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Psychosocial development and the development of problem behaviour during adolescence

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2 The relation between levels in psychosocial development and delinquent behaviour in early adolescence¹

In this article we investigate the relation between psychosocial development levels and delinquency in young adolescents. Questionnaires were administered to approximately 800 (12-13 year old) students who also completed a sentence completion test, the ZALC (based on the WUSCT, a test developed by psychologist Jane Loevinger). The results show a clear pattern over different offences, although strong statistical evidence is lacking for the separate items. First, a relation is found between being in the "Self-protective level" and prevalence of different types of misconduct at school and less serious types of delinquency. Also a clear association between being in the "Impulsive level" and serious and violent delinquency was found. Adolescents with a socio-emotional development below the Self-protective level have a 1.5 to 4-fold increased risk of committing aggressive misconducts and offences.

2.1 Introduction

Research has shown that delinquent behaviour increases sharply in early adolescence (starting at 12 years old), peaks around 17-19 years, and from then onwards slowly decreases (see also Farrington, 1986; Moffitt, 1993). Up till now a general agreement exist on the shape of the curve. However, many of the factors that contribute to the particular shape of the curve remain unclear. Hirschi and Gottfredson (1983) suggest that the relation between age and delinquent behaviour is the same for everyone, rendering the relation invariant. They argue that only the differences in delinquency require an explanation. This point of view is incongruent with mainstream criminological perspectives, as most authors agree that an explanation is needed for the development and change in criminal behaviour over time (see for instance Farrington, 1986, 2003; Moffitt, 1993; Warr, 1993). One issue of importance is the increase in delinquent behaviour in early adolescence.

Recently, developmental and life-course criminology has paid considerable attention to: a) the development of problem behaviour and delinquency, b) the risk factors for developing a criminal career and c) the effects of certain life experiences on the course of

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A revised version of this study is used in combination with chapter three in a book chapter: Ezinga, M., Weerman, F., Bijleveld, C., & Westenberg, M. (2007), Sociaal-emotionele ontwikkeling, zelfcontrole en probleemgedrag [socio-emotional development, self-control, and problem behaviour]. In: F. Weerman, W. Smeenk, & P. Harland (Eds.). *Probleemgedrag van leerlingen tijdens de middelbare schoolperiode*. Amsterdam, Aksant.

criminal careers (Donker, Kleemans, Van der Laan, & Nieuwbeerta, 2004; LeBlanc & Loeber, 1998). Relatively little attention has been paid to the explanation of the sharp increase in delinquent behaviour at the beginning of the adolescent period. One exception in developmental criminology is Moffitt's 'taxonomic' model. Here, Moffitt offers suggestions to clarify the development of delinquent behaviour in adolescence. She suggests that a large group of adolescents starts with relatively mild forms of delinquencies. Eventually, these same adolescents end with this behaviour (Moffitt describes this group as *adolescence-limited* or *adolescence-onset*). Along with the main group of limited offenders, a small subgroup exists that is active in relatively serious delinquent acts. These adolescents are called *life-course persistent* (Donker, 2004; Moffitt, 1993).

Delinquent behaviour of persistent offenders can be explained by innate factors, problematic parenting strategies and the interaction between these two attention areas that leads to an escalation of problem behaviour. According to Moffitt, adolescent-onset crime originates from imitating persistent offenders. This imitation takes place when we are faced with a 'maturity gap'. This occurs when young adolescents seem to grow to physical maturity, but do not get that mature treatment by others in their immediate environment. Persistent offenders seem to have this status (they own a relative autonomic attitude, possess enough money and are often experienced in sexuality). According to Moffitt this is reason enough for adolescence-onset offenders to imitate the persistent offenders in their criminal behaviour (Moffitt, 1993).

Developmental criminology offers, along with models for the development of delinquent behaviour in different trajectories, many perspectives about risk factors for developing delinquent behaviour. Well known examples are studies on problematic parenting, low socio-economic status in the family (SES), delinquent peers and a negative school- and neighbourhood climate (see Farrington, 2003). Empirical research also shows that personality factors such as impulsivity and thrill seeking (Bijleveld, Bakker, & Hendriks, 1998; Heaven, 1996), ego resilience (Westenberg & Block, 1993), lack of empathic reflections (Carlozzi, Gaa, & Libermann, 1983), and a lagging moral development (Blasi, 1980; Brugman & Aleva, 2004; Nelson, Smith, & Dodd, 1990), play a critical role as risk factors for delinquent behaviour.

These studies assume personality factors to be relative static constructs. At the same time, recent studies show considerable development in moral reasoning, identity and social emotions during adolescence (Meeus, 1993; De Wit, Van de Veer, & Slot, 1995). Theories concerned with the relation between personality characteristics and delinquent behaviour (for instance Eysenck, 1964; Hirschi & Gottfredson, 1990) hardly take into account this developmental trend. Moffitt's taxonomic model also uses personality factors to explain the behaviour of persistent offenders, thus assuming they are static in nature. It may be quite possible that personality development in adolescence is related, to a certain extent, to the strong increase in delinquent behaviour during that particular period. Then, a dynamic or development-orientated theory of personality could contribute to the explanation of a strong increase of delinquency in adolescence.

One such psychological theory on personality development is Loevinger's developmental theory on psychosocial maturity (1983). This theory differentiates several levels related to personality characteristics, such as impulsivity, egocentrism, morality and conformism. These same personality characteristics have appeared to be related to delinquency, as described above. With current information, this developmental theory seems likely

to contribute a possible explanation for the changing character of delinquency in adolescence.

The current paper is based on data collected from approximately 800 adolescents, and tries to explore a possible relation between delinquent behaviour of early adolescents and the level of psychosocial development they are presently in. In the next paragraph we describe Loevinger's theory of psychosocial development. Subsequently, we formulate two hypotheses according to the theory and existing empirical results:

- We expect a relation between a stagnating developmental level and serious problem behaviour.
- We expect a relation between a normative developmental level and milder delinquent behaviour.

2.2 Psychosocial development and delinquency

Loevinger's developmental theory concerns the personal growth of impulse control, interpersonal relations, character development and abstracting self-consciousness. The theory is not necessarily concerned with moral development or attachment, but seems most appropriately characterised as a holistic framework of personal growth (Westenberg, Blasi, & Cohn, 1998). Loevinger spoke, therefore, about ego development and the development of the central framework of references, on which each individual relates himself with another individual. Considerable research is carried out by Loevinger (and in The Netherlands by Westenberg and colleagues). Each time her theory is, with the help of empirically founded results, extensively studied and optimised.

The original theory distinguishes nine levels of developmental levels (each of which is labelled with E#, the abbreviation of Ego). Empirical studies showed that five developmental levels exist that are most prevalent with the cohort of 8-25 year olds. These are the Impulsive (E2), the Self-protective (E3), the Conformist (E4), the Self-awareness level (E5) and the Conscientious level (E6) (Westenberg, Drewes, Siebelink, Treffers, Jonckheer, & Goedhart, 2000). The Conscientious level is relatively scarce in the adolescent period and will be left out in this paper. Table 2.1 briefly describes the four remaining levels that are relevant for adolescence.

Table 2.1 Characteristics of the most frequent developmental levels in early adolescence

Impulsive E2	Combination of impulsivity (key factor), vulnerability, dependency and obedience.
Self-protective E3	Unassailable, opportunistic, instrumental relationships, attempt to control own impulses and emotions. Hedonistic attitude.
Conformist E4	Conformity, equality in relationships, pro-social behaviour, social desirability.
Self-awareness E5	Self-aware, emphasizing the singularity, personal relation. Tolerance towards other opinions.

In the *Impulsive* level (E2), most prevalent until the age of ten, there is a fast admittance to aggressive, but also empathic impulses. Impulsive children expect that others will satisfy their needs and desires. At the same time they expect that parents will give guidelines of what behaviour is allowed and what is not. This obedience is nevertheless overshadowed by their impulsivity.

The *Self-protective* level (E3) is most prevalent in pre- and early adolescence, from age 10 to age 13, the period in which the steepest increase in prevalence of problem behaviour occurs. Early adolescents in the Self-protective level have an ability to manage things independently and they may feel beyond reproach. This level is qualitatively different from the Impulsive level, which is characterised by dependency on others and in which autonomous behaviour rarely occurs. In the Self-protective level, rules made by others are meant to be broken, as long as one does not get caught or punished. Reactions of adolescents in this level are often opportunistic; adolescents search for, mainly, instrumental relationships with others. The adolescent attempts to control his/her impulses and emotions, but at the same time he/she denies and fends off negative emotions. As a consequence, the adolescent presents him/herself as being unassailable.

The *Conformist* level (E4) that generally sets in around the age of 12-13 is, unlike the Self-protective level, characterised by the importance given to equality and reciprocity in relationships. Relations with others are goals that are stand-alone. This level involves an important shift in thoughts of the adolescent: it is a change from the relatively egocentric character of the previous level into a more pro-social attitude towards the world. However, conformist behaviour is also possible towards non-conventional groups; identification occurs through detecting expressions of social desirable behaviour and criticism or rejection. The prevalence of the Conformist level increases strongly during middle adolescence.

Lastly, the *Self-awareness level* is characterised by a focus on the inner self. There is attention to the own experienced feelings, even when they are not socially desirable. Singularity and sincerity are important, just like accepting each others feelings and opinions.

Before the Impulsive level there is a level called pre-social, or the Symbiotic level (E1). This level is experienced throughout the first years after birth and is therefore not measurable. The levels after the Self-awareness level are the Conscientious level (E6), the Individualistic level (E7), the Autonomous level (E8) and the Integrated level (E9)². Large-scale research on Dutch children and adolescents showed that the Impulsive level is most prevalent until the age of 10; in early adolescence, an increase in prevalence occurs towards the Self-protective level. Prevalence of the Conformist level increases rapidly in mid-adolescence, whereas the Self-awareness level increases during late adolescence (Westenberg et al., 2000).

The relation of psychosocial development with delinquency during the adolescent period could relate in several ways. First of all, we could presume that delinquency relates with stagnation in development (stagnation hypothesis); in that case, delinquency would be more prevalent in the Impulsive level in early adolescents. This approach is most often used within problem behaviour research in developmental psychology. For instance, research showed that problem behaviour relates to lagging behind in moral development (Brugman & Aleva, 2004). However, the stagnation hypothesis is not capable of explaining why (mild) delinquent behaviour increases in a large group of early adolescents, and decreases afterwards (adolescent-onset delinquency). Nonetheless, the stagnation hypothesis seems useful in explaining more serious and life-course persistent delin-

² A clear description of the stages prior to and after the adolescent period can be found in Loevinger, (1983) and Westenberg et al. (2000).

quency. Perhaps, a joint cause exists for a consistently low psychosocial level and serious delinquency, such as bad parenting. This is a factor that has an empirically established relationship with delinquency (Loeber & Stouthamer-Loeber, 1986).

A second possibility is that adolescent-limited delinquent behaviour relates to normative psychosocial development (normative hypothesis). Loevinger's theory offers several supporting arguments for this postulation. For instance, the self-protective level is normative in early adolescence. Self-protective individuals establish themselves as independent and they decide for themselves what is good and what is wrong. They regard themselves as inviolable and are opportunistic in their actions. Rules are meant to be broken, as long as one does not get caught or punished. These characteristics are normative, developing throughout adolescence, but simultaneously they fit rather well with norm breaking behaviour. Although the previous level has impulsive behaviour as a key character, this individual is compliant at the same time. Parents or teaching authorities should be able to correct them effectively when something wrong is then forbidden. In short, regarding normative psychosocial development we expect at adolescents more problem behaviour and in specific mild problem behaviour, when these adolescents arrive in the self-protective level in early adolescence.

Relatively little research is done regarding the relation between rule breaking behaviour and delinquent behaviour. Frank and Quinlan (1976) showed in their study that delinquent institutionalised girls found themselves in a lower level of psychosocial development than girls not institutionalised or girls doing a leadership course. An additional conclusion was that the origin of violence differed considerably in the various levels. Adolescent girls in the Impulsive level acted violently rather impulsively and randomly. Girls in the Self-protective level used violence only when it was considered necessary. Krettenauer and colleagues (2003) showed in their longitudinal study that psychosocial development could predict externalising problems. These problems occur most in the second and third level; respondents who showed externalising problems stagnated in the development around the age of 12 (early adolescence) (Krettenauer, Ullrich, Hofmann, & Edelstein, 2003).

Furthermore, several studies investigated the relation between the developmental levels and variables concerned with externalising problem behaviour (i.e. dysfunctional family configuration, deviant coping strategies and negative stressors). With this information it can be concluded that psychosocial development relates negatively with externalising problem behaviour (Noam, Paget, Valiant, Borst, & Bartok, 1994; Novy, Gaa, Frankiewicz, Liberman, & Amerikaner, 1992; Recklitis & Noam, 1999; Westenberg & Block, 1993).

Previous research supports the stagnation hypothesis – an increased risk of problem behaviour is found when an individual is lagging behind in psychosocial development. The normative hypothesis has yet not been studied extensively. The current paper investigates which problem behaviours in early adolescence relate to a stagnating development (that is lower than the Self-protective level), and which problem behaviours relate to normative psychosocial development (students have to be present in the Self-protective level). Before testing our hypotheses, we present several descriptive results on misbehaviour and delinquency, as well as the distribution of psychosocial development. Previous research showed differences in sex on problem behaviour (see Moffitt, Caspi, Rutter, & Silva, 2001) and psychosocial development (Cohn, 1991). This will also be investigated.

2.3 Method

Data collection took place in 2002 and was part of the NSCR School Study (see Harland, Van der Laan, Smeenk, & Weerman, 2005). A questionnaire was given for three consecutive years, with the baseline starting in 2002. This questionnaire collects data from students in secondary education (comparable to middle- and high schools in the U.S.). The data collected is about misbehaviour in school, delinquency outside school, friends, lifestyle, and bonding. A portion of the sample filled out the ZALC (ZinnenAanvullijst Curium, Westenberg et al., 2000), a sentence completion test measuring psychosocial development according to established criteria. Through the combination of both datasets we were able to analyse the relation between psychosocial maturity and delinquency.

2.3.1. Participants

A total of 12 schools located in or near The Hague agreed to participate in this longitudinal study. Several factors were taken into consideration when approaching the schools, including type of education (technical vs. non-technical education, like health care, economical and business) and denomination. Survey data was obtained from first and third grade students in the first wave. The sentence completion test is only obtained from first graders, due to the intensive work. This resulted in three schools dropping out of the sample. Two of these participated only with third grade students and one school insisted only to participate in the survey. The final sample consists of students from nine different schools. Table 2.2 shows which students participated in the final sample.

Table 2.2 Response rate

No participation	0,7%	(7)
SCT-Y only	6,6%	(69)
Survey only	15,4%	(161)
Participated in both	77,4%	(811)
Total 1 st graders	100,0%	(1.048)

The remaining schools produced a sample of 1.048 students from the first grade. The table shows a total of 811 students who reached the final sample. This is more than 77% of the total first grade-students. They completed both the survey as well as the SCT-Y (correctly).

The SCT-Y is filled out at a different time from the survey. Both questionnaires consisted of a thorough test procedure. All students were given information on the background of the study and the discrete handling of the acquired information. The emphasis was put on the individual response in the questionnaires. When the questionnaires were filled out correctly, students received a music compact-disc coupon (€5,-).

The sample is evenly distributed between boys and girls (approximately 51% boys against 49% girls). The mean age of the students is 13.6 years old; most students are between 12.5 years and 14.5 years old. Most students live in a large city (about 500,000 inhabitants) in the Netherlands (60%), 31% live in two smaller cities (about 150,000 inhabitants) and 9% in smaller towns (about 20,000 inhabitants). Almost one third of the sample

was from ethnic minorities (non-Dutch descent).³ The sample may be considered as a rough representation of juveniles in western Holland following low to average levels of secondary education (see also Weerman, Smeenk, Slotboom, Harland, Den Dijker, Bijleveld, & Van der Laan, 2003; Harland et al., 2005).

2.3.2 Rule breaking behaviour and delinquency

We used 23 self-report questions on rule breaking behaviour and delinquency to answer our research questions. Earlier reports from the NSCR-school project (see Harland et al., 2005) use the definition of rule breaking behaviour in school as misbehaviour, and outside school as delinquency (for a detailed description of the questionnaire, see Weerman et al., 2003). This method of data collecting is commonly used in criminological studies. In the past, self-report methods were questioned on the basis of validity and reliability (Bruinsma, 1994; Van der Heijden, Sijtsma, & Hart, 1995; Swanborn, 1996). Nowadays most researchers are convinced of the method and its useful results when executed in a proper manner (see for instance Thornberry & Krohn, 2000). We gave particular attention in this study to under- and over reporting, by cleaning the data carefully. We consequently deleted useless answering patterns (see Harland et al., 2005).

The current paper used questions on frequency of misbehaviour and delinquency: How many times did the students commit a delinquent act or misbehaviour in the past school year (response categories were 0, 1, 2, 3-5, 6-10, more than 10 times). The answers of the students were heavily skewed; we therefore chose to dichotomise them. We also chose to differentiate in behaviour that is considered a normal frequency and a deviant frequency, instead of yes/no (i.e. it is relatively normative behaviour for the age group of early adolescence). After all, our goal was to investigate the relation between psychosocial development and deviant behaviour.

The dichotomisation was achieved by conducting a small enquiry with six criminologists, not involved in the present study. This enquiry gave us the opportunity to carry out an inter-rater reliability test on the chosen dichotomisation. For each item we determined the best border between deviant and relatively normal behaviour. Six criminologists, not involved in the present study, rated the severity of the offences. This resulted in six categorical subscales: mild misbehaviour, moderate misbehaviour, severe misbehaviour, mild delinquency, moderate delinquency and severe delinquency. Mild offences were rated at *six* or more times committing in a year (fare dodging). Moderate severe offences are deviant after they have been committed *three* times or more (fighting without injury). Severe offences are deviant when committed just *one* or more times a year (car theft). There was a unanimous decision, or majority, for twenty of the offences and the misbehaviours. These offences were scaled in one of the three groups of severity at once. Three offences (verbal bullying, stealing property in school worth <€5,-, buying stolen goods) had an equal distribution between two scales. These items were subsequently placed in a group determined by the authors.

³ We followed the definition according to the CBS (Central Bureau for Statistics). This means that a respondent is categorized as ethnic minority when at least one parent is born in a foreign country.

The original instrument measuring psychosocial development is the Washington University Sentence Completion Test Youth (WUSCT-Y; Loevinger, Wessler, & Redmore, 1970). In 2000, Westenberg and colleagues developed a Dutch version, called the ZALC. This instrument consists of 32 incomplete sentences. Subjects (with the age range of 8-25) are then asked to complete these sentences from their own point of view. 'My father...'; 'when they avoided me...'; 'raising children...' are a couple of examples of incomplete sentences. Each completion can be related to a certain level of psychosocial development. Two qualified researchers using a detailed manual independently determined this item score. Following on the scoring is the comparison between the two raters. A definitive score is determined when scores between raters are not conclusive. It is also possible that no score can be found for a sentence completion. These scores are counted missing and do not weigh into the total score of level of psychosocial development. At the initial interpretation of the sentence completions in this study, a total agreement percentage of 86% was reached.

The distribution of the definitive item scores leads to an ultimate level of psychosocial development. There are two ways of calculating the definitive item scores. The first is called the automatic score. Respondents are distributed in one of the levels. The other is called the borderline score. This is a scoring technique that is more precise, because it uses transition levels between the normal psychosocial levels. In this way, individual subjects can be seen as developing from one to the other level.

The reliability of the ZALC has been tested on a regular basis. This is especially important, because its method of collecting data (sentence completion) is not free from scepticism. The test-retest reliability, as well as the internal consistency and stability of the scores, have shown during time that the overall reliability is sufficient.

In a critical review on projective techniques by Lilienfeld Wood and Garb (2000), research showed that the use of the sentence completion method by Loevinger is one of the most validated techniques that exist. Furthermore, the technique approaches standards on the academically accepted scale of zero-order and incremental validity (for an overview see also Lilienfeld et al., 2000).

2.3.3. *Analyses*

We based our analyses on cross-sectional data. This means that we look at differences in psychosocial development of adolescents in the same age-cohort. We limit ourselves by investigating only the relation between levels of psychosocial development and the prevalence of misbehaviour or delinquent behaviour. Consequently, we are not able to make any comments on the relation between psychosocial development and changes in problem behaviour. That would require longitudinal data.

We chose to use non-parametric tests to investigate the relation between psychosocial development and misbehaviour and delinquency. These are relatively easy to perform and do not make any assumptions regarding the distribution. By means of Chi-square analysis we investigated the relation between levels of development and dichotomised items of prob-

lem behaviour. We also used odds-ratios to investigate the extent to which misbehaviour or delinquent behaviour is more prevalent in a certain level compared to the other.⁴

2.4 Results

Table 2.3 shows the total sample and the prevalence and mean variation (number of different types) of misbehaviours in school and delinquent behaviour outside school, for both male/female. According to the table, quite a few students misbehave and commit offences. However, the mean number of committed offences is not that high. As is often found in criminological research, more boys than girls misbehave and commit offences. Boys also report more variation in misbehaviour and delinquency (see Harland et al., 2005 for detailed descriptive on each item).

Table 2.3 Prevalence of misbehaviour in school and delinquency outside school

Prevalence	Total (n=811)	Mean variation	Boys (n=418)	Mean variation	Girls (n=393)	Mean variation
Misbehaviour in school	87,1% (706)	2,21	93,3%*** (390)	2,67***	80,4% (316)	1,73
Delinquency outside school	56,5% (458)	1,17	62,0%** (259)	1,28*	50,6% (199)	1,05

*: p<.05 **: p<.01 ***: p<.001

Table 2.4 shows the distribution of the students with respect to the levels of psychosocial development. The upper section shows the distribution according to the automatic scores (levels only). The section beneath shows the distribution according to the transition levels (borderline score). Upcoming analyses will make use of the borderline score distribution.

Table 2.4 Distribution of students between levels of psychosocial development

	Total (n=811)	Boys (n=418)	Girls (n=393)
<i>Automatic score</i>			
Impulsive level E2	10,9% (88)	16,5% (69)	4,8% (19)
Self-protective level E3	64,5% (523)	72,2% (302)	56,2% (221)
Conformist level E4 and higher	24,7% (200)	11,2% (47)	38,9% (153)
<i>Borderline score</i>			
Impulsive level E2	5,8% (47)	8,1% (34)	3,3% (13)
Transition level E2/E3	12,3% (100)	16,5% (69)	7,9% (31)
Self-protective level E3	49,0% (397)	58,6% (245)	38,7% (152)
Transition level E3/E4	18,9% (153)	12,0% (50)	26,2% (103)
Conformist level E4 and higher	14,1% (114)	4,8% (20)	23,9% (94)

4 We also performed multivariate analyses, but these did not show a clearer view than the calculations based on chi-square analysis and odds ratios.

In accordance with earlier studies we see that the majority of the students are located in the Self-protective level (E3) (64.5 percent). There is a remarkable difference in the pace of development between boys and girls. Almost 40 percent of the girls are located in the Conformist level (E4), compared to 11 percent of the boys. This difference is significant, with $F((df 1,809) 105.272; p < .000)$. The mean difference is approximately half a level. Such a difference is also found in previous studies on psychosocial development. These studies also show that the difference slowly disappears over time (see for instance Cohn, 1991).

Tables 2.5 and 2.6 show how often the various items of misbehaviour occur within a certain (transition) level of psychosocial development.⁵ Table 2.5 shows the separate items of misbehaviour in school, and Table 2.6 the separate items of delinquency outside school. Both tables are similar in the utilization of dichotomised variables of misbehaviour and delinquency (i.e. normative and deviant; for more details see the method paragraph).⁶ The second column shows, for each item, the limit that resulted from the small enquiry completed with the six criminologists. The following columns show, for each transition level, the percentage of students that are prevalent (i.e. deviant of normative frequencies) in misbehaviour or delinquent acts. The bold numbers are the highest percentages within each item of misbehaviour. The last column shows the chi-square and significance for differences between levels of psychosocial development.

Table 2.5 Misbehaviour in school related with levels of psychosocial development

	Border	Impulsive		Self-protective		Conformist		Chi ²
		E2	E2/E3	E3	E3/E4	E4		
Throw things in class	6+	21,3%	20,0%	32,2%	22,1%	17,5%	15,338**	
Verbal bullying	6+	6,4%	8,0%	10,3%	6,5%	8,8%	2,527	
Physical bullying	3+	14,9%	14,0%	15,4%	7,2%	6,1%	11,707*	
Graffiti in school	3+	4,3%	2,0%	5,3%	1,3%	3,5%	5,916#	
Vandalism	3+	0,0%	1,0%	3,3%	0,0%	0,0%	11,436#*	
Theft in school <€5,-	3+	0,0%	1,0%	2,5%	2,0%	0,0%	4,659#	
Theft >€5,- in school	1+	0,0%	0,0%	1,5%	1,3%	0,9%	2,344#	
Fighting with injury	1+	10,6%	8,0%	10,1%	4,6%	5,3%	6,247	
Fighting without injury	3+	6,4%	6,0%	7,6%	2,0%	1,8%	6,904*	
Threatening/using violence against a teacher	1+	4,3%	7,0%	3,8%	2,0%	0,0%	9,377#	

*: $p < .05$ **: $p < .01$

#: Insufficient cell filling

As can be seen from Table 2.5, three out of ten variables have a significant difference between levels of psychosocial development. With two items, no significance was found. The other items of misbehaviours all had a low cell filling, so it appeared not possible

5 We also calculated results for total scale and for the variation scales of problem behaviour prevalence. This showed no significant relation. Nonetheless, these analyses showed the same pattern of results as seen in the presented tables.

6 Calculations of which we used simple yes/no dichotomizations showed similar but less distinctive results.

to analyse possible significance. However, the results in the table show a clear pattern. The Self-protective level E₃ is the level with the highest percentages (7 out of 10 items). Students in the Conformist level E₄ show a consistent low prevalence in misbehaviour, as do the students in the transition level E₃/E₄.

Table 2.6 Delinquency outside school related with levels of psychosocial development

	Border	Impulsive		Self-protective		Conformist		Chi ²
		E ₂	E ₂ /E ₃	E ₃	E ₃ /E ₄	E ₄		
Graffiti	3+	4,3%	4,0%	7,3%	9,2%	6,1%	3,228	
Vandalism	3+	6,4%	1,0%	3,8%	1,3%	0,1%	7,819#	
Fare dodging	6+	14,9%	10,0%	13,6%	10,5%	9,6%	2,636	
Shop theft <€5, -	3+	6,4%	5,0%	5,3%	3,9%	4,4%	0,726	
Shop theft >€5, -	1+	2,1%	3,0%	3,5%	1,3%	1,8%	2,630#	
Buying stolen goods	3+	6,4%	4,0%	2,3%	1,3%	0,9%	6,351#	
Theft bike/moped	1+	6,4%	1,0%	3,8%	3,3%	0,9%	5,682#	
Car theft	1+	0,0%	0,0%	0,3%	0,0%	0,0%	1,044#	
Burglary	1+	2,1%	0,0%	1,0%	0,0%	0,0%	5,019#	
Robbing	1+	2,1%	0,0%	0,8%	0,0%	0,0%	4,935#	
Theft otherwise	1+	4,3%	1,0%	2,0%	2,6%	0,0%	4,597#	
Fighting with injury	1+	10,6%	3,0%	7,1%	5,2%	3,5%	5,647	
Fighting without injury	3+	10,6%	4,0%	7,3%	3,9%	1,8%	8,814	

#: Insufficient cell filling

As can be seen from Table 2.6, none of the delinquency items show a significant result between the levels of psychosocial development. However, 8 of the 13 items have a cell filling too low to analyse. Especially the items more severe in character, such as robbery, burglary, car theft and theft otherwise, are too low in incidence to implement in the analysis. Nevertheless, this table has a pattern. Respondents in the Impulsive level are more prevalent in 10 of the 13 items than students in other levels. Again, the lowest percentages are found in the transition level E₃/E₄ and the Conformist level E₄, with the exception of the item *graffiti*.

The Stagnation hypothesis and Normative hypothesis are specifically tested by combining various developmental levels and subsequently comparing them. This action leads to a contrasting variable 'Impulsive level E₂ vs. not-Impulsive level' (stagnation hypothesis) and a variable called 'Self-protective level E₃ vs. not Self-protective level E₃' (normative hypothesis). We also created a third variable, based on the patterns found in the previous analyses. This is a variable that combined lower developmental levels (Self-protective and lower) vs. higher developmental levels (higher than Self-protective).

Table 2.7 shows the results through odds ratios of the combined recoded variables. Only significant odds ratios⁷ are shown, together with the 95%-reliability interval.

7 The criterion is the 95% reliability interval, where the number 1 is not allowed to be comprised in the interval. For some (more severe) items no incidence was found. Therefore, it was not always possible to calculate the odds ratios. Consequently these results are not shown either.

Table 2.7 A comparison between categories of developmental levels: significant odds ratios for misbehaviour and delinquency

Misbehaviour/Delinquency items		Impulsive (E2) versus not impulsive	Self-protective (E3) versus. not Self-protective	Self-protective and lower ($\leq E3$) vs. Higher than Self-protective ($>E3$)
Border		Odds ratio	Odds ratio	Odds ratio
<i>Misbehaviour in school:</i>				
Throw things in class	6+	–	1,842 (1,340-2,531)	1,577 (1,112-2,237)
Physical bullying	3+	–	1,746 (1,138-2,678)	2,457 (1,441-4,184)
Graffiti in school	3+	–	2,256 (1,049-4,854)	–
Vandalism	3+	–	13,982 (1,820-107,388)	–
Fighting with injury	1+	–	–	2,110 (1,129-3,937)
Fighting without injury	3+	–	2,336 (1,219-4,474)	4,049 (1,577-10,417)
Threatening/using violence against a teacher	1+	–	–	4,065 (1,212-13,699)
<i>Delinquency outside school:</i>				
Fighting without injury	3+	–	–	2,433 (1,117-5,291)

The comparison of Impulsive level versus not-Impulsive level (stagnation hypothesis) results in no significant values on all items of misbehaviour and delinquency, or it may be that the cell is not sufficiently filled. There are five significant odds ratios found for the comparison of self-protective and not self-protective (normative hypothesis). The significance is mostly related to vandalism and aggressive items. Here, odds ratios show scores around 2 (twice as large a chance of committing the misbehaving item). For vandalism, an odds ratio of 14 is found, but has also a reliability interval that is equally as wide. The last comparison between the self-protective, and lower and higher than the Self-protective level (added comparison) shows six significant odds ratios. Noteworthy is that relatively low levels of development relate to more aggressive items of problem behaviour. The odds ratios vary between 1.5 and 4; students located in a relatively low level of psychosocial development have a chance of 1.5 to 4-fold increased risk to behave more aggressively than students located in a relatively higher level of psychosocial development.

2.5 Discussion

In this article we explored a possible relationship between levels of psychosocial development and problem behaviour in and outside school. We had two expectations concerning this relation.

The first thing we expected was that a stagnated development would relate to serious delinquent behaviour. The results showed moderate support for this expectation, i.e. the more aggressive offences seem to be related to the lowest Impulsive level (E2). Although no real significant results were found, the tables with chi-square analyses showed clear patterns in offences outside school. The highest percentages of prevalence were found at the Impulsive level, with ten out of thirteen offences.

Our second expectation was that a normative psychosocial development relates to more mild delinquent behaviour. This expectation is largely supported, however only at those offences considered to be mild. The results showed five significant odds ratios between the comparison of the Self-protective level and the combined category of not Self-protective level. We also found a pattern in adolescents from the self-protective level, showing the highest prevalence of misbehaviour in school and showing offences outside school more often.

In conjunction with the two main expectations, we found evidence of clear differences between the combined categories of relatively low and relatively high developmental levels. Results suggest that, alongside a stagnated and a normative hypothesis, a third type of relationship may also exist. Higher levels of psychosocial development have a protective influence regarding the prevalence of problem behaviour. Our results show mainly a protective influence for misbehaviour (in school).

The results regarding the stagnation hypothesis generally support earlier findings in empirical studies by Frank and Quinlan (1976) and Krettenauer and colleagues (2003). They also support the expectation that a normative ego development relates with an increase in misbehaviour or delinquency. This implies that a theory of psychosocial development can add supplemental value to Moffitt's dual taxonomy model, and explain the adolescent onset offending.

At the same time we are aware that numerous factors play a considerable role in the development of delinquency and psychosocial maturity, such family factors and peer influence. Our intention for this study was not to bring out an exclusive explanation of the prevalence of delinquent behaviour. We did this study as an exploration of the relation between psychosocial development, as defined by Loevinger's theory, and misbehaviour and delinquency.

One important limitation of this study was that the respondents' mean age was too low for the offences asked about. Offences outside school in particular, such as car theft or burglary, will have a later onset than the respondents' age in this study (mostly 13 year olds). This means that low incidence was often found, thereby limiting the number of reliable statements that could be made. Also little variation was found in the development of psychosocial maturity. We think, therefore, that a strong stagnated development is harder to observe. Most students just progressed to the Self-protective level. Possible differences between studying, staying behind and students progressing normatively, are small.

All in all, research in prevalence of misbehaviour and delinquency related to psychosocial development is more complicated than it seems. We therefore suggest further research and optimisation of the methods currently applied. Future research should get a better perspective of the development by using longitudinal data. Also a sample somewhat older in age could create a more diverse distribution over the levels of psychosocial development and a greater dispersion in prevalence of misbehaviour and delinquency.

This study showed that several levels of psychosocial development are related to misbehaviour and delinquency in the early adolescence. The analyses result in clear patterns that support the stagnation hypothesis (in delinquency) and the normative hypothesis (for misbehaviour). The third possibility suggested, of a protective element of misbehavi-

our and delinquency through presence in higher levels, calls for further research into the relationship between psychosocial development and misbehaviour and delinquency.

2.6 References

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