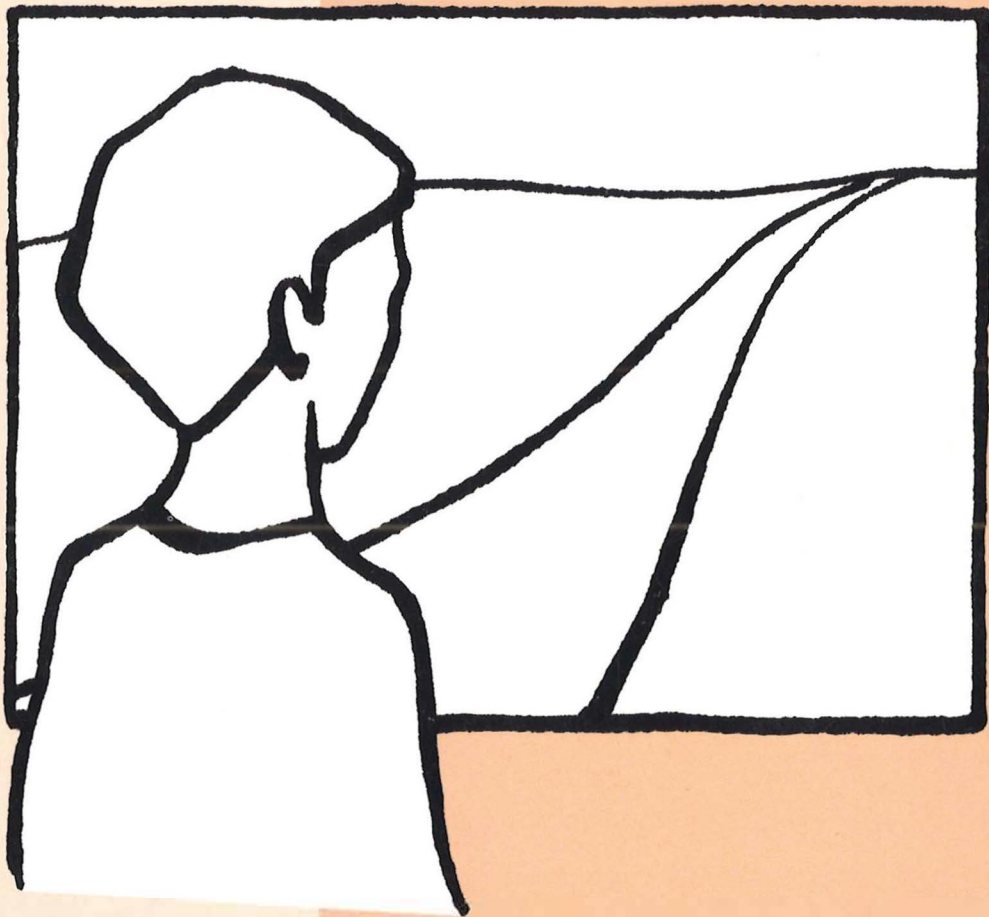




ANNA RÖNKÄ

# THE ACCUMULATION OF PROBLEMS OF SOCIAL FUNCTIONING



UNIVERSITY OF JYVÄSKYLÄ

JYVÄSKYLÄ LONGITUDINAL STUDY OF PERSONALITY AND SOCIAL DEVELOPMENT

Anna Rönkä

# The Accumulation of Problems of Social Functioning

Outer, Inner, and Behavioral Strands

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UNIVERSITY OF JYVÄSKYLÄ

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## ABSTRACT

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This study examined the question of whether problems of social functioning in adulthood accumulate, and compared developmental processes involved in the accumulation of problems in men and women. Problems of social functioning in adulthood included, for example, poor financial standing, poor social relationships, and drinking problems. Risk factors in childhood and adolescence consisted of aggressiveness and anxiety, family problems, and negative schooling experiences. The study was based on the Jyväskylä Longitudinal Study of Personality and Social Development, in which the lives of the participants have been followed from age 8 to age 36. The original sample consisted of 196 boys and 173 girls born in 1959. Data collected at ages 8, 14, 27, and 36 by using teacher ratings, questionnaires, interviews and criminal records were utilized. The results indicated that problems of social functioning tend to interact and co-occur. The accumulation of problems was more common among the men than among the women, and there were sex differences in the strands through which accumulated risk factors were transmuted into adult problems. The "outer strand", referring to lack of opportunities in life included career instability in both sexes; but early parenthood and a problematic partner only in women. "Behavioral strand", denoting the individual's tendency to exhibit problem behavior, and its negative consequences, was more prominent in the accumulation of problems in men than in women, whereas the "inner strand" in terms of sense of failure was more central in the case of women. Continuity in the accumulation of problems was weaker among women, and women's problems started to accumulate later in life than men's problems. As a conceptual conclusion, a distinction was drawn on the basis of the focus of interest (individual or population) and temporal perspective (state or process) between accumulation as a co-occurrence of problems, and accumulation as a chain of problems in individuals; and accumulation as a concentration of problems in a subgroup of people and accumulation as polarization of problems in a population. "Accumulation" in the present study refers to a long-term process on the individual level.

Keywords: social functioning, problem behavior, risk factors, longitudinal studies, sex differences, person- and variable-oriented approach

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# 1 INTRODUCTION

## 1.1 From single problems to cumulative processes

A traditional approach to the study of risk development has investigated the associations between single risk factors in childhood and consequent adjustment problems in adulthood. This approach has recently been questioned by several researchers, such as Magnusson and Bergman (1990), Rutter (1988, 1989, 1994), and Loeber (1991). They have suggested a more dynamic approach to study risk development, which would take account of heterogeneous, complex, and non-linear nature of developmental processes. This approach requires researchers to focus on risk processes, or pathways, rather than on single risk factors and developmental outcomes.

One characteristic of risk processes is that both risk factors and adjustment problems tend to co-occur, and that single risk factors or problems have very little predictive power (e.g., Bergman & Magnusson, 1997; Kolvin, Miller, Fleeting, & Kolvin, 1988; Seifer, Sameroff, Baldwin, & Baldwin, 1992; Stattin & Magnusson, 1996; Werner & Smith, 1992; Yoshikawa, 1994). Serious threats to a person's future development seem to derive either from a combination of adversities occurring at the same time, or from accumulation of adversities over time. Although the co-occurrence of risk factors and negative outcomes has been noted by several researchers, only a very few studies have systematically analysed the way in which problems accumulate (Bergman & Magnusson, 1997; Magnusson & Bergman, 1990; Stattin & Magnusson, 1996).

Therefore, this study was designed to analyse the relationships between childhood risk factors and problems of social functioning in adulthood, focusing on the accumulation of problems. The main purpose of my study was to find out whether problems of social functioning in adulthood accumulate, and to analyse the developmental processes involved. Furthermore, possible sex differences in these processes were investigated.

By *risk factors* I understood both behavioral characteristics and external conditions that may place an adolescent at risk for various adverse outcomes (e.g., Masten & Garmezy, 1985; Werner & Smith, 1992). I focused on interactional styles that indicate low self-control of emotions (aggressiveness and anxiety); on negative schooling experiences (low success, achievement, and motivation); and on risk factors related to family (low socio-economic status and family problems). The main construct for adult outcomes was *social functioning* (Rutter, Quinton, & Hill, 1990); which refers to the way an individual copes with developmental tasks linked to work, his or her social relations, intimate relationships, and financial standing, and how he/she adapts to social norms in terms of problem behavior. These behavioral criteria for adult outcomes were paralleled by *life orientation*, defined as an individual's subjective conception of his/her personal goals in terms of self-percepts of personal control over life, identity status, and orientation to the future.

## 1.2 The accumulation of problems in men and women

The co-occurrence of various forms of problem behavior in young adulthood such as drinking problems and criminality, is well documented (e.g., Magnusson & Bergman, 1990; Jessor & Jessor, 1977; Jessor, Donovan, & Costa, 1991; Stattin & Magnusson, 1996; Zucker, Fitzgerald, & Moses, 1995). These types of problem behavior tend to be connected to difficulties in age-relevant developmental tasks. Difficulties may include, for example, unemployment or weak work-status (Frank, Tuer, & Jacobson, 1990; Hammer, 1992), financial problems and poor accommodation (Farrington, 1989), and poor intimate and social relations (Kandel, Davies, Karus, & Yamaguchi, 1986; Laub & Sampson, 1993; Werner & Smith, 1992). The accumulation of problems of social functioning seems to be preceded by the accumulation of risk factors in childhood including, for example, poverty and family disorganization (Farrington, 1986; 1989; Werner & Smith, 1992) and a broad spectrum of adjustment problems, such as aggressiveness and poor school motivation (Bergman & Magnusson, 1997; Magnusson & Bergman, 1990; Pulkkinen & Tremblay, 1992; Stattin & Magnusson, 1996).

Some of the central processes and elements involved in the problem pathways from childhood to adulthood in females and in males seem to be different (e.g., Serbin, Peters, McAffer, & Schwarzman, 1991; Stattin & Magnusson, 1996). In coping with life stressors such as family adversities males are more prone than females to resort to external problem behavior such as aggressiveness (Pulkkinen, 1996; Zahn-Waxler, 1993; Zoccolillo, 1993); involving them in negative chain effects that often include school problems and career instability, as well as problem behavior (Loeber, 1982; Stattin & Magnusson, 1996).

Females, for their part, have higher rates of internal problems, such as anxiety and depression, and lower rates of external problems than men (Gove, 1985; Pulkkinen, 1995; Zahn-Waxler, 1993; Zoccolillo, 1993). Internal problems

cause less harm, for example, at school; but, they tend to hinder female career development (Bardone, Moffitt, Caspi, Dickson, & Silva, 1996; Kerr, Lambert, & Bem, 1996; Pulkkinen, Ohranen, & Tolvanen, 1998). Aggressiveness in females predicts school problems, just as it does in males (Stattin & Magnusson, 1996); but its connections to problem behavior are less consistent among the females than among the males (Pulkkinen & Pitkänen, 1993; Serbin et al., 1991).

An element involved in the accumulation of problems in females, both as a risk factor and as an outcome, is early reproductive functioning in terms of early pubertal maturation, early heterosexual activity and early timing of motherhood (Bardone et al, 1996; Serbin et al., 1991; Serbin, Cooperman, Peters, Lehoux, Stack, & Swartzman, 1998; Stattin & Magnusson, 1996). It has been suggested that women are more likely than men to escape from unhappy and deprived family circumstances or behavioral problems by opting for early marriage (Rutter et al., 1990) and early parenting (Hagan & Wheaton, 1993; Quinton & Rutter, 1988; Serbin et al, 1991; Stattin & Magnusson, 1996). The history of childhood disadvantages, together with poor life circumstances in adulthood, such as partnership with an unsupportive or deviant man (Quinton & Rutter, 1988) may, in turn, increase the risks of later psychosocial problems (Maughan & Lindelöv, 1997).

Studies of teenage parenting have concentrated on mothers. Recent findings suggest that adolescent fatherhood may be linked to a similar chain of negative events as is the case with young motherhood (Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Stouthamer-Loeber & Wei, 1998; Thornberry, Smith, & Howard 1997).

### 1.3 Conceptualizations of the co-occurrence of problems

The way in which problems of social functioning tend to accumulate has recently been described in terms of a number of theoretical constructs. These include the problem gravitation hypothesis (Bergman & Magnusson, 1997; Stattin & Magnusson, 1996); the problem behavior syndrome (Jessor & Jessor, 1977; Jessor et al., 1993); the cumulative continuity of disadvantage (Laub & Sampson, 1993); the cumulative continuity of interactional styles (Caspi, Bem, & Elder, 1989); the aggregation and amplification of marginal deviations (Caprara & Zimbardo, 1996); the accumulative cycles (Nurmi, 1997); the stepping stone effects (Farrington, 1986); the indirect chain mechanisms (Maughan & Champion, 1990; Rutter, 1988), and the snowball effect (Stattin & Trost, in press).

I will categorize these concepts or metaphors of cumulative processes as falling under either of two approaches: those that see the accumulation of problems from a systemic and holistic perspective, and those that regard the accumulation of problems as a chain of negative experiences proceeding over time.

### 1.3.1 The holistic perspective

One of the latest and most specific ideas on the accumulation of problems is included in the holistic, system-dynamic theory of human development of Magnusson (1988, 1995, 1997) and his colleagues, and is termed the *problem gravitation hypothesis of adjustment problems* (Bergman & Magnusson, 1997; Stattin & Magnusson, 1996). The main idea behind the problem gravitation hypothesis is that adjustment problems tend to concentrate within a small group of people. There is a tendency over time for problems to be polarized, so that both well-adjusted patterns and patterns with multiple adjustment problems become more frequent over time in relation to other patterns. This is because the person either outgrows mild problems, or the problems get worse, and accumulate. Furthermore, Bergman and Magnusson (1997) point out that if problems are severe and bound up with other problems, the individual's dynamic system is pushed into a stable stage of multiple maladjustment for which large sectors of the child's environment are maladjusted. In other words, problems tend to become larger. The possible forces affecting gravitation include, for example, negative reactions from teachers, parents or peers; alienation of a deviant child from a normal peer group and its norms, and identification with an outsider group (Bergman & Magnusson, 1997).

Problem gravitation theory of Bergman and Magnusson (1997) is in many ways in line with the *problem behavior theory* formulated by Jessor and Jessor (1977). The main idea of problem behavior theory is that various types of problem behavior in adolescence and young adulthood, such as delinquency, drug use, and precocious sexuality tend to co-occur; constituting the so called problem behavior syndrome. Like Bergman and Magnusson (1997), Jessor and Jessor (1977) focus on adjustment problems, and stress the point that an individual functions and develops as an active part of an integrated, complex person-environment system. They underline that the balance between risk factors - or in Jessor and Jessor's (1977) terms "instigations" - and protective factors or "controls" is a determiner of cumulative processes. According to Jessor and Jessor (1977), the more instigations to engage in problem behavior there are in the adolescent's social environment, and the fewer controls against it, the bigger the risk is that he or she will show various types of problem behavior. Instigations towards problem behavior include, for example, an adolescent's low self-esteem and moral attitude; low parental control and control by friends; and the presence of models for problem behavior. In similar way Werner (1989) stresses the importance of the balance between stressful events and protective factors in determining the individual's vulnerability to coping problems.

### 1.3.2 The cyclic perspective

Another, a more widely shared and also more general view of the accumulation of problems is to see it as a progressive, longitudinal process. A good example of this is the so called stage model of antisocial development (Patterson, 1988), which is a modification of Erikson's (1950) theory of psycho-social development. The idea behind Patterson's model is that arrival at each new stage places the

child at an even greater risk of continuing on towards a criminal career. The starting-point is that the child learns at home to adopt a pattern of aversive behavior, to avoid responsibility, and to be non-compliant. The coercive interpersonal style is generalized to the school setting, which results in academic failure and peer and parent rejection. Parent rejection may lead to low self-esteem, and rejection by peers and academic failure to a depressed mood. Membership in a deviant peer group facilitates the entry into delinquency and substance abuse. Finally, this increases the risk for a disrupted marriage, institutionalization and chaotic pattern of employment.

Similarly, Hessel (1988) applied Erikson's model to child welfare families. According to him, the developmental pathway leading to social disadvantage included the following steps: to feel unwanted as a child due to parental neglect, to be excluded at school; for example, in terms of punishments or harassment; to be not accepted at work; and finally, to be excluded from society.

Rather than regarding the process leading to the accumulation of problems as a universal sequence of stages, the majority of researchers point out that a diversity of pathways may be involved. Cumulative processes are understood as cyclical chain effects where a risk factor results in some negative outcome, which in turn causes further difficulties (e.g., Caspi et al., 1989; Farrington, 1986; Laub & Sampson, 1993; Nurmi, 1997; Rutter, 1988). In more psychological terms, these researchers think that early adversities may have effects, for example, on social circumstances or on the way people see themselves; which may in turn, affect the further life course. For example, impulsive children tend to have problems in school which may result in school failure; which in turn may cause difficulties for the future educational and working career. This process, in which early individual differences may be elaborated across the life course due to the progressive accumulation of their own consequences, has been described as cumulative continuity or snow-balling (Caspi et al, 1989; Moffitt, 1993).

The cyclical nature of risk processes has been described in most detail by Caprara and Zimbardo (1996). They have introduced a model for understanding the aggregation and amplification of marginal deviations, and emphasize the role of reciprocal or cyclical feedback between the child and other people in the varying contexts in which the child is involved. The path starts with a child's being barely, or inconclusively noticed by observers as being marginally different with respect to a few behavioral traits. Gradually the accumulation of reciprocal effects between the child's behavior and the reactions of teachers and peers becomes amplified over time into increasingly greater deviations and more negative reactions. Aggression becomes both a cause and consequence of the child's social rejection. "In the end, the 'at risk' child becomes the imputed label, validating the negative expectations of others through his or her self-defining, anti-social behavior" (Caprara & Zimbardo, 1996, p. 81).

## 1.4 Strands involved in the accumulation of problems

There are differences of opinion as to what the researchers consider to be the basic strand through which childhood risks are transformed into adulthood, and accumulated over time, namely, environmental continuities (the outer strand), self-related cognitions (the inner strand), or individual dispositions.

*The outer strand.* Some researchers point that it is the continuity and linking of poor environments that may predispose individuals to various kind of problems over time. This type of continuity has been termed environmental continuity or the outer strand of risk factors (Harris, Brown, & Bifulco, 1987; Maughan & Champion, 1990; Rutter, 1992). The main point is that risk factors may set in motion a train of events that predispose the person to the experience of poor social circumstances and lack of support. As a consequence, the individual's chances of managing in life in ways that are socially acceptable may diminish, and his/her bonds to society may weaken (Laub & Sampson, 1993). Furthermore, the outer strand of risk factors may include narrowing options for change such as limited quality and extent of interpersonal contacts and acquiring the reputation of having a deviant life style (Caprara & Zimbardo, 1996; Moffitt, 1993). The outer strand of risk factors is well demonstrated by links between childhood deviance and weak work status (Laub & Sampson, 1993), or by a developmental pathway leading to poor social functioning which includes a discordant family, membership of a deviant peer group and selection of a deviant partner (Quinton et al., 1993)

Certain life events such as unemployment may accentuate problem behavior. The *accentuation principle* (Elder & Caspi, 1988) means that stresses and adversities tend to accentuate behavioral tendencies that were present before the occurrence of the stress. Farrington, Gallagher, Morley, StLeger, and West (1986) found out that the experience of unemployment was most likely to aggravate delinquent behavior in those boys who already showed delinquent tendencies.

*The inner strand of risk factors* means the increase of inner vulnerability as a consequence of the exposure to risk factors (Maughan & Champion, 1990; Rutter, 1992). Inner vulnerability refers to maladaptive conceptions of oneself; for example, in terms of low self-esteem and low self-efficacy. The experience of failing and inadequate coping may affect an individual's conception of him or herself; which may make him/her more vulnerable when later facing times of difficulty (Harris et al., 1987). According to Caprara and Zimbardo (1996) the reactions of other people to what a child does, or fails to do in various contexts affect the child's causal attributions, expectations, perceived opportunities, self-labeling, and especially self-efficacy - all factors involved in the cognitive-emotional information processing.

Similarly, researchers in the area of goal and control concepts point out that success or failure in developmental challenges is related to control beliefs; which in turn, predict success or failure with further challenges. According to Bandura (1986, 128) "judgements of one's capabilities partly determine choice of activities and rate of skill acquisition, and performance mastery, in turn, can boost

perceived self-efficacy in a mutually enhancing process". Similarly, Brandtstädter (1989) pointed out that mastery in personally valued domains enhances sense of control over life. Correspondingly, these processes may function in ways that increase the likelihood of failure.

The inner strand of risk factors may also include other aspects of cognitive processes, such as maladaptive cognitive strategies and personal projects, by contributing to problems in age-relevant developmental tasks. For example, it has been found that the use of failure-trap strategy (Nurmi & Salmela-Aro, 1994) and turning to self-related goals (Salmela-Aro & Nurmi, 1997) is related to low achievement in work and in studies. Nurmi (1997) suggest that there may be accumulating cycles of project appraisals, success, and related satisfaction. A positive cycle might consists (for example), of continually improving positive appraisal, leading to success in achieving one's goals; which in turn earns further positive appraisal; while a negative cycle could include negative appraisals linked to underachievement and dissatisfaction.

*Individual dispositions as contributors to cumulative problems.* The third strand involved in the continuity and accumulation of problems is related to individual dispositions and behavior. These have been conceptualized in many different terms, such as interactional style (which refers to basic individual differences in interacting with the environment) (Caspi et al., 1989; Caspi, Elder, & Herbener, 1990); and temperament (which means individual differences that appear relatively early in life and have a biological, probably genetic basis) (e.g. Kochanska, 1993). It has been suggested that individual dispositions affect the way in which individuals adapt to new situations and contexts, how they select environments, how they meet their developmental challenges, as well as how they are treated by other people (Caspi et al., 1989).

One of the central dimensions of behavior according to which individuals differ is emotion regulation; which refers to the redirection, control and modification of negative emotions (Pulkkinen, 1982). There is plenty of evidence to show that individual dispositions characterized by weak emotion regulation in terms of aggressiveness (Parker & Asher, 1987); shyness or anxiety (Caspi et al., 1989; Kerr et al., 1996); a difficult temperament (Caspi et al., 1989; Caspi & Silva, 1995; Tubman, Lerner, Lerner, & VonEye, 1992); and conduct disorder (Bardone et al., 1996) predispose individuals to problem behavior, as well as to problems in central contexts.

Three basic forms of continuity promoted by individual dispositions have been distinguished: *contemporary continuity*, *cumulative continuity* and *interactive continuity*. Contemporary continuity (Moffitt, 1993) refers to the continuity of negative traits that cause difficulties in different contexts. For example, children or young adults with an aggressive interactional style may find it particularly hard to achieve a good fit within the multiple contexts where they live and interact, and shy people are prone to withdrawal.

Cumulative continuity (Caspi et al., 1989; Moffitt, 1993) refers to the accumulation of the negative consequences of individual dispositions. Interactive continuity (Caspi et al., 1989, p. 401) arises "when an individual's style evokes reciprocal, sustaining responses from others in ongoing social interaction thereby reinstating the behavior pattern across the life-course whenever the relevant



interactive situation is replicated". It has been found, for example, that aggressive behavior in children evokes aggressive reactions from parents (Patterson, 1988).

Individual dispositions result from the interplay between early temperamental qualities that have a biological basis and the individual's socialization history. A central risk factor exposing individuals to weak emotion regulation is poor parenting; for example, an overly-coercive parenting style (Patterson, 1988); and adult-centered child-rearing practices (Pulkkinen, 1982). Individual dispositions thus seem to contribute to the accumulation of problems in a cyclic way in cases where disrupted parenting, interacting with early temperamental qualities, contributes to behavioral problems, which, in turn may set in motion further difficulties.

### **1.5 Forces working against the accumulation of problems**

Adverse developmental features are not the only operating factors underlying later social functioning. In recent decades researchers have begun to pay more and more attention to protective factors that could balance, compete with, compensate for, or reduce the impact of risk factors (e.g., Lösel & Bliesner, 1994; Rutter, 1992; Stattin & Magnusson, 1996; Werner & Smith, 1992). Protective factors include both individual characteristics, such as cognitive competencies, physical health, temperamental qualities (e.g., sociability, emotional control), and positive self-related cognitions; and environmental factors such as parental supervision and monitoring, a positive relationship with a competent adult, and positive school experiences (e.g., Lösel & Bliesner, 1994; Masten, 1998; Stattin & Magnusson, 1996; Werner & Smith, 1992). Protective factors prevent negative chain reactions, bring a sense of success and mastery, open up new opportunities, and encourage an individual to relate to other people (Rutter, 1992, 1996).

Important life events, such as getting married or finding a permanent job often give rise to a new, lasting alteration in the developmental trajectory. This is called as a positive turning-point. Several studies evidence the importance of positive turning points in changing the direction of maladaptive developmental paths (e.g., Laub & Sampson, 1993; Maughan & Champion, 1990; Pickles & Rutter, 1991; Rutter, 1992, 1996; Werner, 1989; Werner & Smith, 1992).

The transition from adolescence to adulthood, during which key choices and decisions are made in several domains of life, is a stage of life which often offers turning points in antisocial development. It has been suggested that new settings in adult lives provide different stimuli, opportunities and norms, and formal and informal controls, as compared to the settings apparent in adolescent life (Jessor et al., 1991; Maughan & Rutter, 1998).

## 1.6 Research questions

The purpose of this study was to analyse the relationships between risk factors in childhood and adolescence and problems of social functioning in adulthood focusing on the accumulation of problems. *Risk factors* included three types of factors. (1) Risk factors relating to interactional styles included aggressiveness and anxiety, which refer to weak self-control of emotions (Pulkkinen, 1982) and have been found to predict problems in several areas of life (e.g., Caspi et al., 1989). (2) Negative school experiences, which are suggested to constitute one of the central mediating links between childhood and adulthood problems (Maughan, 1988) included poor success, adaptation, and motivation. (3) Risk factors relating to family background consisted of low socio-economic status of the family, and family problems such as parental drinking problems, that have an effect on the lives of the offspring through such proximal mediators as poor parental discipline (Baldwin et al., 1993; Dodge, Pettit, & Bates, 1994).

The division between risk factor and outcome factor is sometimes artificial, because in many cases risk factors such as poor school success are outcomes themselves. Thus, the division here is based on the timing; factors taking place at age 14 or earlier were generally considered to be risk factors, and factors taking place later were generally considered to be problems of social functioning.

Problems of *social functioning* (e.g., Rutter et al, 1990) in adulthood included both problem behavior (behavior that is socially defined as a problem or is a source of general concern (Jessor et al., 1991)) and difficulties in coping with age-related developmental tasks in terms of poor financial standing, unemployment, poor social relationships and poor intimate relationships. In order to examine whether these behavioral measures are in agreement with individuals subjective views of themselves, I also studied *life orientation*. Life orientation included self-percept of personal control, identity status, and orientation to the future; constructs especially relevant in adolescence and young adulthood "when themes of individual responsibility, autonomy, and personal identity gain importance" (Brandtstädter, 1987, p.100).

The *outer strand* was mainly studied in terms of career instability, but also in terms of timing of parenthood and quality of partner. The *inner strand* was studied in terms of maladaptive life orientation.

It was hypothesized in this study that

- (1) problems of social functioning in adulthood accumulate, and are preceded by the accumulation of risk factors in childhood and adolescence,
- (2) accumulated problems from one stage of the individual's life to the next are mediated by inner and outer strands,
- (3) there are sex differences in the accumulation of problems, and the processes involved, and
- (4) different aspects of life orientation are interconnected, and associated with problems of social functioning.

## 2 METHOD

### 2.1 Methodological alternatives

The traditional, *variable-oriented approach* to the study of development includes a number of methods of studying interactions among several variables, such as structural equation modeling, factor analysis, and regression analysis. Jessor's (1991) studies of problem behavior are a good example of the variable oriented study of the accumulation of problems. Jessor, Donovan, and Costa (1991) studied the continuity in problem behavior from adolescence to young adulthood by estimating latent variables for overall psychosocial proneness toward problem behavior. In this way it was possible to analyse the structure of the problem behavior syndrome, as well as the relative importance of the different forms of problem behavior involved.

The question concerning the role of multiple risk factors in future development is another topic often analysed by means of variable oriented methods. As to the role of risk factors, two models have been formulated; the *cumulative risk factor model* and the *multiplicative model* (Deater et al, 1998; Pungello, Kupersmidt, Burchinal, & Patterson, 1996; Yoshikawa, 1994).

The *cumulative risk factor model* proposes that it is the quantity of risk factors rather than the quality of these factors that affects later development. Consequently, researchers have formed *cumulative indices* (Luthar, 1993); for example for risk factors (e.g., Sameroff, Seifer, Baldwin, & Baldwin, 1993; Kolvin et al., 1988) and for adverse outcomes (e.g., Bardone et al., 1996; Cairns & Cairns, 1994; Farrington, 1989; Quinton et al., 1993). These indices have been used either in a variable oriented way by, for example, counting correlations between these and other variables, or in a more person oriented way by dividing persons into various groups according to the indices.

The *multiplicative model*, in contrast, assumes that "the combination of risk factors can be disproportionately detrimental to development, and it is explored

statistically by testing for significant interactions among variables" (Pungello et al., 1996). The multiplicative model is in line with the person-oriented approach; the purpose of which is to analyse configurations of risk factors rather than global indices.

The central drawback in variable oriented methods (Bergman, 1998; Magnusson & Bergman, 1990, Magnusson, 1998), is that the relationships are assumed to be the same for all individuals, and thus the results reflect what is characteristic of the average person. The results are expressed in terms of some kind of weight, not directly applicable to individuals and groups. As a consequence, the results do not reveal whether certain interactions can be explained by the existence of a few multi-problem individuals. Furthermore, correlational techniques obfuscate important changes among individuals; as noted by Loeber (1991) and Hinde and Dennis (1986).

In the *person-oriented approach* to the study of development (Bergman, 1998; Bergman & Magnusson, 1997; Magnusson & Bergman, 1990; Magnusson, 1998), which was first introduced by Block (1971), the research questions are formulated and the results interpreted in personal terms. The generalizations made from the results refer to individuals or groups as well. The general idea in person-oriented research is that individuals are grouped on the basis of the similarity of their data profiles, by applying appropriate statistical methods, such as Configurational Frequency Analysis, cluster analytical techniques, the Q-sort technique or latent profile analysis (for more details, see Bergman, 1998; Bergman, Eklund, & Magnusson, 1991; Bergman & Magnusson, 1997; Magnusson, 1995). When compared to variable-oriented methods, person-oriented methods involve fewer assumptions about the properties of the data. For example, Configurational Frequency Analysis is well suited to categorical level data.

Bergman and Magnusson (1997) as well as Stattin and Magnusson (1996) have recently introduced several concrete tools to study the question of whether problems, in fact, accumulate; or in their own words "gravitate". This could be tested (a) by identifying configurations of problems by means of Configurational Frequency Analysis, log linear analysis or by cross-tabulations, and testing whether problems co-occur more often than by chance, (b) by comparing the relative proportions of various patterns of adjustment problems at two ages; problem gravitation exists if the relative frequency of both multi-problem patterns and well-adjusted patterns becomes more frequent over time in relation to single problem patterns, (c) by removing persons with large number of problems from the analysis and counting correlations between risk factors and outcome variables; if no relationships exists after the removal, then one could suggest that the variable in case has no impact as a single variable; and this indicates the importance of the accumulation of adjustment problems in the prediction of later problems, (d) by looking at the individual stabilities of patterns over time; the problem gravitation hypothesis is supported if the pattern of having only a few problems proves to be less stable than the no-problem or the multi-problem pattern.

The person-oriented approach has, however, a few drawbacks. One limitation is that pattern analysis allows the use of only a few variables, which should preferably be dichotomous. According to Magnusson and Bergman (1990)

the more variables or categories are included in the analysis, the more difficult it is to handle the data and interpret the results. However, dichotomizing may result in loss of information.

I applied person-oriented analysis to the analysis of problem patterns and the pathways of risk factors (Study I), as well as for the analysis of problem gravitation (Study IV). Variable-oriented analysis was applied to the study of the interactions among problems of social functioning and among risk factors (Study I), as well as for the study of mediators and moderators (Studies II, III and V). I combined variable- and person-oriented approaches by counting cumulative indices and using them as a grouping variable (Study IV).

## **2.2 Longitudinal study**

As the accumulation of problems is something that happens over time, the best research design is longitudinal. The Jyväskylä Longitudinal Study of Personality and Social Development, directed by Academy Professor Lea Pulkkinen, offered me a unique opportunity to analyse developmental processes involved in the accumulation of problems. The lives of participants born in 1959 (196 boys, 173 girls) have been followed from age 8 to age 36, ever since 1968. Data archives contain large amounts of information about the individual, family, and other environmental factors in shaping the life course from childhood to adulthood.

Most of the data I utilized in my study had already been collected, when I began my dissertation. Thus part of my study is so-called secondary analysis of data. The process of doing secondary analysis differs from the traditional research process in several ways. In secondary analysis the order of the various research stages is re-ordered because the core measures have already been selected, and data collected. McCall and Appelbaum (1991) state that the structure of the data set determines the scientific questions rather than the reverse, and the actual process is more recursive than linear. The researcher is required to modify the question to match the database - and this was the starting point of my study, too. The main problem in secondary analysis is that the data may lack some of the factors relevant to a particular research question, or it may be that only minimal information about these factors has been collected. My relationship to the data, however, changed when I took part in the data collection phase in 1995, which included planning of the data collection phase.

## **2.3 Participants and methods**

The original sample of children resident in the town of Jyväskylä and born in 1959 was randomly drawn from second-grade pupils from both downtown and

suburban areas in 1968. The sample consisted of 12 school classes comprising 196 boys and 173 girls. The mean age of the children was 8 years and 3 months.

Table 2.1 summarizes the points of data collection, the measures used, and the studies in which they were utilized. At the ages of 8 and 14 the main data collection method was teacher rating of social behavior. At age 8, the class teacher was asked to rate each student on a scale from 0 to 3; 3 was given to those students in whom the characteristic in question was very prominent and, 0 to those students in whom the teacher had never observed. At age 14, the teachers were asked about students' problems in adjustment to school; for example in terms of truancy and punishments, peer relationships, and school motivation. School success was studied by collecting data on grade point averages from school archives. A smaller sample of the participants, and one parent of each subject were interviewed when the pupils were 14. This group of participants was also interviewed at the age of 20.

TABLE 2.1 Times of data collection

Times of Data Collection, Number of Participants and Methods Used		Methods Utilized in Studies				
		I	II	III	IV	V
1968 AGE 8 173 girls, 196 boys	Teacher ratings of social behavior	X	X	X		X
1974 AGE 14 167 girls 189 boys	Teacher ratings of social behavior School progress	X	X	X		X
154 girls and boys	Participant interview Parental interview			X X		
1980 AGE 20 135 women and men	Participant interview			X		
1986 AGE 27 155 women 166 men	Life Situation Questionnaire Semi-structured interview Criminal records (local and government)	X X X	X X X	X X X	X X X	X X X
1995 AGE 36 151 women 160 men	Life Situation Questionnaire Semi-structured interview Criminal records (government) Self-reported crime				X X X X	X X X X

At ages 27 and 36, all the participants filled in a mailed Life Situation Questionnaire and participated in a semi-structured interview. The Life Situation Questionnaire included, among others, questions concerning financial standing, intimate relationships, drinking habits, education and career history. The semi-structured interviews lasted 2-3 hours on average, and they were tape-recorded. The interviews completed the picture of social functioning of the participants, also dealing more extensively with life orientation. At age 27, the semi-structured interview also included retrospective questions concerning family life when the participants were 14 years old. Local (ages 16-26) and government (16-36) criminal records were studied for the whole sample.

Studies I and II are based on data collections made at age 8, 14, and 27. Study III, focusing on life-orientation, also included follow-up data measured at age 20. New data collected when the participants were 36 years old made it possible for me to study continuity of problems from age 27 to age 36 (Study IV). Finally, I studied the accumulation of problems as a long-term process from school age to adulthood, utilizing data collected at the ages of 8, 14, 27 and 36 (Study V).

### 3 OVERVIEW OF THE ORIGINAL STUDIES

#### Study I

Rönkä, A. & Pulkkinen, L. (1995). Accumulation of problems in social functioning in young adulthood: a developmental approach. *Journal of Personality and Social Psychology*, 69, 381-391.

The main purpose of this study was to analyse whether problems of social functioning in young adulthood are interrelated and accumulated, and to identify developmental processes that may lead to cumulative problems. The participants consisted of 155 women and 166 men, all aged 27 years. The results showed that problems of social functioning were interrelated, and that an unstable career played a central role, especially in men's lives. An unstable career in men was related to poor financial standing, poor social relations, criminal arrests, and drinking problems. For both sexes, drinking problems and criminal arrests were interrelated. Moreover, problems of social functioning (except problem behavior) were related to negative orientation to the future.

In order to verify that problems did indeed accumulate, and to identify problem accumulations, I used pattern analysis with three variables that had been shown to be interconnected: career line (unstable, stable), drinking problems (yes, no), and criminal arrests (several, no or a few). Pattern analysis showed that an unstable career, drinking problems, and criminality tended either to accumulate or not to exist in men. As to the relationships between risk factors (aggressiveness, family problems, problems in adjustment to school, poor peer relations, poor school success) the results confirmed the previous finding that risk factors do not exist in isolation of each other, but instead tend to interact and co-occur in both sexes.

The analysis of developmental pathways provided evidence for a developmental process through which aggressive behavior at age 8, and



problems in adjustment to school and family problems jointly lead to the accumulation of an unstable career, drinking problems, and criminality among men. In general, the results showed that the accumulation of risk factors, regardless of what risk factors were chosen among the five risk factors in this analysis, contributed to the accumulation of problems of social functioning in adulthood. In women, the accumulation of unstable career, drinking problems, and criminality concerned only very few individuals, and thus there was no point in analysing developmental paths leading to the accumulation of these problems.

The results showed that an unstable career line *per se* does not lead to the accumulation of problems, but when it is linked with aggressiveness and family problems, it does. Unstable career *per se*, whether preceded by other problems or not, was, however, related to future orientation and to poor financial standing, which shows the importance of career line in the lives of young adults in general.

## Study II

**Rönkä, A. & Pulkkinen, L. (1998). Work involvement and timing of motherhood in the accumulation of problems in social functioning in young women. *Journal of Research on Adolescence*, 8, 221-239.**

This study addressed mechanisms involved in the accumulation of problems of social functioning in women which I did not succeed in identifying in Study I. The main problems were to see whether low work involvement and the early timing of motherhood function as mediating factors between risk factors in childhood and problems of social functioning in young adulthood. I assumed that these two factors would be central elements in the accumulation of problems in females' lives. Participants consisted of 155 women, all of whom were 27 years old. A cumulative index for risk factors included anxiety and aggressiveness at age 8; problems in adjustment to school, poor school success, and low school motivation at age 14; and low parental socioeconomic status and high parental drinking. A cumulative index for problems of social functioning at age 27 included low number of friends, poor financial standing, and problem behavior. Educational and work history was described in terms of work involvement, which included both continuity of career line and length of education, to better assess the variation in female career lines. Work involvement was operationalized as career trajectory, which included five categories.

The results showed that low work involvement appeared to be a mediating factor between risk factors and the the accumulation of problems of social functioning in adulthood. The more risk factors a girl had experienced in childhood and adolescence, the more often she ended up with a discontinuous career without education, which increased the risk for later problems. Risk factors increased the likelihood of early motherhood too, but early motherhood had only an indirect effect, through work involvement, in the accumulation of problems of social functioning. This means that accumulated problems may push a girl into early motherhood, but the consequences for social functioning depend on

whether a young woman has succeeded in finishing her education and finding her place in working life.

At an individual level, the five categories for work involvement named as career trajectories differentiated women with regard to risk factors and problems of social functioning. Women with a low education and discontinuous career (Career trajectory 1) were typified by the accumulation of risk factors and problems of social functioning, and consistently differed from women who were highly integrated into education and work (Career trajectories 4 and 5). Furthermore, the results showed that work involvement was related to psychological well-being, too. Women with a discontinuous career were more depressed and dissatisfied, and had lower self-confidence than women with a continuous career.

Early motherhood in this study referred to motherhood at age 21 or earlier, and thus the results are not fully comparable with those of studies of teenage pregnancies, although the results in this study were in line with other studies suggesting that early timing of motherhood does not have negative consequences on later social functioning in all circumstances.

### Study III

**Pulkkinen, L. & Rönkä, A. (1994). Personal control over development, identity formation, and future orientation as components of life orientation: a developmental approach. *Developmental Psychology*, 30, 260-271.**

The focus of this study was life orientation in young adults, which was approached from three perspectives: self-percept of personal control over development, identity formation, and orientation to the future. The purposes of this study were first, to investigate the interrelations between the three aspects of life orientation; second, to analyse the associations between life orientation and adaptive psychological functioning and third, to investigate the developmental antecedents of life orientation. The participants consisted of 142 women and 145 men, all aged 27 years. The methods used were an identity-status interview, a Personal Control Inventory, a semi-structured interview, and a mailed Life Situation Questionnaire.

The results showed, first, that the various aspects of life orientation were interrelated, but that two independent components of life orientation emerged instead of one. The first component, termed Positive vs. Negative Orientation, included self-percepts of personal control over development and optimistic expectations of the future, whereas the other component, termed Motivated Questioning, consisted of identity exploration, motivated future orientation, and dissatisfaction with present achievements.

Second, a Positive Orientation was related to adaptive psychological functioning in terms of positive affects (satisfaction with present life and lack of concerns over the future), a broad range of goals (length of education, career stability, and lack of unemployment), and social support (a large social network).

As regards socially constructive ends, the hypothesis was confirmed only for men; the existence of values correlated with Positive Orientation. Motivated Questioning, in contrast, was less consistently associated with variables for adaptive psychological functioning. Third, of the developmental antecedents, positive prognosis, high socio-economic status of the family, school success, and long education were related to the factors for life orientation, but indirectly rather than directly.

This study demonstrated the complexity of the relationships between life orientation, that is to say, the individual's subjective conception of life, and success judged according to average norms and standards. There were interrelationships, which showed that success in central areas of life, especially in education, work, and social relationships, are reflected in positive life orientation. Problem behavior was related to a low motivation to face the future, but its connections to the factors for life orientation were less consistent. Life orientation - at least in some sub-cultures- may thus be quite independent of how a person succeeds in terms of average norms and standards. "Inner" life orientation may be more determined by personal standards, as well as by the expectations central in each subculture.

#### **Study IV**

**Rönkä, A., Kinnunen, U., & Pulkkinen, L. (in press). Continuity in problems of social functioning in adulthood: a cumulative perspective. *Journal of Adult Development*.**

The aim of this study was to investigate if there was continuity in and accumulation of problems of social functioning from age 27 to age 36. Furthermore, this study was focused to analyse sex differences in the accumulation of problems, and to test the problem gravitation hypothesis formulated by Bergman and Magnusson (1997). The accumulation of problems was identified by counting comparable cumulative indices for problems of social functioning at age 27 and at age 36. They included poor financial standing, unemployment, poor social relationships, poor intimate relationships, drinking problems, and criminality. The participants consisted of 145 women and 152 men.

The results showed that the accumulation of problems of social functioning was more common in men than in women at both ages. Sex differences, however, narrowed; because among the women problems increased, but in the men they remained at the same level during the follow-up from age 27 to age 36. The theory of problem gravitation was only partly confirmed. Continuity both in accumulated problems and in good social functioning was stronger than continuity in single problems, as assumed on the basis of the theory of problem gravitation. This means that if problems are connected to each other, then they tend to persist or even get worse. The proportion of individuals with either accumulated problems or with good social functioning did not, however, increase relative to individuals with single problems, as the theory of problem gravitation has suggested. Instead, the proportion of persons with single problems increased

and the proportion of persons without problems decreased. The discrepancy in findings may be explained by differences in research designs and in contexts, as well as in age groups.

The study gave evidence of the central roles of career line and quality of partner in the continuity of problems in adulthood, specifying factors involved in problem gravitation in adulthood. Continuity in problems of social functioning was partly mediated by career instability among both sexes, which means that a high number of problems of social functioning at age 27 made integration into working life more difficult, which in turn increased the risk for problems of social functioning in settled adulthood. There was a tendency for the relationships between problems of social functioning at the two ages to be moderated by the quality of partner (as assessed at age 36) only in women. The existence of a nonproblematic partner protected women against later problems; whereas the existence of a partner who was unemployed, had drinking problems, and/or was violent increased the likelihood that a woman would have accumulated problems (even if the item intimate relationships was excluded from the cumulative index for problems of social functioning). Quality of partner did not moderate men's problems. Accumulated problems were, however, more common in single men than in men who had a non-problematic partner at both ages.

### **Study V**

**Rönkä, A., Kinnunen, U., & Pulkkinen, L. (in press). The accumulation of problems of social functioning as a long-term process: women and men compared. *International Journal of Behavioral Development*.**

The aim of this study was to compare the long-term processes involved in the accumulation of problems of social functioning in women and men. I was especially interested in the roles of environmental continuities (the outer strand) and self-related cognitions (the inner strand) in mediating problems. Although previous findings suggest that there are gender differences in the accumulation of problems of social functioning, the differences in variables, and in the data analysis methods used in these studies make it difficult to make comparisons between the sexes.

The participants consisted of 145 women and 152 men. A cumulative index for risk factors included anxiety and aggressiveness at age 8; and problems in adjustment to school, poor school success, low school motivation, low parental socioeconomic status, and high parental drinking at age 14. Cumulative indices formed for problems of social functioning at age 27 (year 1986) and at age 36 (year 1995) included poor financial standing, poor social relationships, poor intimate relationships, drinking problems, and criminality. The inner strand was operationalized as a sense of failure, measured at ages 27 and 36; and the outer strand of risk factors included career instability (ages 16-26 and 27-36) and early timing of parenthood.

The results provided evidence for our hypothesis that risk factors are

transmitted into adulthood both through environmental continuities (the outer strand) and psychological vulnerability (the inner strand). Among both sexes, the accumulation of risk factors predicted career instability which tended to continue over time, and predispose individuals to problems of social functioning at the same time. Risk factors accounted for early timing of parenthood among both sexes, which is in accordance with recent findings on teen parenthood. Early parenthood, however, contributed to career instability and the accumulation of problems of social functioning in adulthood only in women; suggesting a more central role of reproductive functioning in risk processes among women than among men. Surprisingly, the early timing of fatherhood was negatively related to career instability. It means that young fathers tended to have stable career lines and few problems of social functioning.

Risk factors predisposed both women and men to a sense of failure; which tended to persist. A sense of failure was, however, linked to career instability and problems of social functioning only in women; indicating a more central role of the inner strand in the accumulation of problems in women than in men, as was hypothesized.

Childhood problems predicted problems of social functioning more directly in men than in women. One reason for this may be that problems typical of boys such as aggressiveness and school maladjustment, easily set in motion difficulties in several areas of life. This suggests that possibly there is a third strand in the continuity of problems of social functioning, especially prevalent for men: behavioral vulnerability. Behavioral vulnerability refers to an individual's tendency to exhibit problem behavior as a signal of stress, which has negative consequences for the life course.

## 4 GENERAL DISCUSSION

### 4.1 Main findings

The results showed that problems relating to individuals' functioning and behavior in age-related contexts - that is to say, risk factors and problems of social functioning - seldom act in isolation from each other, but instead tend to interact, co-occur, and form chains. The accumulation of problems of social functioning proved to be a dynamic process in which childhood risk factors such as problems relating to family and school are perpetuated and transformed into adult problems of social functioning through three cyclic mechanisms that interact. The first of these, the "outer strand", is a chain of events along which poor conditions are linked, and individual's chances of coping with life become more limited. Career instability, which refers to problems in integration into education and work, was a central element in the outer strand: being both a cause and a consequence of accumulated problems. Of the risk factors, parental problems and low socio-economic status of the family also represented the outer strand: environmental conditions that were found to set in motion unfavourable experiences later in life.

Second, the accumulation of risk factors may predispose individuals to negative feelings about themselves, making them psychologically vulnerable in face of adversity. This so-called inner strand concerns cognitive processes; particularly an individual's conceptions of his/her self and orientation to life. Negative experiences and failures tended to predispose participants to a sense of failure.

In addition to these two strands, first time mentioned by Harris et al. (1987), I would like to bring up a third process which I termed "behavioral vulnerability". It refers to individual dispositions such as aggressiveness that may cause harm in different contexts - and also be a consequence of earlier problems.

Likewise, behavioral vulnerability refers to the individual's tendency to exhibit problem behavior as a signal of stress (Hurrelmann & Engel, 1992), and the negative consequences of this for the life course.

The accumulation of risk factors and problems of social functioning was more common among men than among women. Actually, the results draw somewhat different pictures of the developmental processes involved among the two sexes. This is because females and males tend to express and react to life problems (such as family adversities) in somewhat different ways; which furthermore seem to have different consequences for the future life course.

Men exhibited problem behavior of all types more often than women, which suggests the more prominent - or at least more visible- role of the behavioral strand in males than in females. Externalizing problems typical of males, such as aggressiveness and norm breaking, often set in motion various kinds of problems at school and in other contexts. These problems are easily perpetuated if they elicit negative feedback from parents and teachers (Rutter et al., 1990); and more especially; if they serve the needs of adolescents to search for excitement, to become accepted by peers as well as to gain independence (Jessor & Jessor, 1977; Maggs & Hurrelmann, 1998; Silbereisen & Noack, 1988). The inner strand, which has to do with self-related cognitions, played a less central role among males than among females.

Among the women, it was anxiety rather than aggressiveness that seemed to be involved in the accumulation of problems, by contributing to low work involvement. Similarly, the inner strand, in terms of maladaptive life orientation, was more involved in problem pathways in women than in men which means that negative feelings about one's opportunities in life may make a woman less able to deal with her life's challenges. As to the outer strand, partnership with a man who has problems tended to add to women's problems. Although risk factors accounted for early timing of parenthood among both sexes, which is in accordance with recent findings on teen parenthood (e.g., Maughan & Lindelöw, 1997; Serbin et al., 1991, 1998; Stouthamer-Loeber & Wei, 1998; Thornberry et al., 1997) early parenthood contributed to the accumulation of problems of social functioning in adulthood only in women. The results also showed that continuity in accumulated problems between various ages was weaker among women, and that women's problems start to accumulate later in life than men's problems.

The results support the idea of sex-typical problem pathways (e.g., Serbin et al., 1991) which itself may reflect different orientations toward the self and the world among the two sexes (Caffarella & Olson, 1993). Females are prone to internalizing problems, which are therefore less visible, but which may nonetheless hinder career development, which seems to be a very important source of self-esteem. It is possible that the concern for the consequences of one's behavior for others typical of females - either because of different socialization patterns, and the different expectations society has of women and men or deriving from biological factors- limits their desire or their willingness to commit deviant acts (Block, 1983; Gove, 1986; Zahn-Waxler, 1993). Furthermore, the results indicated the important role of reproductive functioning in risk processes, and the strong influence of the partner in social functioning among women. Similarly, the results confirmed the idea that the risk processes of women are

characterized by diversity and non-linearity. This may be due to the fact that the birth and care of children plays a particularly large role in shaping the life patterns of women. Early motherhood, for example, may be an escape route from a difficult childhood, or an alternative pathway to adulthood when opportunities for creating a career are limited. It may offer protection from problem behavior; but, at the same time it may predispose women to other problems of social functioning later in adulthood.

The sex-differences in exhibiting problem behavior are, however, changing (Smith & Rutter, 1995). Young women today drink more than they used to, and have more positive attitudes toward substance abuse than some decades ago (Maggs & Hurrelmann, 1998). It is possible that sex differences in drinking behavior as well as in other forms of problem behavior are more narrow in younger cohorts than in this cohort born in 1959.

The results of this study confirmed earlier findings concerning the co-occurrence of problem behavior (e.g., Jessor et al., 1991), but showed that other problems relating to age-relevant developmental tasks, such as poor financial standing and poor social relations may be involved. The theory of problem gravitation (Bergman & Magnusson, 1997), which offers the most specific ideas on the accumulation of problems, was partly confirmed. That problems concentrate in a small group of people was demonstrated in Study 1. Similarly, the findings throughout this study supported the idea of problem gravitation hypothesis (which is based on the holistic theory of human development proposed by Magnusson and his colleagues) that when problems are severe and accumulated, they tend to persist. This is because the whole system is pushed to a stable state of maladjustment, for which large sectors of the persons environment are maladjusted. Separate problems come and go, without predictive validity. I did not, however, find evidence for problem polarization; that is to say, I found no evidence that the proportion of multiproblem persons and well-adjusted persons increases over time in relation to those who have separate problems. The discrepancy in findings may be due to the historical period of the participants, as characterized by economic recession in the 1990's preceded by period of general prosperity in 1980's.

The findings of this study suggest that the accumulation of problems is a cyclic process (Caprara & Zimbardo, 1996; Laub & Sampson, 1993; Stattin & Magnusson, 1996) contributed to by environmental continuities, cognitive processes and individual dispositions. Educational and work history proved to be one of the central links in cumulative processes. This is because the career line includes many institutionalized turning points, at which the decision taken is dependent on past life, and directs the life course later on in several ways. For example, poor school success limits opportunities in the schooling market, which may result in lack of educational qualifications; which in turn predisposes the individual to unemployment and consequently, to lack of money. The career line seems to be an interesting link between micro and macro-levels, too; a point at which societal factors, such as rate of unemployment and schooling systems, impinge on individual life histories. It should be also noted that although the outer strand refers to events external to the individual, the individual's own choice may to some extent be involved in the selection of environments.



As to the role of individual traits in cumulative processes, this study was in line with earlier findings concerning the life-course patterns of aggressive children (e.g., Caspi et al., 1989). However, the results of this study showed that aggressiveness alone did not predict cumulative problems. When linked with other risk factors, however, it clearly predicted the accumulation of problems in adulthood. The finding that aggressiveness was related to family problems suggests that aggressiveness is at least partly a consequence of problematic family socialization - but of course in interaction with biologically based temperamental qualities (Kochanska, 1993). Neurobiological factors, such as hyperactivity and learning disorders may also contribute to the accumulation of problems; for example, by predisposing to behavioral problems.

The general notion that childhood adversities may make an individual vulnerable to later adversities (the inner strand), has lacked empirical evidence. The findings of this study were in line with Harris's et al. (1987) findings, which showed that early adversities (lack of parental care) affected the inner resources of the women in terms of a sense of helplessness and low self-efficacy. The results concerning life orientation, however, showed that the connections between negative life experiences and life orientation are complicated. Problems of social functioning are not in every case associated with negative life orientation. A sense of success does not always stem from coping with normative developmental tasks. It may arise as a result of other factors. This is in line with the problem gravitation hypothesis of adjustment problems (Bergman & Magnusson, 1997); which considers identification with a subculture and adoption of its norms to be one of the mechanisms involved in the accumulation of problems. Another point is that getting successfully through adversities may even strengthen self-esteem and other inner resources (Rutter, 1992).

This leads to the question of resiliency. Despite the finding that accumulated problems tend to continue, there were individuals who were exposed to several risk factors, but who did not develop accumulated problems at all, or did not continue to have accumulated problems in adulthood. Protective processes - although not the focus of this study - may also be understood in terms of the three central strands. Individuals exposed to risk factors are protected by events that promote good life circumstances; experiences that enhance self-esteem and other inner resources; and behavioral dispositions that elicit positive feedback from other people and facilitate adaptation to new situations and contexts. As a matter of fact, the majority of participants of this study could be described in terms of this positive side of the coin; that is to say, the accumulation of positive experiences.

Neither does the finding that accumulated problems tend to continue from childhood to adulthood mean that all accumulated problems stem from childhood. In adult's lives, life-events such as unemployment or divorce may also put in motion cumulative problems, despite the favourable developmental background of the participants (Baltes, Reese, & Lipsitt, 1980). The accumulation of problems may also occur only at adolescence and young adulthood; reflecting the difficulties in mastering developmental tasks typical of that ages (Jessor et al, 1991; Levinson, 1986).

## 4.2 Conceptual and methodological conclusions

The accumulation of problems can be understood in four different ways depending on two main dimensions: the focus of interest (whether the focus is on an individual or a group); and the temporal perspective (whether the accumulation of problems is understood as a state at one point in time or as a process across time) (Table 4.1). If the focus is on an individual, the accumulation of problems can be understood as a co-occurrence of problems, or comorbidity at one point of time; or as a chain of adversities or an amplification of problems over time. If the focus is on a group of people or on a population, the accumulation of problems can be understood as a concentration of problems in a sub-group among individuals at one point of time, or alternatively as a polarization of problems over time. The latter means an increase in the number of individuals who either have several problems or no problems at all in relation to individuals with single or few problems.

TABLE 4.1 The concept of the accumulation of problems according to the focus of interest and the temporal perspective

Focus of interest	Temporal perspective	
	State	Process
Individual	Co-occurrence Comorbidity	Chain of adversities Amplification
Group/ population	Concentration of problems in a sub-group	Polarization

In the articles included in my thesis I have used the concept of accumulation to refer mostly to a long-term process on individual level, i.e., as a chain of adversities (Table 4.1).

One of the subsidiary aims of this study was to compare the person-oriented approach and the variable-oriented approach to the study of the accumulation of problems. The comparison of these approaches suggest that each provides an answer to different questions concerning the accumulation of problems. For example, the person-oriented approach could be used for the analysis of problem patterns and the pathways of risk factors, as well as for the analysis of polarization. The central advantages of person oriented approach is that it is suited to a categorical-level data, illustrates the heterogeneous and dynamic nature of developmental pathways, and most importantly, reveals more about individuals and their development (e.g., Bergman & Magnusson, 1997; Cairns, 1986; Magnusson, 1997). If there are only a few categorical variables, then patterning is a best solution, whereas cluster analysis works best with continuous

variables.

The variable-oriented approach, for its part, is well suited to the study of the structure of problems of social functioning and risk factors, as well as to the study of mediators. For example, structural equation modeling could be used for these purposes (Jessor et al., 1991). It would be interesting to see whether the three central processes explored in this study (outer, inner, behavioral) would come out in this purely variable-oriented way.

As to a more general notion concerning the methodology of this study, I would finally rise the question of the generalizability of these results. The limitations of a longitudinal study is that one does not know whether the results depend on age, cohort, or period (Loeber & Farrington, 1994; Rutter, 1995). The historical context makes each cohort unique. The historical context is especially relevant in women's lives, because the expectations of, and opportunities open to women vary with different cultures as well as cohorts. The life conditions for Finnish (Scandinavian) women are unique in several respects. For example, working outside home is very common among Finnish women, and highly respected, and the possibilities for combining family and work are good due to relatively long maternity leave and the provision of day care systems; and the rate of teenage motherhood is very low.

### **4.3 Implications for prevention and intervention**

The central processes involved in the accumulation of problems (outer, inner, behavioral) should be kept in mind in planning prevention and intervention programs. In order to be successful in preventing the accumulation of problems, prevention should be targeted first, to enhance positive environmental continuities (the outer strand). This could be done, for example, by school and career counselling, as well as by offering extra-curricular activities and monitoring. Second, positive inner cycles could be promoted; most importantly, by offering supportive adult relationships and activities that could enhance self-esteem and a sense of mastery. Third, positive behavioral cycles could be enhanced; for example, by effective parenting and making it possible for children and adolescents to participate in hobbies and activities in which they can channel their search for excitement in a socially acceptable way.

In order to help people with accumulated problems, it might be fruitful to identify the strands through which the problems are mediated. In cases where the problems of social functioning persist because of environmental continuities (lack of work, participation in a deviant sub-culture, or partnership with a deviant partner) an individual is helped by improving his/her life conditions. This study showed that it is especially worthwhile to give employment to those young adults who have shown problem behavior earlier in their lives; because unemployment in their case may justify them in continuing with problem behavior. A permanent work place, in contrast, would offer them a positive turning point. If the main problem is the inner strand, as expressed by lack of motivation and a low sense

of control over life, or other inner coping resources, the person needs more psychological help, such as psychotherapy. If individual dispositions, such as aggressive interactional style enhance the accumulation of problems, then the person could be helped by social strategies training. It is possible that several forces are involved; in which case only intensive, long-term intervention would be worthwhile.

## YHTEENVETO

Tutkimukseni tavoitteena oli saada selville, kasautuvatko erilaiset sosiaalisen selviytymisen ongelmat aikuisiässä ja analysoida ongelmien kasautumiseen johtavia kehityskulkuja. Vaikka tutkijat ovat viime vuosina alkaneet kiinnittää huomiota sosiaaliseen selviytymiseen liittyvien ongelmien kasautumiseen, siitä miten ja miksi nämä ongelmat kasautuvat, on olemassa vain vähän tutkimuksia. Aiempi tutkimustieto naisten ja miesten erilaisista tavoista reagoida elämänvaikeuksiin sai minut lisäksi kysymään, onko ongelmien kasautuminen erilaista naisilla ja miehillä.

Käsite sosiaalinen selviytyminen tarkoittaa sitä, miten henkilö selviytyy ikävaiheen kehitystehtävistä ja sopeutuu yhteiskunnan normeihin. Tutkimiani sosiaalisen selviytymisen ongelmia aikuisiässä olivat työttömyys, taloudelliset vaikeudet, parisuhdeongelmat, heikot sosiaaliset suhteet, alkoholin ongelmakäyttö ja epäsosiaalinen toiminta. Kehityksen riskitekijät sisälsivät perheoloihin (mm. vanhempien alkoholiongelmat), yksilön käyttäytymistyyliin (aggressiivisuus ja ahdistuneisuus) sekä koulunkäyntiin (heikko koulumenestys ja -motivaatio ja sopeutumisongelmat) liittyviä tekijöitä, jotka voivat vaikeuttaa nuoren myöhempää selviytymistä.

Tämä viidestä osatutkimuksesta koostuva väitöstutkimus pohjautuu Akatemiaprofessori Lea Pulkkinen johtamaan Lapsesta aikuiseksi -tutkimukseen, jossa on seurattu alunperin keskisuomalaisen lapsiryhmän kehitystä jo yli kolmenkymmenen vuoden ajan. Alkuperäisotoksen muodosti 369 jyvaskyläläistä lasta, jotka olivat syntyneet vuonna 1959. Käytin hyväkseni tietoja, jotka oli koottu opettaja-arviointien, kyselyiden ja haastattelujen avulla tutkittavien ollessa 8-, 14-, 27-, ja 36-vuotiaita.

Tutkimus osoitti, että niin lapsuusiän riskitekijöillä kuin sosiaalisen selviytymisen ongelmilla aikuisiässä on taipumus kasautua. Ongelmien kasautuminen on usein pitkäaikainen prosessi, jossa lapsuusiän riskitekijät kasautuvat ja välittyvät aikuisuuteen. Tutkimuksessani kasautuminen eteni kolmea väylää pitkin siten, että seuraukset aiemmista vaikeuksista muuntuivat myöhempien ongelmien syiksi. *Ulkoisen kasautumisen väylä* tarkoittaa tapahtumaketjua, jonka edetessä yksilön olosuhteet vaikeutuvat tai pysyvät epäedullisina, ja hänen mahdollisuutensa selviytyä eri elämänalueilla kapeutuvat. Ulkoisen väylän keskeinen elementti oli työuran epävakaisuus. Riskitekijöiden kasautuminen vaikeutti nuoren siirtymistä työelämään ja työuralla etenemistä, mikä puolestaan heijastui sosiaaliseen selviytymiseen aikuisuudessa. Lapsuuden riskitekijät välittyivät aikuisuuteen myös *sisäistä väylää* pitkin aiheuttamalla epäonnistumisen tunnetta. Kolmas kasautumisen väylä, *käyttäytymisen haavoittuvuus*, viittaa sellaisiin yksilön käyttäytymistyyliin, kuten aggressiivisuuteen, jotka helposti aiheuttavat ongelmia erilaisissa ympäristöissä ja jotka itse ovat usein seurausta vaikeista kasvuoloista.

Sekä riskitekijöiden että sosiaaliseen selviytymiseen liittyvien ongelmien kasautuminen oli yleisempää miehillä kuin naisilla. Myös ongelmien kasautumiseen johtavissa kehityskuluissa oli sukupuolieroja. Tämä johtuu siitä, että tytöt ja pojat regoivat elämänvaikeuksiin jossain määrin eri tavoin, mistä

aiheutuu erilaisia seurauksia. Miehillä kasautumisen väylistä korostui käyttäytymisen haavoittuvuus. Heille ominaiset ulospäinsuuntautuvat käytösongelmat, kuten aggressiivisuus ja alkoholi-ongelmat, käynnistivät helposti ongelmaketjuja eri elämänalueilla.

Naisilla käyttäytymispiirteistä sosiaalinen ahdistuneisuus pikemmin kuin aggressiivisuus oli yhteydessä ongelmien kasautumiseen, koska se ennakoiki vaikeuksia työuralla. Sisäinen ongelmien kasautumisen väylä osoittautui naisilla keskeisemmäksi kuin miehillä: lapsuusiän vaikeuksista johtuva epäonnistumisen tunne näytti altistavan erityisesti naisia myöhemmille elämänvaikeuksille. Ulkoiseen, olosuhteita vaikeuttavaan väylään liittyi naisilla työuravaikeuksien lisäksi kumppanuus sellaisen miehen kanssa, jolla itsellään oli sosiaalisen selviytymisen ongelmia (työttömyys, väkivaltaisuus ja alkoholin ongelmakäyttö). Vaikka lapsuusiän riskitekijöiden kasautuminen lisäsi sekä naisten että miesten todennäköisyyttä tulla vanhemmaksi keskimääräistä nuorempana, ainoastaan naisilla varhainen vanhemmuus altisti sosiaalisen selviytymisen ongelmille aikuisiässä. Ongelmien kasautumista naisten ryhmässä luonnehti lisäksi se, että ongelmat alkoivat kasautua myöhemmin kuin miehillä ja että ongelmien jatkuvuus elämänvaiheesta toiseen oli vähäisempää.

Poikien ja miesten elämässä näyttää olevan enemmän tekijöitä, jotka vahvistavat ongelmien kasautumista ja pysyvyyttä. Yksi tällainen tekijä on se, että ongelmakäyttäytyminen on poikien ja miesten keskuudessa hyväksytympää, jopa suosiota lisäävää. Tosin viime vuosina ongelmakäyttäytyminen on tyttöjen keskuudessa lisääntynyt ja asenteet sitä kohtaan ovat tulleet myönteisemmiksi. Naisten elämänkuluille ominainen epäjatkuvuus johtuu osittain myös siitä vaihtelusta, jota lasten synnytys ja hoito nimenomaan heidän elämäänsä tuottaa.

Käsitteellinen johtopäätökseni on, että ongelmien kasautuminen voidaan ymmärtää tarkastelun kohteesta (yksilö tai väestöryhmä) ja ajallisesta perspektiivistä (tila tai prosessi) riippuen neljällä eri tavalla: joko ongelmien yhdenaikaisuutena tai ketjuuntumisena yksilön elämässä, tai ongelmien keskittymisenä tai polarisoitumisena väestössä. Tässä tutkimuksessa tarkastelin ongelmien kasautumista pitkäaikaisena prosessina yksilön elämässä.

Tutkimustuloksia ongelmien kasautumisen väylistä voidaan soveltaa käytäntöön suunniteltaessa preventio- ja interventio-ohjelmia. Koulutus- ja työuran tukeminen sekä valvottu harrastustoiminta ovat toimenpiteitä, jotka estävät negatiivisten ulkoisten tapahtumaketjujen muodostumista. Itsetunnon ja muiden sisäisten selviytymisresurssien kehittämisen kannalta lapset ja nuoret tarvitsevat ennen kaikkea luottamuksellisia ihmissuhteita ja onnistumisen elämyksiä. Käyttäytymisen haavoittuvuutta voidaan estää tarjoamalla kasvatusta, joka pyrkii tukemaan itsehallinnan kehitystä ja ottamaan huomioon lasten väliset yksilölliset erot. Tämä puolestaan edellyttää riittävän pieniä opetusryhmiä. Lapsia ja nuoria tulisi kannustaa toimintoihin ja harrastuksiin, joissa he voivat päteä ja kanavoida jännityksen kaipuunsa siten, ettei siitä koidu haittaa yhteisölle.

Ongelmien kasautumiseen vaikuttavien interventioiden suuntaamiseksi olisi hyödyllistä tapauskohtaisesti tarkastella, mitä ovat ongelmia ylläpitävät tekijät ja suunnata toimenpiteet tarpeen mukaisesti joko sisäisiin tai ulkoisiin tekijöihin, tai yksilön käyttäytymispiirteisiin.

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I

**Accumulation of Problems in Social Functioning in Young  
Adulthood: A Developmental Approach**

by

Anna Rönkä and Lea Pulkkinen

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**II**

**Work Involvement and Timing of Motherhood  
in the Accumulation of Problems in Social Functioning  
in Young Women**

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Anna Rönkä and Lea Pulkkinen

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**III**

**Personal Control Over Development, Identity Formation, and  
Future Orientation as Components of Life Orientation:  
A Developmental Approach**

by

Lea Pulkkinen and Anna Rönkä

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IV

**Continuity in Problems of Social Functioning in Adulthood:  
A Cumulative Perspective**

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Anna Rönkä, Ulla Kinnunen and Lea Pulkkinen

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V

**The Accumulation of Problems of Social Functioning  
as a Long-term Process: Women and Men Compared**

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