Problem behavior during early adolescence and child, parent, and friend effects: a longitudinal study

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Chapter 1:

Introduction
Prior to the 1970s, the period of early adolescence used to be typified as a period of ‘storm and stress’ with many conflicts for both the adolescents and their families (Blos, 1967; Erickson, 1968; Steinberg, 1990; Henricson & Roker, 2000; Steinberg, 2001). During the late 1960s and early 1970s, however, several community studies found that approximately three quarters of adolescents and their families had happy relationships and a rather trouble free period (e.g., Kandel & Lesser, 1972). This does not mean that only a quarter of adolescents shows problem behavior, considering the fact that nowadays more than 60% of adolescents get involved in some kind of problem behavior in the course of adolescence (Moffitt, 1993). These behaviors are usually preceded by former problem behavior and/or are influenced by personal factors and factors within the social environment, such as family and friends.

The early adolescence is an especially vulnerable period because of the multiple and simultaneously occurring changes both within and outside of the young adolescent (physical and emotional changes, socio-cognitive development, school transition, etc.). This is indicated by an increase in prevalence of a variety of clinical disorders and behavior problems during and following puberty (McCord, 1990; Moffitt, 1993; Siegel & Scovill, 2000). Considering the high amount of problem behavior during this period, it is important to study the determinants of these behaviors. In the present thesis, the focus is on adolescent problem behavior and two important environmental factors: parenting and friends behavior.
The introduction will continue with an elaboration of important concepts/aspects that are dealt with in chapters 2 to 4. Afterwards, a summary of the research questions will be given and a short outline of the subsequent chapters will be provided.

1.1 Externalizing and internalizing problem behavior

Most of the studies on problem behavior of adolescents have focused on various types of externalizing problem behavior, including delinquency and aggression (Kazdin, 1997). A second large group of problem behavior, internalizing problems (e.g., anxiety and depression), has received less attention. A possible reason might be that externalizing problem behavior is more visible and has more direct consequences for the community. Another reason might be that externalizing problems are more prevalent. However, it has been found that between 7% and 33% (depending on its definition and assessment) of the adolescents show depressive feelings. Furthermore, depression is one of the leading predictors of adolescent suicide (Petersen et al., 1993). Given this high prevalence and the serious consequences, this type of problem behavior too deserves research attention. In this thesis, both types of problem behavior will be examined.

1.1.1 Assessment of problem behavior

Two approaches exist to assess problem behavior (see Kamphaus et al., 1999; Sprock, 2003). The first is a categorical approach, in which children are classified in terms of whether or not they have a disorder. The application of the Diagnostic and statistical manual of mental disorders, 4th ed. text revision (DSM-IV-TR; American Psychiatric Association, 1994) exemplifies such an approach. The second approach is a dimensional approach, which provides scores of all children on one or more dimensions. The full range of child behavior becomes clearer, since it does not exclude the children that are not diagnosed (Kamphaus et al., 1999). Overall, the dimensional approach seems to have more predictive validity, represents borderline cases better, and comorbidity can be better understood (e.g., Widiger & Frances, 1994; Fergusson & Horwood, 1995; Clark, 1999; Kamphaus et al., 1999). Illustrative of this approach is the Child Behavior Checklist (CBCL: Achenbach, 1991a; Verhulst, van der Ende, &
Koot, 1996), a questionnaire that is designed to assess problem behavior and social competencies of children as reported by parents.

In the present thesis, problem behavior is measured with the Dutch version of the Youth Self-Report (YSR: Achenbach, 1991b; Verhulst, van der Ende, & Koot, 1997), a questionnaire that is derived from the CBCL. The YSR is filled out by the adolescents themselves (between 11- and 18-years old). Although parents (and also teachers) are important informants for determining the level of problem behavior of children, the child’s own report becomes more important as he or she becomes older. Parents and teachers do not monitor every behavior of the adolescent and many problems of the adolescent might remain unnoticed (Youngstrom, Loeber, & Stouthamer-Loeber, 2000). In line with this reasoning, Verhulst and Van der Ende (1992) found that adolescents reported more problems than their parents did.

In origin, the CBCL is developed for the clinical practice. By means of patients’ files (children and adolescents) and descriptions of problem behavior and emotional problems from the literature, a list of items was developed. Parents with children who were referred to clinical institutes and social workers of these institutes assessed these items. This resulted in a total of 118 questions about behavioral and emotional problem behaviors that could be categorized in eight ‘small-band’ syndrome scales. Five of these syndrome scales belong to two ‘broad-band’ syndromes, Externalizing and Internalizing. The Externalizing syndrome consists of the scales Delinquent Behavior and Aggressive Behavior. The Internalizing syndrome consists of Anxious/Depressed, Withdrawn, and Somatic Complaints.

Because in this thesis a normal population of adolescents is examined, additional questions were added to the YSR in order to expand the range of externalizing problems with problem behaviors that occur frequently in non-clinical groups during this developmental period. Two new scales were developed in conformance with the YSR format (Reitz, Dekovic, & Meijer, 2003), School Problems and Disobedience, consisting of seven and eight items respectively. Items were selected from the literature based on face validity (e.g. Brack, Brack, & Orr 1994; Fletcher, Steinberg, & Sellers, 1999; Gillmore, Hawkins, Catalano, Day, Moore, & Abbott, 1991; Maggs, Almeida, & Galambos, 1995) and were reformulated in correspondence with the items of the YSR.
1.1.2 Structure of problem behavior

When we talk about the construct of problem behavior, what do we mean exactly? Should one consider different types of problem behavior as belonging to one single factor of general deviance, or should one consider them as multiple phenomena?

The majority of research that examined the structure of problem behavior only examined externalizing problem behavior. In the 1970s, Jessor and Jessor (1977) concluded that different types of externalizing problems (drinking, drug use, delinquent behavior, and precocious sexual intercourse) constitute a ‘syndrome’ of problem behavior. This finding is replicated many times later (Allen, Leadbeater, & Aber, 1994; Ary, Duncan, Duncan, & Hops, 1999; Ary et al., 1999; Donovan & Jessor, 1985; Donovan, Jessor, & Costa, 1988; Farrell, Danish, & Howard, 1992; Flannery, Williams, & Vazsonyi, 1999).

Other studies, however, found support for a multi-factor structure of externalizing problem behavior (Farrell, Kung, White, & Valois, 2000; Gillmore, Hawkins, Catalano, Day, & Moore, 1991). These studies do show that a ‘syndrome’ of problem behavior might exist as a second-order factor, instead of a first-order factor, as was previously found.

When both externalizing- and internalizing problem behavior are examined, studies find consistently two-factor models, including an externalizing- and an internalizing factor (Brack, Brack, & Orr, 1994; Hartman et al., 1999; Ingersoll & Orr, 1989). None of these studies checked to see whether there would be a general second-order factor of general deviance. Because externalizing- and internalizing problem behavior are often highly interrelated which suggests the existence of comorbidity (Angold & Costello, 1993; Loeber & Keenan, 1994; McConaughy & Skiba, 1993; Zeitlin, 1999; Zoccolillo, 1992), it would be highly plausible that there is a higher-order factor. The study in chapter 2 examines the structure of both externalizing- and internalizing problem behavior and compares three different factor models, including a one-factor model to examine whether externalizing- and internalizing problem behavior belong to one single factor of general deviance, a two-factor model to examine whether both types of problems should be considered as separate constructs, and a two-factor higher-order model to examine whether problem behavior should be conceptualized as two separate constructs belonging to one factor of general deviance. The structure is examined on two measurement waves and gender differences are also examined.
1.1.3 Stability of problem behavior

Behavioral and emotional problems during adolescence are quite stable (Ferdinand, Verhulst, & Wiznitzer, 1995). There are different ways to conceptualize or operationalize stability. A distinction can be made in absolute and relative stability (Alder & Scher, 1994; Holsen, Kraft, & Vittersø, 2000; Loeber, Drinkwater, Yin, Anderson, Schmidt, & Crawford, 2000). **Absolute stability** indicates the extent to which a construct’s absolute level remains consistent across time. This type of stability is often assessed at the aggregate level by comparing the mean level of problem behavior for a particular group at one time with the mean level for the same group at another time. **Relative stability** on the other hand measures the extent to which individuals retain their rank order or relative position within a group. Conceptually, relative stability is independent of absolute stability. When there is change (or stability) in the absolute level of problem behavior over time, this does not necessarily mean that there is (no) change in the relative position of individuals within the group. Both types of stability for externalizing and internalizing problem behavior are examined in Chapter 2.

1.1.4 Gender differences in problem behavior

During childhood, boys exhibit more internalizing problems than girls. During adolescence, however, girls increasingly show internalizing problem behaviors and are twice as likely as boys to become anxious and depressed (Lewinsohn et al., 1993; Nolen-Hoeksema & Gircus, 1994; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). Externalizing problem behavior, on the other hand, is more prevalent in boys than in girls, both during childhood and adolescence (e.g., Elliott, 1994; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). During adolescence, boys show higher levels of problem behavior like antisocial behavior and conduct disorder (Moffitt, Caspi, Rutter, & Silva, 2001). Because of these gender differences in the prevalence of different types of problem behavior, the structure and stability is examined for boys and girls separately (see Chapter 2).
1.2 Effects of family and friends on problem behavior

Parents influence their children. This perspective is not always shared. Critics of research on parenting have drawn heavily on behavior genetics and state that the role of parents in influencing the child’s development is overemphasized (Harris, 1998; Rowe, 1994). While this might be partially true, for some aspects of development (personality, IQ), there is much evidence from several theoretical approaches (e.g., social learning, cognitive) that parents have an unmistakable influence on their child’s behavior. Of course, parents are not the only source of influence on children’s development. Following the ecological perspective (Bronfenbrenner, 1979, 1986), the child is viewed as being nested within a complex network of interconnected systems. Child characteristics, such as biological, temperamental, and cognitive characteristics, are considered the most proximal influences on behavioral development. The child’s family, the peer group and the neighborhood are more distal variables that can either exert their influence through more proximal variables or directly. Although many factors within the ecological network can relate to problem behavior one way or the other, the focus here will be on the family and the friends of the adolescent.

1.3 Family

At the level of the family, many studies have identified family variables that covary with problem behaviors (e.g., Loeber et al., 2001; Steinberg, 2001). One of the most important family factors that relates to the behavior and well being of adolescents is the quality of the parent-child relationship: the absence of a warm, nurturing, and supporting relationship with parents (Dekovic, 1999; Steinberg, Elmen, & Mounts, 1989). Another family factor consistently found as important in predicting problem behavior is parental control (e.g., Patterson, Reid, & Dishion, 1992).

These two key concepts, support (i.e., involvement, attachment, warmth) and control (i.e., monitoring, supervision, discipline), can also be aggregated into parenting styles (Maccoby & Martin, 1983; Baumrind, 1991; O’Connor, 2002). For example, four types of parenting styles can be operationalized using different combinations of parental support and control: authoritative parenting (high support and high control), authoritarian parenting (low support and high control), indulgent parenting (high support and low control), and neglectful parenting (low support and low control) (Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). Authoritative parents are
warm and involved, but firm and consistent in establishing and enforcing guidelines and limits. This parenting style is consistently linked with a healthy development of children and adolescents, whereas the three other parenting styles are often related to adjustment problems (e.g., Maccoby & Martin, 1983; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994).

In contrast to the examination of the effects of parenting styles, some studies have integrated different parenting dimensions as unique predictors of adolescent problem behavior (e.g., Galambos, Barker, & Almeida, 2003). These studies find distinct associations between support and control measures and problem behavior. It seems important to examine several dimensions of parenting as unique predictors of problem behavior, instead of combining them into parenting styles. This permits us to discern the relative and unique influence of these dimensions on adolescent problem behavior.

Nowadays, there seems to be a general agreement that there are at least three relevant dimensions of parenting behavior instead of two, including parental support, behavioral control, and psychological control (Barber, 1996; Pettit et al., 2001; Pomerantz, 2001; Galambos, Barker, & Almeida, 2003). Parental support includes several parenting behaviors aimed at a positive parent-child relation, such as responsiveness, warmth, and attachment. These behaviors are consistently negatively related to different types of adolescent problem behavior. High levels of attachment (Laible, Carlo, & Raffaelli, 2000), warmth (Greenberger, Chen, Tally, & Dong, 2000), and family bonding (Anderson & Henry, 1994), for instance, are all related to lower levels of externalizing and/or internalizing problems.

Behavioral control refers to parenting behaviors that attempt to regulate the adolescent’s behavior by means of supervision and behavioral management. Monitoring of the adolescent’s whereabouts, activities, and companions, and level of parental strictness are important components of this type of control (Patterson, Reid, & Dishion, 1992; Brown, Mounts, Lamborn, & Steinberg, 1993; Barber, Olsen, & Shagle, 1994). Higher levels of parental knowledge are related to lower levels of delinquency (Reid & Patterson, 1989; Jacobson & Crockett, 2000) and depression (Barber et al., 1994; Jacobson & Crockett, 2000), whereas higher levels of parental strictness are related to higher levels of depression and withdrawal (Maccoby & Martin, 1983).

In contrast, psychological control refers to control of the adolescent’s behavior through keeping the adolescent emotionally dependent on the parent by intruding or interfering with the adolescent’s psychological and emotional development and the development of independence or autonomy. This type of control affects the adolescent
development negatively by impeding the development of autonomy. In general, higher levels of parental psychological control are related to more internalizing problem behavior of the adolescent (Baumrind, 1991b; Barber, Olsen, & Shagle, 1994) or, alternatively, higher levels of emotional autonomy granted to the adolescent by his or her parents are associated with less internalizing and externalizing problems (Gray & Steinberg, 1999; Garber & Little, 2001; Pettit et al., 2001). Chapter 3 describes a study where different types of parenting behaviors are examined simultaneously in relation with adolescent externalizing and internalizing problem behavior to investigate the relative and unique effects.

1.3.1 Child behavior as moderator

Although it is often assumed that the direction of effects is from the parent to the child, many studies that examined the relation between parenting and problem behavior are cross-sectional in nature and do not allow any conclusions about causal relations (e.g., Barber, Olsen, & Shagle, 1994; Gray & Steinberg, 1999). The parent-child relation is created by two people interacting over time, and the behaviors of both persons are intertwined in cycles of reciprocal causality (Lollis & Kuczynski, 1997).

Many theoretical models recognize the interactional nature of parent-child relationships and state that both parent and child influence each other in the course of development. In the Transactional Model (Sameroff, 1975), developmental outcomes are seen as a product of the combination of the individual and the context in which an individual is growing up. Not only parents influence children’s behavior, but children also influence parenting as well. Additionally, parents may have varying effects on children who exhibit different levels of problem behavior. The Goodness-of-fit Model (Thomas & Chess, 1977) describes interactive processes in terms of goodness-of-fit between the parent and child within the context in which they are embedded. Patterson’s coercion model (1982) refers to coercive cycles within the family, where an aversive stimulus of one member of a dyad is contingent on the behavior of the other person. Finally, Bell’s (1977) control systems theory states that parent and child are sensitive to the behavior of the other and both adapt to each other’s behavior level.

Despite these theoretical models/theories, the predominant focus of research has been on the unidirectional relation from the parent to the child. When parent-child interaction effects are considered, mostly child characteristics such as gender, temperament or personality are examined (Bates et al., 1998; O’Connor & Dvorak,
Also, most studies are conducted during childhood instead of adolescence (Lytton, 1990; Campbell et al., 1996). Pomerantz (2001) did include problem behavior of the adolescent as a moderator in predicting depressive symptoms. In this study however, the interaction between problem behavior and parenting was only included as a control on other interactions (parental intrusive support x children's self-evaluative processes) that were the aim of the study. To extend the study, the explicit aim of Chapter 3 was to examine the interactions between problem behaviors of the adolescent and parenting, where it is assumed that parenting effects may depend on the adolescent's previous level of problem behavior. For example, inadequate parenting might have an even more negative effect on subsequent levels of problem behavior of a child who already shows high levels of problem behavior, than in case of a child who does not show high levels of problem behavior. In other words, high levels of problem behavior may increase adolescent's vulnerability to parenting; high levels of problem behavior can strengthen the relation between negative parenting and subsequent levels of problem behavior.

1.3.2 Child behavior as predictor

In addition to the examination of moderator effects, where parenting effects may vary as a function of the child's previous level of problem behavior, child effects (with child behavior as predictor) also have been investigated in the present thesis. Studies found evidence for both parenting and child effects regarding parental discipline and antisocial behavior of preadolescent boys (Vuchinich, Bank, & Patterson, 1992), regarding parental control and support and adolescent drinking and drug use (Stice & Barrera, 1995), and regarding harsh, inconsistent, and nurturant parenting and adolescent problem solving (Rueter & Conger, 1998). Regarding internalizing problem behavior, a study of Belsky, Rha, & Park (2000) showed child effects of 3-year-olds on parenting. No studies have been found that examined child effects regarding parenting and internalizing problem behavior during adolescence. In addition to the examination of child behavior as moderator of parenting effects on problem behavior, Chapter 3 also examines child behavior as predictor of parenting.
1.4 Friends

During the transition into adolescence, adolescents spend an increasing amount of time with their peers and less time with their parents (Berndt, 1982; Larson & Richards, 1991; Brown et al, 1993; Engels et al., 1997). Susceptibility to peer pressure seems to increase and reliance upon parents' opinions declines (Berndt, 1982). Thus, peers become more important for the adjustment of adolescents. Although it is true that peers can have positive influences, for instance, adolescents with prosocial peers increased their involvement in school (Berndt & Keefe, 1995), the predominant focus of research has been on the negative influences of peers on adolescent adjustment.

One of the most potent predictors of adolescent problem behavior seems to be the association with deviant peers (Berndt & Keefe, 1995; Keena et al., 1995; Fergusson & Horwood, 1999). Adolescents with deviant peers engage in higher levels of problem behavior over time (Simons et al., 2001; Scaramella et al., 2002). Two processes can explain the association with deviant peers: influence and selection. These processes will be explained in the following paragraph.

The focus of this thesis will be on the adolescents and their best friends, instead of peers, because studies showed that close friends have more influence on adolescents than other peers have (e.g., Urberg, 1992). Friends enjoy proximity and interaction with each other, whereas peers do not always have a personal relationship (Regnerus, 2002). Spending time with youth who show problem behavior leads to higher rates of subsequent problem behavior of the adolescent (Agnew, 1991; Wallace & Bachman, 1991; Osgood et al., 1996). Assuming that adolescents spend more time with a best friend than with peers, friends are expected to have more effect on adolescent adjustment.

1.4.1 Influence and selection

Adolescents and their friends tend to be similar on various attitudes and behaviors (Kandel, 1978; Bauman & Fisher, 1986; Tolson & Urberg, 1993). When friends show high levels of deviancy, it is more likely that the adolescent will show higher levels of problem behavior too. Two processes can explain this friend homogeneity: influence and selection. The influence process suggests that homogeneity results from socialization processes in which two friends that are associated with each other, influence each other over time to create a more satisfying relationship (Moreland
Selection processes indicate that friends select each other on the basis of common attributes ('assortative pairing') (Kandel, 1978; Bauman & Fisher, 1986; Bauman & Ennett, 1996).

Some studies find more evidence for friends influence (Berndt & Keefe, 1995; Urberg, Değirmencioğlu, & Pilgrim, 1997), whereas others suggest that selection plays the most important role in similarity among friends (Ennett & Bauman, 1994; Engels et al., 1997). Of course, the two processes are not mutually exclusive and both might be differently important at different stages of friendships, including formation, maintenance, and friendship termination (Kandel, 1978; Urberg, Değirmencioğlu, & Tolson, 1998). Results of a review of Bauman and Ennett (1996) on adolescent drug use suggests that selection processes are initially the most important in creating similar drug behavior among friends, whereas peer influence may reinforce common behavior once friendships are formed. Chapter 4 describes a study where both processes in relation with externalizing and internalizing problem behavior are being examined.

1.4.2 Friends' self-reports

Many studies conducted in the early nineties or before, that examined the association with deviant friends, assessed peer deviance by asking adolescents to report on their friends’ behavior, rather than asking the friends themselves to report on their own behavior (Bauman & Ennett, 1996). A problem with these ‘perceived’ reports is projection: “the principle that people project their own attributes, including their own behavior, to others” (Bauman & Ennett, 1996, p. 188). Adolescents might project their own behavior to their friends, which can cause adolescent reports about their friends’ behavior to be more strongly related to problem behavior than reports of the friends themselves. It is shown that adolescents tend to inflate the degree of similarity between themselves and their friends (Mounts & Steinberg, 1995), thus the strong association between peers’ and adolescents’ deviance that is usually found might partly be a methodological artifact. Having friends reporting on their own deviance increases the validity of the measures and might lead to more realistic estimations of peer effects.

Findings from recent studies using friends’ self-reports about their own behavior (e.g., Urberg, Değirmencioğlu, & Tolson, 1998; Little, Brendgren, Wanner, & Krappmann, 1999; Brendgen, Vitaro, & Bukowski, 2000; Cui, Conger, Bryant, & Elder,
2002; Maxwell, 2002), still show moderate effects of the association with deviant friends on adolescent problem behavior. Bauman and Fisher (1986) and Aseltine (1995), however, compared friends’ reports on their own behavior with adolescents’ reports on friend behavior and showed that the magnitude of effect is much or even significantly lower when friends’ self-reports are used. Kandel (1996) even concludes that true peer effects based on perceptions of the peers themselves are about one fifth of the size of the effect when adolescents’ perceptions of the peers are used.

The study in Chapter 4 examines the relation between adolescent problem behavior and their best friends’ deviance, using self-reports of these friends about their own behavior.

1.4.3 Quality of friendship relation

Friends’ influence processes might be magnified when friendships are higher in quality (Berndt, 1999). High-quality relationships, characterized by high levels of prosocial behavior and intimacy, and low levels of conflict and rivalry, may be more worthwhile for the adolescent, who then may be more likely to change behavior to create a more satisfying relationship (Urberg et al., 2003). Because these friendships involve mostly positive interactions, they are often quite stable over time (Berndt, 1999). It has been found that stable friends are more similar in behavior than unstable friends (Kandel, 1978; Urberg et al., 1998). The study in Chapter 4 examines whether friends’ influence differs for stable and unstable friendships.

1.5 Parents and friends

As can be concluded from the findings presented above, both parents and friends have an effect on adolescent problem behavior. During the transition into adolescence, however, when adolescents spend an increasing amount of time with their peers and less time with their parents, it is often assumed that parental influence decreases because of the rising counterinfluence of peers. The relative effect of deviant friends on adolescent problem behavior seems to be higher than the relative effect of parents on problem behavior (e.g., Bauman, Carver, & Gleiter, 2001; Beal, Ausiello, & Perrin, 2001; Deković, Reitz, & Meijer, 2002). A meta-analysis of Allen, Donohue, Griffin, Ryan, and Mitchell-Turner (2003) shows that peer effects on substance use are
substantially larger than the effects for parents. Also, in a study of Deković (1999) the association with deviant peers is found to be a stronger predictor of both externalizing and internalizing problem behavior, than parenting.

Although these studies seem to suggest that, at least in this developmental period, peers are more influential than parents, it remains possible that peer effects are overestimated. A reason might be that most studies have used adolescents' reports about their friends' behavior, instead of reports of the friends themselves. As is stated in paragraph 1.4.2, adolescents tend to project their own behavior to their friends, which might lead to an overestimation of the association between friends' and adolescents' deviance. The study in Chapter 4 examines the relative effect of parenting and friends' deviance by using actual self-reports of friends' deviant behavior.

1.6 Research questions

In the previous sections, the most important concepts/aspects regarding adolescent problem behavior, family, and friends are described, which form the elements of the present thesis. The relevance of examining these concepts has now been clarified and, to summarize, a short overview will be presented of the research questions that are investigated in Chapters 2, 3, and 4:

*Chapter 2:*
- What is the structure of externalizing and internalizing problem behavior during early adolescence and is that structure identical over time?
- Is adolescent problem behavior stable over time? (relative and absolute stability)
- Are there gender differences in structure and stability of problem behavior?

*Chapter 3:*
- Do different parenting dimensions have unique effects on adolescent externalizing and internalizing problem behavior one year later?
- Are there interaction effects of parenting and adolescent problem behavior on subsequent levels of problem behavior? (child behavior as moderator)
- Are there child effects on parenting over time? (child behavior as predictor)
- Are there interaction effects of parenting and adolescent problem behavior on subsequent levels of parenting?
Chapter 4:
- What are the effects of parenting and best friends' behavior (self-reports friends) on adolescent externalizing and internalizing problem behavior one year later?
- Are there reciprocal effects between parenting and adolescent problem behavior over time?
- Are there reciprocal effects between friends' deviance and adolescent problem behavior over time?
- Are there differences in parenting and friends effects between stable and unstable friends and between boys and girls?

1.7 Research design

To answer the research questions, data from early adolescents were collected two times with a one-year interval. Three secondary schools participated that were located in medium- to large-sized municipalities in the Netherlands (Weesp, Almere, and Lelystad). The sample on the first measurement wave (Time 1) consisted of 650 adolescents between 12 and 15 years old from the 8th Grade. The distribution of boys and girls was about equal. The self-reported ethnicity was mostly Dutch (88%). The adolescents completed a battery of questionnaires during regular school hours.

One year later (Time 2), the same adolescents were tested again during school hours. Those who could not be reached at school received the questionnaires at home, including a letter containing instructions and a postpaid return envelope. When they did not return the envelope, they were called at home to ask if they would fill out the questionnaires and send it back. A total of 563 adolescents participated again at Time 2. More information regarding the sample and instruments used to assess central concepts are to be found in the proceeding three empirical chapters.

1.8 Outline of the present thesis

In sum, the present thesis continues with three chapters in which different systems (child, family, peers) within the ecological model (Bronfenbrenner, 1979, 1986) are examined using longitudinal data. In Chapter 2, the focus is on characteristics of the adolescent self: his or her own problem behavior. The chapter concentrates on
different types of problem behavior, and the structure and stability of externalizing and internalizing problem behavior during early adolescence is examined.

In Chapter 3, the system most proximal to the child is investigated, namely parenting behaviors of the adolescent's parents. The relations are examined between parenting and externalizing and internalizing problem behavior, including child behavior as moderator and child behavior as predictor.

Chapter 4 combines the family system with the more distal system of friendships and examines the relation between parenting and best friends' deviance, on the one hand, and adolescent externalizing and internalizing problem behavior, on the other hand. Differences in relations are studied between stable and unstable friendships and between boys and girls.

Finally, Chapter 5 summarizes and discusses the empirical findings and concludes with limitations and recommendations for future research.