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ADOLESCENTS' MOTIVATIONAL ORIENTATIONS, SCHOOL-SUBJECT VALUES, AND WELL-BEING: A PERSON-CENTERED APPROACH

Katariina Salmela-Aro[1], Jukka Vuori[2], & Petri Koivisto[2]
[1]University of Jyväskylä, Finland & [2]Finnish Institute of Occupational Health, Helsinki, Finland

Abstract: A person-oriented approach was taken in order to determine what kinds of motivational orientations could be identified on the basis of adolescents' personal goals, and how these orientations differed in terms of school motivation and well-being. A total of 561 15-year-olds (277 boys, 284 girls) rated their personal goals, school-subject values and well-being. The most frequently mentioned personal goals were those related to school, future education/occupation, property, and friends. The boys had more property- and education/occupation-related goals than the girls, while the girls had more family-, leisure-, self- and friend-related goals than the boys. Three motivational orientations thus emerged on the basis of their personal goals: present-interpersonal (30%), future-competence (43%), and past-self (27%). Those with past-self-orientation felt more stress and made less progress toward their education-related goals. Moreover, those oriented to the present were more likely to be interested in skills-related subjects, those oriented to the future were mainly interested in competence in mathematics, and those oriented to the past in languages. Finally, the self-oriented more often reported school-related burnout, stress symptoms, and depressive symptoms than those in the other two groups, while those in the interpersonal group had the highest life satisfaction, and the competence group had the highest self-esteem.

Key words: Motivational orientations, Personal goals, Task-value, Well-being.

INTRODUCTION

Adolescence is a life period during which individuals are faced with many age-graded developmental tasks, challenges, transitions and demands

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Address: Katariina Salmela-Aro, Centre of Excellence on Learning and Motivation, P.O. BOX 35, 40014 University of Jyväskylä, Finland. E-mail: katariina.salmela-aro@psyka.jyu.fi

(Heckhausen, 1999; Nurmi, 2004). However, adolescents are not only influenced by their immediate environment, but also direct their own development and select environments of their own. It has been suggested that personal goals play an important role in this self-direction process (Salmela-Aro, 2001). Although a considerable amount of research has been published on personal goals, most studies have been variable-oriented (Brunstein, 1993; Emmons, 1991; Nurmi, & Salmela-Aro, 2002) and only a few have adopted a person-centered approach (Salmela-Aro, 2001). Such a person-oriented approach would enable motivational orientations to be identified on the basis of the kinds of patterns or profiles of personal goals that adolescents report in different life domains. To date, little is known about how personal-goal variables combine to form meaningful motivational patterns, and how these patterns influence adolescent development and well-being.

The first aim of the present study was to investigate the kinds of motivational orientations that can be identified on the basis of adolescents' self-reported personal goals. The second aim was to find out how these motivational orientations affect adolescents' education-related goal appraisals, and school subject task-value. The third aim was to investigate if groups of adolescents who differed in their motivational orientation also differed in well-being in terms of school-related burnout, stress symptoms, depressive symptoms, life satisfaction, and self-esteem.

Adolescents' motivational orientation

It has been suggested that motivation plays an important role in how individuals direct their behavior in different situations, and also in their efforts to change their behavior (Austin & Vancouver, 1996; Brandstädter & Renner, 1990; Karniol & Ross, 1996; Nurmi & Salmela-Aro, 2002; Salmela-Aro, Nurmi, & Näätänen, 2004). Individual motivation has typically been conceptualized either in terms of short-term (proximal) motivation and self-regulatory issues –such as achievement goals (Dweck & Leggett, 1988; Nicholls, 1989), self-efficacy (Bandura, 1997), or proximal target goals (Locke & Latham, 1990)– or in terms of personally valued, distal, self-articulated goals (Brunstein, 1993; Heckhausen, 1999; Nurmi, 1989; Salmela-Aro, 1992) –such as personal strivings (Emmons, 1986), life tasks (Cantor, Norem, Niedenthal, Langston, & Brower, 1987), possible selves (Markus & Nurius, 1986), or personal projects (Little, 1983). The present study focused on personally valued, distal self-articulated goals. These goals include important

future aspirations such as getting an education, striving for a job, developing intimate relationships, and making a contribution to society. They are important because they provide a basis for the ongoing regulation of behavior, form the criteria for evaluating behavioral outcomes, activate emotions, and motivate the construction of a variety of plans and strategies for coping with challenges and situational demands (Karoly, 1993; Nurmi, 1991).

An individual's motivation develops in the context of a variety of challenges, opportunities and constraints that channel his or her decisions (Heckhausen, 1999). Nurmi (2004) suggested recently that young people grow up in environments in which they face a variety of developmental tasks and social expectations that channel their personal goals. For example, schooling and educational systems influence students' behavior and decisions at specific ages. These "socially recognized road maps for human lives" (Hagestad & Neugarten, 1985) are often described in terms of institutional careers (Mayer, 1986), tracks (Klaczynski & Reese, 1991), and action opportunities (Grotevant, 1987). Because opportunities are varied while individual resources are limited, young people are forced to narrow their focus with respect to the challenges they will meet in the future.

It has been suggested that personal motives and goals are the key mechanisms responsible for how young people direct their development (Nurmi, 1993; Salmela-Aro, 2001). Personal goals are constructed by comparing individual motives and interests with the opportunities available in the particular environment (Nurmi, 1991). These personal goals often refer to culturally defined tasks (Cantor, 1990), and are realized through the construction of different means-end structures, such as planning and strategies (Nurmi, 2004; Nurmi, Salmela-Aro, & Koivisto, 2002; Schoon & Parsons, 2002). Moreover, adolescents may not always attain the goals they pursue: they may either fail to reach them or may not succeed to the extent they expected. When young people encounter problems in goal attainment, they need to adjust their previous goals, which they do either by modifying them or by disengaging from them and setting new ones (Brandtstädter & Renner, 1990; Wrosch, Scheier, Miller, Schultz, & Carver, 2003). The reconstruction of goals helps them to sustain motivation, to stay on a realistic level of functioning, and to maintain a positive mind-set when facing new challenges (Gollwitzer & Brandstätter, 1997; Nurmi & Salmela-Aro, 2002).

It has been shown that personal goals reflect (Nurmi, 1993; Salmela-Aro & Nurmi, 1997) developmental tasks (Erikson, 1959; Havighurst, 1948), role

transitions (Caspi, 2002; Elder, 1985), and institutional tracks (Mayer, 1986). Adolescents' personal goals can thus be expected to relate mainly to education, occupation, social, and self-related issues. Moreover, acccording to Deci and Ryan (2000), humans have three basic needs: autonomy, relatedness and competence. According to this view, the main motivational orientations in terms of personal goals might also reflect these broad motivations. For example, relatedness or interpersonal orientation refers to having social goals, and competence to having achievement-related goals. Personal goals may also echo different time perspectives (Kauffman & Husman, 2004; Nurmi, 1993; Nuttin & Lens, 1985). For example, self-reported goals may reflect (a) a past orientation, in terms of pondering and ruminating on self-related issues (Holman & Silver, 1998; Nolen-Hoeksema, Parker, & Larson, 1994; Salmela-Aro, 1992); (b) a present orientation, in terms of being concerned with present schooling, friends or leisure-time-related goals (Salmela-Aro, 2001); or (c) a future orientation, in terms of future education and occupation-related goals (Nurmi, 1991, 1993).

Moreover, there is evidence of gender differences in personal goals. It has been shown that girls produce more interpersonal-, family- (Greene & Wheatley, 1992) and education-related (Nurmi, 1989) goals than boys, who place more emphasis on material values (Cross & Markus, 1991; Solantaus, 1987). Similarly, it has been found that women are interested in social issues, while men were interested in achievement and property in the transition to parenthood (Salmela-Aro, Nurmi, Saisto, & Halmesmäki, 2000).

Personal goals have typically been analyzed in two ways. The first approach focuses on what a person aims to achieve, that is, what the contents of personal goals are. In analyzing such contents, most researchers have used categories that refer to different life domains, objectives and future events (Little, 1983; Nurmi, 1993; Salmela-Aro, 1992), such as family, education, hobbies, property, and self-related existential issues. The emphasis in the second approach is on the ways in which individuals appraise their personal goals along several dimensions such as importance, progress, effort and stress (Cantor et al., 1987; Little, 1983; Salmela-Aro, 1992; for a review see Chambers, 1997). In the present study, we used both of these approaches. First, we considered the contents of adolescents' personal goals from the perspective of the motivational orientations these goal contents reflect. Second, we examined the extent to which these motivational orientations affect the adolescents' appraisals of education-related personal goals in terms of progress and stress.

Person-oriented approach

Most studies on personal goals have deployed a variable-oriented approach and have focused on examining the relationships between certain personal goal variables and other variables, such as depression, emotions, and school performance (Brunstein, 1993; Emmons, 1986; Nurmi & Salmela-Aro, 2002). Several researchers have, however, emphasized the importance of studying individuals rather than focusing on analyzing relationships between variables (Bergman, 1998; Bergman, Magnusson, & El Khouri, 2003). The person-oriented approach allows individuals to be grouped according to the pattern they show with respect to certain criteria variables (e.g., personal goals) and to examine the proportion of the sample that shows a particular pattern (Bergman et al., 2003). In the present study, we aimed to identify what kinds of patterns of motivational orientations adolescents show on the basis of their self-reported personal goals. Although this approach has previously been applied in research on motivation, contents have been investigated in only a few studies (Ludtke, 2003; Pulkkinen, Nurmi, & Kokko, 2002; Salmela-Aro, 2001; Salmela-Aro & Nurmi, 2004).

Motivational orientation and school motivation

In any given situation, individuals' motivational orientations are likely to reflect their present educational plans, interests, appraisals and aspirations, as well as how these have been actualized in their life trajectories up to the present moment. For example, poor school achievement is likely to decrease the level of educational goals (Oyserman, Bybee, Terry, & Hart-Johnson, 2004), which further increases the risk of not acquiring an appropriate education.

School motivation is evidenced in many ways in young people's behavior. For example, the interest young people show in specific school subjects, that is, their task motivation (Nurmi & Aunola, 2005), is reflected in the effort they invest at school, and this also contributes to their achievements in particular academic disciplines, such as mathematics or languages (Nurmi & Aunola, 2005). A variety of concepts – such as educational goals (Nurmi & Salmela-Aro, 2002), intrinsic motivation (Deci, & Ryan, 2000), subjective task-value (Eccles & Wigfield, 1995), achievement beliefs and motivational strategies (Onatsu-Arvilommi & Nurmi, 2000) – is used to describe specific school- or achievement motivation. Task-value motivation refers to the

interest, utility, and importance attached to specific academic subjects, such as mathematics or languages (Eccles & Wigfield, 1995; Nurmi & Aunola, 2005). Thus, another aim of the present study was to investigate the extent to which adolescents with different motivational orientations based on broader personally valued, distal, self-articulated goals also differ in their educational goals and school-subject task-value appraisals.

Motivational orientation and well-being

Much research interest has been shown in the relationships between personal goals and well-being (Brunstein, 1993; Emmons, 1991; Heckhausen, 1999; Little, 1989; Salmela-Aro & Nurmi, 1997). Most of these studies have focused on goal appraisals and have shown that making good progress, feeling low stress, and having positive emotions towards one's personal goals are associated with psychological well-being (Little, 1989), life satisfaction (Emmons, 1991), lack of hypochondria (Karoly, 1993; Lecci, Karoly, Briggs, & Kuhn, 1994), low anxiety (Emmons, 1991), and low levels of depression (Brunstein, 1993).

A few studies have also shown an association between the contents of personal goals and well-being. It has been found that having personal goals that focus on the developmental tasks associated with a particular age phase and goals that reflect the major demands of a particular life transition are related to enhanced well-being (Nurmi, 1993; Nurmi & Salmela-Aro, 2002; Salmela-Aro et al., 2001). For example, young adults who report goals focusing on education, intimate relationships, family and children seem to show a greater sense of well-being than those who do not focus on such goals (Emmons, 1991; Salmela-Aro & Nurmi, 1997). Social strivings (Emmons, 1991) and leisure goals (Little & Chambers, 2004) have also been found to be related to life satisfaction and pleasure in life.

On the other hand, several studies have shown that individuals who focus on self-oriented, existential kinds of goals tend to have a low level of well-being and elevated levels of depressive symptoms (Salmela-Aro et al., 2001; Salmela-Aro, Pennanen, & Nurmi, 2001). It has been also found that self-orientation is related to burnout among adults (Salmela-Aro & Nurmi, 2004). These results are in accordance with those of a recent meta-analysis suggesting that self-focus overall is related to negative affects and rumination (Mor & Winqvist, 2002). Consequently, another aim of this study was to examine the extent to which adolescents' motivational orientations are

associated with such aspects of well-being as school-related burnout, stress symptoms, depressive symptoms, life satisfaction and self-esteem.

Aims - Hypotheses

This study investigated the following research questions:

(1) What are the main personal goal categories and what kinds of motivational orientations can be identified on the basis of the contents of adolescents' personal goals? We hypothesised (Hypothesis 1) that most of the adolescents' personal goals would be related to their developmental tasks in terms of education and friends (Salmela-Aro, 2001). Moreover, we assumed that three motivational orientations would emerge; these would reflect three basic needs, namely, competence, relatedness and autonomy (Deci & Ryan, 2000) (Hypothesis 2).

(2) How do groups of adolescents, who share the same motivational orientation, differ between them in terms of education-related goal appraisals of progress and stress, and value appraisals of school subjects such as mathematics, languages, and practical skills, and do girls and boys differ from each other? As no previous study has focused on these issues no specific hypothesis was formulated on this issue.

(3) How do these motivational orientation groups differ in well-being in terms of school-related burnout, stress symptoms, depressive symptoms, life satisfaction, and self-esteem and do girls and boys differ from each other? We expected that those focusing on more self-related issues (Mor & Winqvist, 2002) would have higher burnout and more depressive symptoms, while those who focus on their developmental tasks, such as future education, would have higher self-esteem and life satisfaction (Salmela-Aro & Nurmi, 1997) (Hypothesis 3).

METHOD

Participants

A total of 561 ninth-graders (277 boys and 284 girls) of mean age 15.47 (SD = 0.73) from all the junior high schools in two medium-sized cities in Finland (11 schools) participated in the study. The average size of the classes ranged from 17 to 25 students (M = 23). Participants completed a self-

report questionnaire tapping various types of constructs related to personal goals, school motivation, and subjective well-being. The present study is part of the Finnish School Transition (FST) study which has the overall aim of examining adolescents' life-planning and well-being in middle and late adolescence. As ninth-graders, the participants of the present study were facing the transition to secondary education.

The majority of the participants (98%) were Finnish-speaking, while the remaining 2% had some other mother tongue. The majority (74.6%) lived with both of their biological parents, while 12.3% lived in families consisting of the mother or the father living with her/his new spouse, 11.5% lived with their single mother, 1.3% lived with their single father and 0.3% lived with older siblings. Parental occupations were as follows: 25% of the fathers and 16.9% of the mothers worked in higher white-collar occupations, 8.9% of the fathers and 45.9% of the mothers worked in lower-level white-collar occupations, 35.5% of the fathers and 15.6% of the mothers worked in blue-collar occupations, 6.4% of the fathers and 1.8% of the mothers were in private business, 0.3% of the fathers and 2.1% of the mothers were students, 2.0% of the fathers and 1.3 % of the mothers were retired, and 21.9% of the fathers and 16.4% of the mothers reported some other occupational status.

Procedure

The data were collected in the fall of 2003. The questionnaires were group-administered to the students in their classrooms during regular school hours, and 45 minutes was allowed for their completion.

Measures

Personal Project Analysis inventory. The participants were asked first to fill in a revised version of Little's (1983) Personal Project Analysis inventory (PPA). They were asked to describe four of their current personal projects in answer to the following instruction: "People have many kinds of things that they think about, hope for and wish to accomplish. Think about the kinds of personal projects you have in your life at the moment. These may be related to any life domain, such as education, friends, future work, health, hobbies, family or yourself." They were given four numbered lines for their written responses.

Content analysis of the PPA. Each project mentioned by the participants was first classified independently by two assessors in one of eight content categories on the basis of content. The categories identified, similar to those used most frequently in earlier studies (Cantor et al., 1987; Little, 1989; Salmela-Aro & Nurmi, 1997) were the following: future occupation and education ("to construct career options"), school ("to study"), property ("to buy a motorcycle"), friends ("to spend time with friends"), family ("to find a boyfriend"), leisure ("to have leisure time"), self ("to struggle with myself", "to grow as a person"), and other (for all projects that did not fall into the previous categories). Content-analysis reliability, measured in terms of percentage of agreement between the two independent raters, was 97%.

Education-related goal appraisals. In the second part of the PPA, the participants were asked first to produce one personal goal related to education (Nurmi et al., 2002), and then to appraise this goal in terms of *stress* (α = .84) and *progress* (α = .76). Three items for progress (e.g., "How far has this goal progressed?") and two for stress (e.g., "How stressful this goal is?"), respectively, were rated using a 7-point Likert scale ranging from 1 (very little) to 7 (very much). These scales have been used in several studies (e.g., Nurmi et al., 2002).

School-subject value. A revised version of the Task-Motivation inventory (Eccles & Wigfield, 1995; Niemivirta, 2002), measuring task-value, was given to the participants; they were asked to rate the school subjects of languages, mathematics, and other skills (such as music, arts, and sports) in terms of *importance*, *usefulness*, and *interest*, one question for each, on a 7-point Likert scale ranging from 1 (not at all) to 7 (very much). Cronbach's alpha for the languages scale was .77, for the mathematics scale .80, and for the other skills .83.

Subjective well-being. Subjective well-being was assessed by using the following measures:

Self-esteem was measured with the revised version of Rosenberg's (1965) scale: A 5-item scale including statements reflecting general self-acceptance, self-respect, and overall attitude toward the self (e.g., "On the whole, I am satisfied with myself"). The items were assessed on a 7-point Likert scale ranging from 1 (I totally disagree) to 7 (I totally agree). Cronbach's alpha for the Self-esteem scale was .89.

Depressive symptoms were assessed by using the Depression scale (Salokangas, Poutanen, & Stengård, 1995), which includes 10 items (e.g., "I suf-

Table 1. Personal goal content: Descriptive statistics

	Total		Girls		Boys			
Personal goal contents	*M*	*SD*	*M*	*SD*	*M*	*SD*	Min	Max
School	.60	.60	.64	.62	.55	.58	0	3
Education/occupation	.49	.40	.43	.55	.57	.56	0	2
Property	.29	.52	.20	.43	.39	.59	0	3
Friends	.20	.42	.28	.47	.12	.33	0	2
Family	.37	.55	.42	.56	.32	.54	0	2
Leisure	.36	.60	.41	.63	.31	.57	0	2
Self	.28	.53	.37	.59	.18	.44	0	2

fer from sleeping problems") rated on a 4-point Likert scale ranging from 1 (I disagree) to 4 (I agree). Cronbach's alpha was .92.

Life satisfaction was measured by means of the Satisfaction with Life inventory (Diener, Larsen, Emmons, & Griffith, 1985), which consists of 5 items (e.g., "I am satisfied with my life") rated on a 5-point Likert scale ranging from 1 (I disagree) to 5 (I agree). Cronbach's alpha was .88.

School-related burnout was measured on the School-Burnout scale (Salmela-Aro & Näätänen, 2005), which was revised so as to focus on schoolwork. It consisted of 9 items (e.g., "I feel that I am drowning in schoolwork"), which were assessed on a 6-point Likert scale ranging from 1 (I totally disagree) to 6 (I totally agree). Cronbach's alpha for this scale was .86.

Stress symptoms were assessed by asking the participants how often they had experienced the three symptoms (e.g., Emmons, 1991) of *headache*, *neck ache*, and *sleep problems* on a 4-point Likert type scale from 1 (not at all), 2 (once a month), 3 (once a week), to 4 (almost daily). Cronbach's alpha for this scale was .66.

RESULTS

Adolescents' personal goals and motivational orientations

Descriptive data on the personal goals are given in Table 1. The adolescents most often mentioned personal goals related to school, education and occupation, friends, property, family, leisure and self-related issues. The boys had more property-related goals, $F(1, 559) = 17.58, p < .001$, Cohen's $d = .39$, and education/occupation-related goals, $F(1, 559) = 6.43, p < .01$, Co-

Table 2. The means (and SD) of personal goal contents in the three motivational orientation groups

	Motivational orientations				
Personal goal contents	Past-self	Future-competence	Present-interpersonal	$F(2, 550)$	η^2
Education/occupation	$.77^{b}$ (.63)	1.22^{a} (.51)	$.84^{b}$ (.62)	19.53***	.07
Leisure	$.24^{b}$ (.50)	$.20^{b}$ (.44)	$.70^{a}$ (.73)	44.48***	.14
Self	1.03^{a} (.51)	$.00^{b}$ (.00)	$.00^{b}$ (.00)	845.10***	.75
Family	$.28^{b}$ (.45)	$.28^{b}$ (.48)	$.58^{a}$ (.66)	19.84***	.07
Friends	$.32^{a}$ (.50)	$.00^{b}$ (.00)	$.38^{a}$ (.51)	57.85***	.26
School	$.59^{b}$ (.63)	$.46^{b}$ (.52)	$.80^{a}$ (.64)	16.17***	.06
Property	$.32^{b}$ (.50)	$.49^{a}$ (.62)	$.00^{c}$ (.00)	51.45**	.16

Note: * $p < .05$; ** $p < .01$; *** $p < .001$. The significant difference regards the scores with different superscripts with Bonferonni correction.

hen's $d = .25$, than the girls. On the other hand, girls had more leisure-related goals, $F(1, 559) = 4.03, p < .05$, Cohen's $d = .17$, self-related goals, $F(1, 559) = 17.91, p < .001$, Cohen's $d = .37$, family-related goals, $F(1, 559) = 5.09, p < .05$, Cohen's $d = .18$, and friend-related goals, $F(1, 559) = 22.22$, $p < .001$, Cohen's $d = .39$, than the boys.

The first aim of the study was to find out what kinds of groups of adolescents could be identified in the sample according to their personal goals. To this end, a latent-class analysis (LCA) using the Mplus progam (Muthen & Muthen, 1998-2004) was carried out in which 7 different goal-content variables (that is, future education/occupation, school, property, friends, family, leisure, and the self) were taken as the criteria. The LCA is a probabilistic or model-based variant of traditional cluster analysis, and seeks to identify the smallest number of latent classes (groups) that adequately describe the associations among observed continuous variables. Bayesian Information Criterion (BIC), as implemented in the Mplus statistical program, was used as the statistical criterion for choosing the best fitting model. The model with lower BIC value is considered to provide a better fit to the data. The solution that best described the data was the three-class solution, BIC = 4152.03 (the BICs for the two- and four-class solutions were larger). The three motivational orientations that emerged were labeled present-interpersonal, future-competence, and past-self (see Table 2).

Of the whole sample, 43% of the adolescents fell into the future-competence category (see Table 2 for pairwise comparisons on mean values). They had more future-education and occupation-related personal goals than those in the other two groups, and also more property-related goals. Another 30% of the participants displayed a present-interpersonal motivational

Table 3. Differences in the three motivational orientation groups in school-subject values, educational goal, and well-being

	Motivational orientations							
	Past-self		Future-competence		Present-interpersonal			
Personal goal contents	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*(2, 550)	η^2
Task-value								
Mathematics	4.58^{b}	1.39	4.87^{a}	1.31	4.51^{b}	1.33	2.98*	.01
Practical skills	4.96^{b}	1.39	4.73^{b}	1.40	5.20^{a}	1.39	5.89***	.02
Languages	5.62^{a}	1.77	5.37^{b}	1.16	5.50^{ab}	1.05	2.89*	.01
Educational goal								
Stress	4.77^{a}	1.56	4.42^{b}	1.42	4.24^{b}	1.47	5.11***	.01
Progress	1.82^{b}	0.89	2.31^{a}	1.00	2.30^{a}	0.89	4.20*	.01
Well-being								
Burnout	2.13^{a}	0.77	1.87^{b}	0.73	1.84^{b}	0.70	3.78*	.02
Life satisfaction	4.38^{c}	1.33	4.51^{b}	1.19	4.64^{a}	1.24	3.44*	.01
Depressive symptoms	1.73^{a}	0.63	1.50^{b}	0.56	1.55^{b}	0.63	6.80***	.01
Self-esteem	4.31^{c}	1.28	4.67^{a}	1.05	4.47^{b}	1.10	4.60**	.01
Stress symptoms	2.12^{a}	0.77	1.86^{b}	0.73	1.83^{b}	0.70	7.60***	.03

Note: * $p < .05$; ** $p < .01$; *** $p < .001$. The significant difference regards the scores with different superscripts with Bonferonni correction.

orientation: They had more leisure-, friend-, family- and school-related goals than those in the other two groups. Finally, 27% of the adolescents were categorized as past-self-related: they had more self-related goals than those in the other two groups. The boys were more often future- competence-oriented (155 boys, 86 girls), and the girls more present-interpersonal (100 girls, 71 boys) or past-self-related (98 girls, 51 boys), $\chi^2(1) = 39.42, p < .001$.

Motivational orientations, school, and well-being

The aim was to determine the extent to which the adolescents in these three motivational groups differed in their appraisals of their education-related goals in terms of stress and progress, the value accorded to the school subjects of mathematics, languages and practical skills, and well-being. To examine this, a 2(gender) x 3(motivational orientations) MANOVA for goal appraisals, values and well-being as dependent variables was carried out (see Table 3).

The results showed that the main effects of motivational orientation, Pillais' trace = .09, $F(2, 550) = 1.96, p < .01, \eta^2 = .04$, and gender, Pillais' trace = .25, $F(1, 551) = 15.88, p < .001, \eta^2 = .25$, were statistically significant, while the interaction between motivation orientation and gender was not.

Table 4. Gender differences in school-subject values, educational goal, and well-being

	Girls		Boys			
Personal goal contents	*M*	*SD*	*M*	*SD*	*F*(1, 550)	Cohen's *d*
Task-value						
Mathematics	4.61	0.08	4.97	0.09	8.73**	4.23
Practical skills	5.09	0.08	4.92	0.09	3.44*	2.55
Languages	5.72	0.07	5.34	0.08	13.94***	5.95
Educational goal						
Stress	4.60	0.09	4.34	0.10	3.56*	5.73
Progress	4.89	0.07	5.12	0.08	5.00*	3.06
Well-being						
Burnout	2.62	0.06	2.46	0.06	3.71*	2.67
Life satisfaction	4.41	0.08	4.73	0.08	8.39**	4.00
Depressive symptoms	1.73	0.04	1.42	0.04	34.98***	7.75
Self-esteem	4.09	0.07	4.97	0.07	83.39***	13.00
Stress symptoms	2.12	0.07	1.86	0.07	7.60***	3.71

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

First, the results for motivational orientation (see Table 3) in terms of goal appraisals showed that those with a past-self-related orientation felt more stress and believed they made less progress towards their education-related goal than the others. Second, in terms of task-value regarding mathematics, languages, and practical skills, the results showed that those in the present-interpersonal group were more likely to be interested in skills-related subjects, while those in the future-competence group were more interested in mathematics, and those with a past-self-related orientation were more interested in languages. Finally, in terms of well-being (see Table 3) those in the self-related group more often showed school-related burnout, stress symptoms and depressive symptoms, while those in the present-interpersonal group had the highest life satisfaction, and those with a future-competence orientation had the highest self-esteem.

Next, the results for gender (see Table 4) showed that girls scored higher on task-value in languages and practical skills than boys, while boys valued mathematics more than girls. In terms of education-related goal appraisals, girls scored higher on education-related goal stress than boys, while boys scored higher on education-related goal progress than boys. Finally, girls experienced more depressive, stress and burnout symptoms than boys, while boys had higher self-esteem than girls.

DISCUSSION

Adolescence is a life period during which individuals are faced with many age-graded developmental tasks, challenges, transitions and demands. However, they also direct their own development and it has been suggested that personal goals play an important role in this self-direction process. Although there is a substantial body of research on personal goals, most studies have focussed on personal goal variables and other variables, such as depression, emotions, and school performance (Brunstein, 1993; Emmons, 1986; Nurmi & Salmela-Aro, 2002) and only a few have taken a person-centered approach. Consequently, little is known about how personal goal variables combine to form meaningful patterns, and how these patterns influence adolescent development and well-being. This study represented an attempt to fill this gap by taking a person-centred approach in considering the kinds of motivational orientation groups that can be identified on the basis of adolescents' personal goals. The advantage of this approach is that the results refer to individuals rather than to variables, and it is possible to estimate how big a proportion of the sample showed a particular personal goal pattern. A further objective was to find out how these motivational orientations differed, first, in terms of education-related goal appraisals, and school-subject value, and, secondly, in terms of school-related burnout, well-being and self-esteem.

The first aim of the study was to examine what kinds of personal goals adolescents have and what kinds of motivational orientations these produce. The results showed, first, that the adolescents' personal goals reflected important developmental tasks: The most frequently mentioned personal goals were related to school, future education and occupation, friends, property, family, leisure and self-related issues. This supports our first hypothesis (Hypothesis 1) and earlier findings showing that the young adults' personal goals reflect their main developmental tasks (Nurmi, 1991; Salmela-Aro, 2001).

The results also revealed clear gender differences in personal goals: The boys had more property- and future-education/occupation-related goals than the girls, while the girls had more school-, self-, family- and friend-related goals than the boys. These results support earlier findings suggesting that girls have more social and interpersonal (Greene & Wheatley, 1992) and education-related (Nurmi, 1989) goals than boys, who emphasize material values more (Cross & Markus, 1991; Solantaus, 1987). Conse-

quently, although there is evidence that gender differences in achievement have narrowed in recent years, differences in their respective involvement with the future continue to exist among boys and girls.

Our main aim was to find out what kinds of groups could be identified in the sample according to adolescents' personal goals. The three-class solution turned out to describe the data best. Almost half of the participants were classified as future-competence-oriented, having more future-education/occupation-related goals than those in the other two groups. Moreover, they had more property-related goals. This group had a more distal future time perspective than the other two groups. Second, about one third of the participants were classified in the present-interpersonal group, having more leisure-, family-, friend- and school-related goals than those in the other two groups. This group focused on goals reflecting the present time perspective. Finally, a little less than a third was classified as past-self-oriented, having more self-related goals than the others. It was typical for those in this group to refer to goals in the past tense.

The results of the present study support the notion that motivational orientations relate to developmental tasks (Erikson, 1959; Havighurst, 1948) such as having future-education-related goals. They also revealed that motivational orientations based on these particular personal goal contents reflect to some extent the three basic motivational domains of autonomy, relatedness and competence (Deci & Ryan, 2000), thereby supporting at least partly our second hypothesis (Hypothesis 2). Education/occupation-related goals refer to competence, friends- and leisure-related goals refer to interpersonal issues and relatedness, and self-related goals are likely to refer to negative aspects of autonomy, struggle and rumination in past self-related issues. Motivational orientations also might thus differ in terms of their time perspective: self-related rumination goals might indicate an orientation toward the past, while leisure-, friends- and present-school-related goals refer to the present, and future-education- and occupation-related goals refer to the future (Nuttin & Lens, 1985; Salmela-Aro et al., 2001; Simons, Vansteenkiste, Lens, & Lacante, 2004).

Moreover, there were more boys in the future-competence-oriented group, and more girls in the present-interpersonal and self-related groups. This confirms earlier findings that girls are more oriented towards social or self-related issues, while boys are more concerned about achievement and property (Cross & Markus, 1991; Greene & DeBacker, 2004; Greene & Wheatley, 1992; Salmela-Aro et al., 2000; Solantaus, 1987).

A further aim was to examine the extent to which these three motivational orientations differed in terms of specific school motivation in education-related goal appraisals and school-subject valuation, and in well-being and self-esteem. The largest group comprised adolescents with a future-competence orientation, in which the boys outnumbered the girls. In terms of the value accorded to school subjects, those in this group were more interested in and valued mathematics more than those in the other groups. They seemed to put a strong utility value on mathematics, which might also reflect an instrumental value as far as their future career is concerned (Miller, Debacker, & Greene, 1999). These young people were also found to have the highest self-esteem and to appraise their educational goals as progressing well. It might be that such a motivational orientation increases adolescents' task motivation and encourages a task focus, which then further increases self-esteem (Onatsu-Arvilommi & Nurmi, 2000). These results support earlier findings according to which young adults who report goals focusing on education and developmental tasks seem to show greater well-being than those who do not focus on such goals (Emmons, 1991; Salmela-Aro & Nurmi, 1997) and so support our third hypothesis (Hypothesis 3). It might be that the feeling of progressing well with one's goals leads to a high sense of well-being (Brunstein, 1993); however, these causal relations were not investigated in this cross-sectional study.

The second largest group comprised those with a present-interpersonal motivational orientation, and contained more girls than boys. The young people in this group were more likely to be interested in and to value skills-related subjects such as sports, music and the arts than those in the other groups, and they had the highest life- satisfaction level. This also supports earlier findings that young adults who report goals focusing on social issues show greater well-being than those who do not (Emmons, 1991; Salmela-Aro & Nurmi, 1997), and that leisure projects are related to well-being, life satisfaction and pleasure in life (Little & Chambers, 2004). It appears from the results of the present study that adolescents oriented to the present are pleasure- and leisure-seeking and enjoy life.

The smallest group comprised those with a past-self-related motivational orientation and contained more girls than boys. These adolescents felt more stress and less progress with their education-related goals than the others. In terms of the value they accorded to school subjects, they were more interested in languages, and in terms of well-being they experienced school-related burnout and depressive symptoms more often than those

in the other two groups. These results support various earlier studies suggesting that individuals who focus on self-oriented, existential kinds of goals tend to have low levels of well-being, burnout and elevated levels of depressive symptoms (Salmela-Aro et al., 2001; Salmela-Aro & Nurmi, 2004; Salmela-Aro, Pennanen, & Nurmi, 2001), and thus support our third hypothesis (Hypothesis 3). Moreover, the fact that these adolescents found their educational goals stressful and difficult to achieve might lead to school-related burnout and a decrease in well-being.

Finally, the results revealed many gender differences. Girls scored higher on school value in languages and practical skills, and goal-related stress than boys, while boys valued more mathematics and reported more goal progress than girls. Finally, girls experienced more depressive, stress and burnout symptoms than boys, while boys had higher self-esteem than girls.

Limitations of the study

This research effort could be considered to have at least two main limitations. First, the study was cross-sectional. A longitudinal approach would be needed to investigate what causal relationships might subsist between adolescents' motivational orientations, school- task motivation and school-related burnout. Although the assumption was that motivational orientations lead to both a particular task motivation and well-being, it is possible that these also reflect individuals' goals and related motivational orientations. Second, there is an obvious need to replicate the findings across different samples and cultures.

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