allow a direct comparison of increase on the score of this measure which can also be regarded as a limiting factor. Fourth, as is the case with many other studies on career development, only self-reported measures were applied which results in some limitations of the potential validity of the results due to shared method bias. The

validity of self-reports is especially restricted for reported achievement scores (Kuncel, Crede, & Thomas, 2005) and these results should be treated with caution. Finally, the use of a convenience sample and the specific Swiss context imply limitations on generalizability of the results to other countries. It can be expected that the results are more valid for European countries with similar educational systems such as Germany, Austria, or Denmark where early entry into vocational education and training is the norm for many adolescents.

### *Implications for Counseling Practice*

The fact that work values are not fixed personality traits opens possibilities for systematic career interventions targeting the change and/or increase of values. Based on the presented results, counselors could generally try to enhance the importance that young adolescents attach to intrinsic work aspects. Unfortunately, very little evaluation research is available on value change interventions. Practitioners could, however, receive important insights from the related literature on attitude change (Bernard, Maio, & Olson, 2003). This research implies that values could be changed by interventions which focus on actively processing and reflecting upon information regarding the reasons for different values and challenging their adaptability. For example, teachers and counselors could engage students in discussions about what is personally important for one's work and life. Critical reflections and discussions about how different aspects of work (e.g., pay, variety, helping others) would result in an increased quality of work and life could engage students in raising their awareness of and appreciation for the value of work.

## References

- Bergmann, C. (1993). Differenziertheit der Interessen und berufliche Entwicklung [Differentiation of interests and vocational development]. *Zeitschrift für Differentielle und Diagnostische Psychologie, 14*, 265-279.
- Bernard, M. M., Maio, G. R., & Olson, J. M. (2003). The vulnerability of values to attack: Inoculation of values and value-relevant attitudes. *Personality and Social Psychology Bulletin, 29*, 63-75.
- Brown, D. (1996). Brown's values-based, holistic model of career and life-role choices and satisfaction. In D. Brown & L. Brooks (Eds.), *Career choice and development*. San Francisco, CA: Jossey-Bass.
- Bundesamt für Berufsbildung und Technologie (2007). *Berufsbildung in der Schweiz 2007 - Zahlen und Fakten [Vocational education in Switzerland 2007 - facts and figures]*. Berne: Author.
- Creed, P. A., Patton, W., & Prideaux, L. (2007). Predicting change over time in career planning and career exploration for high school students. *Journal of Adolescence, 30*, 377-392.
- Crites, J. O. (1973). *Theory and research handbook for the Career Maturity Inventory*. Monterey, CA: CTB/McGraw Hill.
- Dawis, R. V., & Lofquist, L. H. (1984). *A psychological theory of work adjustment: An individual differences model and its applications*. Minneapolis: University of Minnesota Press.
- Degenais, F. (1998). Super's Work Values Inventory scales as intrinsic or extrinsic conditions. *Psychological Reports, 83*, 197-198.
- Duffy, R. D., & Sedlacek, W. E. (2007). The work values of first-year college students: Exploring group differences. *Career Development Quarterly, 55*, 359-364.

- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology, 53*, 109-132.
- George, J., & Jones, G. (1997). Experiencing work: Values, attitudes, and moods. *Human Relations, 50*, 393-416.
- Hirschi, A. (in press). Vocational exploration: Multivariate predictors and effect on confidence development in adolescence. In F. Columbus (Ed.), *Career Development*. Hauppauge, NY: Nova Science Publishers.
- Hirschi, A., & Läge, D. (2007). Holland's secondary constructs of vocational interests and career choice readiness of secondary students. *Journal of Individual Differences, 28*, 205-218.
- Hitlin, S., & Piliavin, J. A. (2004). Values: Reviving a dormant concept. *Annual Review of Sociology, 30*, 359-393.
- Johnson, M. K. (2002). Social origins, adolescent experiences, and work value trajectories during the transition to adulthood. *Social Forces, 80*, 1307-1341.
- Katz, M. R. (1993). *Computer-assisted career decision making*. Hillsdale, NJ: Lawrence Erlbaum.
- Kuncel, N. R., Crede, M., & Thomas, L. L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature. *Review of Educational Research, 75*, 63-82.
- Lee, H. R. (1997). A study on the career maturity and intrinsic-extrinsic work values of college students. *Korean Journal of Counseling & Psychotherapy, 9*, 289-310.
- Moser, U. (2004). *Jugendliche zwischen Schule und Berufsbildung [Adolescents between school and vocational education]*. Bern/Aarau: Swiss Science Foundation.
- Patton, W., & Creed, P. A. (2001). Developmental issues in career maturity and career decision status. *Career Development Quarterly, 49*, 336-351.

- Phillips, S. D., & Blustein, D. L. (1994). Readiness for career choices: Planning, exploring, and deciding. *Career Development Quarterly, 43*, 63-74.
- Porfeli, E. J. (2007). Work values system development during adolescence. *Journal of Vocational Behavior, 70*, 42-60.
- Post-Kammer, P. (1987). Intrinsic and extrinsic work values and career maturity of 9th- and 11th grade boys and girls. *Journal of Counseling and Development, 65*, 420-423.
- Roberts, B. W., & Robins, R. W. (2000). Broad dispositions, broad aspirations: the intersection of personality and major life goals. *Personality and Social Psychology Bulletin, 26*, 1284-1296.
- Ros, M., Schwartz, S. H., & Surkiss, S. (1999). Basic individual values, work values, and the meaning of work. *Applied Psychology, 48*, 49-71.
- Rottinghaus, P. J., & Zytowski, D. G. (2006). Commonalities between adolescents' work values and interests. *Measurement and Evaluation in Counseling and Development, 38*, 211-221.
- Savickas, M. L. (1997). Career adaptability: An integrative construct for life-span, life-space theory. *Career Development Quarterly, 45*, 247-259.
- Schmitt, N. (1996). Uses and abuses of coefficient alpha. *Psychological Assessment, 8*, 350-353.
- Schulenberg, J., Vondracek, F. W., & Kim, J. (1993). Career certainty and short-term changes in work values during adolescence. *Career Development Quarterly, 41*, 268-284.
- Schwartz, S. H., & Bilsky, W. (1987). Toward a psychological structure of human values. *Journal of Personality and Social Psychology, 53*, 550-562.
- Seifert, K. H. (1983). Berufswahlreife [Career maturity]. *Berufsberatung und Berufsbildung, 68*, 233-251.

- Seifert, K. H. (1993). Zur prädikativen Validität von Berufswahlreifeinstrumenten [Predictive validity of measures of career maturity]. *Zeitschrift für Arbeits- und Organisationspsychologie*, 4, 172 - 182.
- Seifert, K. H., & Eder, F. (1985). Der Fragebogen zur Laufbahnentwicklung [The Career Development Inventory: The German adaptation]. *Zeitschrift für Differenzielle und Diagnostische Psychologie*, 6, 65-77.
- Seifert, K. H., & Stangl, W. (1986). Der Fragebogen Einstellung zur Berufswahl und beruflichen Arbeit [The questionnaire attitudes toward career choice and professional work]. *Diagnostica*, 32, 153-164.
- Skorikov, V. B., & Vondracek, F. W. (2007). Positive career orientation as an inhibitor of adolescent problem behaviour. *Journal of Adolescence*, 30, 131-146.
- Super, D. E. (1990). A life-span, life-space approach to career development. In D. Brown & L. Brooks (Eds.), *Career choice and development: Applying contemporary theories to practice* (2nd ed., pp. 197-262). San Francisco, CA: Jossey-Bass.
- Super, D. E., Thompson, A. S., Lindeman, R. H., Jordaan, J.-P., & Myers, R. A. (1981). *Career Development Inventory*. Palo Alto, CA: Consulting Psychologists Press.

Table 1

Intercorrelations, Means and Standard Deviations of the Applied Measures (N=268)

	1	2	3	4	5	6	7	8	9	10	11
1. Gender	-	-.003	.092	.099	.043	-.077	.090	.089	-.037	.168**	-.230***
2. Nationality		-	-.297***	-.175**	.012	.149*	-.166**	-.120*	-.039	.185**	-.010
3. Achievement			-	-.012	-.071	-.244***	-.032	-.095	-.322***	-.143*	-.081
4. Decidedness T1				-	.576***	.161**	.485***	.411**	.222***	-.094	.061
5. Planfulness T1					-	.445***	.349***	.479***	.209***	-.035	.104
6. Exploration T1						-	.171**	.194**	.287***	.105	.102
7. Decidedness T2							-	.613***	.441***	-.008	.180**
8. Planfulness T2								-	.559***	.051	.254***
9. Exploration T2									-	.138*	.178**
10. Extrinsic Values										-	.262***
11. Intrinsic Values											-
<i>M</i>				35.9	74.2	92.8	38.5	76.7	34.7	14.7	15.4
<i>SD</i>				6.3	12.7	14.3	6.1	11.7	7.2	2.3	2.1

Note. Correlations for measures 1 and 2 are Spearman, all others are Pearson

Coding: Gender: girls = 0, boys = 1; Nationality: Swiss = 0; other = 1

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

Table 2.

Multiple Hierarchical Regression Analysis for Increase in Career Development Variables (N=268)

Career development T2				
<i>Model 1</i>	<i>B</i>	<i>SD( B)</i>	<i>Beta</i>	<i>R<sup>2</sup></i>
Career development T1	0.493	0.056	.457***	.253***
<i>Model 2</i>				
Gender	0.526	0.269	.106	
Nationality	-1.102	0.357	-.167**	
Achievement	-0.399	0.136	-.160**	.294***
<i>Model 3</i>				
Extrinsic values	0.019	0.060	.017	.300***
<i>Model 4</i>				
Intrinsic values	0.234	0.065	.198***	.333***

Note: Values are reported for the final model

Coding: Gender: girls = 0, boys = 1; Nationality: Swiss = 0; other = 1

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