

Reports from the project

Individual Development and Adaptation

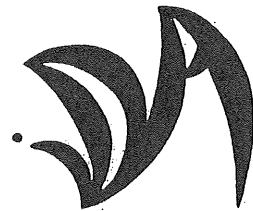
**WOMEN'S POSITIVE ADAPTATION IN CHILDHOOD
AND ADULTHOOD**

A longitudinal study

Håkan Andersson

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**IDA / Department of Psychology
STOCKHOLM UNIVERSITY
106 91 STOCKHOLM, SWEDEN**

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Viera Gantner, Copy Editor

gan@psychology.su.se

TEL +46 8 16 3962

FAX +46 8 15 9342

Principal investigator: **Professor Lars R. Bergman**

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Reports from the project Individual Development and Adaptation published from 2000 and onwards:

- No. 70 Bergman, L.R. Women's health, work, and education in a life-span perspective. Technical report 1: Theoretical background and overview of the data collection. (*January 2000*)
- No. 71 Isaksson, K., Johansson, G., Lindroth, S., & Sverke, M. Women's health, work, and education in a life-span perspective. Technical report 2: The coding of work biographies. (*November 2000*)
- No. 72 Publications 1961 - 2000. (*December 2000*)
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- Nr. 81 Grip, A. Linjära statistiska kontra icke linjära dynamiska modeller av individuell utveckling. (*Oktober 2002*)
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- No. 83 Daukantaite, D., & Bergman, L.R. Components of subjective wellbeing in Swedish women. (*January 2003*)
- No. 84 Wångby, M. Questions about life-style in 2002. Follow-up survey on the 1998 data collection among females in the IDA-project. Technical report. (*March 2004*)
- No. 85 Trost, K., & Bergman, E. Men's work and well-being in a lifespan perspective. Technical report from the 2002-2003 data collection. (*September 2004*)
- No. 86 Lindfors, P. Questions on women's situation, life satisfaction and health. The 2004 IDA follow-up survey on women. Technical report. (*October 2004*)
- No. 87 Lindfors, P. Stress, health and well-being in midlife. The 2004 stress study on men. Technical report. (*December 2005*)

- No. 88 Selén, A. Sambandet mellan generellt och områdesspecifikt välbefinnande: En jämförelse mellan män och kvinnor. (*Oktober 2006*)
- No. 89 Daukantaite, D. Women's health, work, and education in a life-span perspective. Technical report 3: Overview and detailed descriptions of the questionnaires. (*January 2007*)
- No. 90 Wulff, C. Ability and satisfaction with school and job. A longitudinal study. (*Licentiate thesis, May 2007*)
- No. 91 Andersson, H. Women's positive adaptation in childhood and adulthood. A longitudinal study. (*November 2007*)



Department of Psychology
STOCKHOLM UNIVERSITY, SWEDEN

Foreword

This report is a mainly descriptive study of women's positive adaptation in childhood and adulthood and it is written by Håkan Andersson. It has also been presented as his master's thesis.

The data collection at age 43 was supported by grants to Lars R. Bergman from the Swedish Council for Social Research and the earlier data collections were supported by grants to David Magnusson from the Swedish Board of Education, the Swedish Council for the Planning and Coordination of Research, the Swedish Council for Social Research, and the Bank of Sweden Tercentenary Foundation. The infra structure of the data base is supported by the Committee for Longitudinal Research at the Swedish Research Council.

Stockholm, November 3, 2007

Lars R. Bergman
Professor
Director of IDA

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WOMEN'S POSITIVE ADAPTATION IN CHILDHOOD AND ADULTHOOD

A longitudinal study

An area within psychology that looks at the strengths and positive sides of human life has emerged the last decade. It is called positive psychology and one area related to that is positive adaptation. The main purpose of this paper is to describe the natural history of females' positive extrinsic and intrinsic adaptation from childhood to adulthood, with a focus on typical positive patterns of adaptation and how these patterns develop within the same individual. The sample consisted of about 500 Swedish girls and data were taken at age 13, 15, and 43 from the longitudinal research program Individual Development and Adaptation (IDA). Variable-oriented methods were used to study basic relationships among factors both within age and between childhood and adulthood and person-oriented methods were used to study typical patterns of adaptation and how these patterns develop, using cluster analyses and cross-tabulation of clusters. The overall results show, as expected, more distinct typical positive adaptation patterns in the intrinsic than the extrinsic area in both childhood and adulthood. Significant longitudinal developmental streams between typical positive adaptation patterns in childhood and adulthood were found and these are discussed from a dynamic system perspective suggesting the interaction between factors thru reinforcing feedback processes.

A note to the reader

This study gives a rather detailed description of the natural history of women's adaptation. Therefore the result section is extensive. If the reader wants to get an overview without reading thru the whole thesis it is recommended to read the 'Introduction' and then 'Main findings and discussion'. In the discussion, mainly the findings referring to typical positive adaptation patterns (largely with results from the person-oriented analyses) are discussed. For a quick overview of all results the reader is referred to the 'Summary of results' section.

INTRODUCTION

This study is about positive adaptation. The term "adaptation" here refers to the individual's functioning in relation to herself and the environment and the term "positive" refers to an adaptation that is good and not merely is the absence of a bad adaptation. This study looks for patterns of positive adaptation in childhood and adulthood and the relations between these patterns and thus takes a developmental perspective. In different ways the

concept of adaptation lies at the core of psychology and extensive research relating to different forms of this concept has been carried out, for instance with regard to how the individual adapts to different circumstances but also how the individual, as an active agent, can transform and create new patterns and structures for functioning.

Positive psychology – An overview

When introducing positive psychology in an article in the *American Psychologist* in 2000 Seligman and Csikszentmihalyi (2000) wrote:

Psychologists have scant knowledge of what makes life worth living. They have come to understand quite a bit about how people survive and endure under conditions of adversity.... However, psychologists know very little about how normal people flourish under more benign conditions. Psychology has, since World War II, become a science largely about healing. It concentrates on repairing damage within a disease model of human functioning. This almost exclusive attention to pathology neglects the fulfilled individual and the thriving community. The aim of positive psychology is to begin to catalyze a change in the focus of psychology from preoccupation only with repairing the worst things in life to also building positive qualities. [...] A science of positive subjective experience, positive individual traits, and positive institutions promises to improve qualities of life and prevent the pathologies that arise when life is barren and meaningless. The exclusive focus on pathology that has dominated so much of our discipline results in a model of the human being lacking the positive features that make life worth living. Hope, wisdom, creativity, future mindedness, courage, spirituality, responsibility, and perseverance are ignored or explained as transformations of more authentic negative impulses. The field of positive psychology at the subjective level is about valued subjective experiences: well-being, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (in the present). At the individual level, it is about positive individual traits: the capacity for love and vocation, courage, interpersonal skill, aesthetic sensibility, perseverance, forgiveness, originality, future mindedness, spirituality, high talent, and wisdom. At the group level, it is about the civic virtues and the institutions that move individuals toward better citizenship: responsibility, nurturance, altruism, civility, moderation, tolerance, and work ethic. (p. 5)

The view this quotation puts forward is admittedly somewhat narrow but it seems to be basically true. It is interesting to note that Seligman (2002) observed that before World War II, psychology gave a stronger emphasis to two other missions except from the healing of pathology, namely promotive factors to a productive and fulfilling life and the identification and nurturing of high talent.

Long before the introduction of the field of positive psychology, philosophers thought about what constitutes a good life and about optimal human functioning. Aristotle, for example, thought that the highest of human goods was the realization of one's true potential, what he called eudemonia. Ryff (2003) also reminds us of that many of the themes within positive psychology have historical precursors with efforts to depict the more noble attributes of mankind.

The growth and acknowledgment of positive psychology has partly its beginning in prevention. Psychologists became increasingly concerned with how to prevent different psychological problems. And an important lesson that has been learnt over the years is that the disease model is not sufficient for this purpose. The lesson was instead that successful prevention largely depended on systematically building competence, not correcting

weakness (Seligman, 2002). The claim from positive psychology is that human strengths act as buffers against psychopathology - like courage, future mindedness, optimism, interpersonal skill, faith, work ethic, hope, honesty, perseverance, and the capacity for flow and insight (Seligman & Csikszentmihalyi, 2000).

Another important influence on the forthcoming of positive psychology was the movement of humanistic psychology with names like Abraham Maslow, Carl Rogers, and Erich Fromm. They posited a more positive picture of humans and talked about higher human needs like self-actualization. The downside of humanistic psychology was the lack of empirical research (Seligman & Csikszentmihalyi, 2000). This is a gap that positive psychology has set out to fill. Of course, this doesn't mean that humanistic psychology is gone and taken over by positive psychology. There are also work being done inside the academic psychology in the name of humanistic psychology where researchers are trying to confirm the thoughts from earlier thinkers based on empirical research (Sheldon & Kasser, 2001) and connect humanistic psychology with positive psychology (Resnick, Warmoth & Serlin, 2001). But the critique from Seligman and Csikszentmihalyi can also be seen as part of a broader controversy of what constitutes good science. According to Taylor (2001) positive psychology embraces a positivistic reductionistic epistemology with a belief that "empirical science can only be defined by the logical ordering of sense perceptions because this is the only way that we can know reality" (p. 15). So Taylor's point is that it is not a question of scientific or unscientific but a question of different kinds of science. He also criticizes positive psychology for not confronting the fundamental philosophical issues of the relation between subject and object and this can also be understood in relation to the critique of positive psychology that it lacks a overarching theoretical framework (Cowen & Kilmer, 2002).

In a more recent article, Gable and Haidt (2005) discussed the positive psychology movement and they defined positive psychology as "[...] the study of conditions and processes that contribute to the flourishing or optimal functioning of people, groups and institutions" (p. 14). They described it as a reaction to the pathology focused imbalance mentioned before and a new focus on neglected areas such as gratitude, forgiveness, awe, inspiration, hope, and curiosity. An important point they made was that even though Seligman and Csikszentmihalyi argues for an imbalance in the form of a negative focus in psychology, a large part of the academic psychology deals with the neutral where the focus is neither well-being nor distress. According to Gable and Haidt, the negative imbalance is mostly an imbalance within clinical psychology.

Another important aspect of positive psychology they point out is that the aim is not the denial of the dark and negative aspects of human life but the aim is to study "the other side of the coin", how we, for instance, feel joy and show altruism and create healthy societies (Gable & Haidt, 2005).

In a target article in *Psychological Inquiry* 2003, Lazarus made an extensive critic of positive psychology (Lazarus, 2003). He outlined four problems. The first problem was that most research within positive psychology is cross-sectional and focuses on interindividual

differences and he asked for more longitudinal or ipsative-normative designs. The second problem he called “emotional valence” by which he meant (1) that many emotions have no fixed valence (e.g. anger can have both negative and positive valence in different situations for different individuals) and (2) that it is problematic to combine a number of emotions and call them positive or negative which for example is the case in research on happiness and subjective well-being (Lyubomirsky, Diener & King, 2005). This view was also supported by for example Matthew and Zeidner (2003). Lazarus argued for a study of discrete emotions and he said that the area approach “...undervalues the distinctive adaptational import of each discrete emotion”. (p. 99). In a response to this Diener (2003) stated that positive and negative emotions tend to form strong factors and that the purpose of the study has to determine the level of analysis. This is not the place to resolve this issue but it is a reminder that the use of the areas of positive and negative emotions is not a clear cut issue. Lazarus also pointed out that positive and negative emotions can not really be seen as fixed and consistent opposites. The third problem Lazarus referred to as “individual differences” and has to do with research on emotions and the way it overstates the cohort differences and do not give adequate attention to individual variations. Finally, Lazarus saw a problem in positive psychology with the way emotions were measured. In the end of the article he described some of the philosophical problems with positive psychology, for example to see coping as a feature of negative psychology and the problems with dividing the world in negative and positive areas and he referred to the dialectic of thesis, antithesis and synthesis. The good needs the bad like God needs Satan.

Much of the critique against positive psychology, put forward by Lazarus (as he himself makes clear) can be said about psychology in general. That is not to say that the critique is unimportant for positive psychology. I will not extend on the issue further but my intention has been to highlight some of the critique made towards positive psychology.

Central to positive psychology is the term “positive”. Diener (2003), influenced by the philosopher Brock, described three bases by which people judge what is good or valuable. The first is people’s choices. What people consistently choose must also be good. The second base is to use people’s experiences and judgments about what they find pleasurable, for example their subjective well-being (the hedonistic perspective). If something makes you feel good it also must be good. The third way in which we decide what is positive is according to some value system based on norms or different beliefs (e.g. religious, scientific). From the above we see that what is positive cannot be decided from one of the approaches alone and sometimes they will not agree. We can, for example, do something that makes us feel good but are not valued as good by society (e.g. steal, speed driving) or we can do something that is valued by society but which makes us feel bad (e.g. go to a boring job). All of these approaches can be relevant for the study of positive adaptation. In psychology the hedonistic approach is often used to decide what is positive and as an indicator of a good life but, as Diener (2003) stated, and which I have shown above, this has major limitations. A severely mentally ill person can feel happy and Hitler could have been happy but we wouldn’t describe these in terms of a good and positive life.

Three levels of positive psychology

One can divide the area of positive psychology in three broad levels. The first one is at the subjective level and is about valued subjective experiences. The second level is also at the individual level and is about positive individual traits. The third level is about civic virtues and institutions that help individuals towards better citizenship (Seligman & Csikszentmihalyi, 2000; Seligman, Steen, Park & Peterson, 2005). At the subjective level we have subjective, and psychological well-being, satisfaction, and self-esteem (in the past), hope, optimism, self-determination and self-efficacy (for the future) and flow, happiness, positive emotions (in the present) (Seligman & Csikszentmihalyi, 2000). I will develop some of these concepts below.

The subjective level

Well-being and mental health are important parts of positive psychology and they cover large parts of the subjective level of positive psychology. Two main constructs within well-being are subjective well-being (SWB) and psychological well-being (PWB). SWB refers to the hedonic view that well-being consists of pleasure or happiness. This is broadly construed to include all judgements about the good and bad elements of life (Ryan & Deci, 2001). The growing concern for SWB reflects the larger trend in society in valuing the individual view and subjective experience (Diener, Suh, Lucas & Smith, 1999). SWB is often regarded as consisting of three components: Life satisfaction, both as a global judgment and domain specific satisfaction, the presence of positive affect and the absence of negative affect (Diener et al., 1999). In the light of social science, well-being can be described as a function of, expecting to attain and ultimately attaining the outcomes one values (Ryan & Deci, 2001). Two main approaches have been used to understand SWB. The first is to identify bottom-up processes and factors that influence SWB. The question is how external events and situations influence SWB and the idea is that there are universal basic human needs that under the right circumstances can be fulfilled and as a consequence of this the person will be happy (Diener et al., 1999). This approach has failed to explain many important parts of SWB (the environment didn't have as big an influence on SWB as one first thought) and therefore the researchers turned to a second approach, a top-down view. That is, structures within the individual (e.g. the personality) that determine how events and circumstances are perceived, and which influence SWB (Diener et al., 1999). Important determinants here are temperament, traits (e.g. extraversion, neuroticism, optimism) and cognitive dispositions. In later research, the person-environment interaction has been studied (Diener et al., 1999). In affect theories, positive affect and negative affect have also been linked to personality traits like positive affectivity (extraversion) or negative affectivity (neuroticism) (Watson & Clark, 1992). These theories states that people with extraverted traits have an inherent susceptibility towards experiencing positive affect and people with neurotic traits have an inherent susceptibility towards experiencing negative affect (Watson & Clark, 1992; Watson, Clark & Tellegen, 1988).

PWB refers to the eudaemonic view that maintain that not all desires or outcomes that a person might value will lead to enhanced well-being when achieved (Ryan & Deci, 2001).

Ryff (1995) described well-being (PWB) as "the striving for perfection that represents the realization of one's true potential" (p. 100). She draws from theories of life-span development and sees well-being as progression of continued growth across the life course (Ryff, 1995). To measure PWB she used six distinct aspects of human actualization; Self-acceptance, Positive relations with other people, Autonomy, Environmental mastery, Purpose in life, and Personal growth (Ryff, 1995). These six areas describe what constitutes a positively functioning human being. In another article Ryff and Singer (1998) concluded that the core features of positive mental health are "leading a life of purpose" and having "quality connections to others". Other features could be self-regard (e.g. self-esteem, self-acceptance) and mastery (self-efficacy, perceived control). Cowen (1994) describes what he calls psychological wellness in respect to different *markers*. First we have behavioural markers which include eating and sleeping but also working well, having effective interpersonal relationships, and mastering age and ability appropriate tasks. Second we have psychological markers such as having a sense of belongingness and purpose, control over one's fate and satisfaction with oneself and one's place in life. That is, we have both behavioural and psychological signs of well-being and subjective experiences and demands from the environment (society) that have to be mastered. All three bases, relating to what constitutes positive in life, described above by Diener are thus included (people's choices, people's experiences and judgments about what they find pleasurable, and defining what is positive according to some value system based on norms or different beliefs).

Keyes (in Keyes & Lopez, 2002) argued that well-being and functioning also are social and proposed five areas; Social acceptance (accepting others), Social actualization (believe society is positive and have potential for growth), Social contribution (a feeling of having something valuable to give to society), Social coherence (to see a social world that is intelligible, logical, and predictable) and Social integration (to feel part of community).

Self-determination theory (SDT) is another concept within the eudaemonic view with self-realization as a central aspect of well-being. SDT posits three psychological needs which fulfilment is essential for psychological growth (described as moving towards intrinsic motivation), integrity (e.g. internalization and assimilation of cultural practices), well-being as well as vitality and self-congruence (Ryan & Deci, 2001). These needs are autonomy, competence, and relatedness.

Of great importance in SDT is the source of motivation. Deci and Ryan (2000) describe a continuum of motivation from extrinsic to intrinsic. It goes from all extrinsic, what they call non-regulation totally outside the individuals control, via external regulation (compliance, external rewards, and punishments), introjected regulation (self-control, ego-involvement, internal rewards, and punishments), identified regulation (personal importance, conscious valuing), integrated regulation (congruence, awareness, synthesis with self) to intrinsic motivation (interest, enjoyment, inherent satisfaction). Intrinsic motivation has been found to have positive outcomes in areas such as physical exercise, political activity, environmental activism, intimate relationships, behavioural effectiveness, greater volitional persistence, enhanced subjective well-being, and better assimilation of the individual within his or her group (Ryan & Deci, 2001).

To summarize the hedonic and eudemonic views one can place them in two broad classes, happiness and meaning (Ryan & Deci, 2001). Therefore, PWB can be defined more broadly as a fully functioning person and operationalized "...either as a set of six areas (Ryff, 1995), happiness plus meaningfulness [...] or a set of wellness variables such as self-actualization and vitality" (Ryan & Deci, 2001 p. 161)

Optimism and hope refer to future oriented cognitive constructs and are two important parts of positive psychology on the subjective level. The theory of optimism sees our behaviour as organized around the pursuit of goals. The goals can be desirable and we approach what is desirable and try to keep away from what is undesirable. Optimism then is generalized expectancies that one is able to move towards desirable goals and away from undesirable outcomes (Carver & Scheier, 2002). Optimism seen in this way is described as a part of a personal resilience construct together with self-esteem and control beliefs (Mäkikangas, Kinnunen & Feldt, 2004). High self-esteem and optimism have for example been linked to better mental and physical health, better coping with stress and higher life satisfaction compared to individuals with low self-esteem and optimism (Carver & Scheier, 1992; Mäkikangas, Kinnunen & Feldt, 2004). Another way to look at optimism is in terms of attribution style. According to Seligman (2002), an optimistic attribution style is the pattern of external, variable, and specific attributions for failures (the opposite of helplessness). Hope theory states that hopeful thoughts reflect "the belief that one can find pathways to desirable and become motivated to use those pathways" (Snyder, Rand & Sigmon, 2002 p. 257). So even if the specific focus is somewhat different from optimism, the general focus is the same. Another similar construct is self-efficacy, which is more situation specific, and implies that the person evaluates relevant contingencies in a given goal attainment situation and then evaluates his or her capacity to carry out the actions required to reach the goal. So self-efficacy theory focuses on the person's belief about her capacity to carry out tasks (if she can) whereas hope theory focus on if the person *will* initiate relevant tasks (Carver & Scheier, 2002).

The level of individual traits

The second level of positive psychology is at the individual level and is about positive individual traits. According to Peterson and Seligman (2004), these traits or virtues concern, on a broad level, wisdom, courage, humanity, justice, temperance and transcendence. These virtues then have psychological ingredients called strengths, for example creativity and curiosity (wisdom); persistence and vitality (courage); love, kindness and social intelligence (humanity); fairness and citizenship (justice); humility and self-regulation (temperance), and gratitude, hope, optimism and future-mindedness (transcendence). Other traits are mature defenses (Vaillant, 2000) and self-determination (see above) (Ryan & Deci, 2001). Sandage and Hill (2001) suggest that virtues can become "a central construct of positive psychology that serves to integrate numerous areas of science and practice." (p. 241). Virtues was more or less lost within modern psychology because of its moral valence and replaced by more moral-neutral concepts like values or personality (Sandage & Hill, 2001). But more post-positivistic approaches have revealed

the unavoidable moral area of psychology and have started to bring back the concept of virtues within psychology.

McCullough and Snyder (2000) define virtue as “any psychological process that consistently enables a person to think and act so as to yield benefits to him- or herself and society” (p. 1). Sandage and Hill (2001) suggest six areas to which virtues could be relevant within the area of positive psychology: (1) Integration of ethics and health in human flourishing (2) embodied traits of character (3) sources of human strengths and resilience (4) virtues as embedded within a cultural context and community (5) linked to a sense of meaningful life purpose (6) virtues grounded in the cognitive capacity for wisdom. Even though the points made by Sandage and Hill show the importance of the study of virtues within the area of positive psychology, and as a consequence also for positive adaptation, I will not develop this level further here for two main reasons. First, traits, virtues and strengths are not relevant constructs for a *description* (indicators) of positive adaptation, which is the focus of the present thesis, and second the concepts of virtues are still controversial. Kohlberg (1981) for example argues strongly against “a bag” of universal human virtues. It is also not clear which virtues (if any) are universal and which are more culturally based and even if all of them were universal they could have quite different behavioural indicators across cultures and even for individuals within cultures, making them (at least for now) difficult to measure (Diener, 2003). Sugarman (2007) also criticizes Peterson and Seligman concepts of virtues. For example, it is not possible to decontextualize virtues, “Virtues and character strengths do not float freely in the world” (Sugarman, 2007 p. 190). Peterson and Seligman also does not makes clear the different virtues comparative worth, how one in case of conflict are to choose between them. They admit no “hierarchy of goods” and level the goods “in the name of scientific neutrality” (p 192). This has the consequence that “The ecstasy of the terrorist, the Nazi, or the inquisitor is to the positive psychologist not distinguishable from the joy of the philanthropist or the saint. We can serve God or Satan but the psychology is the same” (p. 192). This line of reasoning also has consequences for concepts like subjective well-being and happiness. They can not alone describe the worth or good of a person’s life, or the level of positive or negative adaptation. These concepts must be seen in an integrated way including the whole individual and its relation to the system which the person lives in. There are of course important concepts within the research of traits, for example extraversion and neuroticism that have been shown to have a strong influence on adaptation, though the question of causal is problematic (Lazarus, 2003; Matthew & Zeidner, 2003; see Diener et al., 1999 on SWB). But traits are not indicators of positive adaptation even though traits and strengths (and virtues) can have strong influence on the process of positive adaptation. Another important area on the individual level in relation to positive adaptation is the adaptive and transformational function of mature defences (Vaillant, 2000). This is part of the person’s ability to cope and I will come back to this and how one meets adversity later when I describe resilience, but, again, this is not a measure of adaptation in itself. Even though, what contributes to and what constitutes a good life can many times be the same thing and it is not always possible to keep them apart.

The level of civic virtues and institutions

The third level of positive psychology is about the civic virtues and institutions that help individuals towards better citizenship (Seligman & Csikszentmihalyi, 2000). This level recognizes the importance of the environment and social context in which we live. This is an important topic but the focus in this paper is the individuals' intrinsic and extrinsic adjustment and the purpose is not to determine cause and effect. So, both for the reason that adjustment in itself cannot lie in the environment (more precise, it lies in the relation between the person and the environment, more on this later) and for the reason that explanations of different patterns of adjustment are not looked for in this paper, I will leave the topic.

Resilience and protective factors

Important areas within positive psychology that cross over these three levels are resilience and coping (Snyder & Lopez, 2002). Resilience is an important area in relation to positive adaptation (Mahoney & Bergman, 2002) and refers to a "dynamic process encompassing positive adaptation within the context of significant adversity" (Luthar, Cicchetti & Becker, 2000 p. 543). From a developmental perspective, resilience can be described as meeting age-salient developmental tasks in spite of serious threats to development (Masten & Reed, 2002). In studies of resilience in youth, typical measures of good adjustment are "academic achievement (e.g. grades and test scores, staying in school, graduating from high school); conduct (rule abiding behaviour vs. antisocial behaviour); peer acceptance and friendship; normative mental health (few symptoms of internalizing and externalizing behaviour problems); and involvement in age-appropriate activities (extracurricular activities, sports, community service)." (Masten & Reed, 2002 p. 76).

Protective factors supporting psychological resilience in children and youth have been divided in four categories. 1) *Within the child*: cognitive abilities; problem-solving and attention skills; easy temperament in infancy; adaptable personality later in development; positive self-perception: self-efficacy; sense of meaning in life; a positive outlook in life; good self-regulation of emotional arousal and impulses; talents valued by self and society; good sense of humour. 2) *Within the family*: close relationships with care giving adults; authoritative parenting (warmth, structure, expectations); positive family climate with low discord between parents; organized home environment; postsecondary education of parents; parents qualities; socioeconomic advantages. 3) *Other relationships*: close relationships to competent, prosocial, and supportive adults; connections to prosocial and rule-binding peers. 4) *Within community*: effective schools; ties to prosocial organizations (clubs, sports etc); high levels of public safety; good emergency social services; good public health. (Masten & Reed, 2002, p. 83).

In resilience research, questions have been raised if factors promoting positive adaptation in the face of significant adversity are the same that promotes positive adaptation for a normal population. But according to Luthar et al. (2000), among others, there is much evidence that the dynamics that underlie the process of resilience is not the same process contributing to positive adjustment when not facing adversity. Luthar et al. (2000) also show how some

competencies could be of little advantage under normal circumstances but of great advantage under severe circumstances (and the relationship could also be the other way around). An interesting question for this study is to see how different constructs, important within the area of resilience research, work and interact when we look at positive adaptation.

Development and adaptation in a system perspective

A good starting point to understand human development is Bronfenbrenner's ecological system theory (Bronfenbrenner, 1979). He describes development as the individual evolving in a complex system of relationships affected by multiple levels of the environment. Bronfenbrenner has more recently described his model as a bioecological model to stress the importance of biology (Bronfenbrenner & Ceci, 1994). Bronfenbrenner sees the environment as nested structures and describes it in four levels. First the *microsystem* is the innermost level of environment and refers to the activities and interactions in the person's immediate surroundings (Bronfenbrenner, 1979). He also calls these proximal processes (Bronfenbrenner & Ceci, 1994). Important here are that the relationships are bidirectional. In the child-parent relationship for example, the adult affects the child's behaviour but the child's biology and personality also affect the adults' behaviour. The second level Bronfenbrenner calls the *mesosystem* and it encompasses connections between microsystems (Bronfenbrenner, 1979), for example, connections between family, school, child-care and neighbourhood. The third level is called the *exosystem* and is composed of a social arrangement that doesn't contain the person but nonetheless affect experiences in the proximal settings. Examples are the board of directors of the individuals' workplace and institutions whose decisions affect the person's life. For the child the parents' social network is an exosystem. The last level is called the *macrosystem* and is not a specific context but consists of values, laws, customs, world-views etc. Through life the context shifts for the individual; starting school, starting a new work, getting children etc. Bronfenbrenner also has a temporal area in his model that he calls the *chronosystem* (Berk, 2007). He states that life changes can be imposed on the individual externally but that they can also arise from within the person and this because we in a sense produce our own environment (Berk, 2007). All of these system levels above are in action and are relevant for a comprehensive understanding of individual development and positive adaptation.

Bronfenbrenner's model described above takes a system perspective, focusing on the different levels both external and internal to the individual. He takes on a relational perspective where the different system levels in a reciprocal way influence each other. The model is not in an explicit sense dynamic in the way that it includes non-linear and complex dynamic interactions between and within the different levels. This is the characteristic in the holistic-interactionistic model described below.

The holistic-interactionistic paradigm and the person-oriented approach

The holistic-interactionistic paradigm is a development from classical interactionism. In classical interactionism the central idea is that human functioning is a function of the

interplay between the individual and the environment (Magnusson & Stattin, 2006). Instead of seeing the individual as the target of stimuli from the environment and instead of treating the individual and the environment as two different entities classical interactionism focuses on the reciprocal relation and interaction between the two systems. The relation itself becomes the focus of interest. The holistic-interactionistic perspective takes this line of reasoning several steps further. It has a stronger focus than the classical model on the dynamic character of individual functioning and the total person-environment (PE) system, and includes different levels both in the environment and in the individual (Magnusson & Stattin, 2006). This can also be seen as a shift from the model underlying psychology taken from classical natural science in the Newton tradition focusing on passive physical objects, to a model taken from the life sciences (e.g. biology, chemistry) (Richters, 1997). The irony is that at the same time as psychology based its underlying model on classical natural science, natural science itself started to abandon this model and embraced more complex, non-linear and dynamic models of the physical world (Richters, 1997). One important shift in modern physics with implications for the study of individual development is the notion that the world (within physics, the physical world) is not viewed as similar on different levels. A system is built up by subsystem and within each system the parts takes on meaning from its role in the total. This is expressed in the saying that 'the whole is more than its parts'. At the same time a system is a whole, it is a part/subsystem in another whole (Koestler, 1989). This means that every system at each level functions in part as an integrated whole but at the same time is dependent on its environment (the whole in which it functions as a part). In the development of the individual this means that the person must both develop as a well integrated and well functioning and independent person and at the same time adapt and function in an integrated way with the different levels and aspects of the environment. A holistic-interactionistic perspective rests on five propositions (Magnusson & Stattin, 2006).

- (1) The individual is an active, intentional part of a complex, dynamic PE system.
- (2) The individual functions and develops as a total, integrated organism.
- (3) Individual functioning in existing psychobiological structures, as well as developmental change, can best be described an integrated, complex, and dynamic processes.
- (4) Such processes are characterized by continuously ongoing interactions (including interdependence) among mental, behavioural and biological components of the individual and social, cultural, and physical components of the environment.
- (5) The environment functions and changes as a continuously ongoing process of interaction and interdependence among social, cultural, and physical factors." (p. 407).

In research on human development, a consequence of the holistic interactionistic paradigm is a shift from the traditional variable approach to a so called person-oriented approach (Bergman & Magnusson, 1997). In the variable approach "the main conceptual and analytical unit has been the variable" (Bergman & Magnusson, 1997 p. 292). Both the statistical analysis and the theories have focused on the variable and how they relate to each other. Bergman and Magnusson (1997) summarized the criticism of the variable-oriented approach as follows, "The modelling/description of variables over individuals can be very

difficult to translate into properties characterizing single individuals because the information provided by the statistical method is variable oriented, not individual oriented” (p. 292).

In the person-oriented approach the main unit is the person seen as an integrated whole (Bergman & Magnusson, 1997). This means that the variables get their meaning and function in their relation to the other variables and the patterns they form. They have no meaning in and of themselves. This does not mean, however, that the whole system can be analyzed at the same time. Only one or a few levels can be studied at the same time. The important thing is that the study involves relevant characteristics of the individual and the environment for the present problem under investigation. An important assumption in the person-oriented approach is that even if there is a theoretical possibility of infinite ways a set of variables can form different patterns only a limited number of observed patterns will frequently be observed, so called “common types” (at least on a global level; Bergman & Magnusson, 1997). Only these limited numbers of patterns will lead to a stable behaviour of the system. In the terms of dynamic system theories this can be described as emergent properties of a self-organizing system (Kauffman, 1995; Thelen & Smith, 1996). Bergman and Magnusson (1997) summarized this view; “Viewing individuals in terms of complex dynamic systems, we would expect certain states to be more frequent than others, corresponding to such optimal patterns, and it seems natural to explain and investigate such systems using a pattern-oriented approach” (p. 294).

Positive adaptation

Positive adaptation is not an easy concept to define and it doesn’t have an agreed upon definition (Mahoney & Bergman, 2002). Atchley (1967) defines adjustment as a “[...] process of adjusting ourselves to fit a situation or environment” (p. 237). The adjustment can be both to changes and demands from inside the individual and to the external environment. The adjustment can be both voluntarily or unconscious and automatic (e.g. the constant adjustment that takes place in our biological system to internal and external stimuli (Atchley, 1967). Further, adjustment can be described as adjustment through assimilation or accommodation. Assimilation means that the individual modifies internal or external experiences to already existing structures or models. Accommodation means a restructuring of internal structures and models to fit internal or external demands (Atchley, 1967)

The important parts of Atchley’s arguments are that adjustment concerns a fit between systems. In our case a fit between the person and the environment and different levels of systems in which the person lives (compare Bronfenbrenner’s view discussed above). Atchley further states that adjustment concerns both changes within the individual and in its environment. This means that the person has to adjust both to herself and to the environment.

Mahoney and Bergman (2002) argued that positive adaptation must involve the whole person (biological and psychological levels) and it must be understood in the individuals’

interaction with multiple levels in the environment. The focus on the whole person is essential to understand adaptation. It cannot be understood from just a few behaviours or states. They described positive adaptation as “processes by which individuals’ attain overall patterns of adjustment that represent unusually favourable developmental trajectories, given their background and available resources” (Mahoney & Bergman, 2002 p. 197). Further they state that “[...] adaptation refers to a synchronization of internal functions within the organism in relation to the demands and opportunities of the environment” (p. 199). From this follows that adaptation never can be understood from the perspective of the organism alone. Adaptation is always a relation between organism and environment. An important point made by Mahoney and Bergman (2002) is that “[...] positive functioning is *not* a mirror opposite of negative functioning” (p. 197).

Two major areas are important to adjustment, the intrinsic and extrinsic. Individual functioning can be described as being more or less adjusted in these areas. Extrinsic adjustment is the level of agreement between the individual’s behaviour and what is expected from the environment (society). These expectations or demands come in two forms, norms of conduct and levels of achievement (Magnusson, 1988). That is to say how the individual adjusts to the social system. Intrinsic adjustment or functioning has to do with the person’s own satisfaction with the situation. This has been described as the agreement between “the individual’s own needs, values, and motives on the one hand, and the rewards received from those actions and the environment, on the other hand” (Magnusson, Dunér & Zetterblom, 1975 p. 22). Magnusson (1988) also described adjustment (or maladjustment) as deviations from biological, psychological and social norms. Positive adjustment could therefore be seen as positive deviations from these norms. In terms of problems like depression and criminality, positive adjustment would mean absence of these problems. In terms of more positive norms, like school achievement or subjective well-being, positive adjustment would mean a functioning or satisfaction above normal (in an absolute or relative sense)

From the reasoning above follows that both the social system (the environment) and the individual has a saying in the determination of a person’s adjustment. Figure 1 describes five different aspects of the individual’s adjustment. Arrow A shows how the person’s behaviour fits the environment from the perspective of the environment. Arrow B shows the environment’s view of the person’s psychological and biological functioning. Arrow C shows the person’s subjective experience of her own behaviour. Arrow D describes the person’s subjective experience of the environment and her situation within it and finally arrow E describes the person’s subjective experience of her inner life.

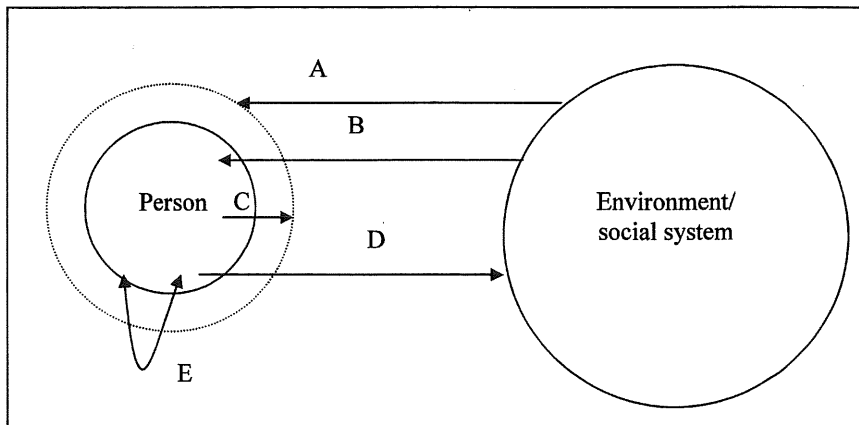


Figure 1. Five different aspects of the person's adjustment. The broken line symbolises the person's behaviour. The full line inside symbolises the person's subjective world. The environment circle includes the different system levels in the person's environment described by Bronfenbrenner.

If we understand the individual's degree of adjustment as a fit to the internal and external environment, the concept of developmental tasks becomes important. Perhaps the best known advocate for this view is Erik H. Erikson. Erikson describes development as a path that goes through eight stages that includes different tasks (Erikson, 2002). Examples of tasks are *identity* versus *identity diffusion*, *intimacy* versus *isolation*, *generativity* versus *stagnation*, and *integrity* versus *despair*. Erikson calls these tasks to be solved psychosocial crises. Thus, from this perspective, positive adaptation can be understood as the successful mastery of age specific tasks and a hierarchical accumulation of these different competencies (Mahoney & Bergman, 2002). The concept of developmental tasks has most relevance, from our perspective, if we focus on the tasks that society expects the individual to solve. Masten and Coatsworth (1998) list some important developmental tasks up to adolescence: *Middle childhood*; school adjustment (attendance, appropriate conduct); academic achievement, getting along with peers (acceptance, making friends); rule-governed conduct (following rules of society for moral behaviour and prosocial conduct); *Adolescence*; successful transition to secondary schooling; involvement in extracurricular activities; forming close friends within and across gender; forming a cohesive sense of self-identity.

Internalizing and externalizing problems

Most of the research in adjustment has been done to distinguish normative or pathological development (Mahoney & Bergman, 2002). Although the study of adjustment problems fall outside the focus of the present study, it is important to discuss this approach briefly to place the present study in relation to this context that presently dominates research on adjustment. When studying adjustment problems, two broad groups of problems have been

found and they are strongly related to the areas of intrinsic and extrinsic adaptation. These are internalizing problems (e.g. emotional disorders) versus externalizing problems (e.g. conduct disorders), (Achenbach, 1984). Other labels similar to these constructs are personality problems versus conduct problems; undercontrolled syndromes versus overcontrolled syndromes; inhibition versus aggression (Achenbach, 1984). They can be understood as externalizing problems involving conflicts with the environment and internalizing problems occurring inside the person (Wångby, Bergman & Magnusson, 1999). We can see that the logic of functional fit and synchronization of internal functions within the organism in relation to the demands of the environment is the same as for the mechanisms of intrinsic and extrinsic adaptation. Even though positive adaptation is not the invert of negative adaptation, the relative absence of internalizing and externalizing problems is still an important aspect of positive adaptation.

Longitudinal studies of adjustment and positive adaptation

Vaillant (2000) states the necessity of a life-span or longitudinal approach for the understanding of positive psychological processes and so do Mahoney and Bergman (2002). A search for positive adaptation in a longitudinal perspective with 'google scholar' shows that the main focus is on adjustment to adversity and how the person can go back to normal functioning or even transform. Some examples are the influence of peer relations to adjustment in adolescence (Morison & Masten, 1991; Berndt, 1999; Woodward & Fergusson, 1999) coping with adversity (Taylor & Armor, 1996); problem-solving appraisal and its relation to adjustment (Heppner, Witty & Dixon, 2004) relations between emotional functioning in childhood and functioning and adjustment in adolescence (Eisenberg, Guthrie, Cumberland, Murphy, Shepard, Zhou & Carlo, 2002; Roeser, Eccles & Sameroff, 1998). Longitudinal research has been carried out to understand how protective factors work and which factors are important for positive adjustment (see for example Brody, Murry, Kim & Brown, 2002; Criss, Pettit, Bates, Dodge & Lapp, 2002)

An area that in a way is closely linked to positive adaptation is the research on wisdom. Baltes and Staudinger (2000) describes wisdom as an "[...] expert knowledge system concerning the fundamental pragmatics of life. These include knowledge and judgment about the meaning and conduct of life and the orchestration of human development towards excellence while attending conjointly to personal and collective well-being." (p. 122) Within this paradigm, positive adaptation in relation to trauma and adversity is seen as more than simply a return to a baseline in case of adversity or resilience against negative effects but as a transformation to a higher level of functioning. But the lack of longitudinal research leaves the question open on the relations between positive adaptation and wisdom.

Positive psychology, as stated above, also does empirical research on optimal human functioning but as Mahoney and Bergman (2002) pointed out, they say little of the road to this functioning and very little of the development thru life-span of patterns of unusually positive adaptation. Longitudinal research that looks at unusually positive adaptation patterns and their development thru life-span are thus in large parts missing within positive psychology. See also Lazarus critique on positive psychology that was cited above.

Women and adaptation

This study focuses on positive adaptation and its development for women only. The amount of research made on women appears to be limited but in the last twenty years the research on women and their development and adaptation has increased (Wångby, Bergman & Magnusson, 1999). Within the area of adjustment problems most research before the 1980s were done on male samples, in part because of their more visible problem structure. Females more often show internalizing problems and girls also, perhaps falsely, seem to be less vulnerable than boys in childhood (Wångby et al., 1999). That is, females are perceived as less problematic than boys. In adolescence the psychological difficulties increases (e.g. Emotional Disturbances), especially among females but females are also more likely to stay engaged with school despite emotional difficulties (Roeser, Eccles & Sameroff, 1998; Wångby et al., 1999). So, even though the research on positive adaptation in women (especially longitudinal studies) is scarce, it might be reasonable to assume that the patterns of adaptation and life-span development for females are different than for males in regard to positive adjustment and development.

Positive adaptation and development in relation to positive psychology

The growing interest for positive development is in part due to the development of theories within positive psychology and the ensuing empirical research on positive and elusive constructs such as optimism, hope, wisdom, motivation and flow (Mahoney & Bergman, 2002). A central theme in positive psychology is that the positive (e.g. good health) is not just the absence or inverse of the bad but the presence of something more and qualitative different and this perspective is also important within the area of positive adaptation. An important gap to fill in the study of positive adaptation is how it emerges. Cowen (1994), for example, describes five areas or pathways that promote psychological wellness and functioning; “forming wholesome early attachments; acquiring age- and ability-appropriate competencies; engineering settings that promote adaptive outcomes; fostering empowerment; and acquiring skills needed to cope effectively with life stressors.” (p. 149) Mahoney and Bergman (2002) said that positive psychology identifies people that already have a good or very good functioning, not how they got it in the first place. In a similar vein, Cowen and Kilmer (2002) commented on some crucial gaps that need to be filled within positive psychology in reference to the special issue in 2000 in American psychologist and which has bearing on the study of positive adaptation. Two of their main points were (1) The lack within positive psychology of a cohesive guiding-theory in which they point to several limiting features, namely “(a) some of the main variables identified as desired outcomes in a positive psychology are neither clearly defined, nor are their belongingness in an overall positive psychology always evident; and (b) neither logical nor empirical relationships, i.e., overlap, and interconnectedness, among these multiple “targeted” outcome variables, are clearly established” (p. 451). (2) Positive psychology focuses more on end-products and also more on adults than on life-history processes and childhood and Cowen and Kilmer (2002) stressed the importance of a developmental perspective to understand how strengths and positive aspects of life unfold over the life span. To understand the factors that promote early positive outcomes and pathways to later adaptation must be central to a guiding theory of positive psychology. They also stressed

the importance of using a longitudinal perspective and methodology to identify factors and pathways that favour the creation and maintenance of positive outcomes. This study tries to answer to some of these gaps pointed out by Mahoney and Bergman, and Cowen and Kilmer by studying positive adaptation in childhood and how it develops into adulthood. The intrinsic and extrinsic areas of positive adaptation include both the bases for positive outlined above by Diener (2003) and the psychological and behavioural markers discussed by (Cowen, 1994).

Even though there are important linkages between positive psychology and positive adaptation, the viewpoint in this study is that although theories from positive psychology can in important ways influence the study of positive adaptation, they must for a more comprehensive understanding be seen as a part of the broader area of developmental psychology and developmental science and be grounded in the holistic-interactionistic paradigm.

Areas of intrinsic and extrinsic positive adaptation

After this brief review of positive psychology, adaptation in form of positive adaptation, and adjustment problems, a list of areas within the area of positive adaptation will now be presented along the two areas, intrinsic and extrinsic adaptation. It is not claimed that the list will be exhaustive. An important starting point is that the list should include indicators of positive adaptation and not factors that cause positive adaptation. This excludes for example most of the area of human strengths as described in positive psychology and also much of the concept of resilience. Both of these are important causes or conditions for positive adaptation but not indicators of positive adaptation in themselves even though resilience and adaptation have some areas in common (e.g. sense of control, interpersonal relationships). A person's norm system and values, motives and beliefs are also examples of very important parts of human functioning but they are not indicators in themselves of positive adaptation. The focus is instead on the person's experiences of her situation, for instance in relation to these beliefs, values and motives and the environment's reaction to the person's behaviour. The different indicators should cover Diener's (2003) bases for what is regarded as positive, behavioural and psychological markers (Cowen, 1994) and the different views described in Figure 1 above. Another important condition for an area to be included is that it is measurable and, even more precise, that it has at least some indicator within the data bank of the IDA program (see Bergman, 2000; Magnusson, 1988; Duakantaité, 2007) from where this study takes its data. The study has a developmental focus and thus the areas should be possible to follow through the life-span from childhood to adulthood.

The following areas and indicators of positive adaptation are suggested:

Area 1: Intrinsic areas of positive adaptation

- Subjective well-being
- Self-perception
- Sense of Control
- Purpose in life

Lack of Inhibition and Anxiety
 Optimism/A positive outlook in life
 Subjective health

Area 2: Extrinsic areas of positive adaptation

Achievement
 Socialization (conformity to rules and social expectations)
 Social relations

Purpose

Broadly speaking, the purpose is to study the natural history of females' positive extrinsic and intrinsic adaptation from childhood to adulthood and then also taking into account patterns of adaptation within the same individual. For comparative purpose it will also be of interest to study negative intrinsic and extrinsic adaptation. It should be pointed out that the purpose is not to draw conclusions about what causes positive adaptation or to find explanatory factors of different adaptation patterns.

Expectations

A basic premise for the expectations below is that the person is seen as a system of subsystems on different levels working as an integrated whole (Bergman & Magnusson, 1997). The person is also a part of the environment which is comprised of systems on different levels. This has the consequence that factors within the intrinsic area, all relating to the person, are expected to have stronger connections than factors in the extrinsic area which includes factors both relating to the person and different system levels in the environment.

(A) It is expected stronger relationships within the intrinsic area than the extrinsic area and therefore more distinct positive and negative adaptation patterns within the intrinsic area.

(B) It is expected stronger relationships within each age group than between the age groups and therefore more connections of adaptation patterns between the intrinsic and extrinsic area within each age group than longitudinal streams between adaptation patterns from childhood to adulthood.

(C) It is expected stronger relationships between similar than dissimilar constructs between childhood and adulthood and therefore more clear longitudinal developmental streams between childhood and adulthood within the intrinsic and extrinsic areas respectively than streams that goes between the intrinsic and extrinsic area.

(D) It is expected those with generalized positive or negative adaptation patterns to more frequently connect to positive or negative adaptation patterns respectively, both within childhood/adulthood and between childhood and adulthood, than those with less distinctive adaptation patterns.

Two specific questions

(1) Previous studies have shown different results regarding the characteristics of children with good or poor school adjustment. Roeser, Eccles, and Sameroff (1998) for example found differences between high and low achievers in their school adjustment regarding academic competence beliefs, academic values, and emotional functioning. Other studies have found differences in optimism between high and low achievers (Pajares, 2001) and the role of peer-relations in relation to academic success have also been studied, normally regarding the negative influence of poor peer-relations on academic success (Woodward & Fergusson, 2000). Further, intelligence has in many studies been shown to strongly relate to academic success (Woodward & Fergusson, 2000; Marjoribanks, 1976) but research on the relation between intelligence and emotional adjustment show mixed results (Neihart, 1998). The question for this study is then: In what way do children with patterns of good or poor Global School Adjustment differ from those with normal Global School Adjustment regarding intrinsic and extrinsic adjustment, intelligence and parents' educational level? Global School Adjustment is comprised of Academic Achievement, Global School Satisfaction and School Motivation.

(2) The second question refers to the resilience construct that is related to Optimism, Self Respect and Sense of Control in adulthood and how it relates to the other adaptation indicators in adulthood, taking into account interaction effects between the three resilience variables. In the literature, these three constructs are often described as together constituting an underlying dimension of personal resilience (Mäkikangas et al., 2004; Scheier & Carver, 1992) but they are often treated as separate variables. Therefore regression analyses will be used to study if interactions between the three variables can increase the prediction of the other adulthood variables in addition to their main effects.

METHOD

Sample

The present study is based on data for females only. The data in the study is taken from the longitudinal research program, Individual Development and Adjustment (IDA) (Bergman, 2000; Daukantaitė, 2007; Magnusson 1988; Magnusson et al., 1975). The main group in the IDA project encompassed from the beginning all the girls who attended the third grade in the school year 1964/1965, and also all the children, who by moving into the region, became their classmates in grades 6, 8 or 9. In this study, data for childhood were taken from grade six (approximately age 13) and grade eight (approximately age 15). Excluded were only a few children attending special schools for mentally retarded or needing special institutionalized care due to extreme physical or mental handicaps. The reason that data from both grade six and eight were included is that some variables in this study were not measured in 1968. Data were also taken from the 1998 follow up at age 43. The sample studied at age 13 comprised of N=557 or 82% of the whole age cohort, at age 15 of N=522 or 88% of the whole cohort and at age 43 of N=569 or 89% of the eligible women in the total IDA cohort. In some of the analysis the dropout was larger and the number of cases is given in the table.

Variables in childhood

In childhood no measures for Sense of Control and Purpose in Life were available.

Subjective well-being

Subjective well-being was measured by two variables, Global School Satisfaction and Harmony.

Global School Satisfaction consisted of the mean score of eight items (with 5 response options) taken from the student questionnaire at age 13. To carry out the computation, complete data were demanded. For this sample the mean was 3.47 (SD=0.60 min/max=1.25/4.88, N=518). The average inter-item correlation was .38 and the internal consistency reliability (Cronbach's alpha) was .83

Harmony is based on teachers' ratings of the child at age 13. The rating scale ranged from 1 (*They seem very harmonious and well balanced, and are seldom involved in serious conflicts with their surroundings or themselves. They seem to be emotionally "at home" in school.*) to 7 (*They seem very disharmonious and unhappy. They are often in restrained or open conflict with their surroundings or themselves*). The teachers' obtained detailed written instructions on how to rate the children and rating forms with descriptions for the positive and negative extremes of each single behaviour (Magnusson et al., 1975). For this study the scale was reversed so that 1 indicated disharmony and 7 harmony. For this sample the mean for harmony was 4.29 (SD=1.47 min/max=1.00/7.00 N=549).

Achievement

To measure academic achievement, the results from standardised achievement tests in Swedish and Mathematics, developed by the National Board of Education for nation-wide use, were used. The sum of the two tests were used as an index of achievement. For this sample the mean was 101.58 (SD=26.92 min/max=35/170 N=480).

Social relations

Social relations in childhood were measured in three different areas, namely; (1) *Peer-rated popularity*, (2) *Self-rated peer popularity*, (3) *Relation to parents*
Peer-rated popularity. This indicator was constructed from sociometric ratings made by classmates of the same sex. The children were told to rank every classmate of the same gender in the order they wanted them to stay with the class if it was to move to a new smaller classroom, in which there would not be room for everyone (Zettergren, 2007). The rank-ordering scales were normalized and the scores standardized (and a constant +3 added to each score). The score for each child is the mean of the sum of her score values from the same gender. For this sample the mean was 3.00 (SD=0.48 min/max=1.33/4.12 N=545).

Self-rated peer popularity. This indicator was based on the girl's estimate of her classmates' sociometric ranking of her as described above. The scores were normalized and

standardized (and a constant +3 added). For this sample the mean was 2.87 (SD=0.46 min/max=1.24/4.32 N=515).

Relations to parents. To measure relations to mother and father, items were taken from the symptom questionnaire at age 15. Ratings were on a 4-5-point ordinal scale where 1 indicated good relations and 5 poor relations and therefore the scale was reversed so that 1 indicated poor relations and 5 good relations. Six items measured relations to mother and six items measured relations to father (Wångby, Magnusson & Stattin, 2002). An index of the two scores was used to create a measure of relations to parents. To carry out the computation, complete data were demanded. The index mean was 3.62 (SD=0.67, minimum/maximum=1.33/ 4.92, N=463). The average inter-item correlation was .33 and the internal consistency reliability (Cronbach's alpha) was .85.

Self-perception

Self perception was measured by forming an index out of 13 items from the symptom questionnaire at age 15 measuring *Self-Esteem* (Wångby, Magnusson & Stattin, 2002). Ratings were on a 5-point ordinal scale. To carry out the computation, complete data were demanded. The index mean was 3.77 (SD=0.50, minimum/maximum=1.92/ 4.92, N=507). The average inter-item correlation was .19 and the internal consistency reliability (Cronbach's alpha) was .74.

Optimism

Optimism was measured at age 13 by the Attitude to the Future scale using the semantic differential technique. The girls rated on a 7-point scale of adjective pairs that were polar opposites (e.g., positive-negative, good-bad). Daukantaite and Bergman (2005) found after a principal component analysis with varimax rotation that only the adjective pairs belonging to the evaluative area, had loadings higher than .40 so only that area was used in this study. The index of Attitude to the Future was based on six adjective pairs (good-bad, dull-interesting, unpleasant-pleasant, kind-unkind, unfair-fair and happy-sad.). Certain items were reversed so that a high total score indicates an optimistic evaluation of the future. To carry out the computation, complete data were demanded. The mean of the attitude to the future scale was 5.58 (SD=1.24, minimum/maximum=1.00/ 7.00, N=522). The average inter-item correlation was .56 and the internal consistency reliability (Cronbach's alpha) was .86.

Socialization

Socialization was measured in three different areas, namely; (1) Aggression (2) Low School Motivation (3) Antisocial behaviour.

Aggression and *Low School Motivation* were based on teachers' ratings of the child at age 13. The teachers' obtained detailed written instructions on how to rate the children and rating forms with descriptions for the positive and negative extremes of each single behaviour (Magnusson et al., 1975). For this sample the mean for Aggression was 3.58 (SD=1.51, minimum/maximum=1.00/ 7.00, N=550). The scale of Low School Motivation

was reversed and called School Motivation with 1 indicating low School Motivation and 7 indicating high School Motivation. The mean was 4.46 (SD=1.38, minimum/maximum=1.00/ 7.00, N=549).

Antisocial behaviour

Antisocial behaviour was measured by forming an index out of 12 items from the symptom questionnaire at age 15 on a 5-point scale where 1 indicated lack of problem and 5 indicated high prevalence of problem (Wångby, Magnusson & Stattin, 2002). To carry out the computation, complete data were demanded. The index mean was 1.52 (SD=0.48, minimum/maximum=1.00/ 4.08, N=501). The average inter-item correlation was .24 and the internal consistency reliability (Cronbach's alpha) was .78.

Inhibition and anxiety

As an indicator of inhibition and anxiety, *Timidity*, was measured based on teachers' ratings of the child at age 13. The mean was 3.92 (SD=1.49, minimum/maximum=1.00/ 7.00, N=551).

Subjective health

Subjective health was measured in two different areas, namely; (1) Emotional Disturbances (2) Psychosomatic Disturbances. *Emotional Disturbances* consisted of the mean score of 14 items from the symptom questionnaire at age 15 on a 5-point scale where 1 indicated lack of problem and 5 indicated high prevalence of problem (Wångby, Magnusson & Stattin, 2002). Persons with missing data in more than three items were excluded from the computation of the scale. For this sample the mean was 2.32 (SD=0.55, minimum/maximum=1.07/ 4.21, N=522). The average inter-item correlation was .22 and the internal consistency reliability (Cronbach's alpha) was .80.

Psychosomatic Disturbances consisted of the mean score of 13 items from the symptom questionnaire at age 15 on a 5-point scale where 1 indicated lack of problem and 5 indicated high prevalence of problem. Persons with missing data in more than three items were excluded from the computation of the scale. For this sample the mean was 2.49 (SD=0.54, minimum/maximum=1.23/ 4.23, N=521). The average inter-item correlation was .18 and the internal consistency reliability (Cronbach's alpha) was .74.

Variables used for validation and comparison in cluster analysis

For some cluster analysis in childhood three additional variables (Parents' Educational Level, Intelligence and Perceived Work Load) were used for validation and comparison purposes.

Parents' Educational Level was based on the parents' questionnaire and 1 indicates the highest educational level and 7 the lowest. The educational levels were (1) university level

education, (2) advanced education, but of shorter duration, (3) higher secondary school, (4) education at intermediate school level, (5) lower secondary school, (6) vocational training, etc, and (7) underskilled labour (Daukantaite & Bergman, 2005).

Measure of *Intelligence* (IQ) included verbal, inductive, and spatial ability subtests and were assessed by the DBA (Differential Begåvnings-Analys) test. An index was created by summing the different subtests. For this sample the mean was 149.55 (SD=26.94, minimum/maximum=52.00/ 201.00, N=549)

Perceived Work Load was measured by five items from the student questionnaire. For this sample the mean was 2.34 (SD=0.65, minimum/maximum=1.00/ 5.00, N=521). The average inter-item correlation was .32 and the internal consistency reliability (Cronbach's alpha) was .77.

Variables in adulthood

Subjective well-being, SWB

Subjective well-being was measured by three different variables; *Global Life Satisfaction and Positive Affect and Negative Affect*.

Global Life Satisfaction was measured by four different items from three different questionnaires (Life satisfaction, Life goals and questions about the future, and Life line) with, respectively, 7, 8, 8, 9 response options. The items were taken from Daukantaite and Bergman (2003). An index was formed based on the mean score on these four items. A higher total score indicates a higher level of Global Life Satisfaction. To carry out the computation, complete data were demanded. The index mean was 6.21 (SD=1.00, minimum/maximum=2.75/ 8.00, N=314). The average inter-item correlation was .51 and the internal consistency reliability (Cronbach's alpha) was .80.

Positive Affect and Negative Affect was measured by the Swedish translation of the Positive Affect and Negative Affect Schedule, PANAS (Daukantaite & Bergman, 2003). The scale was composed of 10 Positive Affect states and 10 Negative Affect states and the participants rated on a scale ranging from 1 (not at all) to 5 (very often) how often they felt each of the states over the past year. To carry out the computation, complete data were demanded. The scale mean for Positive Affect was 3.67 (SD= 0.45, minimum/maximum = 1.90/4.90, N=350) and the average inter-item correlation was .34 and the internal consistency reliability (Cronbach's alpha) was .84. The scale mean for Negative Affect was 1.75 (SD=0.60, minimum/maximum=1.00/4.00, N=346) and the average inter-item correlation was .40 and the internal consistency reliability (Cronbach's alpha) was .87.

Achievement

Achievement for the women was measured in by Academic achievement. A 7-graded *Academic achievement* scale was constructed by Daukantaite and Bergman (2003) which indicate higher educational levels up to university/college degree. The different levels were

(1) women who had compulsory school competence (N=122, 21.4%); (2) women who had two-year vocational upper secondary school competence (N=88, 15.5%); (3) women who had begun but not completed two-year theoretical upper secondary school competence (N=8, 1.4%); (4) women who had two-year theoretical upper secondary school competence (N=55, 9.7%); (5) women who had three-four year upper secondary school competence (N=40, 7.0%); (6) women who had studied but not graduated from university/college (N=66, 11.6%); (7) women who had graduated from university/college (N=190, 33.4%). Data were available from 569 women.

Social relations

Social relations were measured in two areas, namely; (1) Relation to partner and (2) Relations to friends and relatives.

Relation to partner. The measure were taken from Daukantaite and Bergman (2003) who after a factor analysis found 9 items, taken from the social relations questionnaire, with loadings higher than .40 measuring partner satisfaction, close emotional relations to the partner, and agreement in different issues. The mean score of the sum of the nine items was computed. A higher score indicates a higher level of satisfaction with relations to partner. The scale mean was 3.94 (SD=0.62, minimum/maximum=1.22/4.89, N=428). The average inter-item correlation was .43 and the internal consistency reliability (Cronbach's alpha) was .86.

Relations to friends and relatives. The measure was taken from Daukantaite and Bergman (2003) who after an factor analysis found five items from the social relations questionnaire loading higher than .40, measuring relations to friends and relatives (they found two factors which they combined to one scale, friends and relatives). The mean score of the sum of the five items were computed. A higher score indicates a higher level of satisfaction with relations to friends and relatives. The scale mean was 3.73 (SD=0.69, minimum/maximum=2.00/5.40, N=537). The average inter-item correlation was .22 and the internal consistency reliability (Cronbach's alpha) was .56.

Self perception

Self perception was measured with questions from the questionnaire "How I usually feel?" which is a Swedish translation of the P.I.S.I. questionnaire (Oláh, 2002). Five questions measuring *Self-Respect* were used and the mean score of the sum of the five items were calculated to form an index. A higher score indicates a higher level of Self-Respect. The scale mean was 2.89 (SD=0.43, minimum/maximum=1.40/4.00, N=341). The average inter-item correlation was .33 and the internal consistency reliability (Cronbach's alpha) was .71.

Optimism

Optimism was measured with five items from the questionnaire "How I usually feel?" which is a Swedish translation of the P.I.S.I. questionnaire (Oláh, 2002). Participants rated on a 4-point scale ranging from 1 (*does not apply at all*) to 4 (*applies completely*) on items

like “I am a person that has a very positive view toward life”. Daukantaite and Bergman (2003) performed a principal component analysis with varimax rotation of all 80 items of the scale that did not reproduce the original factor structure where only two of the five items had loadings higher than .40 in the same factor. But since the items constituted the original optimism scale and it was dealing with optimism and that the average inter-item correlation was high, Daukantaite and Bergman (2003) still considered the scale useful. The scale is based on the mean score of the sum of the five item scores. A higher score indicates a higher level of optimism. The scale mean was 3.05 (SD=0.43, minimum/maximum=1.80/4.00, N=344). The average inter-item correlation was .38 and the internal consistency reliability (Cronbach’s alpha) was .75.

Socialization

Socialization (how the person conform to the rules and expectation of the society) was measured by two scales (based on five items each) from The Karolinska Scales of Personality Questionnaire (KSP), namely; (1) Verbal aggression (2) Indirect aggression. Participants rated on a 4-point scale ranging from 1 (*does not apply at all*) to 4 (*applies completely*). These two scales formed a composite scale called *Aggressive-nonconformity* which was the mean of the sum of the two scales. The scale mean for *Aggressive-nonconformity* was 2.38 (SD=0.40, minimum/maximum=1.20/3.40, N=347). The average inter-item correlation was .18 and the internal consistency reliability (Cronbach’s alpha) was .69.

Socialization was also measured by official records concerning *Criminality* and *Alcohol abuse*. Criminality and Alcohol abuse were dichotomized indicating either presence or absence of a problem according to official records. Criminality had data available from 681 women (absence, N=680, 81.8%; presence, N=59, 7.1%) and Alcohol abuse had data available from 676 woman (absence, N=649, 78.1%; presence, N=27, 3.2%)

Sense of Control

Sense of Control was measured with five items from the questionnaire “How I usually feel?” which is a Swedish translation of the P.I.S.I. questionnaire (Oláh, 2002). Participants rated on a 4-point scale ranging from 1 (*does not apply at all*) to 4 (*applies completely*). The scale is based on the mean score of the sum of the five item scores. A higher score indicates a higher level of Sense of Control. The scale mean was 2.64 (SD=0.40, minimum/maximum=1.40/3.80, N=334). The average inter-item correlation was .16 and the internal consistency reliability (Cronbach’s alpha) was .49.

Inhibition and anxiety

Inhibition and anxiety were measured by the Psychic Anxiety-scale from The Karolinska Scales of Personality Questionnaire (KSP) which consisted of ten items. The scale is based on the mean score of the sum of the five item scores. A higher score indicates a higher level of Psychic Anxiety. The scale mean was 2.13 (SD=0.52, minimum/maximum=1.00/3.90, N=350). The average inter-item correlation was .37 and the internal consistency reliability (Cronbach’s alpha) was .85.

Purpose in life

Purpose in life was measured by the Sense of Coherence-scale from the questionnaire "How I usually feel?" which is a Swedish translation of the P.I.S.I. questionnaire (Oláh, 2002). The scale is based on the mean score of the sum of the five item scores. A higher score indicates a higher level of Sense of Coherence. The scale mean was 3.10 (SD=0.46, minimum/maximum=1.40/4.00, N=345). The average inter-item correlation was .32 and the internal consistency reliability (Cronbach's alpha) was .70.

Subjective health

As a measure of mental health 19 items from the Physical Health questionnaire were taken, measuring different Psychosomatic Disturbances on a 4-point scale were 1 is indicating high prevalence of the problem and 4 indicating low prevalence. The scale is based on the mean score of the sum of the 19 item scores. A higher score indicates a higher level of Physical Health. The scale mean was 3.46 (SD=0.43, minimum/maximum=1.79/4.00, N=472). The average inter-item correlation was .31 and the internal consistency reliability (Cronbach's alpha) was .89.

Statistical analyses

Variable-oriented statistical analysis

Ordinary product moment correlations were computed and stepwise regression analysis were carried out with a probability level for entry of .01, to find independent variables in childhood that predicted a dependent variable in adulthood. Logistic regression was also used for the same purpose on two dependent dichotomized variables. Finally, stepwise multiple regression analysis was carried out, including interactions effects, with Optimism, Sense of Control and Self-Respect predicting the other indicators in adulthood. These three variables make up the resilience construct described above and the purpose of the analysis was to see if interactions between the resilience variables could strengthen the prediction.

Person-oriented statistical analysis

The interest here is to classify observed patterns in a set of variables into typical patterns. All the subjects belonging to a type has a similar pattern profile. For this purpose cluster analysis within the framework of the LICUR procedure was used (Bergman, Magnusson & El-Khoury, 2003). A residue of multivariate outliers was first removed and the remaining subjects cluster analyzed using Ward's agglomerative hierarchical method. To study the development in clusters from childhood to adulthood, and also combinations of clusters within each age group, cross-tabulation using exact single-cell tests based on the hypergeometric distribution were performed (see Bergman et al., 2003).

RESULTS

Variable-oriented analysis

Relationships among childhood scales

In Table 1 correlations among the different childhood scales are given. Due to the problem with mass significance, mainly Bonferroni adjusted correlations will be considered although for the sake of completeness, 5% and 1% significant levels are also given in the table. It was expected that the relationships would be stronger within areas (intrinsic and extrinsic) than between.

As expected, there were moderate to strong relationships within the two areas but there were also moderate to strong relationships between the areas. Within the intrinsic area strong relationships were found between Self-Esteem and Psychosomatic Disturbances (-.53) and Emotional Disturbances (-.63). Psychosomatic Disturbances and Emotional Disturbances were also strongly correlated. These relationships can in part be explained from the fact that they all came from the same questionnaire. Self-Esteem was also moderately (around .20) correlated with Optimism and Global School Satisfaction. Further, Global School Satisfaction was moderately positively correlated with Harmony and Optimism and negatively correlated with Psychosomatic Disturbances. Finally, in the intrinsic area Harmony had, as expected (because both were teachers' ratings), a moderate negative relationship with Timidity. Noticeable is also that Timidity is close to zero correlated with Self-Esteem even though the instructions in the teachers' rating includes low self-esteem.

Within the extrinsic area four scales were moderate or strongly correlated; Academic Achievement, Peer-Relations, Aggressiveness and School Motivation. Moderate correlations were found between Academic Achievement and Peer-Relations (.30) and Aggressiveness (-.27) and a strong relationship was found between Academic Achievement and School Motivation (.60). Peer-Relations also showed a strong relationship with School Motivation and Self-Perceived Peer-Relations and a moderate negative correlation with Aggressiveness. Aggressiveness also had a moderate correlation with Self Perceived Peer-Relations (-.20). That Peer-Relations and Self-Perceived Peer-Relations have almost the same correlation with Aggression is a bit surprising in regard to results that show that aggressive children have a tendency of overestimate and idealize their friendship relations (Hughes, Cavell & Grossman, 1997). Social Relations to Parents showed a negative relationship with Antisocial Behaviour (-.32) which in part can be explained from the fact that they both came from the same questionnaire. Aggressiveness also had a strong negative correlation with School Motivation (-.56) and a moderate correlation with Antisocial Behaviour.

.Table 1. Correlations among childhood scales

Indicator	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Area 1 Intrinsic	1. Global School Satisfaction	—	,23*** (510)	,19*** (424)	,19*** (515)	-,16** (433)	-,20*** (432)	-,10* (514)	,12* (450)	,08 (507)	,16*** (509)	,14** (386)	-,21*** (513)	,27*** (512)	-,07 (415)	
	2. Harmony		—	-,14** (444)	,02 (514)	-,09 (456)	-,10* (455)	-,26*** (547)	,50*** (476)	,32*** (540)	,16*** (511)	,11* (406)	-,65*** (546)	,72*** (545)	-,15*** (436)	
	3. Self Esteem			—	,17*** (426)	-,63*** (507)	-,53*** (506)	-,04 (446)	-,03 (402)	-,02 (442)	,07 (424)	,43*** (453)	-,19*** (445)	,08 (445)	-,17*** (488)	
	4. Optimism				—	-,16*** (435)	-,13** (434)	-,01 (518)	-,05 (454)	-,02 (511)	,09* (512)	,08 (388)	-,01 (517)	,04 (516)	-,02 (417)	
	5. Emotional Disturbances					—	,68*** (521)	,02 (458)	-,01 (409)	,08 (454)	-,08 (433)	-,36*** (463)	,09 (457)	-,03 (457)	,14** (501)	
	6. Psychosomatic Disturbances							-,06 (457)	,03 (408)	,06 (453)	-,02 (432)	-,33*** (463)	,11* (456)	-,07 (456)	-,35*** (501)	
	7. Timidity							—	-,30*** (480)	-,20*** (544)	-,17*** (515)	,03 (408)	,02 (550)	-,30*** (549)	-,09 (438)	
Area 2 Extrinsic	8. Academic Achievement								—	,30*** (479)	,15** (455)	,03 (368)	-,27*** (479)	,60*** (480)	-,03 (393)	
	9. Peer-relations									—	,35*** (531)	-,00 (404)	-,21*** (543)	,36*** (544)	,01 (435)	
	10. Self perceived peer-relations										—	,02 (386)	-,20** (514)	,15*** (515)	,09 (415)	
	11. Relations to parents												—	-,17*** (408)	,10* (407)	-,32*** (448)
	12. Aggressiveness													—	-,56*** (548)	,19*** (437)
	13. School motivation														—	-,17*** (437)
	14. Antisocial behaviour															—

* p<.05 Bonferroni adjusted, **p<.01, ***p<.001, two-tailed tests.

The number of subjects is presented within parenthesis.

The relationships between the areas were stronger than expected. The strongest correlations were between the intrinsic area Harmony (teachers rating) and the extrinsic areas Academic Achievement (.50), Peer-Relations (.32), Aggressiveness (-.65) and School Motivation (.72). Global School Satisfaction had weak to moderate relationships with Self-Perceived Peer-Relations, Aggressiveness (negative) and School Motivation, but interestingly almost zero correlation with Peer-Relations. Self-Esteem had a fairly high correlation with Relations to Parents which in part can be explained from the fact that they both came from the same questionnaire and weak correlations with Aggressiveness (negative) and Antisocial Behaviour (negative). Emotional Disturbances had a moderate negative relationship with Relations to Parents and Psychosomatic Disturbances had moderate negative relationships with Relations to Parents and Antisocial Behaviour (all from the same questionnaire). Finally, Timidity had moderate correlations with Academic Achievement (negative) and School Motivation (negative) and weak correlations with Peer-Relations (negative) and Self-Perceived Peer-Relations (negative).

Relationships among adulthood scales

In Table 2, correlations among the different adulthood scales are given. In the intrinsic area, all the scales were moderate to strongly correlated with each other. Global Life Satisfaction was highly correlated with both Positive Affect and Negative Affect (negative) and with Optimism and Sense of Coherence. Strong inter-correlations were also found between Optimism, Self Respect, Positive Affect and Sense of Coherence (all higher than .55 except between Positive Affect and Sense of Coherence (.42)). Other strong correlations were between Psychic Anxiety and Negative Affect (.56) and Sense of Coherence (-.51). The rest of the correlations in the intrinsic area were between .24 and .47 with the expected directions.

In the extrinsic area, the relationships were much weaker than in the intrinsic area. A significant but weak correlations was found between Academic Achievement and Criminality (-.16) and a strong correlation was found between Criminality and Alcohol abuse. However, due to the fact that Criminality and Alcohol abuse are dichotomized and has an uneven split, this could lead to weaker correlations.

Between the intrinsic and extrinsic area several significant relationships were found. The strongest were between Global Life Satisfaction and Relation to Partner (.56) and Physical Health (.49) and also between Negative Affect and Physical Health (-.54) and Psychic Anxiety and Physical Health (-.42). Physical Health also showed moderate to strong relationships with the rest of the intrinsic scales. Optimism showed moderate (around .30) relationships with Relations to Partner and with Aggressive Nonconformity (negative). Sense of Coherence showed moderate relationships (around .20) with Academic Achievement, Relation to Partner and Aggressive Nonconformity. Finally, Self Respect showed a relationship with Relation to Partner (.28) and Negative Affect with Aggressive Nonconformity (.26) and Relation to Partner was also correlated with Positive Affect (.26).

Table 2. Correlations among adulthood scales

Indicator		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Area 1 Intrinsic	1. Global Life Satisfaction	—	,50*** (311)	,50*** (307)	,50*** (303)	,60*** (305)	,31*** (299)	-,39*** (303)	,56*** (308)	,49*** (307)	,01 (314)	,56*** (248)	,09 (306)	-,19*** (301)	-,01 (313)	,05 (313)
	2. Positive Affect		—	-,38*** (344)	,56*** (331)	,59*** (334)	,33*** (324)	-,42*** (334)	,42*** (335)	,27*** (340)	,07 (350)	,26*** (270)	,17*** (334)	-,13* (331)	,00 (349)	-,01 (349)
	3. Negative Affect			—	-,38*** (327)	-,43*** (330)	-,24*** (321)	,56*** (330)	-,46*** (331)	-,54*** (336)	-,08 (346)	-,19** (267)	-,15** (330)	,26*** (327)	,07 (345)	,04 (345)
	4. Self Respect				—	,61*** (335)	,39*** (329)	-,47*** (325)	,58*** (335)	,28*** (332)	,04 (340)	,28*** (263)	,10 (326)	-,13* (327)	,03 (340)	,04 (340)
	5. Optimism					—	,37*** (328)	-,44*** (332)	,56*** (340)	,30*** (335)	,07 (343)	,33*** (266)	,17** (330)	-,27*** (329)	-,07 (343)	-,03 (343)
	6. Sense of control						—	-,24*** (321)	,33*** (331)	,26*** (325)	-,00 (333)	,13* (257)	,07 (322)	-,13* (321)	,04 (333)	,07 (333)
	7. Psychic anxiety							—	-,51*** (333)	-,42*** (340)	-,12* (349)	-,13* (266)	-,06 (334)	-,15** (344)	-,01 (349)	-,02 (349)
	8. Sense of coherence								—	,38*** (335)	,19*** (344)	,26*** (267)	,10 (332)	-,24*** (331)	-,08 (344)	-,04 (344)
Area 2 Extrinsic	9. Physical health									—	,11* (472)	,17*** (364)	,07 (455)	-,15** (338)	-,12* (472)	-,11* (472)
	10. Academic achievement										—	,01 (428)	-,03 (537)	-,02 (346)	-,16*** (567)	-,12** (567)
	11. Relation to partner											—	,09 (420)	-,18** (264)	-,05 (427)	-,00 (427)
	12. Relations to friends and Relatives												—	-,15** (332)	,02 (536)	-,02 (536)
	13. Aggressive Nonconformity													—	,13* (346)	,09 (346)
	14. Criminality														—	,42*** (676)
	15. Alcohol															—

• p<.05 Bonferroni adjusted, *p<.05, **p<.01, ***p<.001, two-tailed tests.

The number of subjects is presented within parenthesis.

Relationships between childhood scales and adulthood scales

In Table 3, relationships between childhood scales and adulthood scales are given. Stronger relationships were expected between similar constructs than between dissimilar constructs and stronger relationships between the same area (intrinsic versus intrinsic and extrinsic versus extrinsic) than between the intrinsic and extrinsic area. As expected, the relationships between childhood and adulthood were much weaker than within each age group.

Relationships between intrinsic childhood scales and intrinsic adulthood scales

The significant relationships found between the intrinsic areas were all between .20 and .27 and among the stronger relationships were those between Emotional Disturbances and Psychosomatic Disturbances in childhood and Psychic Anxiety in adulthood (.27 and .25) which was expected because they are similar constructs. Emotional Disturbances also showed a relationship with Negative Affect. Self-Esteem showed moderate relationships with the different SWB components; Global Life Satisfaction (.26) and Positive Affect (.20) and a non-significant correlation but still a tendency to a relationship with Negative Affect (-.19). Self-Esteem also showed a moderate relationship with Psychic Anxiety (-.26). As expected, Optimism in childhood was correlated with Optimism in adulthood (.22) but also with Positive Affect (.23). Global School Satisfaction was related to Self Respect and Positive Affect.

Relationships between extrinsic childhood scales and extrinsic adulthood scales

The strongest correlation in these areas was between Academic Achievement in childhood and adulthood (.50). It was even expected that the relationship would be somewhat stronger. Academic Achievement in adulthood also showed moderate relationships with Peer-Relations and Aggressiveness (negative) and a somewhat stronger relationship with School Motivation (.37). Aggressiveness was related to Criminality and Alcohol and so was School Motivation (negative). Antisocial behaviour in childhood was correlated with Aggressive-nonconformity and Criminality. Finally, Peer-Relations showed a negative relationship with Alcohol abuse (-.22).

Relationships between intrinsic childhood scales and extrinsic adulthood scales

The variable in childhood in the intrinsic area that showed the strongest correlation with adulthood variables in the extrinsic area and also had most significant relationships was Harmony. It correlated with Academic Achievement (.32) and with Criminality (-.15) and Alcohol (-.20). Both Emotional Disturbances and Psychosomatic Disturbances were moderately correlated with Physical Health and Psychosomatic Disturbances also showed a moderate relationship with Aggressive-nonconformity. Finally, Timidity showed a weak negative relationship with Academic Achievement and Global School Satisfaction with Alcohol abuse (negative).

.Table 3. Correlations between childhood scales and adulthood scales

		Adulthood							Area 2							
		Area 1 Intrinsic							Extrinsic							
Childhood		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Area 1 Intrinsic	1. Global School Satisfaction	.12 (253)	.23*** (282)	-.09 (279)	.23*** (271)	.17** (273)	.09 (265)	-.14* (279)	.11 (276)	.00 (358)	.10* (430)	-.01 (320)	.07 (405)	-.05 (275)	-.10* (518)	-.20*** (515)
	2. Harmony	-.03 (266)	.10 (296)	.01 (294)	-.04 (285)	-.10 (287)	-.08 (280)	-.00 (294)	.06 (290)	-.02 (379)	.32*** (456)	.01 (337)	.02 (428)	-.06 (291)	-.15*** (549)	-.20*** (546)
	3. Self Esteem	.26*** (259)	.20*** (292)	-.19** (257)	.18** (281)	.17** (285)	.08 (276)	-.26*** (290)	.16** (285)	.17** (365)	-.06 (432)	.16** (318)	.04 (406)	-.14* (287)	.01 (506)	-.03 (506)
	4. Optimism	.19** (255)	.23*** (284)	-.19** (281)	.12* (273)	.22*** (275)	.02 (267)	-.07 (281)	.14* (278)	.00 (362)	-.07 (434)	.08 (323)	-.02 (408)	-.08 (277)	-.03 (522)	-.07 (519)
	5. Emotional Disturbances	-.20** (266)	-.11 (298)	.20*** (294)	-.08 (288)	-.16** (292)	-.05 (283)	.27*** (297)	-.14* (292)	-.20*** (375)	.04 (445)	-.06 (327)	-.05 (417)	.19** (294)	.01 (521)	-.05 (521)
	6. Psychosomatic Disturbances	-.21** (266)	-.16** (298)	.19** (294)	-.10 (288)	-.20** (292)	-.07 (283)	.25*** (297)	-.13* (292)	-.24*** (375)	-.06 (445)	-.10 (327)	.07 (417)	.24*** (294)	.06 (521)	.02 (521)
	7. Timidity	-.09 (268)	-.19** (298)	.06 (295)	-.20** (287)	-.19** (289)	-.07 (282)	.18** (297)	-.12* (292)	.00 (380)	-.19*** (457)	-.04 (338)	-.04 (429)	.02 (293)	-.02 (551)	.11** (548)
Area 2 Extrinsic	8. Academic Achievement	-.07 (240)	.13* (268)	-.00 (264)	-.07 (256)	-.07 (257)	-.04 (251)	-.09 (266)	.04 (280)	-.02 (335)	.50*** (402)	-.11 (302)	-.03 (380)	.13* (264)	-.13** (480)	-.09* (478)
	9. Peer-relations	-.02 (266)	.01 (296)	-.02 (293)	.10 (288)	-.04 (287)	-.02 (280)	.01 (295)	.03 (290)	.02 (376)	.19*** (453)	.00 (336)	-.03 (425)	.09 (291)	-.11** (545)	-.22*** (543)
	10. Self perceived peer-relations	.03 (253)	.08 (281)	-.04 (278)	.21*** (269)	.14* (271)	.03 (264)	-.14 (277)	.10 (274)	-.02 (355)	.07 (429)	.10 (320)	.15** (403)	-.11 (273)	-.10* (515)	-.10 (513)
	11. Relations to parents	.20** (240)	.13* (271)	-.08 (266)	.06 (261)	.10 (265)	.07 (256)	-.09 (269)	.14* (265)	.15 (329)	.01 (395)	.27*** (291)	.15** (371)	-.15* (266)	-.06 (462)	-.02 (462)
	12. Aggressiveness	.02 (287)	-.05 (297)	.01 (294)	.06 (286)	.14* (288)	.06 (281)	-.03 (296)	-.02 (291)	-.01 (379)	-.21*** (456)	-.10 (337)	-.08 (428)	.11 (292)	.23*** (550)	.17*** (547)
	13. School motivation	-.05 (267)	.08 (297)	-.07 (29)	-.01 (286)	-.05 (288)	-.03 (281)	-.05 (296)	.12 (291)	.03 (379)	.37*** (456)	-.02 (337)	.03 (428)	-.04 (292)	-.20*** (549)	-.22*** (547)
	14. Antisocial behaviour	.05 (255)	.04 (287)	-.01 (283)	.06 (277)	-.00 (280)	.10 (273)	-.06 (285)	.03 (281)	-.02 (359)	-.15** (427)	-.06 (314)	.02 (402)	.22*** (283)	.16*** (500)	.15** (500)

Note adulthood variables: 1.Global Life Satisfaction; 2.Positive Affect; 3.Negative Affect; 4. Self-Respect; 5.Optimism; 6.Sense of control; 7.Psychic Anxiety; 8.Sense of Coherence; 9.Physical health; 10.Academic Achievement; 11.Relation to partner; 12.Relations to friends and relatives; 13.Aggressive non-conformity; 14.Criminality; 15.Alcohol abuse.

• p<.05 Bonferroni adjusted, *p<.05, **p<.01, ***p<.001, two-tailed tests.

The number of subjects is presented within parenthesis.

Relationships between extrinsic childhood scales and intrinsic adulthood scales

Fewer relationships were expected across the areas than within and here only one significant relationship was found, namely between Self Perceived Peer-Relations and Self Respect (.21).

Relationships between similar scales in childhood and adulthood

An interesting comparison to do in a longitudinal sample is to see if the relationships between similar constructs stay the same over time or change. Two different relations were looked at, those between Optimism and Self-Esteem in childhood and Optimism and Self-Respect in adulthood and between Optimism and Emotional-/Psychosomatic Disturbances in childhood and Optimism and Psychic Anxiety in adulthood. The correlation matrix shows that the relationships get stronger in adulthood. In childhood, Optimism had a correlation with Self-Esteem of .17 and in adulthood the correlation between Optimism and Self-Respect was .61.

In childhood, Optimism only had weak correlations with Emotional Disturbances (-.16) and Psychosomatic Disturbances (-.13, non significant). In adulthood, the correlation between Optimism and Psychic Anxiety was -.44.

Prediction of adulthood variables (continuous) by childhood variables

In Table 4, 5 and 6, results from stepwise regression analysis are presented. Each adulthood variable (except for Criminality and Alcohol abuse where logistic regression was used) was used separately as dependent variable and all childhood variables were entered stepwise as independent variables. Only the results that describe a different picture than the correlations are presented which means that at least two predictors must enter the equation. Due to the massignificance problem, in these analyses a significance level of .001 is seen as significant and .01 is seen as a tendency.

In adulthood, three variables came out from the analysis, Self Respect, Optimism, and Psychic Anxiety. With Self Respect as dependent variable, 17% of the variance could be explained by the childhood variables Self Perceived Peer-Relations, Self Esteem, Timidity and Aggressiveness. Self-Perceived Peer-Relations and Self-Esteem had the highest Beta-weights (.24 and .27) and Timidity and Aggressiveness can more be seen as tendencies ($p < .01$). A difference from the correlation matrix is that Aggressiveness is in the equation and that Global School Satisfaction, which had the highest correlation with Self-Respect, is not in the equation.

With Optimism as dependent variable, 17% of the variance could be explained by the childhood variables Timidity, Aggressiveness, Self Esteem and Optimism. Aggressiveness and Self-Esteem had the two highest Beta-weights (-.29, .25). Optimism is seen as a tendency. In the correlation matrix, only Optimism in childhood had a significant relationship with Optimism in adulthood.

Table 4: Summary of stepwise regression analysis for childhood variables predicting Self Respect in adulthood (N=189).

Predictor	Self Respect	
	β	R ²
Step 1		
Self perceived peer-relations	.25***	.06***
Step 2		
Self perceived peer-relations	.25***	.11***
Self Esteem	.23***	
Step 3		
Self perceived peer-relations	.22**	.14***
Self Esteem		
Timidity	.22***	
	-.19**	
Step 4		
Self perceived peer-relations	.24***	.17***
Self Esteem		
Timidity	.27***	
Aggressiveness	-.19**	
	.19**	

Note. *p<.05, **p<.01, ***p<.001

Table 5: Summary of stepwise regression analysis for childhood variables predicting Optimism in adulthood (N=191).

Predictor	Optimism	
	β	R ²
Step 1		
Optimism	.25**	.056***
Step 2		
Optimism	.25***	.097***
Timidity	-.21**	
Step 3		
Optimism	.25***	.14***
Timidity	-.22***	
Aggressiveness	-.22**	
Step 4		
Optimism	.19**	.19***
Timidity	-.22***	
Aggressiveness	-.29***	
Self Esteem	.25***	

Note. *p<.05, **p<.01, ***p<.001

Table 6: Summary of stepwise regression analysis for childhood variables predicting **Psychic Anxiety** in adulthood (N=197).

Predictor	Psychic Anxiety	
	β	R ²
Step 1		
Emotional disturbances	.27***	.07***
Step 2		
Emotional disturbances	.27***	.13***
Timidity	.25***	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

With **Psychic Anxiety** as dependent variable, 13% of the variance could be explained by the childhood variables Emotional Disturbances (.27) and Timidity (.25). In the correlation matrix, Timidity only had a weak relationship with **Psychic Anxiety** and significant correlations that are left out of the equation are Psychosomatic Disturbances and Self esteem.

Prediction of Criminality and Alcohol abuse by childhood variables

For the adulthood variables, Criminality and Alcohol abuse (dependent variables) a stepwise (ForwardLR) logistic regression was performed where all childhood variables were entered stepwise as independent variables. The results are presented in Table 7 and 8.

For Criminality, three variables entered the equation, Harmony, Academic Achievement and Aggression. Nagelkerke's R square says that 15.3% of the variance could be explained by the variables. According to the Wald criterion, only Aggression reliably predicted Criminality ($p < .001$). The odds ratio for Aggression was 2.14. Academic Achievement had an odds ratio of .97 which is close to one but has to be seen in relation to the scale ranging from 35-170 (min/max). Harmony also entered the model but was only significant on the 5% level. It had a odds ration of 1.80 which is surprisingly because it means that higher values on Harmony in childhood predicts higher frequency of Criminality in adulthood. The model correctly classified 93.5% of the cases compared to 93.2% in the constant-only model.

For Alcohol abuse, two variables entered the equation, Global School Satisfaction and Self Perceived Peer-Popularity. Nagelkerke's R square indicates that 15.6% of the variance could be explained by the variables. None of the predictors were significant at 0.1% level but Global School Satisfaction was the most reliable predictor with an odds ratio of .30. This is also a unsuspected finding in that Aggressiveness didn't enter the equation. Aggressiveness has been associated with alcohol abuse. The model correctly classified 97.5% of the cases compared to 97.2% in the constant-only model.

. Table 7. Summary of stepwise logistic regression predicting criminality

Criminality	
Independent variables	Exp. of reg. Coeff. (odds coefficient) ¹ N=323
Aggression	2.14***
Academic Achievement	0.97**
Harmony	1.80*
Nagelkerkes R ²	.15***

Note. *p<.05, **p<.01, ***p<.001

. Table 8. Summary of stepwise logistic regression predicting alcohol abuse

Alcohol abuse	
Independent variables	Exp. of reg. Coeff. (odds coefficient) N=323
Global School Satisfaction	0.30**
Self Perceived Peer-Status	0.27*
Nagelkerkes R ²	.16**

Note. *p<.05, **p<.01, ***p<.001

Prediction of adulthood variables by the resilience variables Optimism, Sense of Control and Self-Respect

Stepwise multiple regression analysis were computed to find out if predictions of the other adulthood adaptation variables would be strengthened by the interaction effects of the three variables. Only regression analyses that included an interaction term and in which one or more interaction terms made a significant contribution to the explained R square were considered. The significant level for change in R square was set to 0.1%. The interaction terms were created by first creating dichotomous variables of the three dependent variables indicating high or low values. Values above mean were coded as 1 and values equal to or below mean were coded as 0. The interaction terms were then created by multiplying the different dichotomous variables and thus creating four interaction terms indicating good or average/poor adjustment; Optimism x Sense of Control, Optimism x Self-Respect, Sense of Control x Self-Respect and a three-way interaction term, Optimism x Sense of Control x Self-Respect. The four interactions terms were then included in a stepwise regression analysis together with the original variables of Optimism, Sense of Control and Self Respect.

The analysis resulted in one prediction where one interaction term made a significant contribution to the explained variance (R square). The dependent variable was Positive Affect. The results are presented in Table 9 and shows that Self-Respect and Optimism were the strongest predictors of Positive Affect but that the interaction effect between Optimism and Sense of Control also entered the equation with a Beta-weight of .21 ($p < .001$). The interaction term should be interpreted in the way that when moving from the group coded at or below average in both terms to the group with above average in both terms the dependent variable Positive Affect increases by Beta. This means that that when high levels of Optimism and Sense of Control occur together their additive effect in addition to their separate effects on positive affect increases. The three variables together explained 43% of the variance in Positive Affect.

Table 9. Summary of stepwise regression analyses for Optimism, Sense of Control and Self-Respect, including interaction effects, predicting Positive Affect in adulthood (N=314).

Predictor	Positive Affect	
	β	R ²
Step 1		
Optimism	.59***	.34***
Step 2		
Optimism	.39***	.40***
Self-Respect	.32***	
Step 3		
Optimism	.28***	.43***
Self-Respect	.31***	
Optimism x Sense of Control	.21***	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Person-oriented analysis

In contrast to the variable oriented analysis, the person oriented analysis focuses on finding typical patterns, which in this study refers to patterns of positive and negative adjustment. To find typical patterns, cluster analysis using the LICUR method was performed. Separate cluster analysis were carried out for the intrinsic and extrinsic areas in both childhood and adulthood. Linking of clusters was done thru cross-tabulation of the different cluster solutions. In addition to this, cluster analyses were done for three indicators of Global School Adjustment in childhood. These clusters were then validated and compared in relation to their intrinsic and extrinsic adjustment, cognitive functioning, and sociodemographic status.

Typical patterns of positive and negative adaptation

Below, the results from the four cluster analyses describing typical patterns of positive and negative adaptation are presented. Only those cluster describing distinct positive and negative adaptation patterns are described but all clusters are presented in Figure 2-5 and Table 10-13.

Intrinsic area in childhood

For the intrinsic area in childhood an 11-cluster solution was chosen which explained 50.7% of the total error sum of squares (EES). In Figure 2 and Table 10 the variable profiles of the 11 clusters are presented with the means for each variable (=cluster centroids) along with the size of the cluster and a measure of the cluster homogeneity (=hc).

Based on the correlation matrix, no overall positive typical adaptation pattern was expected. Nevertheless, in Figure 2, one overall positive adaptation pattern emerges in Cluster 1 except for Optimism which lies just above mean, but this should be interpreted in relation to the fact that Optimism has a high mean value ($M=5.58$, $SD=1.24$, on a 7-point scale). The cluster was characterized by high Global School Satisfaction, Harmony and Self-Esteem and low in Emotional- and Psychosomatic Disturbances and Timidity. Harmony and Timidity are both teachers' ratings and Emotional- and Psychosomatic Disturbances and Self-Esteem are from the same questionnaire which in part explains their internal relations.

A second multi positive typical adjustment pattern was also found, represented by Cluster 2. It was characterized by being low in Emotional- and Psychosomatic Disturbances and high in Self-Esteem but was also high in Optimism. These last two indicators, Self-Esteem and Optimism, are often described as part of a personal resilience construct (Mäkikangas, Kinnunen & Feldt, 2004) with links to, for example, better mental and Physical Health. Interestingly, this cluster is characterized by being high on Timidity and below mean on Harmony. Timidity had almost zero correlations with the other intrinsic indicators except for Harmony where the correlation was negative.

A high level of Timidity is normally seen as an internalizing adjustment problem with negative consequences for example self-esteem, peer relations and scholastic achievement (Stöckli, 2002), but in this cluster the girls Self-Esteem was high. It seems though that the disadvantages are greater for boys than girls (Stöckli, 2002). But Timidity is also described by for example Wängby, Bergman and Magnusson (1999) as a potential protective factor, for problems like externalizing problems in early adolescence and criminality in adulthood. In this second positive adaptation cluster one other difference in comparison to the first cluster is that Global School Satisfaction is around mean. In Cluster 1 it was above mean.

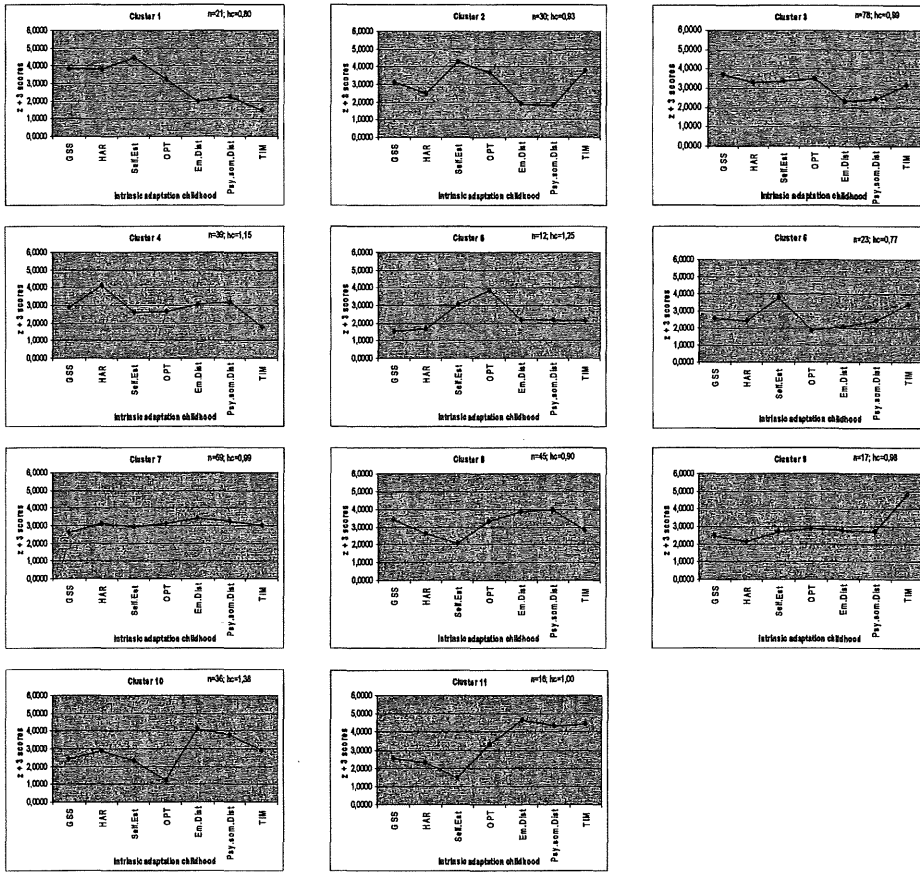


Figure 2. Cluster means for the cluster solution for intrinsic adaptation in childhood. *Notes:* GSS=Global School Satisfaction; HAR=Harmony; Self.Est=Self-Esteem; OPT=Optimism; Em.Dist=Emotional Disturbances; Psy.som.Dist=Psychosomatic Disturbances; TIM=Timidity.

Table 10. Cluster solution for intrinsic adaptation in childhood

	GSS	HAR	Self.Est	OPT	Em.Dist	Psy.som.Dist	TIM	Homogeneity
	z+3 scores	z+3 scores	z+3 scores	z+3 scores	z+3 scores	z+3 scores	z+3 scores	Coef.
Cluster 1	3,84	3,84	4,46	3,22	1,98	2,25	1,49	0,80
Cluster 2	3,13	2,50	4,27	3,68	1,90	1,81	3,81	0,93
Cluster 3	3,70	3,28	3,38	3,53	2,33	2,46	3,16	0,99
Cluster 4	2,88	4,10	2,61	2,65	3,06	3,20	1,74	1,15
Cluster 5	1,52	1,68	3,03	3,84	2,18	2,17	2,13	1,25
Cluster 6	2,58	2,42	3,76	1,84	2,11	2,41	3,36	0,77
Cluster 7	2,63	3,12	2,94	3,16	3,46	3,29	3,04	0,99
Cluster 8	3,44	2,64	2,08	3,32	3,88	3,99	2,84	0,90
Cluster 9	2,50	2,18	2,72	2,93	2,82	2,73	4,84	0,98
Cluster 10	2,38	2,88	2,29	1,21	4,10	3,78	2,92	1,38
Cluster 11	2,53	2,28	1,45	3,33	4,67	4,34	4,41	1,00
Explained variance	60,69							

Several typical negative adaptation patterns were found. Cluster 11 was characterized by describing the opposite picture to Cluster 1. That is, poor adaptation in all indicators except in Optimism which lies around its mean value. Global School Satisfaction is also just around 0.5 standard deviation (sd) below mean, so even the girls with an overall negative adjustment pattern are not really dissatisfied with school. Timidity, Emotional Disturbances, Psychosomatic Disturbances and Self-Esteem lays more than one standard deviation on the negative side of their adaptation scale but Harmony lies less than one standard deviation below mean. Cluster 10 differs from Cluster 11 in that Optimism is well below the mean (1.8 sd) and Timidity and Harmony are around the mean. Self-Esteem is still on the negative side which then together with Optimism creates poor adjustment in the resilience construct described above. Global School Satisfaction is the same as in Cluster 11. Cluster 10 also has a homogeneity coefficient of 1.38 which makes it a quite heterogeneous cluster. Other clusters with negative adaptation patterns are Cluster 8 which have a pattern of low Self-Esteem and high on Emotional- and Psychosomatic Disturbances, which could be expected from the correlation matrix, and Cluster 9 which is very high on Timidity and below mean in Harmony and can be described as an introverted cluster.

Extrinsic area in childhood

For the extrinsic area in childhood an 11-cluster solution was chosen which explained 51.7% of the total error sum of squares (EES). In Figure 3 and Table 11 the variable profiles of the 11 clusters are presented.

No strong overall typical positive adaptation pattern was found for the extrinsic area. Cluster 1 describes the most positive adjustment pattern with values above mean (but less than one standard deviation) in Academic achievement, Peer-Relations, Self perceived Peer-Relations, Social relations to parents and School Motivation. The cluster is also low in Aggression and around mean in Anti-Social Behaviour. The picture is not contradictory or unexpected to the results from the correlation matrix.

There is one cluster that has a higher value on Academic Achievement, namely Cluster 3. Cluster 3 is also, as expected, high in School Motivation and below mean in Aggression but at the same time low in Peer-Relations. These girls could be described as good and diligent in school but a bit outside when it comes to the social life.

On the negative side, Cluster 11 is characterized by describing the opposite picture to Cluster 1 with low values in Academic achievement, Peer-Relations, Self-Perceived Peer-Relations, Social Relations to Parents and School Motivation and high in Aggression and around mean in Anti-Social Behaviour.

Cluster 10 also describes a picture of poor adjustment with low Academic Achievement, Social Relation to Parents and very poor adjustment in Anti-Social Behaviour but with good Peer-Relations. One can guess that these girls make up a group with good peer

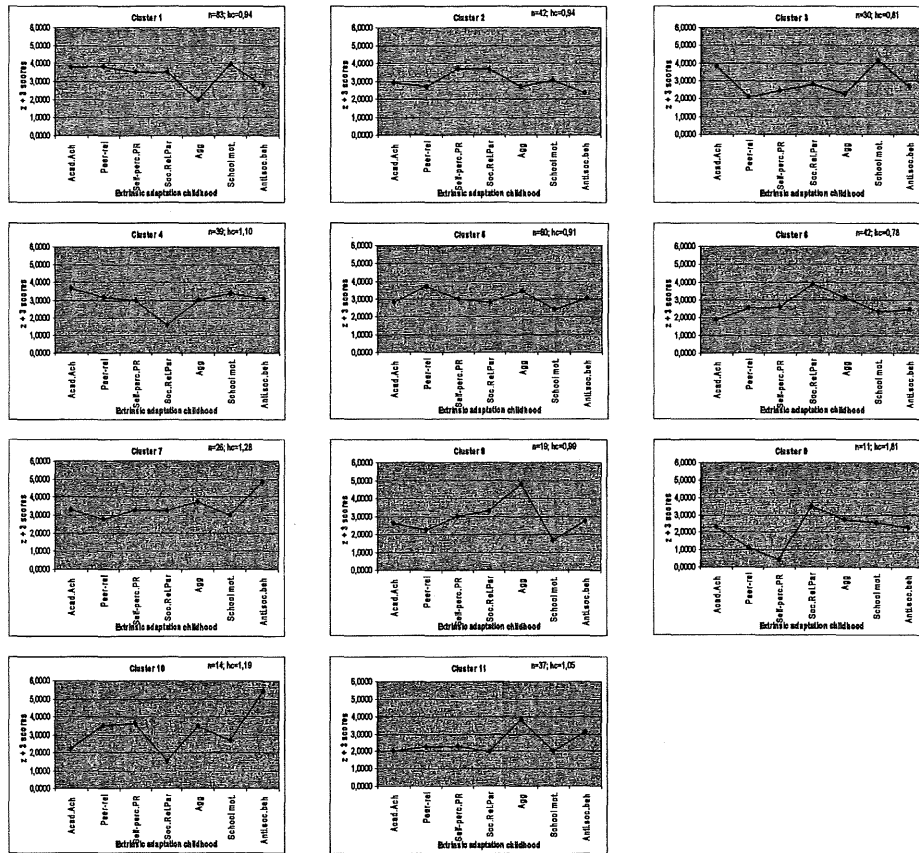


Figure 3. Cluster means for the cluster solution for extrinsic adaptation in childhood. *Notes:* Acad.Ach=Academic Achievement; Peer-rel=Peer-Relations; Self.perc.PR=Self-Perceived Peer-Relations; Soc.Rel.Par=Social Relations to Parents; Agg=Aggression; School.mot=School Motivation; Anti.soc.beh=Antisocial behaviour.

Table 11. Cluster solution for extrinsic adaptation in childhood

	Acad.Ach z+3 scores	Peer.rel z+3 scores	Self.Perc.PR z+3 scores	Soc.Rel.Par z+3 scores	Agg z+3 scores	School mot. z+3 scores	Anti.soc.beh z+3 scores	Homogeneity Coef.
Cluster 1	3,77	3,84	3,51	3,54	1,99	3,97	2,79	0,94
Cluster 2	2,93	2,72	3,70	3,69	2,70	3,09	2,33	0,94
Cluster 3	3,86	2,12	2,46	2,82	2,28	4,15	2,70	0,81
Cluster 4	3,64	3,14	2,96	1,58	3,01	3,37	3,05	1,10
Cluster 5	2,83	3,71	3,00	2,84	3,44	2,42	3,03	0,91
Cluster 6	1,90	2,56	2,59	3,88	3,12	2,33	2,44	0,78
Cluster 7	3,30	2,76	3,30	3,28	3,73	3,00	4,83	1,28
Cluster 8	2,60	2,25	3,02	3,35	4,78	1,68	2,77	0,99
Cluster 9	2,34	1,15	0,45	3,54	2,77	2,57	2,31	1,81
Cluster 10	2,20	3,53	3,61	1,50	3,46	2,66	5,40	1,19
Cluster 11	2,00	2,22	2,30	1,95	3,79	2,02	3,12	1,05
Explained variance	51,74							

relations but with problems at home and in school. Interestingly though, their School Motivation is just below mean and they are just above mean in Aggression.

Cluster 8 is characterized by being high in Aggression and low in School Motivation and below the mean in Peer-Relations, a finding that could be expected from the correlation matrix. But the value for Academic Achievement is just below mean, a value that could be expected to be lower when looking at the correlation matrix. The other indicators are around mean. Noticeable here is that these girls have a tendency to rate their Self-Perceived Peer Relations higher than the rank-ordering nominations from their friends. This is in line with Hughes, Cavell and Grossman (1997) who shows that aggressive children tends to overestimate their relationship quality and this overestimation is not described as a positive and protective factor but as a defensive mechanism to defend against insecurity in a process called defensive exclusion. Social Relations to Parents' are just above mean in this cluster. One can speculate in if this works as a buffer for these children against problems in school, because these girls are doing fairly well in school considering their low School Motivation and high Aggressiveness, and also for Anti-Social Behaviours, or if it is an overestimation which according Hughes, Cavell and Grossman (1997) also is a tendency of aggressive children.

Intrinsic area in adulthood

For the intrinsic area in adulthood an 11-cluster solution was chosen which explained 61.0% of the total error sum of squares (EES). In Figure 4 and Table 12 the variable profiles of the 11 clusters are presented with the means for each variable (=cluster centroids) along with the size of the cluster and a measure of the cluster homogeneity (=hc). Based on the correlation matrix with high inter-correlations between the different indicators, an overall positive adaptation pattern could be expected.

One overall positive adaptation pattern was also found, represented by Cluster 1 in Figure 4 and it is a homogenous cluster (hc=0.69). It is characterized then by high values in Global Life Satisfaction, Positive Affect, Self-Respect, Optimism, Sense of Control and Sense of Coherence and low values in Negative Affect and Psychic Anxiety. As described before Self-Respect, Optimism (when seen as a favourable orientation to the future) and Sense of Control are often described in the resilience literature as “[...] key elements in understanding mental health functioning” (Mäkikangas et al., 2004 p. 556). This cluster have the highest subjective well-being (high Global Life Satisfaction and Positive Affect and low Negative Affect) and the lowest value in Psychic Anxiety. This would be expected both from the correlation matrix and from the literature. In resilience research one refers to resilience as “a dynamic process encompassing positive adaptation within the context of significant adversity” (Luthar et al., 2000 p. 543). From the view of positive adaptation in a more general sense it is interesting to see if these constructs, important for resilience, also have a more general importance for a good life.

A second multi typical positive adaptation pattern was found, represented by Cluster 2. It is characterized by high values in Self-Respect, Optimism, Sense of Coherence and Global

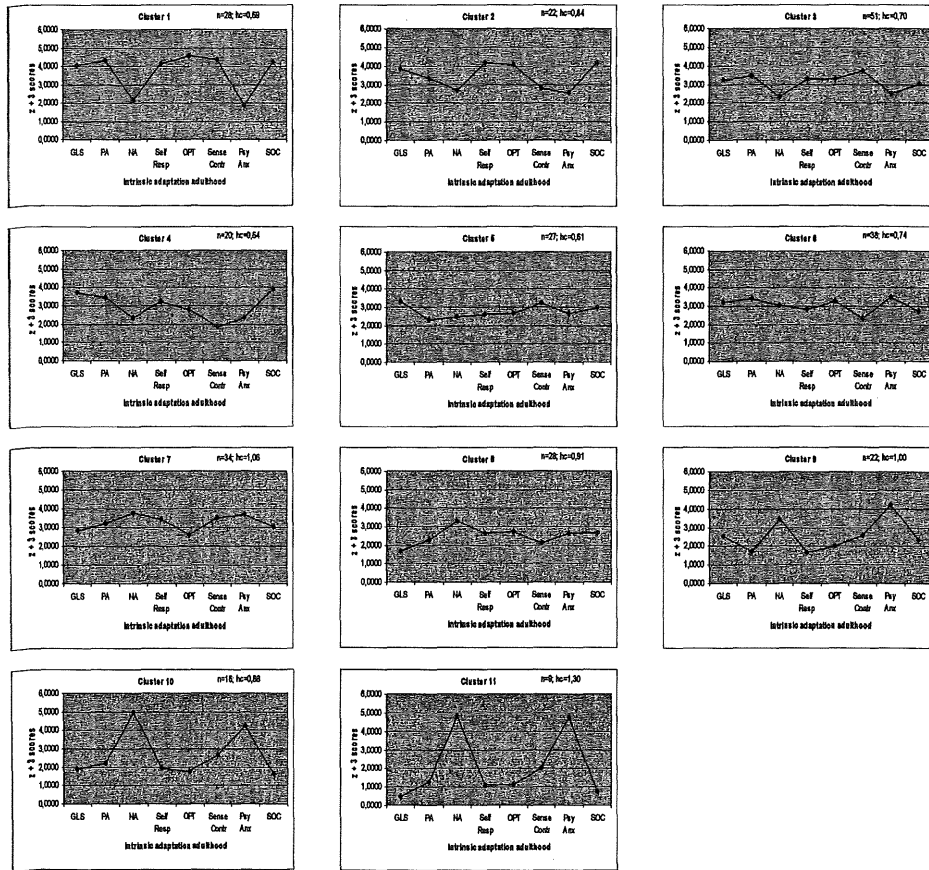


Figure 4. Cluster means for the cluster solution for intrinsic adaptation in adulthood. *Notes.* GLS=Global Life Satisfaction; PA=Positive Affect; NA=Negative Affect; Self Resp=Self Respect; OPT=Optimism; Sense Contr=Sense of Control; Psy Anx=Psychic Anxiety; SOC=Sense of Coherence.

Table 12. Cluster solution for intrinsic adaptation in adulthood

	GLS	PA	NA	Self Resp.	OPT	Sense Contr	Psyc.Anx	SOC	Homogeneity
	z+3 scores	z+3 scores	z+3 scores	z+3 scores	z+3 scores	z+3 scores	z+3 scores	z+3 scores	Coef.
Cluster 1	4,06	4,32	2,14	4,15	4,57	4,36	1,81	4,24	0,69
Cluster 2	3,86	3,35	2,66	4,15	4,08	2,82	2,55	4,15	0,84
Cluster 3	3,26	3,47	2,33	3,30	3,30	3,74	2,51	3,02	0,70
Cluster 4	3,70	3,44	2,35	3,22	2,79	1,85	2,32	3,87	0,64
Cluster 5	3,30	2,28	2,48	2,62	2,65	3,23	2,63	2,94	0,61
Cluster 6	3,22	3,40	3,06	2,82	3,28	2,35	3,49	2,73	0,74
Cluster 7	2,83	3,22	3,79	3,42	2,62	3,52	3,69	3,03	1,06
Cluster 8	1,67	2,28	3,30	2,66	2,73	2,11	2,65	2,63	0,91
Cluster 9	2,54	1,69	3,47	1,68	2,03	2,56	4,20	2,32	1,00
Cluster 10	1,89	2,21	4,94	1,96	1,78	2,64	4,24	1,65	0,88
Cluster 11	0,47	1,25	4,83	1,09	1,13	2,00	4,72	0,75	1,30
Explained variance	60,97								

Life Satisfaction and above mean in Positive Affect. Psychic Anxiety is below mean and the other indicators around mean. In comparison to Cluster 1 only two out of the three indicators in the resilience construct have a high value, that is Optimism and Self-Respect. From the correlation matrix with strong correlations between Optimism and Self-Respect in relation to Positive Affect and Psychic Anxiety one might have expected more positive values in the last two due to the high values in Optimism and Self-Respect.

Several negative clusters were found. Cluster 11 paints the most negative picture and describes poor adaptation in all indicators. It is noticeable though that it is a heterogeneous cluster ($hc=1.30$). It is the opposite to Cluster 1 but with more extreme values in all indicators but Sense of Control. Cluster 10 represents a similar pattern as Cluster 11 but with less extreme values in all indicators but Negative Affect which is very high in both. It is also a more homogeneous cluster ($hc=0.88$). The only indicator that is around the mean (just below) in Cluster 10 is Sense of Control.

Cluster 9 describes a cluster with low values in Self-Respect, Optimism and Positive Affect and high in Psychic Anxiety. Global Life Satisfaction, Sense of Control and Sense of Coherence are below mean and Negative Affect above mean but all less than one standard deviation. It then describes an overall negative adaptation pattern but not as extreme as Cluster 10 and 11.

Cluster 8 could be described as an unhappy cluster with low Global Life Satisfaction and below mean in Positive Affect but around mean in Psychic Anxiety and Negative Affect. Interestingly, Optimism and Self-Respect are just below mean despite low Global Life Satisfaction which has strong correlations with both indicators.

Extrinsic area in adulthood

For the extrinsic area in adulthood a 10-cluster solution was chosen which explained 58.1% of the total error sum of squares (EES). In Figure 5 and Table 13 the variable profiles of the 10 clusters are presented with the means for each variable (=cluster centroids) along with the size of the cluster and a measure of the homogeneity (=hc).

Based on the correlation matrix, no special adaptation patterns were expected. One overall positive adaptation pattern was found (Cluster 1) but only two of the indicators were more than one standard deviation from the mean value. The cluster is characterized by being high in Social Relations to Friends and Relatives and low in Aggressive Nonconformity. Academic Achievement, Social Relation to Partner and Physical Health are all above mean. Cluster 2 describes a similar pattern but with higher values in Academic achievement and Physical Health and low in Social Relations to Friends and Relatives.

No overall negative adaptation pattern was found. Cluster 7 describes a cluster that probably is composed of individuals with some kind of sickness because it's very low in Physical Health and otherwise with values around mean.

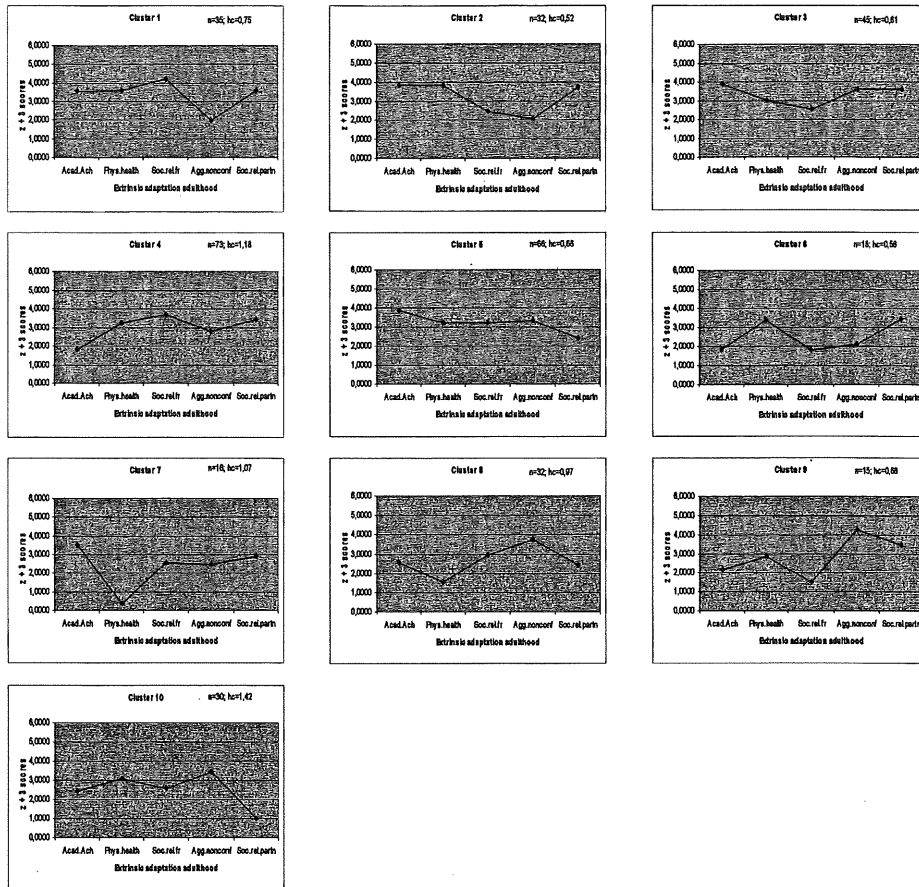


Figure 5. Cluster means for the cluster solution for extrinsic adaptation in adulthood. *Notes.* Acad.Ach=Academic Achievement; Phys.health=Physical Health; Soc.rel.fr=Social Relations to Friends and Relatives; Agg.nonconf=Aggressive Nonconformity; Soc.rel.partn=Social Relation to Partner.

Table 13. Cluster solution for extrinsic adaptation in adulthood

	Acad.Ach z+3 scores	Phys.health z+3 scores	Social rel. fr.rel z+3 scores	Agg.nonconf z+3 scores	Soc.rel.partn z+3 scores	Homogeneity Coef.
Cluster 1	3,54	3,59	4,22	1,95	3,60	0,75
Cluster 2	3,81	3,83	2,47	2,05	3,72	0,52
Cluster 3	3,85	3,04	2,53	3,61	3,61	0,61
Cluster 4	1,83	3,25	3,67	2,79	3,43	1,18
Cluster 5	3,89	3,22	3,20	3,35	2,43	0,66
Cluster 6	1,86	3,41	1,81	2,14	3,41	0,56
Cluster 7	3,50	0,35	2,56	2,47	2,92	1,07
Cluster 8	2,55	1,55	2,95	3,75	2,43	0,97
Cluster 9	2,16	2,83	1,47	4,27	3,45	0,68
Cluster 10	2,44	3,08	2,54	3,44	1,01	1,42
Explained variance	58,10					

Cluster 8 also has low Physical Health and is further characterized by above mean in Aggressive Nonconformity and below mean in Academic achievement and Social Relation to Partner. Cluster 9 is low in Academic Achievement and Social Relations to Friends and Relatives and has the highest value in Aggressive Nonconformity but it is above mean in Social Relation to Partner. Finally, Cluster 10 is characterized by being very low value in Social Relation to Partner and below mean in Academic achievement but otherwise with values around mean. However, it is a heterogeneous cluster ($hc=1.42$).

Linking of patterns within each age group

Figure 6-10 shows combinations of cluster membership in childhood and adulthood and longitudinal streams between childhood and adulthood that are more frequent than expected by chance. It was expected that positive adaptation patterns would connect more frequently than expected to other positive adaptation patterns and the same for negative adaptation patterns. The criteria for being classified as a positive or negative cluster is that the cluster has at least three indicators defining it as positive or negative cluster (have high or low values). Therefore the significant level for these combinations was set to 5% and for the rest of the combinations the significant level was set to 0.1%. Because there are many clusters, most clusters are small which gives low power. So if the sample would have been larger, more significant combinations and streams would probably have been found.

Linking between intrinsic and extrinsic areas in childhood

Figure 6 shows significant cluster combinations between intrinsic and extrinsic areas in childhood. As can be seen and contrary to what was expected, only one significant combination was found and that was between Cluster 8 in the intrinsic area and Cluster 10 in the extrinsic area. This combination was 2.9 times more frequent than expected by chance ($p<.05$). Both of these clusters are characterized by negative adaptation patterns where the girls in Cluster 8 have internalizing problems (low Self-Esteem and high Emotional- and Psychosomatic Disturbances) but they are quite satisfied with school. The girls in Cluster 10 have problems with Antisocial Behaviours and low Academic Achievement. Further, Social Relations to Parents are low but Peer-Relations and Self-perceived Peer-Relations are above average.

Linking between intrinsic and extrinsic areas in adulthood

Figure 7 shows significant cluster combinations between intrinsic and extrinsic areas in adulthood. Two combinations between positive adaptation patterns and one combination between negative adaptations patterns were found. The first was between Cluster 1 in the intrinsic area and Cluster 1 in the extrinsic area and the combination was 2,7 times more frequent than expected by chance ($p<.01$).

Cluster 1 in the intrinsic area was characterized by an overall well adjusted pattern and Cluster 1 in the extrinsic was the most positive adaptation pattern even if the positive adaptation patterns weren't as distinct as in the intrinsic area. But the combination shows that there are individuals that are characterized by an overall positive adaptation pattern.

Cluster membership childhood, intrinsic adaptation

- 1. Overall Well adjusted
n=20
- 2. High Self-Esteem & above average Optimism. Low internalizing problems. Above average Timidity.
n=26
- 3. Satisfied with school. Low Internalizing problems
n=70
- 4. Outgoing (high on Harmony & low on Timidity)
n=34
- 5. Optimistic & low internalizing problems. Low School satisfaction, Harmony & Timidity.
n=9
- 6. High Self-Esteem & low Internalizing problems. Low optimism.
n=23
- 7. Average adjusted
n=67
- 8. Internalizing problems & low Self-Esteem
n=40
- 9. Timid girls
n=14
- 10. Low Optimism. Internalizing problems. Below average Self-Esteem.
n=31
- 11. Low Self-Esteem & high Timidity with internalizing problems.
n=13

Cluster membership childhood, extrinsic adaptation

- 1. Well adjusted, non-aggressive.
n=74
- 2. Average adjusted
n=39
- 3. High School Motivation & Academic achievement. Weak Peer-Relations & low Aggression.
n=27
- 4. Poor Relations to parents
n=32
- 5. Average adjusted
n=53
- 6. Poor Academic Achievement & below average in School Motivation. Good Relations to parents.
n=38
- 7. Anti social behaviours.
n=25
- 8. High Aggression & low School Motivation. Below average Peer-Relations.
n=14
- 9. Poor Peer-Relations.
n=7
- 10. Antisocial behaviours & low Academic achievement. Poor Relations to parents but above average to friends.
n=12
- 11. Over all Poor adjustment except Antisocial behaviour.
n=26

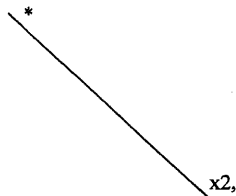


Figure 6. Significant cluster membership combinations between the intrinsic and extrinsic area in childhood. Numbers on arrows indicate how many more times frequent a combination of cluster membership is from what is expected. For test of significance, an exact 1-tailed hypergeometric test was used. * n < .05. ** n < .01. *** n < .001.

Cluster membership childhood, intrinsic adaptation

1. Overall Well adjusted
n=10
2. High Self-Esteem & above average Optimism. Low internalizing problems. Above average Timidity.
n=19
3. Satisfied with school. Low Internalizing problems
n=40
4. Outgoing (high on Harmony & low on Timidity)
n=21
5. Optimistic & low Internalizing problems. Low School Satisfaction, Harmony & Timidity.
n=5
6. High Self-Esteem & low internalizing problems. Low optimism.
n=7
7. Average adjusted
n=38
8. Internalizing problems & low Self-Esteem
n=20
9. Timid girls
n=11
10. Low Optimism. Internalizing problems. Below average Self-Esteem.
n=18
11. Low Self-Esteem & high Timidity with Internalizing problems.
n=7

Cluster membership adulthood, intrinsic adaptation

1. Overall Well adjusted.
n=21
2. Well adjusted. High on Global Life Satisfaction, Self-Respect, Optimism & Sense of Coherence
3. Slightly above average. Peaks on low Negative Affect & Sense of Control.
n=27
4. High Sense of Coherence & above average Subjective well-being. Low Sense of Control.
n=12
5. Slightly below average adjusted
n=25
6. Average adjusted but below average on Sense of Control.
n=26
7. Worried (above average on Negative Affect and Psychic Anxiety).
n=20
8. Low on Global Life Satisfaction & below average on Positive Affect & Sense of Control
n=16
9. Low Self-Respect, Optimism & Positive Affect. High Psychic Anxiety. Below average Sense of Coherence.
n=18
10. Low Subjective well-being, Self-Respect, Optimism & Sense of Coherence. High Psychic Anxiety.
n=8
11. Overall poor adjustment
n=7

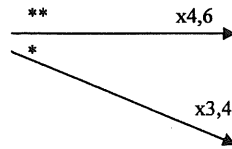
* x2,5

* x4,1

Figure 8. Significant longitudinal streams between cluster membership in childhood, intrinsic area, and in adulthood, intrinsic area. Numbers on arrows indicate how many more times frequent a combination of cluster membership is from what is expected. For test of significance, an exact 1-tailed hypergeometric test was used. * $p < .05$, ** $p < .01$, *** $p < .001$.

**Cluster membership childhood,
intrinsic adaptation**

1. Well adjusted n=11
2. High Self-Esteem & above average Optimism. Low Internalizing problems. Above average Timidity. n=19
3. Satisfied with school. Low Internalizing problems n=44
4. Outgoing (high on Harmony & low on Timidity) n=24
5. Optimistic & low internalizing problems. Low School Satisfaction, Harmony & Timidity. n=7
6. High Self-Esteem & low internalizing problems. Low Optimism.
7. Average adjusted n=37
8. Internalizing problems & low Self-Esteem n=21
9. Timid girls n=11
10. Low Optimism. Internalizing problems. Below average Self-Esteem. n=15
11. Low Self-Esteem & high Timidity with internalizing problems. n=9


**Cluster membership adulthood,
extrinsic adaptation**

1. Well adjusted. Peaks on Good relations to Friends & relatives & low Aggressive Nonconformity. n=21
2. Well adjusted. High Academic Achievement & Physical Health. Low Aggressive Nonconformity. Above average Relations to partner. n=17
3. High Academic achievement. Above average Aggressive nonconformity & Relations to partner. n=25
4. Low Academic Achievement. n=40
5. High Academic achievement. Below average Relations to partner. n=45
6. Low Academic achievement, Relations to friends & relatives. Low Aggressive Nonconformity. n=7
7. Very bad Physical Health. n=9
8. Bad Physical Health. Above average Aggressive nonconformity. n=17
9. High Aggressive nonconformity. Poor Relations to Friends & relatives. Low Academic Achievement n=12
10. Poor Relations to partner. n=18

Figure 9. Significant longitudinal streams between cluster membership in childhood, intrinsic area, and in adulthood, extrinsic area. Numbers on arrows indicate how many more times frequent a combination of cluster membership is from what is expected. For test of significance, an exact 1-tailed hypergeometric test was used. * $p < .05$, ** $p < .01$, *** $p < .001$.

Cluster 10 in childhood is characterized by internalizing problems with low in Optimism and below average in Self-Esteem. Cluster 10 in adulthood is characterized by low subjective well-being, Self-Respect, Optimism and Sense of Coherence and high in Psychic Anxiety. Both clusters then show poor adaptation in the resilience pair of Optimism and Self-Esteem/Self-Respect and both have internalizing problems.

Streams between intrinsic area in childhood and extrinsic area in adulthood

Figure 9 shows significant longitudinal streams between the intrinsic area in childhood and the extrinsic area in adulthood. Two significant streams were found, both describing streams between positive adaptation patterns. The first stream was between Cluster 1 in childhood and Cluster 1 in adulthood and this combination was 4.6 times more frequent than expected by chance ($p < .01$). Cluster 1 in childhood describes an overall positive adaptation pattern, except for Optimism which lies around mean and Cluster 1 in adulthood is also an overall positive cluster.

The second stream was also from Cluster 1 in childhood and to Cluster 2 in adulthood and this combination was 3.4 times more frequent the expected by chance ($p < .05$). Cluster 2 in adulthood is a bit higher than Cluster 1 in Academic Achievement and Physical Health but much lower in Relations to Friends and Relatives. Compared to the linking between the intrinsic area in childhood and the intrinsic instead of extrinsic area in adulthood, no significant streams were found between Cluster 2 in childhood and positive clusters in adulthood. So, Cluster 1 in childhood is only linking to the extrinsic area in adulthood and Cluster 2 in childhood is only linking to the intrinsic area in adulthood which means that no single positive cluster in childhood is linking to both the intrinsic and extrinsic area in adulthood.

Streams between extrinsic area in childhood and extrinsic area in adulthood

Figure 10 shows significant streams between the extrinsic area in childhood and the extrinsic area in adulthood. Two significant streams were found, one positive and one negative. The first stream was between Cluster 1 in childhood and Cluster 1 in adulthood and this combination was 1.8 times more frequent than expected by chance ($p < .05$). Cluster 1 in childhood describes a well-adjusted pattern with low Aggression and high School Motivation and Cluster 1 in adulthood also describes a well adjusted pattern with high in Social Relations to Friends and Relatives and low in Aggressive Nonconformity.

The second stream was between Cluster 11 in childhood and Cluster 8 in adulthood and this combination was 4.6 times more frequent than expected by chance ($p < .001$). Cluster 11 describes an overall negative adaptation pattern except for Anti-Social Behaviour and Cluster 8 is characterized by poor Physical Health and above average in Aggressive Nonconformity. This tells a different picture then the correlation matrix where Physical Health in adulthood show almost zero correlations with all extrinsic indicators in childhood and Aggressive Nonconformity in adulthood only show a significant correlation with Anti-Social Behaviour in childhood.

**Cluster membership childhood,
extrinsic adaptation**

1. Well adjusted, non-aggressive. n=51
2. Average adjusted n=29
3. High School Motivation & Academic achievement. Weak Peer- Relations & low aggression. n=16
4. Poor Relations to parents n=19
5. Average adjusted n=36
6. Poor Academic achievement & below average in School Motivation. Good Relations to parents. n=16
7. Anti social behaviours. n=15
8. High Aggression & low School Motivation. Below average Peer- Relations. n=12
9. Poor Peer-Relations. n=5
10. Antisocial behaviours & low Academic achievement. Poor Relations to parents but above average to friends.
11. Over all poor adjustment except Antisocial behaviour. n=16

**Cluster membership adulthood,
extrinsic adaptation**

1. Well adjusted. Peaks on Good relations to Friends & relatives & low Aggressive nonconformity. n=24
2. Well adjusted. High Academic achievement & Physical Health. Low aggressive nonconformity. Above average Relations to partner. n=18
3. High Academic achievement. Above average Aggressive nonconformity & relations to partner. n=28
4. Low academic achievement. n=40
5. High Academic achievement. Below average Relations to partner. n=47
6. Low Academic achievement, Relations to friends & relatives. Low Aggressive nonconformity. n=8
7. Very bad Physical Health. n=9
8. Bad Physical Health. Above average Aggressive nonconformity. n=18
9. High Aggressive nonconformity. Poor relations to Friends & relatives. Low Academic achievement n=10
10. Poor Relations to partner. n=19

* x1,8

x4,6

Figure 10. Significant longitudinal streams between cluster membership in childhood, extrinsic area, and in adulthood, extrinsic area. Numbers on arrows indicate how many more times frequent a combination of cluster membership is from what is expected. For test of significance, an exact 1-tailed hypergeometric test was used. * $p < .05$, ** $p < .01$, *** $p < .001$.

Streams between extrinsic area in childhood and intrinsic area in adulthood

No significant streams were found between these areas.

Typical patterns of Global School Adjustment in childhood

Three measures were used to assess Global School Adjustment, namely Academic Achievement, Global School Satisfaction, and School Motivation. These variables were cluster analysed to find typical patterns of Global School Adjustment. The different clusters were then validated and compared on indicators measuring intrinsic and extrinsic adjustment, cognitive functioning (intelligence), and sociodemographic status using two-tailed t-test of independent samples. The reason for this was to see if the clusters differed on these indicators in an attempt to increase the understanding behind the different typical adjustment patterns from the cluster solution.

For Global School Adjustment in childhood, an 8-cluster solution was chosen which explained 72.3% of the total error sum of squares (EES) which indicates a fairly homogenous cluster solution. In Figure 11 and Table 14 the variable profiles of the 8 clusters are presented with the means for each variable (=cluster centroids) along with the size of the cluster and a measure of the cluster homogeneity (=hc).

One overall distinctive typical positive adaptation pattern was found in Cluster 1. It was characterized by high Academic Achievement and School Motivation (both values were the highest of all clusters) and above mean in Global School Satisfaction. The cluster with the second highest value in Academic Achievement, Cluster 3, was characterized by being above mean in School Motivation but low in Global School Satisfaction. Noticeable is that the two clusters with the highest values in Academic Achievement didn't have the highest values in Global School Satisfaction and Cluster 3 even had one of the lowest values. Further on the positive side, Cluster 2 described a cluster with high in School Motivation and above mean in Global School Satisfaction and around mean in Academic Achievement. Cluster 4 had the highest value on Global School Satisfaction but low on School Motivation and below mean in Academic Achievement.

On the negative side, Cluster 8 shows the most negative typical adaptation pattern with low in Academic Achievement and School Motivation and very low in Global School Satisfaction. Cluster 7 also described an overall negative adaptation pattern and Cluster 6 describes a pattern with very low Academic Achievement and low School Motivation but around the mean in Global School Satisfaction. Cluster 5 described a typical pattern with all indicators around mean.

For validation of the cluster solution and for comparison purposes, a reference cluster was chosen (Cluster 5) characterized as describing a "normal" cluster. The clusters were compared in relation to the "normal" cluster in intelligence, intrinsic and extrinsic adjustment and sociodemographic status using a two-tailed t-test for independent samples. Significant levels of 0.1% were seen as significance and 1% as a tendency.

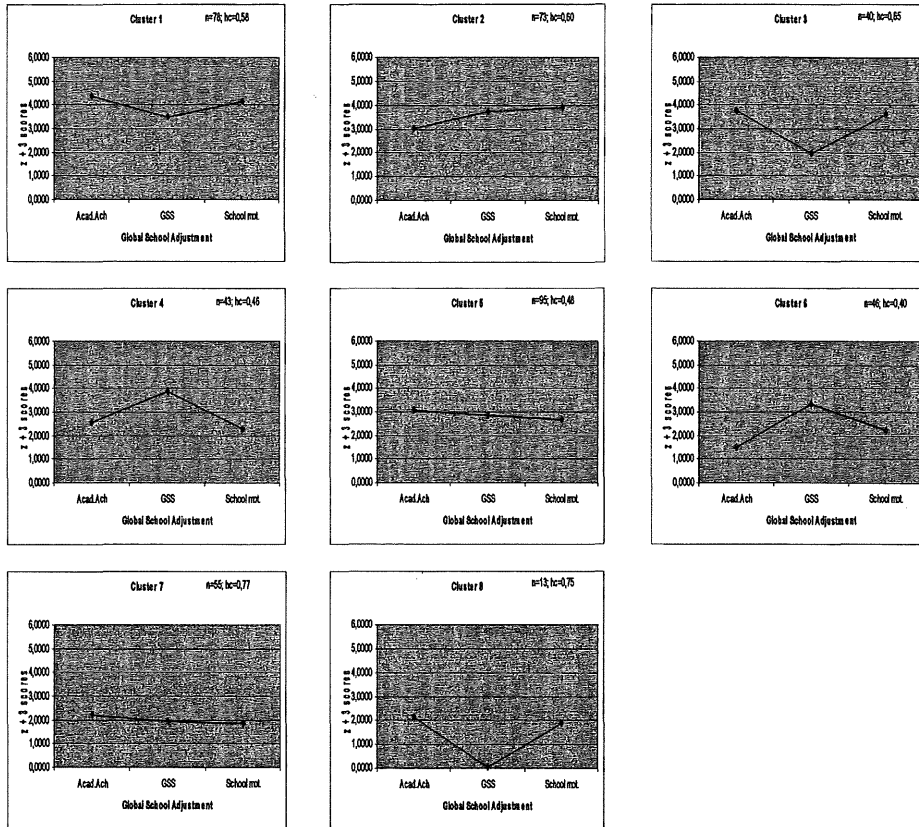


Figure 11. Cluster means for the cluster solution for Global School Adjustment in childhood. *Notes:* Acad.Ach=Academic Achievement; GSS=Global School Satisfaction; School.mot=School Motivation.

Table 14. Cluster means for the cluster solution for Global School Adjustment in childhood

	Acad.Ach z+3 scores	GSS z+3 scores	School mot. z+3 scores	Homogeneity Coef.
Cluster 1	4,3475	3,4889	4,1260	0,5792
Cluster 2	3,0278	3,7440	3,9137	0,5950
Cluster 3	3,7559	1,9603	3,6013	0,6525
Cluster 4	2,5656	3,8802	2,3154	0,4577
Cluster 5	3,0768	2,8582	2,6704	0,4794
Cluster 6	1,5116	3,3643	2,2335	0,4014
Cluster 7	2,2062	1,9319	1,8362	0,7710
Cluster 8	2,1346	0,0344	1,8886	0,7502
Explained variance	72,25			

Table 15. Means for different adjustment variables and cognitive and sociodemographic variables for the different clusters of Global School Adjustment.

Variable	Cluster							
	1	2	3	4	5#	6	7	8
Cognitive capacity								
IQ	176,88***	151,19	168,55***	141,53***	155,62	118,67***	137,38***	134,15***
Intrinsic adjustment								
Emotional Disturbances	2,25	2,24	2,46	2,24	2,26	2,21	2,43	2,46
Psycho-somatic Disturbances	2,46	2,31	2,63	2,31	2,46	2,44	2,63	2,77
Self-Esteem	3,84	3,90	3,68	3,78	3,74	3,94	3,70	3,50
Optimism	5,48	5,85	5,24	5,82	5,63	5,78	5,24	5,03
Timidity	3,10***	3,45***	3,50	4,22	4,18	4,43	4,44	4,77
Harmony	5,63***	5,13***	5,08***	3,59	4,04	3,60	3,15***	2,69***
Extrinsic adjustment								
Perceived work load	1,96***	2,10***	2,65	2,03***	2,40	2,30	2,89***	3,31***
Peer-Relations	3,17	3,24**	3,15	2,90	3,05	2,85	2,78**	2,68
Aggressiveness	2,73***	2,64***	3,23	4,12	3,84	3,98	4,69***	4,77
Sociodemographic variables								
Parents' Educational level	4,01***	4,89	4,21	5,48	5,21	5,75	5,38	5,75

Note. * $p < .05$, ** $p < .01$, *** $p < .001$, when mean of cluster was compared to the mean of the reference cluster and tested using a two-tailed t-test for two independent samples.

Reference cluster

The results are presented in Table 15. As expected, large differences were found in intelligence (IQ) between the two clusters with the highest scores on Academic Achievement (Cluster 1 & 3) and the reference cluster in that they had significantly higher IQ ($p < .001$). In the opposite way, the three clusters with the most negative adaptation patterns (Cluster 6, 7 & 8) had significantly lower IQ with Cluster 6 having the lowest IQ. Cluster 6 also had the lowest value on Academic Achievement. Cluster 4 (low School Motivation and Academic Achievement and high Global School Satisfaction) also had significant lower IQ than the reference cluster.

No significant differences were found in Emotional Disturbances, Psychosomatic Disturbances, Self-Esteem and Optimism. Cluster 1, 2 and 3 were all significantly higher in Harmony and Cluster 1 and 2 were also significantly lower in Timidity. On the negative side, Cluster 7 and 8 were significantly lower in Harmony than the reference cluster.

In relation to Perceived Work Load, the most positive cluster (Cluster 1) had the lowest value and Cluster 3 and 4 also had significantly lower values in Perceived Work Load. Cluster 3, with high Academic Achievement and School Motivation but low Global School Satisfaction and with the second highest value on IQ had a Perceived Work Load that was higher than the reference cluster (but the difference wasn't significant, $P < .01$). Cluster 7 and 8 had significantly higher Perceived Work Load.

When compared on Aggressiveness, Cluster 1 and 2 were both significantly lower and Cluster 7 was significantly higher in Aggressiveness. When looking at Peer-Relations, only tendencies were found in that Cluster 2 had more positive Peer-Relations than the reference cluster and Cluster 7 had poorer Peer-Relations. Finally, looking at Parents' Educational level Cluster 1 had parents' with significantly higher Education level (lower value indicates higher education level).

The differences in the clusters in relation to Intelligence and Parents' Educational level support the validity of the 8-cluster solution. Also, the scores on Aggressiveness (lower in positive clusters and higher in negative clusters) and Harmony (higher in positive clusters and lower in negative clusters) supports the validity of the cluster solution.

Summary of results

Variable oriented analyses

Relationships among childhood scales

As expected, there were moderate to strong relationships within the two areas. In the intrinsic area the resilience pair, Self-Esteem and Optimism, were moderately correlated. Noticeable is also that Timidity is not at all correlated with Self-Esteem even though the instructions in the teachers' rating includes low self-esteem. Within the extrinsic area, four scales were moderately or strongly correlated; Academic Achievement, Peer-Relations, Aggressiveness and School Motivation. The strongest relationship was between Academic Achievement and School Motivation.

The relationships between the areas were stronger than expected. The strongest correlations were between Harmony (teachers rating) and Academic Achievement (.50), Peer-Relations (.32), Aggressiveness (-.65) and School Motivation (.72). In the literature, research on harmony in childhood is scarce which makes comparison with previous research difficult. Interestingly, Harmony and Timidity correlated stronger with the extrinsic than the intrinsic area. Timidity showed negative correlations with Academic Achievement, Peer-Relations, and Self Perceived Peer-Relations. Timidity also had a fairly strong correlation with School Motivation (-.30) which considering that the sample is comprised of girls was higher than expected (see discussion for further comments). Global School Satisfaction had a moderate correlation (.16) with Self Perceived Peer-Relations but almost zero correlation with Peer-Relations.

Relationships among adulthood scales

In the intrinsic area, all the scales were moderate to strongly correlated with each other and the correlations were stronger than in childhood. The correlation between the resilience pair, Optimism and Self-Respect (in childhood called Self-Esteem) were .61 compared to .17 in childhood. The third resilience indicator, Sense of Control, showed moderate correlations with Optimism (.37) and Self-Respect (.39). In the extrinsic area, the relationships were much weaker than in the intrinsic area. Between the intrinsic and extrinsic area, several significant relationships were found. The strongest were between

Global Life Satisfaction and Relation to Partner (.56) and Physical Health (.49) and also between Negative Affect and Physical Health (-.54) and Psychic Anxiety and Physical Health (-.42). Physical Health also showed moderate to strong relationships with the rest of the intrinsic scales. Interestingly, only Sense of Coherence in the intrinsic area had a significant relationship with Academic Achievement.

Relationships between childhood scales and adulthood scales

As expected, the relationships between childhood and adulthood were much weaker than within each age group. Among the stronger relationships were those between Emotional Disturbances and Psychosomatic Disturbances in childhood and Psychic Anxiety in adulthood (.27 and .25) which were expected because they are similar constructs.

Self-Esteem showed moderate relationships with two of the SWB components; Global Life Satisfaction (.26) and Positive Affect (.20). Self-Esteem also showed a moderate relationship with Psychic Anxiety (-.26). As expected, Optimism in childhood was correlated with Optimism in adulthood (.22) but also with Positive Affect (.23). Global School Satisfaction was related to Self Respect and Positive Affect.

Between the extrinsic areas the strongest correlation was between Academic Achievement in childhood and adulthood. Peer-Relations in childhood only showed significant correlations with Academic Achievement and Alcohol abuse in adulthood and Self-Perceived Peer-Relations showed a significant relationship with Self-Respect.

As in childhood, Harmony correlated with the extrinsic area in adulthood; with Academic Achievement (.32), Criminality (-.15) and Alcohol Abuse (-.20). Emotional and Psychosomatic Disturbances were related to Physical Health in adulthood.

Prediction of adulthood variables by childhood variables

Stepwise regression analyses were carried out to find independent variables in childhood that predicted a dependent variable in adulthood. That is, to find out if additional predictions apart from the correlation matrix could be found. Therefore, only regression analyses that include more than one variable from childhood are presented. Interesting results from the analyses were that Timidity, together with Psychosomatic Disturbances) entered the equation as a significant ($p < .001$) predictor for Psychic Anxiety. In the correlation matrix, both Emotional Disturbances and Self-Esteem had stronger correlations with Psychic Anxiety than Timidity but they didn't enter the equation. Aggressiveness entered the equation as a predictor (negative) for Optimism, together with Optimism, Self-Esteem and Timidity, even though the correlation was small ($p < .05$) with three other indicators having stronger correlations but not being included in the equation. Self-Esteem, together with Self Perceived Peer-Relations, Aggressiveness and Timidity, entered as a predictor for Self-Respect which in relation to them being similar constructs could be expected but the correlation was only .18 ($p < .01$).

In predicting Criminality, Harmony entered the equation with an odds ratio of 1.80 ($p < .05$) which was unexpected in that it means that a higher value on Harmony in childhood increases the odds of being subject for Criminality in adulthood. In the prediction of Alcohol abuse unexpectedly, Aggressiveness didn't enter the equation. Instead, Global School Satisfaction and Self-Perceived Peer-Relations entered as predictors.

Prediction of adulthood variables by Optimism, Sense of Control and Self-Respect

Stepwise multiple regression analyses were computed to see if interaction effects of Optimism, Sense of Control and Self-Respect contributed to the prediction of the other adulthood variables. One interaction effect was found that significantly contributed to a prediction. This was in predicting Positive Affect where three variables entered the equation, Optimism, Self-respect and the interaction effect of Optimism and Sense of Control. The interaction term means that when moving from the group at or below average in both terms to the group with above average in both terms the dependent variable Positive Affect increases by Beta (.21). This means that that when high levels of Optimism and Sense of Control occur together their additive effect in addition to their separate effects on positive affect increases. The equation explained 43% of the variance.

Person oriented analyses

Separate cluster analyses were performed for the intrinsic and extrinsic area in childhood and adulthood to find typical positive and negative adaptation patterns. The cluster solutions were then cross-tabulated to find combinations and longitudinal streams that were more frequent than expected by chance. As expected, more distinct overall positive and negative adaptation patterns were found in the intrinsic area than the extrinsic area, both in childhood and adulthood. Contrary to expectations, six significant longitudinal streams were found between childhood and adulthood with two being between the intrinsic and extrinsic area even though no significant connections between intrinsic and extrinsic clusters were found in childhood. Also as expected, only multi positive and negative clusters respectively significantly connected to each other both within age and between childhood and adulthood.

Intrinsic area in childhood

In the intrinsic area in childhood, one overall typical positive adaptation pattern was found with positive values on all indicators, except for Optimism which was around the mean. This cluster was characterized by being high in Harmony and low in Timidity. A second typical positive adaptation pattern was also found. This cluster was, in comparison to the most positive cluster, characterized by being high in Optimism which together with high Self-Esteem makes up part of the resilience construct described in the introduction. This Cluster was interestingly characterized by being above average in Timidity and below average in Harmony.

The most negative cluster described the opposite picture to the most positive cluster. The second most negative cluster could be compared to the second most positive cluster in that it was characterized by being low in the resilience pair of Optimism and Self-Esteem and high in internalizing problems. In both these clusters, Global School Satisfaction was just below the mean.

Extrinsic area in childhood

In the extrinsic area in childhood, no typical overall positive adaptation pattern was found. The most positive adaptation pattern was not as distinct as in the intrinsic dimension. Noticeable is that this cluster didn't had the highest mean value on Academic Achievement. The cluster with the highest Academic Achievement value was one which on the other indicators was characterized by being below mean adjustment in all indicators but School Motivation which was high. The most negative cluster described the opposite picture to the most positive cluster. An interesting cluster was characterized by being very low in School Motivation, high in Aggressiveness and below average in Peer-Relations but with Academic Achievement just below the mean. These individuals also rated their Self Perceived Peer-Relations higher than the ranking they received from their peers.

Intrinsic area in adulthood

For the intrinsic area in adulthood one overall typical positive adaptation pattern was found. Also a second cluster described a typical positive adaptation pattern but not as distinct as first cluster and with lower values in Sense of Control and around mean in Psychic Anxiety. Two distinct negative clusters were found. They described a picture opposite to the most positive cluster.

Extrinsic area in adulthood

In the extrinsic dimension in adulthood one overall typical positive adaptation pattern was found but the pattern wasn't as distinct as in the intrinsic dimension. A second cluster also described a positive pattern but being higher in Academic Achievement and lower in Social Relations to Friends and Relatives. As in childhood, the highest value in Academic Achievement wasn't in the cluster with the most overall positive adaptation pattern. No overall typical negative pattern was found but several cluster had negative adaptation in one, two or three indicators.

Linking of clusters

When linking cluster within each age group and between childhood and adulthood, a limited number of significant combinations and longitudinal streams were found. In childhood, no clusters with typical positive adaptation patterns linked between the intrinsic and extrinsic area. One significant combination was found on the negative side between a cluster in the intrinsic area characterized by internalizing problems and low Self-Esteem and a cluster in the extrinsic area characterized by Antisocial Behaviours and low Academic Achievement, poor Relations to Parents but above average in Peer-Relations. In adulthood, two combinations of clusters linked to each other. The two most positive adaptation

patterns in the intrinsic area linked to the most positive adaptation pattern in the extrinsic area. One significant combination of negative clusters was found between one cluster in the intrinsic area characterized by low Self-Respect, Optimism and Positive Affect, high Psychic Anxiety, and below average Sense of Coherence and a cluster in the extrinsic area characterized by Bad Physical Health and above average Aggressive Nonconformity.

When looking at longitudinal streams, no single positive cluster in childhood linked both to the intrinsic and extrinsic area in adulthood. Between the intrinsic areas, one significant stream was found, namely that between the second most positive cluster in childhood and the most positive cluster in adulthood. The childhood cluster was characterized by being above average in Timidity and by being high in the resilience pair, Optimism (above average) and Self-Esteem. Between negative clusters, one stream was found between the second most negative cluster in childhood and the second most negative cluster in adulthood. Between the intrinsic area in childhood and the extrinsic area in adulthood it was instead the most positive adaptation pattern in childhood which significantly connected to the two most positive adaptation patterns in adulthood. Between the extrinsic areas, the longitudinal stream between positive adaptation patterns also significantly connected to the most positive cluster in adulthood and the stream went from the most positive cluster in childhood. One significant negative stream was also found between the most negative pattern in childhood and a cluster in adulthood characterized by bad Physical Health.

Global School Adjustment in childhood

On the positive side, two clusters with high Academic Achievement were found, both also having high School Motivation but none were high in Global School Satisfaction and one was even low in Global School Satisfaction. The first of these two clusters could be described as an overall positive typical adaptation pattern due to the fact that the mean value of Global School Satisfaction is relatively high. Two distinct negative typical adaptation patterns were found. The clusters differed significantly in Intelligence between high, medium and low achievers with high achievers being higher in intelligence. The positive clusters were also lower in Timidity and Aggressiveness and higher in Harmony. They didn't differ in Emotional Disturbances, Psychosomatic Disturbances, Self-Esteem and Optimism which have been shown in previous research (see discussion for further comments).

MAIN FINDINGS AND DISCUSSION

Introduction

One main purpose of the thesis is to present a rather detailed picture of women's positive adaptation in a developmental perspective. This, I believe, has been accomplished by the detailed results given in the Results section which, hopefully, will serve the reader as a "dictionary" of basic findings concerning the natural history of women's positive adaptation. In this last part of the thesis, only selected findings will be discussed, concentrating on the results relating to typical patterns of positive adaptation, which is the purpose at the focus in the present thesis. Other findings will only be discussed insofar as they shed light on the issues raised within this approach.

Childhood findings

As expected, there were moderate to strong relationships within the two areas but the relationships between the areas were stronger than expected. Overall though, the correlations were quite low except for variables from the same questionnaire and the teachers' ratings which had quite high inter-correlations.

From the cluster analysis in the intrinsic area in childhood, one overall typical positive adaptation pattern was found with positive values on all indicators (high in Global School Satisfaction, Self-Esteem and Harmony and low in Timidity), except for Optimism which was around the mean but the mean value for Optimism was high so these children should be seen as optimistic about their future. Optimism and self-esteem have been described in the literature as part of an underlying resilience construct together with control beliefs (Scheier & Carver, 1992; Lightsey, 1996) and also as part of a latent dimension of positive thinking together with life satisfaction (Caprara & Steca, 2005) and low self-esteem has been linked to pessimism and hopelessness (Schneider & Leitenberg, 1989). Optimism and self-esteem can be seen to work as buffers for internalizing problems (e.g. emotional and psychosomatic disturbances) (Gillham & Reivich, 2004). Part of the explanation is that self-esteem and optimism has been linked to more active problem-focused coping in contrast to more emotion-focused coping and also better social support which together contributes to lower internalizing problems (e.g. anxiety and depression) (Dumont & Provost, 1998). The preference for using problem-focused coping also contributes to the child's feeling of competence and belief that they can handle problems and stress in the future (Dumont & Provost, 1999) which then also could influence their expectancies of the future (optimism).

Regarding school satisfaction and its relation to self-esteem, previous research has only found weak relationships (Baker, Dilly, Aupperlee & Patil, 2003) and the results obtained here also indicate a weak relationship between Global School Satisfaction and Self-Esteem, and also between Global School Satisfaction and most of the other indicators of childhood adaptation. What could then contribute to the high school satisfaction of these children? The strongest (but still moderate) correlations are to the teachers' ratings (e.g. Harmony and School Motivation). Maybe the relationship with some of the teachers' ratings could be

interpreted as markers for the importance of a good teacher-student relationship for school satisfaction (Baker et al., 2003). Further, the low Timidity score in the most positive cluster can be understood as describing outgoing, open and extraverted children. The trait of extraversion has been linked to more positive affect (Watson & Clark, 1992) and someone who experiences more positive affect would probably perceive their environment as more satisfactory. But this is probably not the only explanation because there are clusters low in Timidity without being high in Global School Satisfaction. So in all, no clear pattern emerges in relation to school satisfaction. The cluster analyses in childhood show that the children can be satisfied or dissatisfied in both more positive and negative clusters. It should be noted though that the measures are relative and in a more absolute sense almost all children are fairly satisfied with school. Another clue could possibly be found in the relationship between Perceived Work Load and Global School Satisfaction in that higher Perceived Work Load often combines with lower Global School Satisfaction. That both high achievers and low achievers and children from families with both above and below mean educational level can perceive the work load as demanding can be understood as a consequence of that the home environment can contribute to the high demands some children experience in school. Some families with lower education provide little support for the child (e.g. not helping with school work) and some families with high educational level may put higher pressure on the child to perform (Bronfenbrenner, 1986; Baker et al., 1993). Taken together, this shows that the child's perception of and satisfaction with school must be understood from a broad perspective taking into account both variables within the person, from the school environment, and the family (Bronfenbrenner, 1986; Huebner et al., 2001).

A second typical positive adaptation pattern was also found. This cluster was, in comparison to the most positive cluster, characterized by being high in Optimism which together with high Self-Esteem makes up part of the resilience construct described above (Scheier & Carver, 1992). This cluster was also characterized by being above average in Timidity and below average in Harmony. Two other clusters show high values in Timidity. One representing, apart from Timidity, normal adaptation and the other describes the most negative adaptation pattern. The role of timidity in adaptation doesn't then have a clear direction in relation to the other indicators. Rubin, Burgess and Kennedy (2003) make a difference between different kinds of social withdrawal (timidity) with one difference being if it is an active or passive withdrawal. That is, if the child itself withdraws from the group or if the group actively isolates the person. Because timidity in this study was only measured by teachers' rating on the basis of the child's behaviour it is difficult to distinguish between different types of withdrawn and timid girls in this study. But probably these children can largely be described as introverted and passively withdrawn and what Rubin et al. (2003) described as more object- than person-oriented and therefore prefer solitude. And also, as described above, the benefits of high self-esteem and optimism (e.g. problem-focused coping behaviours, high social support) could act as buffers and balance out the negative aspects of social withdrawal. Finally, it is worth mentioning that our culture is more tolerant towards withdrawn girls than withdrawn boys (Stöckli, 2002).

In the extrinsic area in childhood, no distinct typical overall positive adaptation pattern was found but the most positive adaptation pattern was characterized by positive adaptation in most indicators with no indicator showing negative adaptation. In relation to previous research, several indicators have been related to each other in promoting positive adaptation. Regarding academic achievement, peer relations have been shown to play an important role (Zettergren, 2007). Bernt (1999) emphasizes the role of close friends in school adjustment. He states that a peer group tends to become more similar over time and that the influence can be both positive and negative regarding school adjustment (most research has focused on the negative influence of friends). In the analyses carried out in the present thesis, it doesn't show if the individuals in the cluster have close friends with similar characteristics so that has to be a question for further research but one could speculate that these children have friends who are doing well in school and are motivated because children often choose friends similar to themselves (Kandel, 1978). The role of the family and relations to parents have also been shown (as described above) to be important in many ways for the child's adjustment (Bronfenbrenner, 1986). One way to conceptualize this positive adaptation pattern is that the different factors work together and strengthen each other in a system of positive interactions (Magnusson, 1988; Magnusson & Stattin, 2006). A positive family context provides a starting point with both modelling (for social interactions, academic behaviours, school attitudes etc.) and supportive functions (Baker et al., 2003). For example, Baker et al. (2003) wrote that families influence the child's attitudes towards school through "modelling academically oriented behaviours, socializing an achievement orientation and values regarding education, and direct teaching and structuring of the home so that school tasks are emphasized and accommodated" (p. 215). This background influences the choice of close friends in school as described above which then promotes a reinforcing positive feedback loop for proschool (e.g. high school motivation) and prosocial behaviours (Bernt, 1999). In the group with the most positive adaptation pattern in the extrinsic area this is also strengthened by their low aggressiveness in that aggressiveness frequently has been linked to negative peer relations (Zettergren, 2007) and also to lower support from parents (Hughes et al., 1997).

Peer relations had a significant correlation with Academic Achievement but when looking at the cluster analysis, the role of Peer Relations in relation to Academic Achievement seems to be more diverse. There are clusters with girls doing well in school and at the same time having good peer relations but there are also clusters with girls doing well in school and at the same time having poor peer relations. In regard to school adjustment, an additional cluster analysis was performed with three variables measuring Global School Adjustment, consisting of Academic Achievement, Global School Satisfaction and School Motivation. These clusters were then compared on different extrinsic and intrinsic adjustment variables, intelligence and parents' educational level. The same picture emerges with no large differences in peer relations in different clusters. What differed between the clusters with good and poor Global School Adjustment was that the two clusters with high Academic Achievement and high School Motivation (one of these cluster had low Global School Satisfaction) had significantly higher intelligence, they were rated as less timid and aggressive, more harmonious, and had parents' with a higher educational level. Interestingly, the one of these positive clusters that was less satisfied with school also had a

higher perceived work load. Only the two clusters with overall poor Global School Adjustment had a higher perceived work load. It seems that perceived work load and satisfaction with school goes hand in hand and that it is not directly connected to intelligence. Also, no differences were found between the global school adjustment clusters in Emotional Disturbances, Psychosomatic Disturbances, Self-Esteem and Optimism and these results are in line with studies showing no clear links between intelligence and psychological well-being (Neihart, 1999). That no differences were found in relation to the students' subjective intrinsic adjustment are though contrary to results found by Roeser, Eccles, and Sameroff (1998) and Pajares (2001). Roeser et al. (1998) performed cluster analysis on three different school adjustment variables (academic competence beliefs, academic values, and emotional functioning) which resulted in a four cluster solution which was validated on several measures, one being academic achievement. The cluster with poor adjustment in all three variables showed significantly lower academic achievement than the other three clusters. They also found differences in self-esteem between the clusters and in parents' perception of the child's academic and emotional functioning. This last measure could be compared to the teachers' ratings in the present study which also showed differences between the clusters. Another difference in the results of the present study and previous research was that optimism didn't differ between the groups. Pajares (2001) found, in comparing different constructs from positive psychology (e.g. optimism and perceived authenticity), differences in optimism when comparing high achievers and low achievers. One explanation could be that the variation in the present sample is too small to show a difference between the groups. Another explanation could be that optimism is more of a trait like construct and therefore not influenced too much of the child's school adjustment (Scheier & Carver, 1992). However, one could easily envisage the reversed causal direction.

A picture emerges in childhood where there are individuals with overall good adjustment in the intrinsic area and in the extrinsic area (but in the extrinsic area the one overall positive adaptation pattern was less distinct) but with no strong connections between positive clusters in the intrinsic and extrinsic area, which was expected. Probably this could partly be explained by low power because of the low sample size of many clusters. This picture of quite separate adaptation areas is strengthened when looking at the cluster analysis for Global School Adjustment. Looking back at Figure 1 in the introduction which describes different aspects of a persons' adjustment (see below), two groups of measures could be seen as describing separate adjustment areas.

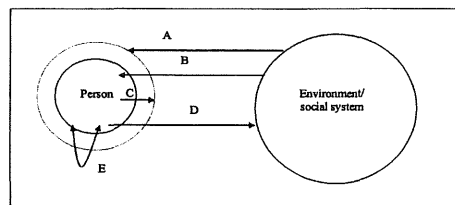


Figure 1.

The first group of measures refers to arrow E which is the persons own perception of their inner life (Emotional and Psychosomatic Disturbances, Self-Esteem, Global School Satisfaction, Perceived Work Load and Optimism) and the second group refers to arrow A and B which symbolises the environments perception of the child's behaviour and inner life (Harmony, Timidity, Aggressiveness, School Motivation, Academic Achievement, Intelligence and Peer-Relations). These two groups seem to describe separate and fairly independent adjustment areas in a child's life with some exception for peer relations. This means that the child could do well in school, be described by the teacher as a harmonious, outgoing and motivated child with low aggressive behaviour or the total opposite without necessary any differences in their own perception of their inner life. To get a complete picture of a child's school adjustment, it is then necessary to look at it from different angles (to ask the child, the teachers' and obtain objective measures of the child's performance in school). To just ask the child provides information about how the child perceives themselves and their environment but it says little about how they will perform in school and how they are perceived by their peers.

Adulthood findings

For the intrinsic area in adulthood, one overall typical positive adaptation pattern was found, which could be expected by the correlation matrix because of quite high correlations between most variables. These individuals reported high subjective well-being (high Global Life Satisfaction, Positive Affect and low Negative affect) (Diener, et al., 1999), can be described as highly resilient (High Optimism, Self-Respect and Sense of Control) (Scheier & Carver, 1992) and reported a high sense of meaning in their lives (Sense of Coherence; Antonovsky, 1991). Several relations between these constructs have been described in the literature. The strong relation between Optimism and Self-Respect has been described by for example Scheier and Carver, 1990 and Aspinwall and Taylor, 1992, and Major, Richards, Cooper, Cozzarelli and Zubeck (1998) suggest that they are to be seen as parts of an underlying construct of personal resilience. The beneficial effects of these constructs has been related to for example less use of avoidant coping and more use of problem solving strategies, and a more positive appraisal of stressful situations, higher life satisfaction, and better physical health (Scheier & Carver, 1992; Mäkikangas et al., 2004).

The positive effects of experiencing high positive affect and low negative affect has not only been linked to the construct of subjective well-being. They have also been linked to certain personality dimensions of positive and negative affectivity/emotionality describing extroverted traits and neurotic traits respectively (Larsen & Ketelaar, 1991; Lent, 2004; Lightsey, 1996; Watson & Clark, 1984, 1992). These theories state that people with extraverted traits show an inherent susceptibility towards positive affect and those with neurotic traits show susceptibility towards negative affect. Maybe the most positive cluster is comprised of individuals that to a higher degree are marked by being more extroverted and lower in neuroticism. The low level of Psychic Anxiety in this cluster could in part be explained by the low level of Negative Affect in that anxiety in different forms have been shown to strongly connect to the trait of neuroticism or negative affectivity (Watson, Clark and Tellegen, 1988). Several benefits of positive emotions have been described. They have

been linked to a broadened scope of thinking and therefore a broadened scope of actions, greater flexibility, more resilient to adversity, more social resources (more successful marriages and friendship relations), and better physical health (e.g. strengthens the immune system) (Fredrickson, 1998; Fredrickson & Losada, 2005; Lyubomirsky, Diener & King, 2005).

Fredrickson and Losada (1998) propose an interesting theory that flexible and healthy systems (individuals) are marked by a higher ratio between positive and negative affect and that there is a threshold or bifurcation point when the system's behaviour could be described as flexible and flourishing (in system language called a chaotic attractor) compared to more limited and rigid behaviours of a system below this threshold. Schuldberg (2002) also describes health from a complex system perspective and stresses among other things the importance of flexibility, diversity, robustness and a focus on multiple salutogenetic (health promoting) factors in describing healthy systems. The point is that from a system perspective, a healthy system is best understood as a well integrated and interrelated system of subsystems (Magnusson & Stattin, 2006) and that it is the behaviour and functions of these different parts treated as a whole that decides the systems function and adaptive behaviour. For example, some researchers have referred the constructs of life satisfaction, optimism and positive feelings towards the self (Self-Respect) to a common underlying latent dimension called "Positive thinking" (Caprara & Steca, 2005; MacLeod & Moore, 2000). Positive thinking considered as a common latent dimension has been showed to relate stronger to well-being indicators such as health, emotional stability and depression (Caprara & Steca, 2005) than the separate constructs on their own. The results from the regression analyses (see question 2 in the introduction) also showed how different construct can interact. Optimism, Self-Respect and Sense of Control, including interaction effects between the variables were used to predict Positive Affect and the regression analysis showed that when high levels of Optimism and Sense of Control occur together their additive effect in addition to their separate effects on positive affect increases.

The second positive adaptation pattern differs from the first in that it is characterized by lower levels of Positive Affect and Sense of Control and higher levels of Negative Affect and Psychic Anxiety. The levels of Global Life Satisfaction and Sense of Coherence are still the same which supports the notion that they are both more cognitive and global judgments of one's situation in life (Diener 1984; Eriksson & Lindström, 2007)

Both of these positive intrinsic clusters connect to the most positive adaptation pattern in the extrinsic area. This connection could be expected from research in that physical health, good social relations, both to partner and friends frequently have been linked to subjective well-being, optimism and self-esteem (Diener et al., 1999; Scheier & Carver, 1992). The extrinsic cluster is also fairly high in Academic Achievement. In relation to the intrinsic area, only Sense of Coherence correlated significantly with Academic Achievement. Sense of Coherence refers to a global judgment of the persons' life in the domains of meaningfulness, comprehensibility and manageability (Antonovsky, 1991). Even though there are quite high correlations between Sense of Coherence and Global Life Satisfaction,

Optimism and Self-Respect, they seem to tap in to different dimensions of a persons' life space. In the literature on subjective well-being, for example, the role of education level in relation to well-being shows mixed results (Diener, 1984; Diener et al., 1999). It has been shown that the effect of education on subjective well-being disappears when controlling for occupational status and income (Diener et al., 1999). Higher education may allow people making progress towards their goals and in a higher degree contribute to changes in the world around them. But at the same time it may elicit more and higher aspirations which may cause distress and anxiety (Diener et al., 1999). The connection in this study between Sense of Coherence and Academic Achievement could possibly be understood in the sense that education in some ways contributes to giving the person a sense of meaning, making the world more comprehensible, and develops resources to manage the world around herself (Antonovsky, 1991) but which in it selves doesn't necessarily lead to higher subjective well-being. It is also noteworthy that the cluster in the extrinsic area which connects to the two most positive clusters in the intrinsic area doesn't have the highest value in Academic Achievement.

On the negative side, the two most negative adaptation patterns are inverted images from the positive clusters and both are marked by very high levels of Negative Affect and low or very low levels of Positive Affect. In reference to Fredrickson and Losada (1998), the ratio between positive and negative affect are very low which could indicate low behavioural flexibility, high vulnerability, and an overall unhealthy system (Schuldberg, 2002).

Developmental findings

As expected, the relationships between childhood and adulthood were much weaker than within each age group. But still, four positive streams and two negative streams were found, that is between positive or negative intrinsic or extrinsic clusters in childhood and adulthood. That more positive streams were found could be interpreted from of dynamic system point of view in that the system that we live in (our society and close environment) tend to work as an attractor (made up by laws, norms, values, institutions etc.), pulling us in a certain direction (Barton, 1994; Thelén & Smith, 1996). This means that deviant behaviour according to the system tends to decrease by time. This then would have the consequence that positive and normal adaptation patterns remain or are strengthened over time but negative (deviant) patterns tend to be normalized over time. This also means that one could expect that some negative adaptation patterns in childhood would link to some normal adaptation patterns in adulthood (Bergman & Magnusson, 1997). This was not found in this study and one reason for that could be the small cluster sizes which lower the statistical power to find significant streams.

Looking at the specific longitudinal streams between the intrinsic areas in childhood and adulthood, one significant stream was found between the second most positive adaptation pattern in childhood characterized by overall positive adaptation, except for being higher in Timidity and slightly below average in Harmony, and the most positive adaptation pattern in adulthood. It is somewhat surprising that the cluster with the more timid girls connects to the most positive cluster in adulthood. But as stated earlier, maybe these girls were satisfied

with their more withdrawn behaviour in childhood and our western culture probably is more acceptant of timid and withdrawn girls than boys (Rubin, et al., 2003; Stöckli, 2002). This could mean that the environment (e. g. peers, teachers' and parents) doesn't see the behaviour as too deviant with less negative consequences for the girls.

The role of both self-esteem and optimism in childhood and its connection to subjective-well-being and optimism in adulthood has been shown in several studies. Carver and Scheier (2002) stated that optimism develops in childhood and then remains fairly stable during life. Optimism in childhood have both direct and indirect effects via positive affect, on subjective well-being in adulthood (Daukantaite & Bergman, 2005) and self-esteem measured in adolescence has been showed to predict optimism in adulthood 30 years later (Heinonen, Räikkönen & Keltikangas-Järvinen, 2005). This longitudinal stream could in part be understood as a positive feedback process in that dispositional optimism developed during childhood is part of a underlying trait of extraversion (Marshall, Wortman, Kusulas, Hervig & Vickers, 1992) which, as described above, makes the individual inherently more susceptible towards positive affect. The positive expectations for future outcomes elicits more positive affect which then in turn affects the cognitive judgment in expectations for the future and also constructs like life satisfaction and self-esteem (Carver & Scheier, 1990; Daukantaite & Bergman, 2005; Schimmack, Diener & Oishi, 2002; Heinonen et al., 2005). The same relationships as just described but in the opposite way can be found in the stream that connects the second most negative intrinsic adaptation pattern in childhood (with low Optimism, internalizing problems and below average Self-Esteem) with the second most negative intrinsic pattern in adulthood which then, as expected because of a negative reinforcing feedback loop, is characterized by overall poor adjustment in all variables (except for Sense of Control).

Between the intrinsic area in childhood and the extrinsic area in adulthood, two positive longitudinal streams were found, both going from the most positive adaptation pattern in childhood connecting to the two most positive patterns in adulthood. This could be expected from previous research, for example from the positive effects of optimism and self-esteem in relation to social relations and physical health (Scheier & Carver, 1992). From the correlation matrix, only Harmony in the intrinsic area correlated significantly in a positive direction with Academic Achievement in adulthood and Timidity showed a negative (but weaker) correlation.

Between the extrinsic areas in childhood and adulthood, only one positive stream was found between the most positive clusters at both ages. An interpretation one can make here is the importance of favourable relationships between the child and the parents for later possibilities to form close relationships (Broberg, Granqvist, Ivarsson, & Risholm-Mothander, 2006; Cowen, 1994). This interpretation is also strengthened by the results from the correlational analyses which show a fairly strong relationship between the child's relations to its parents and later, the women's relationship to here partner. The relationship between the high achieving, motivated child with good peer relations and academic achievement in adulthood are also fairly strong (with academic achievement in childhood being the strongest predictor). Part of the relation between academic achievement in

childhood and adulthood could probably be explained by the close connection, described earlier, between intelligence and achievement (Neihart, 1999; Woodward & Fergusson, 2000) which also is closely connected to family conditions during upbringing (Bronfenbrenner, 1986, 1994; Woodward & Fergusson, 2000). The role of aggressive behaviour in children (Aggressiveness was low in this cluster) has also frequently been shown to predict future adjustment in academic achievement and also future social relations and antisocial behaviours (Woodward & Fergusson, 2000).

Finally I will give a suggestion to an explanation of the peculiar finding in predicting criminality in adulthood from childhood variables. Using logistic regression, Harmony together with Aggressiveness and Academic Achievement entered the equation as predictors. Aggression has frequently been described in the literature as a strong marker for later criminality (Huesmann, Eron & Dubow, 2002; Roff & Wirt, 1984) and Huesmann et al. (2002) also emphasized the role of low intelligence for later criminality. They describe the role of low intelligence as mediated by aggression and that it exerts its effects early in life in that it might be an "important frustrator that instigates early aggression" (p. 204). The role of Academic Achievement as a predictor of criminality in adulthood could then be seen as an indicator of intelligence in childhood.

But the third variable, Harmony, was the unexpected finding in that the direction of Harmony was that higher values increased the odds of having registered criminality in adulthood. One way of looking at this is that when a child is doing poor in school and is also seen as aggressive, being seen as harmonious could be an indicator of maladjustment instead of good adjustment. That is, feeling good (e.g. lack of guilt) about not doing well in school and being in conflict with their environment could be seen as a risk factor for future criminality. Huesmann et al. (2002) wrote that "A child's failure to feel guilty or confess transgressions at an early age might allow antisocial scripts and beliefs to be established that reveal themselves first in early aggressive behaviour and later in criminal behaviour" (p. 204). But at this stage, this is only speculations and needs further studies.

A final note and conclusion

No study to my knowledge has studied the natural history of women's positive adaptation patterns and their development from childhood to adulthood in a longitudinal perspective. One main finding of this exploratory study is that there are individuals who could be described by very positive adaptation patterns both in childhood and adulthood (but especially in adulthood) and that longitudinal streams were found from childhood to adulthood describing individuals with positive developmental trajectories. These individuals could be of great interest for future studies in trying to understand process and mechanisms underlying these trajectories. Are these processes and mechanisms just opposite mirrors of negative development trajectories or are they very different?

Methodological considerations and limitations

A study that covers such a large spectrum of a persons' life in both childhood and adulthood as the present study does has the disadvantage of loosing in detail. This means that many of the areas covered in this thesis would need more detailed measurements for a deeper understanding of different phenomena. In the present work, only the broader picture can be presented which then need more specific analyses to be better understood.

When conducting a large number of analyses, as is the case in this study, one is always confronted with the problem of mass significance. As far as possible, the results and significance levels have been adjusted to correct for this. It has been done in relation to each separate set of analyses (correlations, regression, t-test etc.) and not on an overall basis. When certain outcomes were expected, a lower level of significance where allowed (normally on the 5% level) for this specific expectations and the rest of the results were then adjusted for mass significance.

Another problem in this study relates to the lack of power in certain analyses, mainly when cross-tabulating the cluster solutions. This is because the sample sizes, when divided between many clusters, become very small and that a larger sample size could have yielded different results, mainly additional significant combinations and streams between the clusters. This could have been dealt with in a way that one merges similar clusters together before cross-tabulating and thus increase the size of the clusters and in that way increase the power. The disadvantage with this is, of course, that one loses in detail.

That significant cross-correlations were found (for example between the intrinsic and extrinsic area in childhood) but in some cases no significant streams or connections between the clusters could, as described above, be explained by the power problem. But it could also be understood in relation to variable oriented analyses (e.g. correlational analyses), where the whole variance is included which could create a relation because of a connection in the positive end (spectrum) or a connection in the negative end (spectrum) between two variables. That is, it doesn't say in which spectrum of the variables the relationship emerges. The relation could, for example, be in the negative spectrum and therefore no positive stream is found.

The cluster analyses are also sensitive to the reliability of the measures included. The variables Sense of Control and Social Relations to Friends and Relatives in adulthood had Cronbach's alpha levels of .49 and .56 respectively. This shouldn't be a problem in finding the typical patterns but could be a problem when trying to classify individuals into clusters and look for combinations and streams.

Future studies

The main purpose of this thesis was to describe women's positive adaptation patterns in childhood and adulthood and study what typical pattern emerges and how they relate to each other. Even if some attempts could be made at explaining the patterns that were found

and their relations, more in depth studies are needed to understand the mechanisms behind these patterns. Important areas for further study would be the role of family factors, both regarding the upbringing conditions and personal characteristics of parents', and the school environment in childhood. Personal characteristics (e.g. traits, coping strategies) and how they emerge into adulthood would also be important to include. One focus could be to study the mechanisms behind the adaptation patterns that were found and their development in a dynamic system perspective and within the holistic-interactionistic paradigm. That is, trying to understand the dynamics and mechanisms as interrelated systems of subsystems, normally behaving in non-linear ways.

REFERENCES

- Achenbach T. M. (1984). Psychopathology of childhood. *Annual Review Psychologist*, 35, 227-256.
- Antonovsky, A. (1991). *Hälsans mysterium*. Stockholm: Natur och Kultur.
- Aspinwall, L. G., & Taylor, S. E. (1992). Modelling cognitive adaptation: 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.
- Atchley, R. C. (1967). *Social forces and aging: An introduction to social gerontology*. CA: Wadsworth.
- Baker, J. A., Dilly, L. J., Aupperlee, J. L., & Patil, S. A. (2003). The developmental context of school satisfaction: Schools as psychologically healthy environments. *School Psychology Quarterly*, 18, 206-221.
- Baltes P. B., Staudinger U. M. (2000). Wisdom. A metaheuristic (pragmatic) to orchestrate mind. *American Psychologist*, 55, 122-136.
- Barton, S. (1994). Chaos, self-organisation, and psychology. *American Psychologist*, 49, 5-14.
- Berk, L. E. (2006). *Development through the lifespan*. (Sample chapter) Boston: Pearson higher education.
- Berndt, T., J. (1999). Friends' influence on students' adjustment to school. *Educational Psychologist*, 34, 15-28.
- Bergman, L. R. (2000). Women's health, work, and education in a life-span perspective. Technical report 1: Theoretical background and overview of the data collection. Stockholm University, Department of Psychology. *Reports from the project Individual Development and Adaptation*, No. 70.
- Bergman, L. R., Magnusson, D. (1997). A person-oriented approach in research on developmental psychopathology. *Development and Psychopathology*, 9, 291-319.
- Bergman, L. R., Magnusson, D. & El-Khoury, B. (2003). Studying individual development in an interindividual context. In D. Magnusson (Series Ed.), *Paths through life* (Vol. 4). Hillsdale, NJ: Erlbaum.
- Broberg, A., Granqvist, P., Ivarsson, T. & Risholm-Mothander, P. (2006). *Anknytningsteori: Betydelsen av nära känslomässiga relationer*. Stockholm: Natur och Kultur.

- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge MA.: Harvard University.
- Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, 22, 723-742.
- Bronfenbrenner, U., Ceci, S. J. (1994). Nature-nurture reconceptualized in developmental perspective: A bioecological model. *Psychological Review*, 101, 568-586.
- Brody, G.H., McBride-Murry, M., Kim, S., Brown A.C., (2002). Longitudinal Pathways to Competence and Psychological Adjustment among African American Children Living in Rural Single-Parent Households . *Child Development*, 73, 1505–1516.
- Caprara, G.V., & Steca, P. (2005). Affective and social self-regulatory efficacy beliefs as determinants of positive thinking and happiness. *European Psychologist*, 10, 275-286.
- Carver, C. S. & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review*, 97, 19-35.
- Carver, C. S. & Scheier, M. F., (1992). Effects of Optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy and Research*, 16, 201-228.
- Carver, C. S., Scheier, M. F. (2002). Optimism. In Snyder, C. R., Lopez, J. S. *Handbook of positive psychology*. NY: Oxford University Press.
- Cavell, T. A. (1990). Social adjustment, social performance, and social skills: A tri-component model of social competence. *Journal of Clinical Child Psychology*, 19, 111-122.
- Criss, M. M., Pettit, G. S., Bates, J. E., Dodge, K. A., Lapp, A. L. (2002). Family adversity, positive peer relationships, and children's externalizing behavior: A longitudinal perspective on risk and resilience. *Child Development*, 73, 1220–1237.
- Cowen, E. L. (1994). The enhancement of psychological wellness: Challenges and opportunities. *American Journal of Community Psychology*, 22, 149-179.
- Cowen, E. L. & Kilmer, R. P. (2002). "Positive psychology": Some plusses and some open issues. *Journal of Community Psychology*, 30, 449-460.
- Duakantaité, D. (2007). Women's health, work, and education in a life-span perspective. Technical report 3: Overview and detailed descriptions of the questionnaires. Stockholm University, Department of Psychology. *Reports from the project Individual Development and Adaptation*, No. 89.

Daukantaite, D., & Bergman, L.R. (2003). Components of subjective well-being in Swedish women. Stockholm University, Department of Psychology. *Reports from the project Individual Development and Adaptation*, No 83.

Daukantaite, D., & Bergman, L.R. (2005). Childhood roots of women's subjective well-being. *European Psychologist*, *10*, 287-297.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, *95*, 542-575.

Diener, E. (2003). What is positive about positive psychology: The curmudgeon and Pollyanna. *Psychological Inquiry*, *14*, 115-120.

Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276-302.

Dumont, M. & Provost, M. A. (1998). Resilience in adolescents: Protective role of social support, coping strategies, self-esteem, and social activities on experience of stress and depression. *Journal of Youth and Adolescence*, *28*, 343-363.

Eisenberg, N., Guthrie, I.K., Cumberland, A., Murphy, B.C., Shepard, Zhou & Carlo, (2002). Prosocial development in early adulthood: A longitudinal study. *Journal of Personality and Social Psychology*, *82*, 993-1006.

Erikson H. E. (2002). *Den fullbordade livscykeln*. Stockholm: Natur och Kultur.

Eriksson, M., & Lindström, B. (2006). Antonovsky's sense of coherence scale and the relation with health. A systematic review. *Journal of Epidemiology and Community Health*, *60*, 376-381.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology*, *2*, 300-319.

Fredrickson, B. L., Losada, M.F. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist*, *60*, 678-686.

Gable, S. L., Haidt, J. (2005). What and why is positive psychology? *Review of General Psychology*, *9*, 103-110.

Heinonen, K., Räikkönen, K. & Keltikangas-Järvinen, L. (2005). Self-esteem in early and late adolescence predicts dispositional optimism-pessimism in adulthood: A 21-year longitudinal study. *Personality and Individual Differences*, *39*, 511-521.

- Hepper, P.P., Witty, T.E., & Dixon, W.A. (2004). Problem-solving appraisal and human adjustment. A review of 20 years of research using problem solving inventory. *The Counselling Psychologist*, 32, 344-428.
- Huebner, E. S., Ash, C. & Laughlin, J. E. (2001). Life experiences, locus of control, and school satisfaction in adolescence. *Social Indicators Research*, 55, 167-183.
- Huesmann, L.R., Eron, L.D., & Dubow, E.F. (2002). Childhood predictors of adult criminality: are all risk factors reflected in childhood aggressiveness? *Criminal Behaviour and Mental Health*, 12, 185-208.
- Hughes, J. N., Cavell T. A. and Grossman, P. B. (1997). A positive view of self: Risk or protection for aggressive children? *Development and Psychopathology*, 9, 75-94.
- Kandel, D. B. (1978). Similarity in real-life adolescent friendship pairs. *Journal of Personality and Social Psychology*, 36, 306-312.
- Kauffman, S. (1995). *At home in the universe*. NY: Oxford University Press.
- Keyes, C. L. M., Lopez, S. J. (2002). Towards a science of mental health: Positive directions in diagnosis and interventions. In Snyder, C. R., Lopez, J. S. *Handbook of positive psychology*. NY: Oxford University Press.
- Koestler, A. (1989). *Janus: En sammanfattning*. Göteborg: Korpen.
- Kohlberg, L. (1982). Essays on moral development Vol. 1: The philosophy of moral development. SF: Harper & Row.
- Larsen, R. J. & Ketelaar, T. (1991). Personality and susceptibility to positive and negative emotional states. *Journal of Personality and Social Psychology*, 61, 132-140.
- Lazarus, R.S. (2003). Does the positive psychology movement have legs? *Psychological Inquiry*, 14, 93-109.
- Lent, R. W. (2004). Toward a unifying theoretical and practical perspective on well-being and psychosocial adjustment. *Journal of Counselling Psychologist*, 51, 482-509.
- Lightsey, O. R. (1996). What leads to wellness? The role of psychological resources in well-being. *The Counselling Psychologist*, 24, 589-735.
- Linley, A. (2003). Positive adaptation to trauma: Wisdom as both process and outcome. *Journal of Traumatic Stress*, 16, 601-610.
- Luthar, S.S., Cicchetti D. & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71, 543-562.

- Lyubomirsky, S., Diener, E., King, L. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin*, *131*, 803-855.
- MacLeod, A. K., & Moore, R. (2000). Positive thinking revisited: Positive cognitions, well-being and mental health. *Clinical Psychology and Psychotherapy*, *7*, 1-10.
- Magnusson, D. (1988). Individual development from an interactional perspective. In D. Magnusson (Series Ed.), *Paths through life* (Vol. 1). Hillsdale, NJ: Erlbaum.
- Magnusson, D., Dunér A., Zetterholm, G. (1975). *Adjustment: A longitudinal study*. Stockholm: Almqvist & Wiksell.
- Magnusson, D. & Stattin, H. (2006). The person in Context: A Holistic-Interactionistic approach. In Lerner, R. M. *Handbook of child psychology. Vol. 1: Theoretical models of human development*. (pp. 400-464). NY: Wiley.
- Mahoney, J. L., Bergman, L. R. (2002). Conceptual and methodological considerations in a developmental approach to the study of positive adaptation. *Applied Developmental Psychology*, *23*, 195-217.
- Major, B., Richards, C., Cooper, M. L., Cozzarelli, C., & Zubeck, J. (1998). Personal resilience, cognitive appraisals, and coping: An integrative model of adjustment to abortion. *Journal of Personality and Social Psychology*, *74*, 735-752.
- Marjoribanks, K. (1976). Academic achievement, intelligence, and creativity: A regression surface analysis. *Multivariate Behavioural Research*, *11*, 105-118.
- Marshall, G.N., Wortman, C.B., Kusulas, J.W., Hervig, L.K., & Vickers, R.R., Jr. (1992). Distinguishing optimism from pessimism: relations to fundamental dimensions of mood and personality. *Journal of Personality and Social Psychology*, *62*, 1067-1074.
- Masten A. S., Coatsworth, J. D. (1998). The developmental of competence in favourable and unfavourable environments: Lessons from research on successful children. *American Psychologist*, *53*, 205-220.
- Masten A. S., & Reed, M-G. J. (2002). Resilience in development. In Snyder, C. R. & Lopez, S. J. *Handbook of positive psychology*. NY: Oxford University Press.
- Matthew, G., Zeidner, M. (2003). Negative appraisals of positive psychology: A mixed-valence endorsement of Lazarus. *Psychological Inquiry*, *14*, 137-143.
- McCullough, M.E., & Snyder, C.R. (2000). Classical sources of human strength: Revisiting an old home and building a new one. *Journal of Social and Clinical Psychology*, *19*, 1-10.

- Morison, P., & Masten, A.S. (1991). Peer reputation in middle childhood as a predictor of adaptation in adolescence: A seven-year follow-up. *Child Development, 62*, 991-1007.
- Mäkikangas, A., Kinnunen, U., & Feldt, T. (2004). Self-esteem, dispositional optimism, and health: Evidence from cross-lagged data on employees. *Journal of Research in Personality, 38*, 556-575.
- Neihart, M. (1999). The impact of giftedness on psychological well-being: What does the empirical literature say? *Roepers Review, 22*, 10-32.
- Oláh, A. (2002, October). *Positive traits: Flow and psychological immunity*. Paper presented at the first International Positive Conference, Washington, DC.
- Pajares, F. (2001). Toward a positive psychology of academic achievement. *The Journal of Educational Research, 95*, 27-35.
- Peck, R. F., & Berkowitz H. (1964) Personality and adjustment in middle age. In Neugarten, B. L. & associates. *Personality in middle and late life*. NY: Prentice-Hall.
- Peterson, C, & Seligman, M. E. P. (in press) *Values in action (VIA) classification of strengths*. Manus will be published in 2004 by American Psychological Association and Oxford University Press.
- Reich, J. W. Zautra, A. J., & Davis, M. (2003). Dimensions of affect relationships: Models and their integrative implications. *Review of General Psychology, 7*, 66-83.
- Resnick, S. R., Warmoth, A., & Serlin, A. (2001). The humanistic psychology and positive psychology connection: Implications for psychotherapy. *Journal of Humanistic Psychology 41*, 73-101.
- Richters, J. E., (1997). The Hubble hypothesis and the developmentalist's dilemma. *Development and Psychopathology, 9*, 193-229.
- Roeser, W. R., Eccles, J. S., Sameroff, A. J. (1998). Academic and emotional functioning in early adolescence: Longitudinal relations, patterns, and prediction by experience in middle school. *Development and Psychopathology, 10*, 321-352.
- Roff, J.D. & Wirt, R.D. (1984). Childhood aggression and social adjustment as antecedents of delinquency. *Journal of Abnormal Child Psychology, 12*, 111-126.
- Rubin, K.H., Burgess K.B. & Stewart, S. (2003). Social withdrawal and inhibition in childhood. In Mash, E. & Barkley, R. (Eds.). *Child Psychopathology* (pp.372-406). (2nd edition). NY: Guilford.

- Ryan, R. M. Deci, E. L. (2001). On happiness and human potentials. A review of research on hedonic and eudaimonic well-being. *Annual Review Psychologist*, 52, 141-166.
- Ryff, C. D. (1995). Psychological well-being in adult life. *Current Directions in Psychological Science*, 4, 99-104.
- Ryff, C. D., Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, 9, 1-28.
- Ryff, C. D. (2003). Corners of myopia in the positive psychology parade. *Psychological Inquiry*, 14, 153-159.
- Salovey, P., Mayer, J. D., Caruso, D (2002). The positive psychology of emotional intelligence. In Snyder, C. R., Lopez, J. S. *Handbook of positive psychology*. NY: Oxford University Press.
- Sandage, J. S., Hill, P. C. (2001). The virtues of positive psychology: the reapproachment and challenges of affirmative postmodern perspective. *Journal for the Theory of Social Behaviour*, 31, 241-260.
- Schimmack, U., Diener, E., & Oishi, S. (2002). Life-satisfaction is a momentary judgement and a stable personality characteristic: The use of chronically accessible and stable sources. *Journal of Personality*, 70, 345-385.
- Schneider, M. J. & Leitenberg, H. (1989). A comparison of aggressive and withdrawn children's self-esteem, optimism and pessimism, and causal attributions for success and failure. *Journal of Abnormal Child Psychology*, 17, 133-144.
- Schuldberg, D. (2002). Theoretical contributions of complex systems to positive psychology and health: A somewhat complicated affair. *Nonlinear Dynamics, Psychology, and Life sciences*, 6, 335-350.
- Seligman, M. E. P. (2002). Positive psychology, positive prevention, and positive therapy. In Snyder, C. R., Lopez, J. S. *Handbook of positive psychology*. NY: Oxford University Press.
- Seligman, M. E. P., Csikszentmihalyi, M. (2002). Positive psychology: An introduction. *American Psychologist*, 55, 5-14.
- Seligman, M. E. P (2002). Optimistic explanatory style. In Snyder, C. R., Lopez, J. S. *Handbook of positive psychology*. NY: Oxford University Press.
- Seligman, M. E. P, Steen, T. A., Park, N & Peterson, C. (2005). Positive psychology progress. *American Psychologist*, 60, 410-421.

Sheldon, R. K., Kasser, T. (2001). Goals, congruence, and positive well-being: New empirical support for humanistic theories. *Journal of Humanistic Psychology, 41*, 30-50.

Snyder, C. R., Lopez, J. S. (Ed) (2002). *Handbook of positive psychology*. NY: Oxford University Press.

Snyder, C.R., Rand, K. L., & Sigmon, D. R. (2002). Hope theory: A member of the positive psychology family. In Snyder, C. R., Lopez, J. S. *Handbook of positive psychology*. NY: Oxford University Press.

Stöckli, G. (2002). Shyness in cultural context. A comparative study of correlates of shyness in school in Switzerland and China. *Psychologie in Erziehung und Unterricht, 49*, 151-159.

Sugarman, J. (2007). Practical rationality and the questionable promise of positive psychology. *Journal of Humanistic Psychology, 47*, 175-197.

Taylor, E. (2001). Positive psychology and humanistic psychology: A reply to Seligman. *Journal of Humanistic Psychology, 41*, 13-29.

Taylor, E.S., Armor, D.A (1996). Positive Illusions and Coping with Adversity. *Journal of Personality, 64*, 873–898.

Thelén, E., Smith, L. B. (1996). *A dynamic system approach to the development of action and cognition*. CA: MIT Press.

Vaillant G. E., (2000). Adaptive mental mechanisms: Their role in positive psychology. *American Psychologist, 55*, 89-98.

Vaillant G. E., (2003). Mental health. *American Journal of Psychiatry, 160*, 1373-1384.

Watson, D., & Clark, L. A. (1984). Negative Affectivity. The disposition to experience aversive emotional states. *Psychological Bulletin, 96*, 465-490.

Watson, D. & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96*, 465-490.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070.

Watson, D. & Clark, L. A. (1992). On traits and temperament. General and specific factors of emotional experience and their relation to the five-factor model. *Journal of Personality, 60*, 441-476.

Woodward, L.J. & Fergusson, D.M. (2000). Childhood peer relationship problems and later risks of educational under-achievement and unemployment. *Journal of Childhood Psychology and Psychiatry*, 41, 191-201.

Woodward, L.J. & Fergusson, D.M. (1999). Childhood peer relationship problems and psychosocial adjustment in late adolescence. *Journal of Abnormal Childhood Psychology*, 27, 87-104.

Wångby, M. (1997). *Externalizing and internalizing adjustment problems in teenage girls: A longitudinal study*. Doctoral thesis, Stockholm University, Department of Psychology.

Wångby, M., Bergman, L. R., Magnusson, D. (1999). Development of adjustment problems in girls: What syndromes emerge? *Child Development*, 70, 678-699.

Wångby, M., Magnusson, D. & Stattin, H. (2002). Self-perceived psychological health among Swedish teenage girls. Stockholm University, Department of Psychology. *Reports from the project Individual Development and Adaptation*, No.79.

Zettergren, P. (2007). *Children's peer status and their adjustment in adolescence and adulthood*. Doctoral thesis, Stockholm University, Department of Psychology.