Sami Määttä

Achievement Strategies in Adolescence and Young Adulthood

JYVÄSKYLÄN YLIOPISTO

Sami Määttä

Achievement Strategies in Adolescence and Young Adulthood

UNIVERSITY OF JYVÄSKYLÄ

JYVÄSKYLÄ 2007

Achievement Strategies
in Adolescence
and Young Adulthood

Sami Määttä

Achievement Strategies in Adolescence and Young Adulthood

ABSTRACT

This dissertation examined following research aims: (1) Is it possible to identify homogeneous subgroups of adolescents who deploy different kinds of achievement strategies? (2) How stable are adolescents' achievement strategies during the 8th and 9th grades? (3) What are the antecedents of strategy use? (4) What are the consequences of the use of specific strategies on well-being, school adjustment and external problem behavior? (5) What is the role of achievement strategies in the transition from school to work? (6) What is the role of peer groups in adolescents' achievement strategies? Four studies (two cross-sectional and two longitudinal) using two datasets were carried out. The results showed that: (1) adolescents used five kinds of achievement strategies, four of which resembled the kinds of strategy reported previously: the optimistic strategy, defensive pessimism, self-handicapping and learned helplessness; (2) each type of achievement strategy showed some stability across the year and a half; changes in group membership were most likely to occur between the two adaptive (i.e., from the optimistic to defensive pessimistic group or vice versa), or between the two maladaptive (i.e., from the self-handicapping to learned helplessness group or vice versa) groups; (3) depressive symptoms, school adjustment and external problem behavior impacted changes in strategy use; (4) the use of achievement strategies contributed to adolescents' subsequent depressive symptoms, school adjustment and, for boys in the helpless group, norm-breaking behavior; (5) the achievement strategy use had an impact on the likelihood of problems in the transition from school to work (adaptive strategies increased success, maladaptive hindered it); and problems with this transition decreased use of self-protecting causal attributions; (6) the failure expectations and task-avoidance of adolescents' peers were related to adolescents' own norm-breaking behavior, and indirectly to their maladjustment at school and low grades. Overall, achievement strategies seem to form self-perpetuating, cumulative mechanisms together with other psychological mechanisms and outcomes. The problems individuals face during their life-span may be caused on the one hand by the accumulation of failures, and on the other, by the related use of maladaptive strategies.

Key words: Achievement strategies, adolescents, self-handicapping, causal attributions, well-being, school adjustment, problem behavior, peer groups

Author's Address   Sami Määttä
Department of Psychology
University of Jyväskylä
FIN-40014 University of Jyväskylä, Finland
e-mail: sami.maatta@psyka.jyu.fi

Supervisor group   Professor Jari-Erik Nurmi
Department of Psychology
University of Jyväskylä

Professor Katariina Salmela-Aro
Department of Psychology
University of Jyväskylä

Academy researcher Kaisa Aunola
Department of Psychology
University of Jyväskylä

Reviewers   Docent Marjaana Lindeman
Department of Psychology
University of Helsinki

Professor Inge Seiffge-Krenke
Department of Psychology
University of Mainz, Germany

Opponent   Professor Inge Seiffge-Krenke
Department of Psychology
University of Mainz, Germany

ACKNOWLEDGEMENTS

CONTENTS

LIST OF PUBLICATIONS

I   Määttä, S., Stattin, H., & Nurmi, J.-E. (2002). Achievement strategies at school: types, and correlates. Journal of Adolescence, 25, 31-46.

II   Määttä, S., Nurmi, J.-E., & Stattin, H. (in press). Achievement orientations, school adjustment and well-being: A longitudinal study. Journal of Research on Adolescence.

III   Määttä, S., Nurmi, J.-E., & Majava, E-M. (2002). Achievement and attributional strategies in the transition from school to work. European Journal of Personality, 16, 295-311.

IV   Määttä, S., Nurmi, J.-E., & Stattin, H.(2006). Achievement strategies in peer groups: consequences for school adjustment and norm-breaking behavior. Scandinavian Journal of Psychology, 2006, 47, 273–280.

1   INTRODUCTION

Motivated behavior occupies a central position in the research on personality. Since the 1980s researchers in the field have increasingly began to use various "mid-level" concepts of personality (Buss & Cantor, 1989, Cantor, 1990, McAdams, 1995), that is, concepts that that link thoughts and action. Many psychological mechanisms, such as self-concept, self-esteem, expectations, and causal attributions have been assumed to play a role at this "mid level" analysis of personality. Various conceptualizations of these middle-level processes have been used during over the past two decades, such as future-oriented goals (Nurmi, 1991, 2001), life tasks (Cantor, Norem, Niedenthal, Langston & Brower, 1987), personal projects (Little, 1983), strivings (Emmons, 1986), possible selves (Markus & Nurius, 1986), master-orientation, performance orientation (Diener & Dweck, 1978), and, as is the case in this dissertation, achievement strategies (Norem & Cantor 1986a, Nurmi, 1993)[1]. Other concepts, such as coping (e.g. Lazarus, 1993; Miller 1987) and motivational orientation (Niemivirta, 2002; Pintrich & DeGroot, 1990) can also be viewed as "mid-level concepts of personality".

Many of the middle-level concepts describe how individuals attempt to handle the different challenges and demands presented by their developmental contexts. For example, coping, master orientation, and achievement strategies all refer to people's efforts to deal with challenging and demanding situations. It has also been shown that such cognitive and behavioral strategies provide a basis for an individual's success in various situations, such as academic achievement and finding work (Aunola, Stattin & Nurmi, 2000; Cantor, 1990, Eronen & Nurmi, 1999; Midgley, Arumkumar & Urdan, 1996).

This dissertation takes as its topic the kinds of achievement strategies young people use. Such achievement strategies consist of a successive process of thoughts and actions: self-concept provides the basis for the task-related expectations that activate certain behaviors. The process ends in thinking about

---

[1]   In most studies included in this dissertation these patterns are defined as achievement strategies, but in some cases the term achievement orientations is used as well.

the possible cause of behavioural outcomes, defined as causal attributions (Jones & Berglas, 1978; Midgley et al., 1996; Nurmi, 1993). Achievement strategies are typically described in two kinds of situations: success and failure. For example, an individual who is anxious about the possibility of failure in challenging and demanding situations, and therefore tries to avoid them, typically ends up in behaviors that do not help in successfully dealing with successfully with these situations (Jones & Berglas, 1978; Midgley et al., 1996; Miller, 1987). By contrast, if one is optimistic and makes an active effort to deal with a challenging situation, success typically follows in a variety of situations (Aspinwall & Taylor, 1997; Cantor, 1990; Diener & Dweck, 1978; Hokoda & Fincham, 1995; Hokoda, Fincham, & Diener, 1989; Pintrich & DeGroot, 1990). In previous research, several achievement strategies, e.g. optimism (Norem & Cantor, 1986b), defensive pessimism (Norem & Cantor, 1986a) and self-handicapping (Jones & Berglas, 1978), have been identified.

Although a considerable body of research has been carried out on achievement strategies, it is no without some limitations. First, most of the previous studies have concerned only one kind of strategy (e.g. Norem & Cantor, 1986a) and only a few studies have simultaneously examined the various kinds of achievement strategies described in the literature. Second, most of the previous work has been variable-oriented: studies have examined the associations between different strategies or strategic traits and other psychological variables rather that making an effort to identify different groups of people using a specific strategy. In my dissertation, I approach motivated behaviour in a holistic manner: the whole process of an achievement strategy is examined, that is, individuals' achievement-related cognitions, affects and behaviors are studied in relationships to others. Third, most studies have been cross-sectional, and, consequently, the developmental dynamics of strategy use, that is, the stability of use of an achievement strategy, and its antecedents and consequences, have not been studied extensively/over time. Two of the studies included in this dissertation use longitudinal data, thereby allowing the antecedents and consequences of the use of different achievement strategies to be analyzed. Fourth, most of the previous studies have been carried out among non-representative samples, such as university students (Norem & Cantor, 1986a). In the present dissertation a person-centered approach will be used to examine whether the strategies described in the literature are in fact found among a non-selected sample.

Individual development takes place in the context of a variety of age-graded life-span transitions (Elder, 1985; Valsiner & Lawrence, 1997). These have been described in various terms, such as developmental tasks (Havighurst, 1948), role transitions (Caspi, 1987; Elder, 1985), institutional careers (Held, 1986), and life-events (Baltes, Reese & Lipsitt, 1980). Adolescence and young adulthood is the period of life during which an individual faces a large number of developmental transitions (Havighurst, 1948, Newman & Newman, 1975, Pimentel, 1996), such as school transitions, transition from school to work, and related changes in peers. Interestingly, achievement strategies have not been studied explicitly from the point of view of

developmental transitions, that is, how they contribute to a successful transition. Moreover, the developmental contexts in which achievement strategies develop have not been examined. In this dissertation I examine strategies both in the context of transition from school to work as well as in a specific social context, peer groups.

The present dissertation focuses on the kinds of achievement strategies that can be identified in adolescence, their stability, and the antecedents and consequences of strategy use. Also considered are the impact of achievement strategies on successful transitions during young adulthood, and the importance of the achievement strategies of an adolescent's peer group.

1.1   Achievement Strategies

Achievement strategies can be conceptualized as a succession of psychological processes (Jones & Berglas, 1978; Midgley et al., 1996; Nurmi, 1993). First, when people face a challenging situation, this typically evokes expectations about what will happen, including related affects (See Figure 1). Such expectations are based on individuals' experiences in similar kinds of situations in the past. These expectations and affects then provide a basis for the kinds of goals, plans and effort people invest in the task facing them. If people expect to do well, they set task-related goals, construct plans for their actualization, and invest a high level of effort in carrying them out (Norem, 1989; Nurmi, 1993). By contrast, a person who expects to fail often seeks to avoid the situation (Diener & Dweck, 1978), or will behave in a way that will provide an excuse for a potential failure (Jones & Berglas, 1978; Midgley et al., 1996). Finally, when people have received information about the outcome of their efforts to deal with a situation, they typically begin to consider the causes of their successes and failures, such as those related to situation, skills and effort (Weiner, 1985). Most people use various self-protecting causal attributions in their evaluations: they attribute success to internal factors (e.g. effort, ability) and failures to external factors (e.g. situation, other people) - a tendency which has been described as self-serving or self-protecting attributional bias (Taylor & Brown, 1988; Zuckerman, 1979).

Both adaptive and maladaptive achievement strategies are described in the literature. Some of the adaptive strategies, such as the optimistic strategy (Cantor, 1990) and mastery-orientation (Diener & Dweck, 1978; Dweck, 1986) are very similar. They are typically characterized by optimism, mastery beliefs, a high level of focus on the task, a high level of effort, and the use of self-protecting bias. Another type of adaptive strategy is defensive pessimism (Norem & Cantor, 1986a; Cantor, 1990). Although the individuals using this pattern invest a high level of effort, and show task-focused behavior, they are also anxious in an achievement situation. Moreover, their causal attributions are more realistic and less biased than those of optimists (Norem 1989; Norem &

12

Cantor 1986a). Recently this formulation of defensive pessimism has been criticized by Martin, Marsh and Debus (2003), who emphasize reflectivity as the critical component of defensive pessimists' success.

Achievement Strategies

Self-concept Well-being → Expecations Emotions → Goal setting → Behavior → Outcomes → Causal attributions

Coping

Personal goals
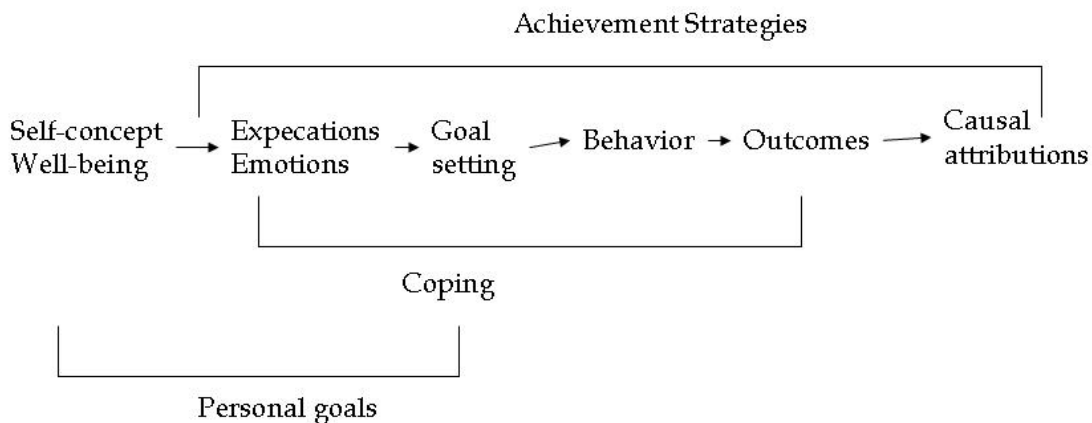
FIGURE 1   An achievement strategy as successive components, and its similarities with other related concepts

On the other hand, several kinds of maladaptive strategies have also been described. For example, it is typical of individuals deploying a self-handicapping strategy to expect to fail, and therefore to turn to active task-avoidance, the aim of which is to provide an excuse for an expected failure. Because self-handicappers refer to their behavior as an excuse for failure, they may be expected to show a high level of a self-protecting attributional bias (Jones & Berglas, 1978).

Another maladaptive strategy pattern is learned helplessness. Because of previous experiences of lack of control and failure in challenging situations, helpless individuals expect to fail, and have external control beliefswhich typically lead to helpless passivity (Abramson, Seligman & Teasdale 1978). It has also been shown that they do not deploy self-protecting attributions (Diener & Dweck, 1978). Nurmi (1993) described a group of young people who were in danger of becoming long-term unemployed as using a failure-trap strategy. The individuals using the strategy were active in task-avoidance, but did not use

self-protecting attributions, which led to a self-perpetuating cycle of failure in academic achievement and work attainment.

Much research has been carried out on achievement strategies during the past few years. However, in most cases non-representative samples, such as selected samples of university students (Cantor, 1990; Norem, 1989) or low- and high-achievers (Nurmi, Onatsu & Haavisto, 1995) have been studied. Consequently, knowledge of how big a proportion of individuals at a certain age, for example during adolescence, deploy a particular achievement strategy is limited. Moreover, only a few studies have made any attempt to examine the stability of the use of a particular strategy, or the developmental antecedents and consequences of strategy use by using cross-lagged longitudinal data. The few studies of this kind published so far have focused on children (Aunola, Nurmi, Niemi, Lerkkanen & Rasku-Puttonen, 2002) or selected samples (Martin, Marsh, & Williamson 2003). Finally, the study of adolescents' achievement strategies is very limited, as most of the studies have used children (Diener & Dweck, 1978; Nurmi et al., 1995) or college student samples (Cantor, 1990; Norem, 1989; Martin et al., 2003).

The concept of achievement strategies is similar to many previous concepts, such as personal goals (Little, 1983), coping (Lazarus, 1993; Seiffge-Krenke, 1995), and causal attributions (Weiner, 1985), for example. The key characteristics of achievement strategy concept is that it takes a more holistic and integrative approach to goal-directed behaviour than some other concepts (see Figure 1). The concept of coping is the closest term to achievement strategy, which also includes the concepts of stressors or tasks, evaluation, resources, and outcomes (Seiffge-Krenke, 1995).

1.2   Antecedents of achievement strategies

Self-concept, self-esteem, and depression have been assumed to play a considerable role in the use of a particular achievement strategy (Figure 1). For example, the people who show 'illusory glow optimism' have been found to show also a low level of depressive symptoms and a positive self-image (Norem, 1989). Defensive pessimists, in turn, report lower self-esteem than the users of an optimistic strategy (Norem & Cantor, 1986a). They have also been shown to report a higher level of depressive symptoms than optimists (Showers & Ruben, 1990). By contrast, people with relatively low self-esteem apply more self-handicapping than those with high self-esteem (Nurmi, Onatsu & Haavisto, 1995). Moreover, learned helplessness has been assumed, and also shown, to be closely associated with depressive symptoms (Abramson et al., 1978; Rosenham & Seligman, 1984).

It has also been suggested that an individual's previous life experiences, that is, successes and failures in various challenging situations, provide a basis for the achievement strategies used later on (Abramson et al., 1978). For

example, young adults who experienced many positive and only few negative life-events showed high well-being and adaptive strategies, whereas those who had faced many negative but only few positive events reported low well-being and low self-protective strategies (Eronen & Nurmi, 1999). Moreover, repeated failures at school have been assumed to lead to an increase in helplessness and self-handicapping, whereas high achievement is expected to lead to optimism and task-focused behavior (Onatsu-Arvilommi & Nurmi, 2000). However, the studies linking well-being, for example self-esteem and depression, and life experiences with achievement strategies, are mostly cross-sectional. Consequently, the causal relationships between strategies and their possible antecedents are not very well known at the present.

In the present dissertation, I will investigate the role of the antecedents that are thought to play a role in the use of achievement strategies, such as self-esteem, depressive symptoms and school adjustment (Study II, Study III) as well as external problem behavior (Study II) and life-events (Study III).

1.3 Consequences of achievement strategies

One key notion in this field of research is that the kinds of achievement strategies people use have different consequences for their lives. Adaptive, task-focused strategies seem to lead to success (e.g. Norem & Cantor, 1986a; Nurmi et al., 2003), while maladaptive strategies are associated with problems in various domains (e.g. Aunola et al., 2000; Nurmi, 1993) . For example, the achievement strategies adolescents deploy are an important factor associated with their school adjustment and subsequent academic achievement. Students who show an expectation of failure, active task-avoidance, and passivity (self-handicapping and/or learned helplessness in terms of achievement strategies), have been found to show negative attitudes towards education (Midgley et al., 1996), poor performance (Chapman, 1988; Diener & Dweck, 1978; Midgley & Urdan, 1995; Nurmi et al., 1995; Onatsu-Arvilommi & Nurmi, 2000) and underachievement (Carr et al 1991; Nurmi et al., 1995). It has also been suggested that the use of such maladaptive strategies may lead, in the long run, not only to problems in school adjustment (Nurmi, Salmela-Aro & Ruotsalainen, 1994) but also to a variety of other kinds of problems, such as norm-breaking behavior, unsuccessful socialization (Nurmi et al., 1994), substance use and delinquency (Aunola et al, 2000; Nurmi, 1993). By contrast, optimism and task-focused strategies have been found to lead to high levels of academic achievement and adjustment (Diener & Dweck, 1978; Eronen & Nurmi, 1999; Onatsu-Arvilommi & Nurmi, 2000).

In the present dissertation well-being, measured by assessing depressive symptoms, self-esteem, school adjustment, external problem behavior (Studies II and III), and successful transition from school to work (Study III), will be examined as consequences of strategy use.

1.4 Contexts of Achievement Strategies

1.4.1 The transition from School to Work

One of the most significant transitions during young adulthood is the transition from school to work (Cantor et al., 1987; Havighurst, 1948; Schulenberg, Maggs & Hurrelman, 1997; Vondracek, Lerner & Schulenberg, 1986), because of its important consequences for the individual's later life-span trajectories and well-being. It influences, for example, an individual's career options and later income (Nurmi, 2004; Schulenberg, et al., 1997; Vondracek, 1998). The transition from school to work also has important psychological consequences, such as those related to the formation of one's adult identity (Bynner, 1998; Grotevant, 1987). The transition from school to work is influenced by a number of institutional and societal factors. These factors include the timing and sequencing of educational transitions, the opportunities available at a given time, and the level of unemployment in the society in question (Hurrelmann, 1994; Nurmi, 2004; Valsiner & Lawrence, 1997).

The achievement strategies individuals deploy in challenging situations are assumed to have important consequences for their success in dealing with this life transition (Nurmi, 2004). Although many studies have shown that achievement strategies play an important role in academic settings (e.g. Norem & Cantor, 1989), only a few studies have investigated their role in the context of the transition from school to work. In one such study, Eronen and Nurmi (1999) showed that task-avoidance increased and an approach-oriented strategy decreased problems in this transition. It is also reasonable to assume that success in dealing with a particular transition might influence the achievement strategies the same individuals use later on.

In the present dissertation, a successful transition (defined as finding work after graduation) is studied both as a predictor and as a consequence of achievement strategies (Study III).

1.4.2 Peer Groups in adolescence

Peer groups have been found to be one of the most important contexts for an adolescent's development (Brown, 2004; Magnusson & Stattin, 1998). Adolescents acquire skills, attitudes and experiences in peer groups (Bukowski, Newcomb & Hartup, 1996, Rubin, Bukowski & Parker, 1998). The impact of peer group experiences, however, can be either positive or negative (Cairns, Cairns & Neckerman, 1989). On the one hand, it has been suggested that the sharing of values and aspirations among peers is important in achieving a successful transition from adolescence to adulthood (Youniss, 1980), while on the other hand, it has been proposed that if the values and actions of peer groups come into direct conflict with conventional institutions, they may cause

problems (Cairns & Cairns, 1994). Norm-breaking may even become a norm in peer groups (Moffit,1993).

The peer groups to which school-age children and adolescents belong are suggested to influence many important aspects of their members' lives. For example, peer groups are similar in terms of academic achievement (Chen, Chang & He, 2003; Ryan, 2001) and in learning motivation (Kindermann, McCollam & Gibson 1996; Ryan, 2001). Moreover, literature also suggests that peer groups influence members' external and internal problem behaviour (Espelage, Holt, & Henkel, 2003; Hogue and Steingerg, 1995; Kiesner, Poulin & Nicotra, 2003), substance use (Cairns & Cairns, 1994; Urberg, Değirmencioğlu & Pilgrim 1997), aggressive behavior (Cairns & Cairns, 1994), dropping out of school (Battin-Pearson, Newcomb, Abbott, Hill, Catalano, & Hawkins, 2000; Cairns & Cairns, 1994; Cairns, Cairns & Neckerman, 1989; Fine, 1989) and norm-breaking behavior (Ary, Duncan, Duncan, & Hops 1999; Elliot, Huizinga & Ageton, 1985).

It has also been suggested that peer groups are important for the development of adolescents' self-concept and their intimate personal beliefs about their identity (Harter, 1990; Youniss, 1980). Peer groups also facilitate change and growth in the individual's self-concept by providing models, feedback and social support. For example, it has been suggested that peers have an impact on the ways in which an adolescent sees the future (e.g. educational expectations [Nurmi, 2001]), and thus his/her sense of well-being (Cairns & Cairns, 1994).

Although there is evidence to suggest that peer groups contribute to adolescents' self-concept, school adjustment and problem behaviour, less is known about the mechanisms of this association. In the present dissertation, the impact of a peer group's use of a strategy and an adolescents' use of a strategy is seen as a reciprocal process, that is, the impact of peers' strategy use on an adolescents' achievement strategies, problem behaviour and school achievement, and the impact of an adolescents' strategy use on his/her peers' strategies and problem behaviour are studied simultaneously.

1.5   Aims of the dissertation

This dissertation examined the following research questions:

(1) Is it possible to identify homogeneous subgroups of adolescents who deploy different kinds of achievement strategies? Do the strategies identified resemble those described in the literature, and are they validated by the different outcome measures?

(2) How stable are adolescents' achievement strategies during the 8th and 9th grades?

(3) What are the antecedents of strategy use? Well-being, school adjustment and external problem behavior are examined as predictors of the use of different kinds of achievement strategies.

(4) What are the consequences of the use of specific strategies (over time) on well-being, school adjustment and external problem behavior?

(5) What is the role of achievement strategies in the transition from school to work? Different aspects of achievement strategies, such as planning and self-protecting attribution, as well as well-being, are examined in context of this transition.

(6) What is the role of peer groups in adolescents' achievement strategies? Do the achievement strategies used by peers impact on adolescents' own external problem behavior and school achievement?

2   METHOD

2.1   Participants

In this dissertation I use two datasets. The first, which is used in studies I, II, and IV, is from the Örebro Study of Adolescence (Stattin, 1998). The second dataset is drawn from the Helsinki from School to Work Transition Study (Nurmi, Salmela-Aro & Koivisto, 1995). An overview of the samples and methods is presented in Table 1.

The Örebro data was gathered at two time-points. First, during the fall term an almost complete age cohort (1351) of 8th grade students of Örebro filled in questionnaires measuring their achievement strategies, well-being, school adjustment, and norm-breaking behavior. Second, during the spring term of the 9th grade, the students filled in the same questionnaires. In addition, the teachers supplied data on the actual school grades at Time 1. In Study I, 880 (65% of the complete age cohort), in Study II 734 (54% of the age cohort), and in Study IV 286 (21%) adolescents were included in the sample. The sample was representative of Swedish adolescents living in urban regions of Sweden in terms of gender, and social and ethnic background. The parents were first asked for permission to study their children, and then the participants were investigated during a typical school day at both measurement points. All answers were treated as strictly confidential.

The Helsinki from School to Work Transition Study (Nurmi, Salmela-Aro & Koivisto, 1995; Study III) was conducted in 1995-1996, measurements performed at three time-points. The participants were 250 students (mean age 25) from two types of post-comprehensive educational institution in the Helsinki metropolitan area: a business-oriented vocational school (117) and an institute of technology (133). The samples were representative of the student populations in these types of educational institution in Finland
The measurement points were: first, at the beginning of their last spring term (250 participants); second, about eight months after the first measurement, and about four months after the participants had graduated (220 participants); and third, about eighteen months after the first measurement (200 participants).

The students filled in questionnaires on their achievement strategies, depressive symptoms, and work status (measurement points 2 and 3 only).

2.2 Measures

Several types of measures are used in the present dissertation: first, questionnaire data concerning achievement strategies; second, questionnaire data about well-being; third, questionnaire and actual data about school adjustment and achievement; and fourth, questionnaire data about work status. The summary of the measures used in Studies I-IV is presented in Table 2.

TABLE 1   Summary of the participants, variables, and methods used in Studies I – IV

Study	Participants	Variables	Data-analysis

Study I
Achievement Strategies
at School: Types and
Correlates
	880 8th graders
	(age 14-15);
	399 boys,
	481 girls
	
	Cross-
	sectional
		Independent variables:
		  - achievement strategies:
		    failure expectations
		    active task-avoidance
		    passive task-avoidance
		    self-protecting attributional bias
		Dependent variables:
		  - school adjustment
		  - school grades
		  - depressive symptoms
		  - self-esteem
		  - norm-breaking behavior
		Control variable:
		  - gender
			Hierarchical clustering by
			cases (Ward method); Tukey's
			t-test

Study II
Achievement Orientations,
School Adjustment and
Well-being: A Longitudinal
Study
	741 8th graders
	(Time 1);
	334 boys,
	407 girls;
	741 9th graders
	(Time 2);
	334 boys,
	407 girls
	
	Longitudinal
		Independent and dependent
		variables:
		- achievement strategies
		    failure expectations
		    active task-avoidance
		    passive task-avoidance
		    self-protecting attributional bias
		- school adjustment
		- depressive symptoms
		- norm-breaking behaviour
		Control variable:
		- gender
			ISOA hierarchical clustering by
			cases; multinomial logistic
			regression analysis; ANCOVA
			with Bonferroni's procedure

Study III
Young Adults' Achievement
and Attributional Strategies
in the Transition from School
to Work: Antecedents and
Consequences
	250 young
	adults measured
	at three time-
	points;
	129 men,
	121 women
	
	Longitudinal
		Independent and dependent
		variables:
		- achievement strategies
		  planning
		  passivity
		  failure expectations
		  external attributions
		  internal attributions after success
		  internal attributions after failure
		- life situation
		Dependent variable
		- depressive symptoms
			Logistic regression analyses;
			regression analyses, partial
			correlations

Study IV
Achievement Strategies in
Peer Groups and Adolescents'
School Adjustment and
Norm-breaking Behavior
	287 8th graders
	(age 14-15);
	168 boys,
	223 girls
	
	Cross-
	sectional
		Independent variables:
		- own achievement strategies:
		  failure expectations
		  active task-avoidance
		- peer group's achievement
		  strategies (same subscales)
		Dependent variables:
		- school adjustment
		- school grades
		Mediator variable:
		- norm-breaking behavior
			Structural Equation Modeling
			(path model)

TABLE 2   Measures used in the thesis

Measure	Items	α	Study	Data set
Achievement Strategy				
SAQ				Örebro Study of Adolescence
(Revised Strategy-Attribution Questionnaire)				
i) Failure expectations	6	.75	I	
		.75-.78	II	
		.75	IV	
ii) Active task-avoidance	8	.81	I	
		.81-.84	II	
		.81	IV	
iii) Passive task-avoidance	6	.75	I	
		.75-.78	II	
iv) Self-protecting attribution	2	-	I	
		-	II	
CASI (Nurmi, 1993)				The Helsinki from School to
(Cartoon-Attribution-Strategy Inventory)				Work Transition Study
i) Planning	6	.84-.88	III	
ii) Passivity	8	.86-.91	III	
iii) Failure expectations	6	.85-.88	III	
iv) External causal attributions	8	.85-.86	III	
v) Internal attributions after success	4	.74-.75	III	
vi) Internal attributions after failure	4	.68-.74	III	
Well-being				
CES-DE (Olsson, 1998)	28	.88	I	Örebro Study of Adolescence
Center for Epidemiological Studies questionnaire		.82-.85	II	

BDI (Beck et al., 1961) Revised Beck's Depression Inventory	13	.84-.88	III	The Helsinki from School to Work Transition Study
RSE (Rosenberg, 1979) Rosenberg's Self-esteem Scale	10	.88	I	Örebro Study of Adolescence

External Problem Behavior

Problem Behavior Scale for Adolescents (Stattin, 1997)	14	.84 .84-.89 .84	I II IV	Örebro Study of Adolescence

School-related Measures

School Adjustment Scale (Kerr & Stattin, 2000) a) School Adaptation	5	.80 .80-.82	I II	Örebro Study of Adolescence
b) Teacher relations	7	.85	I	
ICS-T (Cairns, Leung, Gest & Cairns, 1995)4 Interpersonal Competence Scale -Teacher	.77		IV	Örebro Study of Adolescence
Academic Achievement (3 subjects)	3	.81 .81	I IV	Örebro Study of Adolescence

Work Status

WSQ (Nurmi & Salmela-Aro, 1995) Work status questionnaire	3	-	III	The Helsinki from School to Work Transition Study

3   SUMMARY OF THE FOUR STUDIES

Study I

Study I sought to identify the kinds of strategies adolescents deploy in an achievement context in an nonselected sample of Swedish adolescents. The participants were 880 14 to 15-year-old comprehensive school students (399 boys and 481 girls). Six groups of adolescents were identified, based on clustering-by-cases analysis, according to the strategies they deployed. Four of them, i.e. optimistic, defensive pessimistic, self-handicapping and learned helplessness strategies, were similar to those described previously in the literature. The results showed that membership in the functional strategy groups (optimistic and defensive pessimistic) was associated with well-being, high school adjustment and achievement, and low levels of norm-breaking behavior. By contrast, membership in the dysfunctional strategy groups (self-handicapping and learned helplessness), was associated with low levels of well-being, and school maladjustment, and a higher level of norm-breaking behavior. The results suggest that achievement strategies can be identified in a representative sample and that these strategies are associated with important consequences for adolescents' lives in terms of well-being and school achievement.

Study II

The study II set out to identify the kinds of achievement strategies adolescents deploy, to ascertain how stable such strategies are, and to examine the antecedents and consequences related to the use of a specific strategy. The participants were 741 adolescents (334 boys and 407 girls). By using a longitudinal ISOA clustering-by-cases analysis, five groups of strategies were identified: optimistic, defensive-pessimistic, self-handicapping, learned helplessness and neutral-pessimistic. The use of a particular strategy was also relatively stable over the period extending from when the adolescents had entered the 8th grade, in autumn, until the spring of the following year, when they were in the 9th grade. The results showed further that, for boys, high levels

of depressive symptoms and, for girls, a low level of school adjustment contributed to changes from the use of optimistic and defensive-pessimistic strategies to the use of helplessness and self-handicapping patterns. The use of optimistic and defensive-pessimistic strategies were also found to predict a high level of school adjustment and a lack of depressive symptoms later on, whereas the use of self-handicapping and learned helplessness strategies predicted poor school adjustment, and frequent depressive symptoms and norm-breaking behavior. These results suggest that a pattern of achievement strategies is already established for many teenagers. The results also suggest, however, that change in strategy use can occur, and that well-being and school adjustment seem to predict this change, pointing to possible areas for intervention.

Study III

This study focused on investigating the extent to which the achievement and attributional strategies individuals deploy influence their success in dealing with the transition from school to work; and whether their success or failure in this particular transition would have consequences for the kinds of strategies they deployed later in life. Two hundred and fifty young adults, 129 men and 121 women, took part in the study. The results showed that the deployment of maladaptive strategies, such as the expectation of failure and passive avoidance, lead to problems in dealing with the transition from school to work, that is not finding employment after school. In turn, young adults' problems in dealing with this transition decreased their use of self-protecting causal attributions, which was also found to lead to increased depressive symptoms. The results suggest that the strategies used form an important part of navigating this important transition, and that success in this transition also has an impact on the strategies subsequently used.

Study IV

Study IV examined the role played by the achievement strategies deployed by adolescents, and also by their peers, in determining their school adjustment and problem behavior. The participants were 287 14 to 15-year-old comprehensive school students (168 boys and 223 girls), a subsample of the Örebro data. The results showed that not only the achievement strategies adolescents deploy but also those of their peers are associated with their norm-breaking behavior and school adjustment. The kinds of strategies their peers deployed were positively associated with adolescents' norm-breaking behavior, and indirectly also with their maladjustment at school and low grades. These associations were found after controlling for the impact of adolescents' own achievement strategies. The results suggest that the use of achievement strategies by peers is a factor contributing to success at school, and that problems at school may be partly due to the impact on peers' strategies on external problem behavior (especially for boys).

4 DISCUSSION

This dissertation investigated the role of achievement strategies in young peoples' lives: what kinds of achievement strategies adolescents deploy, their major antecedents and consequences, and the kind of role such strategies play in navigating the transition from school to work. Also the role of peers in the formation of achievement strategies was examined. Overall, the results suggest that adolescents employ different kinds of adaptive and maladaptive achievement strategies, and that psychological well-being, especially depressive symptoms and school adjustment, are significant antecedents as well as consequences of the use of specific strategies. Moreover, achievement strategies were found to have an impact on the transition from school to work on the one hand and success in dealing with the transition to contribute to the subsequent use of a particular achievement strategy on the other. In addition to the adolescents' own achievement strategies, the strategies members of an adolescent's peer group used were found to be related to his or her school achievement.

4.1 The types of achievement strategies

The results of Studies I and II showed that adolescents tend to use five kinds of achievement strategies, four of which resembled the kinds of strategy reported previously: the optimistic strategy (Cantor, 1990; Dweck, 1986; Norem, 1986), defensive pessimism (Norem 1989; Norem & Cantor 1986a), self-handicapping (Jones & Berglas, 1978) and learned helplessness (Abramson et al., 1978). The optimists and defensive pessimists showed low levels of failure expectations and task avoidance. They differed, however, in how they used self-protecting attributions: the optimists showed extremely high level of self-protecting bias, whereas the defensive pessimists showed only slight bias. These two strategies were labeled adaptive. In turn, self-handicappers showed moderate levels of failure expectations and task-avoidance, but also a moderate level of self-protecting bias. The learned helplessness strategy was typified by high levels of

failure expectations and task-avoidance, and a lack of self-protecting attributions. These two strategies were maladaptive. The fifth type of strategy, identified as normative, was used by adolescents who showed average levels of the criteria variables, and who did not resemble any of the strategies described previously.

The results of Study II showed further that, although each type of achievement strategy showed some stability across the year and a half, that is, around fifty percent of the members stayed in any given strategy group, there were also changes in group membership. The changes were most likely to occur between the two adaptive achievement strategy groups (i.e., from the optimistic to defensive pessimistic group or vice versa), or between the two maladaptive groups (i.e., from the self-handicapping to learned helplessness group or vice versa). These results are somewhat different than those of Elliott and Church (2003), who found that defensive pessimists and self-handicappers have similar motivational strategies. Overall, these results suggest that the expectations and subsequent behavior typical of a particular strategy are less likely to change across time than the attributional pattern.

The present findings both supported and conflicted with previous definition of achievement strategies. First, the defensive pessimists did not differ from optimists in their level of success expectations, as has been suggested in the previous literature (Cantor, 1990; Norem, 1989). For this reason, they might also be labeled 'realistic optimists' rather than defensive pessimists. Martin et al. (2003) suggest that it is in fact the reflective element in defensive pessimism that is responsible for the success of the users of this strategy, not pessimism per se. This may partly explain this unexpected result.

Second, both self-handicappers and helpless adolescents reported high levels of active and passive task-avoidance, which was not expected (Abramson & Teasdale, 1978; Seligman, 1975). Avoiding the situation seems to be the aim, and there were few differences – mainly the level of avoidance was higher among the helpless - between the self-handicappers and helpless in how this aim is achieved. If this is the case, perhaps the learned helpless group should be named users of "failure-trap" strategy (Nurmi, 1993), as it seems to exhibit all the possible negative aspects of achievement strategies.

4.2   Antecedents of achievement strategies

The results of Study II concerning the antecedents of the developmental changes in adolescents' achievement strategies over time showed that depressive symptoms, school adjustment, and to a lesser extent external problem behavior, were important in determining changes in the strategies used.

First, the results concerning depression showed that an increase or a decrease in depressive symptoms from 8th to 9th grade was associated with

simultaneous changes in achievement strategies. When an adolescent's depressive symptoms increased across time, he or she was likely to a move to the self-handicapping or learned helplessness group, as could be expected (Abramson et al., 1978; Seligman, 1975). By contrast, if an adolescent reported a decrease in depressive symptoms, he or she was likely to move to the optimistic or defensive-pessimistic groups, in accordance with the idea that an optimistic achievement strategy is associated with low levels of depressive symptoms and a positive self-image (Norem, 1989). These results seem to reflect a mechanism in which an increase in depressive symptoms leads to an increase in task-avoidant behavior, and a decrease of such symptoms leads to more task-focused behavior.

The results of Study II concerning behavioral antecedents showed, first, that engagement with school predicted adolescents' use of an optimistic strategy later on, whereas a low level of it predicted learned helplessness. Furthermore, an increase in school engagement was associated with a move to both the optimistic and defensive-pessimistic groups, and a decrease in engagement with school was related to a move to learned helplessness group. Second, an increase in external problem behavior predicted a move to learned helplessness group. This result is in accordance with previous findings showing that the use of a maladaptive strategy is associated with norm-breaking behavior (Aunola, et al., 1993; Nurmi et al., 1994). A possible explanation for these results is that active engagement in activities that promote adjustment, that is engagement with school, is reflected in more adaptive overall achievement strategy use later on. Similarly, a withdrawal from school engagement and increasing external problem behavior lead to a more maladaptive strategy use. These results add to the previous cross-sectional research by showing that the depression and the behavioral indicators of well-being are not only associated with achievement strategies, but also predict them.

4.3   Consequences of achievement strategies

The results of Study II concerning the consequences of different achievement strategies showed that the use of certain achievement strategies contributed to adolescents' subsequent depressive symptoms, engagement with school and norm-breaking behavior.

The results showed, first, that the use of the optimistic achievement strategy led to a decrease in subsequent depressive symptoms. However, also the use of the defensive pessimistic strategy predicted a decrease in depressive symptoms. This result may be due to the fact that, because defensive pessimism contributes to academic success, it also decreases depressive symptoms, perhaps because of its positive feedback effects (Norem & Cantor, 1986a).

By contrast, the maladaptive achievement strategies, that is, self-handicapping or learned helplessness, increased adolescents' subsequent depressive symptoms. Our results add to the previous findings (Abramson et al., 1978; Seligman, 1975) by showing that learned helplessness and self-handicapping are not only a consequence of depression, but that they also increase adolescents' future depressive symptoms over time. These results may be due to the fact that self-handicapping and helplessness lead to difficulties in dealing successfully with academic tasks, such as schoolwork. This negative feedback in turn also increases adolescents' depressive symptoms.

The results of Study II showed further that the optimistic and defensive pessimistic strategies increased adolescents' subsequent engagement with school, whereas self-handicapping and learned helplessness decreased it, after controlling for the previous levels of school engagement. These results are in accordance with the idea that optimistic and defensive pessimistic beliefs increase the likelihood of success in academic situations (Norem & Cantor, 1986a). This is then likely to lead to better engagement with school. By contrast, self-handicapping and learned helplessness are likely to cause problems in academic achievement (Nurmi et al., 2003), thereby decreasing engagement with school.

Overall, these results add to the previous, mostly associative research, by showing that strategies longitudinally predict depressive symptoms and engagement with school.

Study II had also some unexpected results. Engagement with school was not predictive of the use of self-handicapping, as has been suggested in the previous literature (Midgley et al., 1996). One possible reason for this finding is that, during adolescence, self-handicapping may be a functional strategy deployed to deal with academic failures, at least among some adolescents, as it may, for example, decrease anxiety. It may become maladaptive only later on when combined with negative life-course consequences.

In Study IV achievement strategies were examined by a variable-oriented analysis, path modeling. The results showed that adolescents who used a maladaptive achievement strategy also showed a high level of norm-breaking behavior and low levels of school adjustment and academic achievement. By contrast, adolescents who deployed an adaptive achievement strategy, that is, who expected to succeed, and reported task-focused behavior, showed a low level of norm-breaking behavior and high levels of academic adjustment and achievement. These results support the findings of Study II and are in accordance with previous research suggesting that the use of task-avoidant strategies may lead to difficulties at school, and that they are connected with norm-breaking behavior, whereas optimistic and task-focused strategies are successful in academic settings (Midgley & Urdan, 1995; Nurmi et al. 1994; Nurmi, Onatsu & Haavisto 1995).

The results of Study IV also showed that adolescents' achievement strategies could be modeled as two successive stages of a process which then had behavioral consequences: failure expectations contributed to task-avoidance, which, in turn, predicted norm-breaking behavior. The latter was

then found to predict poor school adjustment and achievement. This is in accordance with the notion that cognitive structures, such as expectations, goals, beliefs, and strategies function as antecedents of behavior (Jones & Berglas, 1978; Norem, 1989; Nurmi, 1993), which then has consequences for academic outcomes (Cantor, 1990; Eronen & Nurmi, 1999; Norem & Cantor, 1986a; Nurmi, 1993). However, failure expectations were also shown to have a direct impact on school adjustment and academic achievement, which suggests that pessimism concerning achievement-related situations, is itself a powerful predictor of school achievement. It may be that its impact is not always mediated through task-avoidance or norm-breaking behavior, but can sometimes be direct. For example, if a person expects to fail at a subject, he or she may just give up at first sign of difficulties.

Overall, the results suggest that achievement strategies interact closely with individuals' well-being and behavioral outcomes. On the one hand, low well-being, particularly depression, increases the likelihood of resorting to maladaptive strategies. In turn, the use of maladaptive strategies leads to a decrease in well-being. On the other hand, school engagement contributes to the use of adaptive strategies, whereas problem behavior predicts maladaptive patterns. Again, however, the use of a certain strategy also had behavioral consequences, for example for adolescents' school achievement.

4.4   Contexts of achievement strategies

4.4.1 The transition from school to work

When achievement strategies were investigated in the context of the transition from school to work in Study III, the results showed that the use of maladaptive achievement strategies increased the likelihood of failure in dealing with this particular transition, whereas the deployment of adaptive achievement strategies helped the individual to deal with it successfully. For example, the more the participants reported the use of passive avoidance while still at school, the more likely they were to be unemployed. The results showed, further, that individuals who reported external control beliefs while still at school, and failure expectations eight months after graduation, were more likely to become unemployed later on. Finally, internal attributions after success eight months after graduation were negatively associated with being unemployed. Overall, these results are similar to those found in academic contexts: the use of an avoidance strategy, typified by passivity, failure expectations and internal attributions of failure, increase individuals' problems in successfully dealing with a challenging life situation (Eronen & Nurmi, 1999; Nurmi, 1993).

The results of Study III concerning starting a new education showed further that causal attributions, in particular, had an impact: the more the participants attributed failure to internal causes while still at school, the more

likely they were to become students in a new educational program later on. Further, internal attributions after failure eight months after graduation were associated with being a student a year and a half after it. There are at least three possible explanations for these results. First, young adults who put a high value on autonomy, as also reflected in their belief in internal control, are more likely to continue in another kind of education as a non-normative developmental pattern. A second possible explanation is that becoming a student in a new educational program might be considered as failure in the transition from school to work. Third, the students who did end up in moving to another education program were in moratorium stage in their career identity (Marcia, 1980), which explains the fact that they spent a lot of time exploring their own role, reflected in the use of internal attributions.

Second, the results of Study III showed that the outcomes of individuals' efforts to deal with the transition had consequences for their subsequent strategies and attributions, in particular. Problems in dealing with the transition decreased internal attributions after success, whereas success decreased beliefs in external control. For example, young adults who were able to find a job after school were less likely to report external causal attributions later on. On the other hand, those who were not able to find a job after school were less likely to attribute success to internal causes a year and a half after graduation. Overall, these results accord well with the notion that success increases the belief of individuals in their personal control and agency (Abramson et al, 1978; Bandura, 1986; Cantor, 1990; Nurmi et al., 1994; Nurmi et al., 1995). There were also some unexpected results. For example, young adults who were not able to find a job after school were less likely to attribute failure to internal causes half a year later. One possible explanation for this result is that becoming unemployed initially stimulates the individual to invest a high level of effort in attempts to continue to master his or her life, which is reflected in causal attributions (Wortman & Brehm, 1975). It is only later on, when this negative life situation becomes more permanent, that it has a negative impact on individuals' control beliefs and causal attribution styles. The success of individuals in dealing with the transition from school to work had, however, only limited impact on other aspects of the strategies they deployed.

Finally, the results showed that the kinds of causal attributions young adults deployed had some consequences for their depressive symptoms. The results showed that a tendency to use internal attributions after failure while still at school increased depressive symptoms one and a half year later among most of the young adults. Moreover, internal attributions after success while still at school decreased subsequent depressive symptoms among the students. These results are in line with the notion that the use of self protecting causal attributions helps individuals to cope with negative feedback (Taylor & Brown 1988; Zuckerman, 1979). These results are also similar to those of Study II in the sense that depressive symptoms or lack of them emerge as an important consequence of strategy use.

Overall, these results suggest that, on the one hand, the kinds of outcomes individuals have experienced previously in their effort to deal with the key

transitions in their lives have consequences for the cognitive and attribution strategies they use later on. On the other hand, the use of a particular strategy has consequences for how successful individuals are in dealing with the transition from school to work.

4.4.2 Peer Groups

The results of Study IV revealed that it was not only the achievement strategies adolescents themselves used, but also the kinds of strategies their peers deployed, that were associated with adolescents' own norm-breaking behavior, school adjustment and achievement. The failure expectations and task-avoidance reported by their peers were positively related to adolescents' norm-breaking behavior, and indirectly also to their maladjustment at school and low grades. These associations were found after controlling for the impact of adolescents' own achievement strategies. These are important findings because they suggest that spending time with peers who show maladaptive achievement strategies contributes to norm-breaking behavior and poor school adjustment among adolescents, independently of the strategies used by the adolescents themselves. By contrast, spending time with peers who reported adaptive achievement strategies contributed to lack of problem behavior and a high level of school adjustment.

Overall, these findings are in accordance with previous results showing that particular aspects of peer groups are associated with adolescents' academic achievement (Cairns et al., 1989; Ryan, 2000), dropping out of school (Battin-Pearson et al., 2000; Cairns & Cairns, 1994; Fine, 1989) and norm-breaking behavior (Ary et al., 1999; Elliot, Huizinga & Menard, 1989). The results obtained in Study IV, however, increase our understanding of some of the mechanisms that are responsible for these associations. It looks as if the way adolescents' peers think and behave in achievement situations has consequences for an adolescent's problem behavior and school adjustment. These results are also important because they combine two previous research traditions concerning adolescents' problem behavior, that is, the cognitive approach to low achievement and adjustment (Abramson et al., 1978; Aunola, Stattin & Nurmi, 2001) and the peer-group framework to problem behavior (Brown, Mory, &, Kinney, 1994; Cairns et al., 1989).

There is, however, a need for future studies on the mechanisms that are responsible for the influence of the peer group. It has been suggested previously, for example, that adolescents choose associates who are similar to themselves. This seemed not to be the case in our data, as the achievement strategies used by peers showed only low correlations with adolescents' own strategies. It is possible, however, that, although peer groups are not homogeneous in terms of the strategies used by their members, those members of a peer group who are deviant with regard to their strategies are the most influential with respect to the adjustment and problem behavior shown by the members of the peer group. The results also showed that adolescents' task-avoidance predicted their peers' norm-breaking behavior. Together with results

reported previously these findings suggest that adolescents' and their peers' cognitive strategies and norm-breaking behavior predict adolescents' academic behavior in an interactive, reciprocal-cyclic, manner.

4.5 Gender Differences

Overall, only a few overall gender differences were found. For example, males reported more external attributions than females, and females deployed a higher level of planning-oriented achievement strategies than men (Study III). Further, boys reported a higher level of failure expectations and active task-avoidance than girls. Similarly, the boys' peers reported a higher level of failure expectations and active task-avoidance than those of girls (Study IV). Moreover, boys showed higher self-esteem and norm-breaking than girls, whereas girls reported more depressive symptoms and better school adjustment and grades (Studies I, II and IV). Being a girl also predicted depressive symptoms and being a boy norm-breaking behavior (Study II). These results are in accordance with previous research regarding gender differences, for example girls showing more depressive symptoms than boys and boys showing more external problem behavior than girls (Lerner & Steinberg, 2004).

Gender also interacted with some other variables. For example, boys in the learned helplessness group reported a much higher level of norm-breaking behavior than other boys, whereas girls in helpless group did not differ from girls in the other groups in this respect (Study I). Similarly, learned helplessness increased norm-breaking among boys but not girls over time (Study II).

When peer groups were studied, more gender differences were found (Study IV). Overall, girls seemed to be more influenced by their peers than boys. Peers' norm-breaking had a direct impact on girls' school adjustment, and an indirect impact on their school achievement. Peers' task-avoidance also predicted girls' grades. These results were not found among boys. The greater impact of peers among girls may be due to the fact that girls' peer groups are typically more intimate and tightly knit than those of boys (Benenson, 1990; Urberg, Değirmencioğlu, Tolson, & Halliday-Scher, 1995) and girls attribute greater importance to peer cliques (Crockett, Losoff, & Petersen, 1984). Kiuru, Aunola, Vuori and Nurmi (in press) found also that girls' future plans were more influenced by their peers than those of boys. However, with respect to norm-breaking, a higher association was found between boys and their peers than between girls and their peers.

Overall these results suggest that achievement strategies are similar phenomenon for both sexes. The differences that were found could stem from the same causes as the results concerning school adjustment, depression, self-esteem and norm-breaking: girls are more worried, but at the same time better adjusted than the boys; boys are more care-free, but at the same time engage more in task-irrelevant behavior.

4.6   Theoretical Implications

The results of this dissertation suggested that, although achievement strategies are relatively stable, they are also influenced by many individual characteristics, such as depressive symptoms, school adjustment, and problem behavior. For example, a decrease in depressive symptoms and an increase in school engagement were associated with a move to the use of adaptive strategies. It seems that both internal stages, exemplified by depressive symptoms and, at the behavioural level, school maladaptation, are important for the change in strategy use. These results are similar to those found in earlier studies. Norem (1989), for example, found that optimism was associated with low levels of depressive symptoms, and Onatsu-Arvilommi and Nurmi (2000) that failures at school led to increases in self-handicapping.

The achievement strategies themselves were found to have consequences for adolescents' lives as well, both for their psychological well-being and behavior. For example, the use of an adaptive strategy contributed to a decrease in depressive symptoms and increased adaptation to school. By contrast, maladaptive strategy use led to higher level of depression, lower school adjustment, and in the case of the most maladaptive boys, higher norm-breaking behavior. These results are in accordance with earlier results concerning associations between achievement strategies and well-being (e.g. Midgley et al., 1996; Nurmi et al., 1994).

The major theoretical implication concerning the development of achievement strategy is that, on the one hand, internal and external problem behaviour have consequences for the kinds of achievement strategies young people use later on. On the other, the use of a certain achievement strategy also contributes to people's well-being. However, the results of this study were found among adolescents and young adults. An important issue for future studies would be whether the developmental changes, and their antecedents and consequences are similar to other age periods as well.

4.7   Practical Implications

The results of this dissertation may also have some implications for how to deal with and intervene in adolescents' problem behavior at school. Although the majority of adolescents seem to use functional and adaptive ways of dealing with school-related demands, a significant proportion of them deploys maladaptive strategies, and consequently is at the risk of problem behavior later on in academic settings. Aside from providing a tool to identify such adolescents, the theoretical approach applied in this study may also offer some insights regarding how to help these adolescents. The first possible intervention for such youth would be to create a learning context at school in which failures

are perceived as a natural part of learning (Eronen, 2001). The principles of reattribution therapy could also be used to help individuals to make external and unstable attributions for failure and internal and stable attributions for success (Abramson et al., 1978). Interestingly, the results of this dissertation also showed that attributions are the most malleable part of achievement strategies. Second, group learning may be an effective way to encourage students to participate in and commit themselves to learning rather than the ways of learning that emphasize competition of success. which might facilitate the deployment of functional strategies (Eronen, 2001). The results of this dissertation also suggest that studying in a group in which adaptive achievement strategies are used could be beneficial for an adolescent's own adjustment. Third, individual help and feedback for students when they are studying for an exam or writing an essay, instead of just grading their acvhievement (Eronen, 2001) might diminish the lure of self-handicapping (Berglas & Jones, 1978) and encouraging them to use adaptive strategies. The results presented in this dissertation also suggest that just being more involved at school overall may lead to more adaptive strategy use. Finally, in serious case of a maladaptive strategy use, a short-term individual therapy might be necessary.

4.8 Limitations

There are at least six limitations that should be taken into account in any attempt to generalize the findings of this dissertation. First, the studies based on the Örebro data (Studies I, II and IV) focused only on examining adolescents over a period of one and a half years at two time-points, and the Helsinki data (Study III) at three time- points over similar period of time. It may be that more profound changes in strategies take more time to develop. Consequently, there is a need to carry out research in which groups of individuals are followed for a longer period. Second, achievement strategies were measured by means of self-reports (although the outcome measures in Study IV were based on teacher-ratings). Despite the fact that this is a widely used approach in the field, it might have been interesting to examine how closely these reported strategies are reflected in adolescents' observable behavior. Third, the self-protecting attributional bias variable used in studies I and II consisted of only two items, on of which was subtracted from another. Although this procedure was based on the theory of self-protecting biases (Taylor & Brown, 1986), there is an evident need in future studies to replicate the findings of the present study by using a self-protecting bias variable consisting of several items. Fourth, the attrition analyzed in the Örebro data (Studies I, II and IV) suggested that some of the more troubled adolescents dropped out of the study, which may have diminished the validity of the findings. It might be assumed, for example, that besides identifying a larger group of helplessness adolescents, a lower attrition

rate might have also strengthened the associations found between being a member of the helplessness group and problem behavior and school engagement, in particular. Fifth, the historical period in which the Helsinki study (Study III) was carried out may have influenced the results. Finland was in a deep economic depression, and the overall rate of unemployment rose to the level of 18% during the data collection period. Finally, the study was carried out in specific Northern European societies. Because a substantial amount of variation in school environments and educational settings exists between even Western countries, it is possible that some of the associations found here might have turned out differently in other sociocultural settings.

4.9 Conclusion

The results of the present dissertation revealed that achievement strategies form various self-perpetuating, cumulative mechanisms together with other psychological mechanisms and outcomes (Onatsu-Arvilommi & Nurmi, 2000). For example, the use of an adaptive type of strategy contributes to high levels of well-being and school adjustment, and a low level of norm-breaking behavior, which then increase the likelihood of the continued use of an adaptive strategy later on. By contrast, the use of maladaptive strategies leads to depressive symptoms, low school adjustment and norm-breaking behavior, which then increase the likelihood of the continued use of a maladaptive strategy later on. Similarly, the deployment of maladaptive strategies leads to problems in completing the transition from school to work, and problems in dealing with this particular transition lead to the use of maladaptive attributional strategies. These findings suggest that some of the problems individuals face during their life-span may be caused on the one hand by the accumulation of failures, and on the other, by the related use of maladaptive strategies.

TIIVISTELMÄ

1980-luvulta lähtien persoonallisuuspsykologiassa ollaan oltu kiinnostuneita siitä, millä tavalla voitaisiin hahmottaa ajattelun ja toiminnan muodostamia kokonaisuuksia. Ajattelu- ja toimintastrategioiden tutkimus on osa tätä tutkimussuuntausta. Toimintastrategiat voidaan hahmottaa ajatusten ja tekojen prosessina: kun ihminen kohtaa haastavan tilanteen, minäkuva muodostaa pohjan kohdattavaan tehtävään liittyville odotuksille. Nämä tehtävästä suoriutumiseen liittyvät odotukset puolestaan saavat aikaan tietynlaista toimintaa. Prosessi päättyy siihen, että henkilö miettii, mistä tehtävässä onnistuminen tai epäonnistuminen johtui. Näitä syypäätelmiä kutsutaan kausaaliattribuutioiksi. Ajattelu- ja toimintastrategiat jaetaan yleisesti kahteen alaluokkaan: niihin, jotka johtavat onnistumiseen haastavassa tilanteessa, ja niihin, jotka johtavat ongelmiin. Esimerkiksi henkilö, joka pelkää epäonnistuvansa vaativassa tilanteessa, yrittää välttää tällaisia tilanteita. Tällainen välttely johtaa yleensä siihen, että henkilö toimii tavoilla jotka eivät auta onnistumaan vaativissa tehtävissä. Toisaalta, jos henkilö on optimistinen ja yrittää aktiivisesti kohdata haastavan tilanteen, hän yleensä onnistuu tehtävissään.

Väitöskirjatyössäni tutkin nuoruutta ja nuorta aikuisuutta ajattelu- ja suoritusstrategioiden näkökulmasta. Tavoitteenani oli tutkia: (1) Minkälaisia erilaisia strategioita käyttäviä ryhmiä nuorten joukosta löytyy? 2) Kuinka pysyvää ajattelu- ja toimintastrategian käyttö on 8. ja 9. luokalla? (3) Minkälaiset tekijät ennustavat erilaisten strategioiden käyttöä? (4) Minkälaisia seurauksia strategioiden käytöllä on nuorten hyvinvoinnille? (5) Mikä on strategioiden merkitys siirryttäessä toisen asteen koulusta työelämään? (6) Ovatko nuorten kaveripiirin käyttämät strategiat yhteydessä nuoren omiin strategioihin? Vaikuttavatko nämä kaveripiirin strategiat myös nuoren ulkoiseen ongelmakäyttäytymiseen ja koulumenestykseen?

Tutkimus koostui neljästä osatutkimuksesta, jossa käytettiin kahta eri aineistoa. Ensimmäinen aineisto (Örebro Study of Adolescence) koostui ruotsalaisista 8. ja 9. luokkalaisista (tutkittavien määrä vaihteli välillä 286-880), ja toinen aineisto (Helsinki from School to Work Transition Study) pääkaupunkiseutulaisista nuorista aikuisista (250), joiden keski-ikä oli 25. Ruotsalaista Örebron yliopiston aineistoa tutkittiin sekä poikkileikkaus - että pitkittäistutkimuksen menetelmillä, Helsingin yliopiston aineistoa pitkittäistutkimuksen menetelmin.

Tutkimuksen tulokset osoittivat, että yläasteikäisistä nuorista löytyi viisi erilaista ajattelu- ja toimintastrategiatyyppiä. Näistä neljä muistutti aikasemmissa tutkimuksissa löydettyjä: optimismi, defensiivinen pessimismi, itseä vahingoittava strategia ja opittu avuttomuus. Viides strategia oli neutraali. Kaikki strategiatyypit olivat suhteellisen pysyviä 8. luokan syksystä 9. luokan kevääseen, eli noin 50% tietyn strategiatyypin käyttäjistä käytti koko tutkimusjakson samaa strategiaa. Jos nuori vaihtoi strategiaryhmästä toiseen, se tapahtui yleensä adaptiivisten, onnistumiseen johtavien strategioiden (optimisteista defensii-

visiin pessimisteihin ja päinvastoin) ja ei-adaptiivisten, epäonnistumiseen johtavien (itseä vahingoittavista avuttomiin ja päinvastoin) ryhmien väillä.

Toiseksi tulokset osoittivat, että masennusoireet, kouluun sopeutuminen ja normeja rikkova käyttäytyminen – viimeinen tosin vähemmässä määrin – ennustivat muutoksia strategioiden käytössä. Masennusoireiden kasvu ennusti siirtymistä ei-adaptiivisten strategioiden (itseä vahingoittava- ja opittu avuttomuus-strategiat) käyttöön, ja niiden väheneminen siirtymistä adaptiivisten strategioiden (optimismi ja defensiivinen pessimismi) käyttöön. Samoin kouluun sopeutuminen ennusti siirtymistä adaptiivisen strategian käyttöön, kun taas sen väheneminen ja normeja rikkovan käytöksen lisääntyminen ennusti siirtymistä opittu avuttomuus –strategian käyttöön. Lisäksi ajattelu- ja toimintastrategiat vaikuttivat nuorten hyvinvointiin: adaptiivisten strategioiden käyttö lisäsi kouluun sopeutumista ja vähensi masennusoireita, kun taas ei-adaptiivisten strategioiden käyttö lisäsi masennusoireita ja vähensi kouluun sopeutumista. Lisäksi pojilla opittu avuttomuus lisäsi normeja rikkovaa käyttäytymistä.

Tarkasteltaessa työhön siirtymistä havaittiin, että ei-adaptiiviset strategiapiirteet, kuten epäonnistumisennakointi, ja itsen syyttäminen epäonnistumisesta, lisäsivät sen todennäköisyyttä, että nuori aikuinen ei löydä töitä valmistuttuaan toisen asteen koulutuksesta. Sen sijaan adaptiiviset strategiapiirteet, kuten suunnittelu ja onnistumisen katsominen itsestä johtuvaksi, lisäsivät työn löytymisen todennäköisyyttä. Sen lisäksi tämän transition epäonnistuminen, eli vaikeudet työpaikan löytymisessä, vähensivät nuorten aikuisten itseä tukevien kausaaliattribuutioiden käyttöä (eli sitä, että onnistumisen katsovaan johtuvan itsestä, ja epäonnistumisen ulkoisista syistä), minkä havaittiin johtavan lisääntyneisiin masennusoireisiin joissain tapauksissa.

Kavereiden ajattelu- ja toimintastrategioita tutkittaessa havaittiin, että ne olivat yhteydessä nuorten normeja rikkovaan käyttäytymiseen siten, että kaverien epäonnistumisennakointi lisäsi heidän aktiivista tehtävän välttelyään, mikä puolestaan vaikutti nuoren omaan normeja rikkovaan käyttäytymiseen ja sitä kautta epäsuorasti kouluun sopeutumiseen ja kouluarvosanoihin. Lisäksi nuorten omat strategiat vaikuttivat kavereiden normeja rikkovaan käyttäytymiseen samalla tavalla. Tytöillä tämä mekanismi näyttäisi olevan poikia voimakkaampi.

Yleisesti ottaen väitöskirjan tulokset näyttäisivät kertovan siitä, että ajattelu- ja toimintastrategiat muodostavat kumuloituvia kehiä erilaisten muiden psykologisten tekijöiden, kuten masennuksen, ja muiden tärkeiden kehitysvaiheeseen liittyvien tekijöiden, kuten koulumenestyksen, kanssa. Adaptiiviset strategiat, kuten optimismi, pitävät itseään yllä, ja lisäävät todennäköisyyttä sille, että nuori pärjää koulussa ja elämässä yleensä, mikä taas vähentää esim. masennuksen todennäköisyyttä. Tämä taas johtaa siihe, että optimistisen strategian käyttö tulevaisuudessa on entistäkin todennäköisempää. Sen sijaan ei-adaptiivisten strategioiden käyttö, esim. itseä vahingoittava strategia, johtaa epäonnistumisiin ja sitä kautta epävakaiseen itsetuntoon ja mahdollisesti masennukseen, mikä entisestään lisää ei-adaptiivisten ajattelu- ja toimintatapojen käyttöä.

Toisaalta tulokset kertoivat myös siitä, että strategiat voivat muuttua. Tulosten mukaan jo pelkästään koulun toimintaan osallistuminen oli tekijä, joka suuntasi nuorta kohti parempien strategioiden käyttöä. Jos huomiota kohdistetaan strategioiden osaprosesseihin, syyselitykset, kausaaliattribuutiot, olivat strategioiden eniten muuttuva osa. Niiden muuttaminen esim. opettamalla koulussa oppilaita antamaan positiivisempia ja itseä tukevia selityksiä onnistumiselle ja epäonnistumiselle, vaikuttaisi luultavasti positiivisesti nuoren tulevaisuuteen.

REFERENCES

Abramson, L. Y., Seligman M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87,* 49-74.

Ary, D.V., Duncan, T.E., Duncan, S.C., & Hops, H. (1999). Adolescent problem behavior: The influence of parents and peers. *Behavior Research & Therapy, 37,* 217-230.

Aspinwall, L. G., & Taylor, T. E. (1997). Modeling cognitive adaption: A longitudinal investigation of the impact of individual differences and coping on college adjustment and performance. *Journal of Personality and Social Psychology, 63,* 989-1003.

Aunola, K., Nurmi, J.-E., Niemi, P., Lerkkanen, M.-K., & Rasku-Puttonen, H. (2002). Developmental dynamics of achievement orientations, reading performance, and parental beliefs. *Reading Research Quarterly, 37(3),* 310-327.

Aunola, K., Stattin, H., & Nurmi, J.-E. (2000). Adolescents' achievement orientations, school adjustment, and externalizing and internalizing problem behaviors. *Journal of Youth and Adolescence, 29,* 289-306.

Aunola, K., Stattin, H., & Nurmi, J.-E. (2001) Parenting styles and adolescents' achievement strategies *Journal of Adolescence, 23,* 205-222.

Baltes, P. B., Reese, R. H., & Lipsitt, L. P. (1980). Life-span developmental psychology. *Annual Review of Psychology, 31,* 65-110.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Battin-Pearson, S., Newcomb, M.D., Abbott, R.D., Hill, K.G., Catalano, R.F., & Hawkins, J.D. (2000). Predictors of early high school dropout: A test of five theories. *Journal of Educational Psychology, 92,* 568-582

Benenson, J. F. (1990). Gender differences in social networks. *Journal of Early Adolescence, 10,* 472-495.

Brown, B.B. (2004). Adolescents' relationships with peers. In Lerner, R. M., and Steinberg, L. (Eds.), *Handbook of adolescent psychology* (pp. 363-394). Hoboken, NJ: John Wiley & Sons.

Brown, B.B., Mory, M.S., & Kinney, D. (1994). Casting adolescent crowds in a relational perspective: Caricature, channel, and context. In: Montemayor, R., Adams, G.R., & Gullotta, T.P. (Eds.), (1990). *Personal relationships during adolescence.* Thousand Oaks: Sage Publications.

Bukowski, W.M., Newcomb A.F., & Hartup, W.W. (1996). The company they keep – Friendship in childhood and adolescence. New York, NY: Cambridge University Press.

Buss, D. M., and Cantor, N. (1989). *Personality Psychology. Recent Trends and Emerging Directions.* New York: Springer Verlag

Butkowsky, I. S., & Willows, D. M. (1980). Cognitive-motivational characteristics of children varying in reading ability: Evidence for learned helplessness in poor readers. *Journal of Educational Psychology, 72,* 408-482.

Bynner, J. (1998). Education and family components of identity in the transition from school to work. *International Journal of Behavioral Development, 22,* 29-53.

Cairns, R.B., & Cairns, B.D. (1994). *Lifelines and risks: Pathways of youth in our time.* New York, NY: Cambridge University Press.

Cairns, R.B., Cairns, B.D., & Neckerman, H.J. (1989). Early school dropout: Configurations and determinants. *Child Development, 60,* 1437-1452.

Cantor, N. (1990). From thought to behavior: "Having" and "doing" in the study of personality and cognition. *American Pychologist, 45,* 735-750.

Cantor, N, Norem, J. K., Niedenthal, P. M., Langston, C. A., & Brower, A. M. (1987). Life tasks, self-concept ideals, and cognitive strategies in a life transition. *Journal of Personality and Social Psychology, 53,* 1178-1191.

Carr, M., Borkowski, J. G., & Maxwell, S. E. (1991). Motivational components of underachievement. *Developmental Psychology, 27,* 108-118.

Caspi, A. (1987). Personality in the life-course. *Journal of Personality and Social Psychology, 53,* 1203-1213.

Chapman, J. W. (1988). Cognitive-motivational characteristics and academic achievement of learning disabled children: A longitudinal study. *Journal of Educational Psychology, 80,* 357-365.

Chen, X., Chang L., & He, Y. (2003). The peer group as a context: Mediating and moderating effects on relations between academic achievement and social functioning in Chinese children. *Child Development, 74,* 710-727.

Crockett, L., Losoff, M., & Petersen, A. C. (1984). Perceptions of the peer group and friendship in early adolescence. *Journal of Early Adolescence, 4,* 155-181.

Diener, C. I., & Dweck, C. S. (1978). An analysis of learned helplessness: Continous changes in performance, orientation, and achievement cognitions following failure. *Journal of Personality and Social Psychology, 36,* 451-462.

Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist, 41,* 140-1048.

Elder, G. H. Jr. (1985). Perspectives of the life course. In G. H. Elder, Jr. Ed., *Life course dynamics* (pp. 23-49). Ithaca, NY: Cornell University Press.

Elliott, A. J., & Church, M. A. (2003). A motivational analysis of defensive pessimism and self-handicapping. *Journal of Personality, 71,* 369-396.

Elliott, D. S., Huizinga, D., & Ageton, S. S. (1985). *Explaining delinquency and drug use.* Newbury Park, CA: Sage.

Elliott, D., Huizinga, D., & Menard, S. (1989). *Multiple problem youth: Delinquency, substance use, and mental health problems.* NY: Springer-Verlag.

Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology, 51,* 1058-1068.

Eronen, S. (2001). The role of achievement and social strategies in the transition into young adulthood. In Nurmi J.-E. (Ed.), *Navigating through adolescence: European perspectives* (pp. 85-118). New York: Routledge Falmer.

Eronen, S., & Nurmi, J.-E. (1999). Life events, predisposing cognitive strategies and well-being. *European Journal of Personality, 13,* 129-148.

Espelage, D.L., Holt, M.K., & Henkel, R.R. (2003). Examination of peer-group contextual effects on aggression during early adolescence. *Child Development, 74,* 205-220.

Fine, M. (1989). Why urban adolescents drop out of public high school. *Teachers College Record, 87,* 393-409.

Grotevant, H. D. (1987). Toward a process model of identity formation. *Journal of Adolescent Research, 2,* 203-222.

Harter, S. (1990). Processes underlying adolescent self-concept formation. In Montemayor, R., Adams, G.R. (Eds.), (1990). *From childhood to adolescence: A transitional period? Advances in adolescent development: An annual book series* (pp. 205-239). Thousand Oaks: Sage Publications.

Havighurst, R. J. (1948). *Developmental tasks and education* 3rd ed. New York:McKay.

Held, T. (1986). *Institutionalization and deinstitutionalization of the life course.* Human Development, 29, 157-162.

Hogue, A., & Steinberg, L. (1995). Homophily of internalized distress in adolescent peer groups. *Developmental Psychology, 31,* 897-906.

Hokoda, A., & Fincham, F. D. (1995). Origins of children's helplessness and mastery achievement patterns in the family. *Journal of Educational Psychology, 87,* 375-385.

Hokoda, A. J., Fincham, F. D., & Diener, C. I. (1989). The effect of social comparison information on learned helpless and mastery-oriented children in achievement settings. *European Journal of Social Psychology, 19,* 527-542.

Hurrelmann, K. (1994). *International Handbook of Adolescence.* London: Greenwood Press.

Jones, E. E., & Berglas, S. (1978). Control of attributions about the self through self-handicapping: The appeal of alcohol and the rate of underachievement. *Personality and Social Psychology Bulletin, 4,* 200-206.

Kiesner, J., Poulin F., & Nicotra, E. (2003). Peer relations across contexts: Individual-network homophily and network inclusion in and after school. *Child Development, 74,* 1328-1343.

Kindermann, T. A., McCollam, T.L., & Gibson, E. (1996). Peer networks and students' classroom engagement during childhood and adolescence.
In Juvonen, J., Wentzel, K.R. (Eds.). *Social motivation: Understanding children's school adjustment* (pp. 279-312). New York, NY: Cambridge University Press.

Kiuru, N., Aunola, K., Vuori, J., & Nurmi, J.-E. (In Press). The role of peer groups in adolescents' educational expectations and adjustment. *Journal of Youth and Adolescence.*

Lazarus, R. S. (1993). Coping theory and research: Past, present, and future. *Psychosomatic Medicine, 55,* 234-247.

Lerner, R. M., and Steinberg, L. (2004). *Handbook of adolescent psychology.* Hoboken, NJ: John Wiley & Sons.

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

Magnusson, D., & Stattin, H. (1998). Person-context interaction theories. In Damon, W., & Lerner, R., M. (Ed.). *Handbook of child psychology: Volume 1: Theoretical models of human development* (pp. 685 – 740). Hoboken, NJ: John Wiley & Sons.

Marcia, J.E. (1980). Identity in Adolescence. In J. Adelson (Ed.), *Handbook of adolescent psychology* (pp. 159-187). New York: Wiley.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41,* 954-969.

Martin, A.J., Marsh, H.W., & Debus, R. L. (2003). Self-handicapping and defensive pessimism: A model of self-protection from a longitudinal perspective. *Contemporary Educational Psychology, 28,* 1–36.

Martin, A.J., Marsh, H.W., & Williamson, A. (2003). Self-handicapping, defensive pessimism, and goal orientation: A qualitative study of university students. *Journal of Educational Psychology, 95,* 617-628.

McAdams, D. P. (1995). What do we know when we know a person? *Journal of Personality, 63,* 365-396.

Midgley, C., Arunkumar, R., & Urdan, T. C. (1996). "If I don't do well tomorrow, there's a reason": Predictors of adolescents' use of academic self-handicapping orientations. *Journal of Educational Psychology, 88,* 423-434.

Midgley, C., & Urdan, T. (1995). Predictors of middle school students' use of self-handicapping orientations. *Journal of Early Adolescence, 15,* 389-411.

Miller, S. M. (1987). Monitoring and blunting: Validation of a questionnaire to assess styles of information seeking under threat. *Journal of Personality and Social Psychology, 33,* 187-203.

Moffit, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review,100,* 674-701.

Newman, B. M. & Newman, P. R. (1975). *Development through life. A psychological approach.* Homewood: The Dorsey Press.

Niemivirta, M. (2002). Motivation and performance in context: The influence of goal orientations and instructional setting on situational appraisals and task performance. *Psychologia: An International Journal of Psychology in the Orient, 45,* 250-270.

Norem, J., & Cantor, N. (1986a). Defensive pessimism: harnessing anxiety as motivation. *Journal of Personality and Social Psychology, 51,* 1208-1217.

Norem, J., & Cantor, N. (1986b). Anticipatory and post hoc cushioning orientations: Optimism and defensive pessimism in "risky" situations. *Cognitive Therapy & Research, 10(3),* 347-362.

Norem, J. K. (1989). Cognitive orientations as personality: Effectiveness, specifity, and change. In Buss, D. M., and Cantor, N. (Eds.), *Personality psychology. Recent Trends and Emerging Directions.* New York: Springer Verlag.

Nurmi, J.-E. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review, 11,* 1-59.

Nurmi, J.-E. (1993). Self-handicapping and failure-trap orientation: A cognitive approach to problem behavior and delinquency. *Psychiatria Fennica, 24,* 75-85.

Nurmi, J.-E. (2001). Adolescents' self-direction and self-definition in age-graded sociocultural and interpersonal contexts. In Nurmi J.-E. (Ed.), *Navigating through adolescence: European perspectives* (pp. 229-249). New York: Routledge Falmer.

Nurmi, J.-E. (2004). Socialization and self-development: Channeling, selection, adjustment, and reflection. In Lerner, R. M., and Steinberg, L. (Eds.), *Handbook of adolescent psychology* (pp. 85-124). Hoboken, NJ: John Wiley & Sons.

Nurmi, J.-E., Onatsu, T., & Haavisto, T. (1995). Underachievers' cognitive and behavioural orientations - self-handicapping at school. *Contemporary Educational Psychology, 20,* 188-200.

Nurmi, J-E., Salmela-Aro, K., & Koivisto, P. (1995). Helsinki from School to Work Transition Study. University of Helsinki.

Nurmi, J.-E., Salmela-Aro, K., & Ruotsalainen, H. (1994). Cognitive and attributional orientations among unemployed young adults: A case of the failure-trap orientation. *European Journal of Personality, 8,* 135-148.

Onatsu-Arvilommi, T., & Nurmi, J.-E. (2000). The role of task-avoidant and task-focused behaviors in the development of reading and mathematical skills during the first school year: A cross-lagged longitudinal study. *Journal of Educational Psychology, 92,* 478-491.

Pimentel, E. E. (1996). Effects of adolescent achievement and family goals on the early adult transition. In J.T. Mortimer, & M.D. Finch (Eds.), *Adolescents work and family: An intergrational developmental analyses* (pp. 191-220). Thousand Oaks, Ca: Sage.

Pintrich, P. R., & DeGroot, E. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82,* 33-40.

Rhodewalt, F. (1990). Self-handicappers: Individual differences in the preference for anticipatory, self-protective acts. In R. L. Higgins, C. R. Snyder, & S. Berglas (Eds.), *Self-handicapping. The paradox that isn't,* (pp. 69-106). New York: Plenum Press.

Rosenham, D.L., & Seligman, M.E.P. (1984). *Abnormal Psychology.* New York: Norton.

Rubin, K.H., Bukowski, W.M., & Parker, J.G. (1998). Peer interactions, relationships, and groups. In Damon, W. & Eisenberg, N. (Ed.), *Handbook of child psychology, Vol 3. Social, emotional, and personality development* (619-700). Hoboken, NJ: John Wiley & Sons.

Ryan, A.M. (2001). The peer group as a context for the development of young adolescent motivation and achievement. *Child Development, 72*, 1135-1150.

Schulenberg, J., Maggs, J. & Hurrelman, K. (1997). Negotiating developmental transitions during adolescence and young adulthood: Health risks and opportunities. In J. Schulenberg, J. Maggs & K. Hurrelmann (Eds.), *Health risks and developmental transitions during adolescence* (pp. 1-19). Cambridge: Cambridge University Press.

Seiffge-Krenke, I. (1995). *Stress, coping, and relationships in adolescence.* New Jersey: Lawrence Erlbaum Associates.

Seligman, M.E.P. (1975). *Helplessness: On depression, development and death.* San Fransisco: Freeman.

Showers, C., & Ruben, C. (1990). Distinguishing defensive pessimism from depression: Negative expectations and positive coping mechanisms. *Cognitive Therapy and Research, 14*, 385-399.

Stattin, H. (1997). Örebro Study of Adolescence. University of Örebro.

Taylor, S. E., & Brown, J. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin, 103,* 193-210.

Urberg, K. A., Değirmencioğlu, S. M., & Pilgrim, C. (1997). Close friend and group influence on adolescent cigarette smoking and alcohol use. *Developmental Psychology, 33*, 834-844.

Urberg, K. A., Değirmencioğlu, S. M., Tolson, J. M., & Halliday-Scher, K. (1995). The structure of adolescent peer networks. *Developmental Psychology, 31*, 540-547.

Valsiner, J., & Lawrence, J. A. (1997). Human development in culture across the life span. In J.W. Berry, P. R. Dasen & T. S. Saraswathi Eds., *Handbook of Cross-Cultural Psychology*, pp. 70-106. Boston, MA: Allyn & Bacon.

Vondracek, F. W. (1998). Career Development: A life-span perspective. *International Journal of Behavioral Development, 22*, 1-6.

Vondracek, F. W., Lerner R. M., & Schulenberg, J. E. (1986). *Career development: A life-span developmental approach.* Hillsdale, NJ: Erlbaum.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological review, 92,* 548-573.

Wortman, C.B., & Brehm, J.W. (1975). Responses to uncontrollable outcomes: An integration of reactance theory and learned helplessness model. *Advance in Experimental Social Psychology, 8,* 277-336.

Youniss, J.(1980). *Parent and peers in social development.* Chicago: University of Chicago Press.

Zuckerman, M. (1979). Attribution of success and failure revised, or: The motivational bias is alive and well in attribution theory. *Journal of Personality, 47,* 245-287.