Parenting quality and delinquency:
A study in two countries

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Abstract

Based on statements of the General Theory of Crime (Gottfredson & Hirschi, 1990), evidence was found for a relationship between self-control and delinquency. Also, results were found suggesting this link being the same across countries. Moreover, a relationship between parenting quality and self-control was (partially) found, based on Baumrind's theory (1996) and the General Theory of Crime (Gottfredson & Hirschi, 1990). These theories combined gave us reason to investigate a possible relationship between parenting quality and delinquency. Also, in this study will be examined if there is a mediating effect of self-control on the link between parenting quality and delinquency. Following the theories, no differences between countries are assumed. We used data from the Second International Self-Report Delinquency Study (ISRD-2) to gather information about the countries in this study, the Netherlands and Germany (Entzmann et al., 2015). Our results suggest no mediating effect of self-control and ambivalent results were found regarding a link between parenting quality and criminal behavior.

Keywords

Parenting quality, self-control, delinquency

Introduction

Since government expenditure on parental support policies is growing cross-nationally, more knowledge should be gained regarding the effects. Such support policies are expected to contribute to the quality of parenting. And therefore, the quality of parenting is assumed to positively influence the kids amount of self-control (Paternoster & Na, 2012). This trend of government expenditure the latest years led us to doubting one of the statements made by Gottfredson & Hirschi (1990). Their General Theory of Crime states that the negative relationship between self-control and criminal behavior is the same across countries. Meaning that the more self control someone has, the less often he or she will commit crime. And also, that this relationship exist in all countries, with similar effects of self-control on delinquency. This study is partly about reviewing this statement of Gottfredson & Hirschi (1990).

As the name of the theory suggests, the core of the theory is about self-control, which is seen as the most important predictor of criminal behavior. According to Gottfredson & Hirschi (1990), criminal behavior occurs when people have little self-control. Self-control refers to considering the long-term consequences of their behavior against the short-term benefits. People with higher amount of self-control are better able of making this calculation, taking into account the future consequences. For example, someone needs money to take care of their children and is considering a robbery. Someone with low self-control mostly thinks about the amount of money that can be stolen, and takes the possible negative outcomes and such more for granted than someone with more self-control. They will think about the situation of getting caught. Not being able to provide for his or her kids in the future because of jail. Besides, this relationship is assumed to be the same across time and is independent from social factors. Social factors are consisting of social circumstances, such as an economic recession. Thus even in a situation when the whole society is financially suffering, self-control is the main factor in explaining crime.

Self-control is learned during childhood according to Gottfredson & Hirschi (1990). And once this self-control is conducted, before an age of ten, the amount of self-control is highly resistant to change. So according to the General Theory of Crime, the amount of self-control is established before an age of ten. And lastly, the theory claims that crime is the outcome of ineffective parenting styles. Poor parenting quality will cause less self-control by the children, leading to a higher chance of delinquency. So the General Theory of Crime (Gottfredson & Hirschi, 1990) states a link between parenting quality and the conducted amount of kids self-control. Studies of Paternoster (2012) and Shulruf (2009) are supporting

this statement. But as mentioned in the beginning, expenditure on parenting support policies increased which probably influence the parenting quality. Thus reason to evaluate the statement of Gottfredson & Hirschi (Shulruf et al., 2009; Paternoster & Na, 2012; Gottfredson & Hirschi, 1990).

So this study will look into the relationship between self-control and delinquency with the influence of parenting quality. And for testing the statement of Gottfredson & Hirschi (1990), the Netherlands and Germany are included in this research. Our expectation, based on their statement, is that there are no differences between the Netherlands and Germany regarding the link between self-control and delinquency. However, we want to test if the quality of parenting has a direct effect on delinquency or if this relationship is (partially) explicable by a mediating effect of self-control. The research question in this paper is divided into two parts, so it will be clearer which aspects will be tested:

Research question 1: Is there a mediating effect of self-control on the relationship between parenting quality and delinquency?

Research question 2: Is this possible relationship between self-control and delinquency with a mediating effect of self-control the same across countries?

Social and scientific relevance

First of all, this study examines several assumptions of Gottfredson & Hirschi (1990). But besides delivering findings on their statements, this research contributes to the discussion of how important parenting is for children's conducted amount of self-control and future delinquency. Less delinquency is positive in many ways for society. For example, it causes less financial damage. Such positive macro outcomes are a result of all micro outcomes together. And if the results suggest that self-control is dependent on the quality of parenting, the importance of parenting support policies should be highlighted. Policies can receive more attention in order to achieve better effects and outcomes on parenting quality. Besides self-control leading to less delinquency, self-control is important for achieving life goals, as research by Hofmann et al. (2014) shows. Achieving goals, such as a good job, leads to less crime. Simply because there are less motives for crime since there is an income. So self-control also has indirect effects, causing less crime (Hofmann et al., 2014; Burt et al., 2006). Summarizing, finding out what positively influences self-control is in everyone's interest.

Secondly, by looking at the effects of parenting quality on the relationship between self-control and delinquency between two countries, more insight and knowledge can be

gained regarding self-control and delinquency. Gottfredson & Hirschi (1990) state that this relationship should be the same, but if differences are found, this could be due to differences in parenting quality, since literature (Burt et al., 2006; Hay, 2001) suggest a relationship between the quality of parenting and self-control. This leads to researching a possible direct relationship between parenting quality and delinquency. In order to achieve more certainty about the causing factors of a possible difference, the link between parenting quality and criminal behavior will be examined as well. If parenting quality seems to influence the link between self-control and delinquency, it will contribute to the public debate. Because in that case the attention can be about what influences parenting quality, and thus more research can be about investigating how the parenting quality can be increased. This can be done by policies, so governments should outline what policy kind of policies works best. Also, more research about a specific topic leads to more attention. More attention and publicity about findings are leading to more research, and more research turns into more knowledge and information. Eventually, more information is leading to more appropriate policies. So findings could deliver new information, more awareness, public discussions, possible appropriate policy and function as a implication for further research (van Daly, 2013).

Theoretical framework & literature review

Repeating, the quality of parenting (so the way in which kids are nurtured) is a strong influencer on self-control, which is mostly developed during childhood. The nurturing quality is expected to increase because of the emphasizes on parenting support policies by governments, so it seems likely that the relationship between self-control and delinquency is affected and perhaps different across countries (Hirschi & Gottfredson, 1990; Wright et al., 1999; Paternoster & Na, 2012).

An extended review will follow, about the applied theories and literature which are supporting the relationships and statements described above, for a complete and solid overview of our variables and mutual relationships. Besides the literature review about the discussed relationships above, factors influencing the quality of parenting will be outlined. And lastly, differences and similarities in parenting policies will be discussed.

Self-control → criminal behavior

One of the main assumptions of Gottfredson & Hirschi (1990) is about the relationship between self-control and delinquency. According to them, this relationship is the same across countries. Meaning that the effect size of self-control on delinquency is consistent, and its existence is independent from social factors (Hirschi & Gottfredson, 1990).

Gottfredson & Hirschi's (1990) General Theory of Crime states that criminal behavior is the outcome of a lack of self-control. They do not assume complex explanations, crime is just gratifying. The theory is based upon the assumption that delinquency is providing an easy to accomplish benefit. Criminals are not capable of resisting the short term gratification. Besides looking at criminal behavior as an indicator of low self-control, deviant behavior can be seen analogously. For example, such deviant behavior consists of smoking, gambling, unprotected sex, cheating and so on. In general, activities with an immediate obtained benefit. Hereby, the long term consequences are being weighed against short term gratifications. A logical consideration, in which the outcome can vary between persons in the same situation. People with a lack of self-control are characterized as impulsive, risk-taking, short sighted, physical and insensitive (Hirschi & Gottfredson, 1990).

A meta-analysis conducted by Pratt & Cullen (2000) supports most of the statements made in the General Theory of Crime. They examined and discussed a lot of studies testing the relationship between self-control and the effects on delinquency. They found impressive evidence for a relationship between self-control and delinquency. They compared their findings and results with many other studies examining the relationship between self-control and criminal behavior and found consistency. When compared with other studies of possible predictors of delinquency, self-control had the greatest effect size. This finding supports Hirschi & Gottfredsons statement about self-control being the most important predictor of crime.

Also, the results show support for the claim that the effect of self-control would be general, and so always present. Small differences between gender, ethnicity and age regarding criminal and analogous behaviors were found but were therefore not significant (Pratt & Cullen, 2000; Moffitt et al., 2011).

However, not all findings are consistent with the theory of Gottfredson & Hirschi. The results show a significant difference in effect sizes of self-control between longitudinal and cross-sectional studies. This suggests that self-control is not a stable propensity during the lifecourse or over countries. The magnitude of self-control as a predictor of delinquency

was able to change over the years. This change was probably due the influence of social learning, and took also place after an age of ten (Pratt & Cullen, 2000).

A research of Vazsonyi et al. (2001) tested, among other things, the proposition of Gottfredson & Hirschi stating that the relationship between self-control and criminal behavior is the same across countries and cultures. They indeed found evidence for this relationship, suggesting independence. Four countries were compared: Hungary, the Netherlands, Switzerland and the United States. The self-control and delinquency relationship appears to be tenable across these four countries. Thus, according to this study, constancy of what predicts crime across countries is found (Vazsonyi et al., 2001).

Therefore, there is not much reason to doubt the relationship between self-control and delinquency. There only seems some discussion about this relationship being stable during life. Since the study of Pratt & Cullen (2000) found evidence that the relationship between self-control and delinquency is not stable after an age of ten. Self-control can be influenced through social learning, and thus change over the years. Because Pratt & Cullen (2000) found evidence not supporting the statement made by Gottfredson & Hirschi, they are questioning another statement. Namely, the assumption of the relationship between self-control and delinquency being the same across countries (Pratt & Cullen, 2000). This led to outlining how self-control could be influenced. Which will be further explained and elaborated in the following section.

In order to establish if self-control has a significant effect on the criminal behavior of the respondents, this research came up with the following hypothesis based upon the literature and theories above:

H1: When a person has more self-control, he or she would be less likely to behave criminally in the Netherlands and Germany.

Also based upon the findings of the literature and theories discussed above, the following hypothesis was formulated, in order to establish if this effect of self-control on delinquent behavior differs for the Netherlands and Germany:

H1a: The relationship between self-control and delinquency does not vary between Germany and the Netherlands.

Quality of parenting → self-control

Another proposition made by the General Theory of Crime (Hirschi & Gottfredson, 1990) states that low self-control is a result of ineffective parenting. In order to avoid this, parents

should care enough about their kids to make the effort of effectively discipline them. So first of all, loving and trusting relationships are needed within a family. Gottfredson & Hirschi are referring to this with 'parental attachment', which is required for a well-developed amount of self-control. But besides parents giving enough love, they need to be effective in parenting too. According to Gottfredson & Hirschi, effective parenting means monitoring and watching the children in the first place. Secondly, parents should be able to recognize deviant behavior when it occurs. And lastly, parents need to act on and give response to deviant behavior in an appropriate way. Meaning, no excessive or physical punishments. This would destroy the relationship between parent and child and affect their parenting effectiveness. So following this statement of Gottfredson & Hirschi, the more effective child-rearing is, the more self-control is conducted. The self-control of children is formed in the early years of childhood and is supposed to stabilize around an age of 7-9. So the differences in self-control observed at an age of 10 should persist from then on (Hirschi & Gottfredson, 1990; Cullen et al., 2008).

The relationship between adequate parenting and self-control of Hirschi & Gottfredson (1990) is supported by the theory of Baumrind (1996). Baumrind states that good parenting consists of demandingness and responsiveness. Demandingness refers to the claim parents make on their kids regarding efforts, discipline, obeying and willingness to integrate within the family. Responsiveness is about the extent to which parents are stimulating self-regulation, support, self-assertion and attitude against peers. Concluded, self-control is the outcome of effective child-rearing. A conclusion supported by Hay (2001) as well, conforming both theories (Baumrind, 1996).

In addition, a research of Wright & Beaver tries to answer the question if parents matter in children's development of self-control. They investigated a sample of twins, examining the role of biological aspects. The answer they found was yes, parenting was positively associated with higher levels of children's self-control. This finding is in line with many other studies, like the study conducted by Burt et al. (2006) (Wright & Beaver, 2005)

A study of R. Paternoster & Na (2012) focused on the link between parenting and self-control and the long term statement of Gottfredson & Hirschi (1990) that any observed differences in self-control among adolescents remains the same after an age of ten. But after an age of ten, some important differences were found in the self-control of young adults during an eight-years time frame. It appears that the process of developing self-control can be influenced by parents or caregivers after an age of ten. Efforts to improve nurturing are paying off. Two sample groups were used in this study, whereby the caregivers of one group

children were supported and assisted. The children in this group showed a significant higher amount of self-control, compared with the control group over six years (from age 11/12 till 17). The control group consisted of kids nurtured by caregivers without support and assistance, showing less self-control than the experimental group. Summarized, the nurturing quality and the relationship between child and caregiver are predictors of self-control and still changeable before an age of eighteen (Paternoster & Na, 2012; Pratt & Cullen, 2000). More literature provides evidence for a relationship between self-control and delinquency after an age of ten, an important finding, since the data in this study is of children between 12 till 15. And apparently, low self-control is a condition that can be influenced through intervention and social experiences and so, is changeable over time till an age of eighteen (Burt et al., 2006; Hay, 2001). But in contrary to the theory of Hirschi & Gottfredson, it seems that self-control can still be influenced after an age of ten. So this relationship lasts longer than they assume, and the effect of parenting exists until an age of eighteen (Burt et al., 2006). Summarizing, the relationship between self-control and delinquency can be influenced by factors falling under parenting styles and qualities. They seem to have an effect on this relationship till an age of eighteen. So a relationship between parenting quality and self-control can be expected based upon the theories and studies in this section, leading to the following two hypotheses:

H2: There is a positive relationship between the quality of parenting and self-control in the Netherlands and Germany.

In order to establish if there are differences regarding H2 between the countries, the following hypothesis was formulated:

H2a: The relationship between the quality of parenting and self-control does not vary between the Netherlands and Germany.

From both sections the following can be assumed: More self-control leads to less delinquency (a negative effect), and the parenting quality has a positive effect on the amount of self-control. Those two assumable relationships give reason for investigating the following two hypotheses:

H3: There is a negative relationship between the quality of parenting and delinquency in the Netherlands and Germany.

H3a: The relationship between the quality of parenting and delinquency does not vary between the Netherlands and Germany.

In order to establish if the direct effect of parenting quality on the delinquency of the respondents is still significant or if it can be explained through self-control, this research has formulated the next hypothesis:

H4: Self-control has a mediating effect on the link between quality of parenting and criminal behavior in the Netherlands and Germany.

In order to establish if there is difference between the two countries that were taken into account in this research, in the possible mediating effect of the self-control of respondents on the link between the quality of parenting and criminal behavior, the last hypothesis was formed:

H4a: The mediating effect of self-control on the link between parenting quality and criminal behavior does not vary between the Netherlands and Germany.

Factors affecting parenting quality

While there are no possibilities within the data set to create an overarching variable describing parenting quality, the tests that were done were based on variables describing the factors that affect parenting quality. These factors are discussed in this section.

The quality of parenting is affected by several factors. Some of these factors are in line with the parenting characteristics that are influencing self-control. So things as effectively monitor and discipline kids are improving the nurturing quality. Parents should recognize deviant behavior, give the right response and should not be too harsh or too lenient. A loving and trustworthy relationship is needed between parents and kids. Moreover, there are indirect factors affecting the quality of parenting; economic resources and parental education (Hope et al., 2003; Thomson et al., 1994; Baumrind, 1996).

A research conducted by Hope et al. (2003) provides considerable support for the indirect effect of family process variables as determinants of self-control. Such as the presence of attachment and discipline within families. But they also found indirect effects, economic resources and parental education seem to be important predictors of self-control. More economic resources increases parents feeling of control over life. Parents are experiencing less stress about life in general, being able to monitor their kids better. So there is a positive effect between available economic resources within a family and their ability to focus on parenting, according to this study (Hope et al., 2003).

Besides economic resources having an effect on parenting, Hope et al. (2003) are also suggesting a relationship between parental education and the quality of parenting. Parental

education and resources are often highly correlated, so the educational attainment of parents is the main reason for the assumption above (Thomson et al., 1994). But there is also another effect of parental education. More educated parents are more effective at monitoring and disciplining their children. Moreover, the higher educated parents are more responsive, because they recognize deviant behavior sooner than less educated parents. Giving feedback and sanctions are important factors in developing more self control. Some parents just don't act upon deviant behavior and other parents lack the ability to give the needed response, varying by educational attainment (Hope et al., 2003). Summarizing the last section, more economic resources lead to more control over children's behavior and parental education has a positive effect on parents ability of good parenting (regarding responsiveness) (Hope et al., 2003; Baumrind, 1996).

Besides those indirect effects and direct effects of parenting techniques (parental attachment and adequate parenting), parenting support policies are assumed to (indirectly) influence the quality of parenting. Studies are suggesting that support by governments should be more comprehensive for more effectiveness. Because this leads to better fulfillment of the parents' needs. But most importantly, they state that there is a relationship between national parenting policies and child outcomes (Ghate & Hazel, 2003; Shulruf et al., 2009; van Daly, 2013). This will be further elaborated in the discussion, since it is not possible to test the different kinds of policies between the two countries with the given dataset (Hope et al., 2003; Thomson et al., 1994; Baumrind, 1996).

Methods

Data description

The data that are used in this research, is the Second International Self-Report Delinquency Study (ISRD-2) (Entzmann et al., 2015). It is a research that was held between 2005 and 2007, and was held at schools to study delinquency and victimization of 12 to 15 year-old students. It was conducted in 31 mostly European countries, the United States, Caribbean and South American countries. It was a school-based study, which drew random samples from city- or national level. This makes for a cross-national description, which allows for the assessment of national crime rates that can be compared to other countries' crime rates (Entzmann et al., 2015).

Data selection

In order to test these hypotheses, we have to have a group of respondents for which we want to test. We have chosen to compare between two countries: the Netherlands and Germany. In these countries, we are going to sample the group of students that were 12 to 15 years-old, whereas this is the largest group of respondents in the dataset (n in total = 62672, which is 91,5% of total respondents). We assume that these respondents are influenced by their parents more than respondents that are over 16 years-old, and we assume that they are more likely to have behaved delinquently than under 12 year-olds. For these reasons, we are going to research the group of 12 to 15 year-olds.

In order to test our hypotheses, we have to filter out the group of 12-15 year-olds in the Netherlands and Germany. The valid N for both countries, when all variables are taken into account, are 1443 for the Netherlands, and 2205 for Germany.

In order to test our hypotheses, the tests will be done separately for respondents from the Netherlands and Germany, and will be held next to each other.

Operationalisation

Criminal behavior

This variable is the dependent variable in H1, H1a, H3 and H3a.
This variable is measured with the variable which is a description of the total offences over the last year. The offences that were used, are: getting into a group fight, carrying a weapon, shoplifting, vandalism, hacking, assault, extortion, snatching, theft from car, car theft, burglary, and drug dealing. In this research, the respondents within this variable were put into two categories, dividing the respondents that had committed one or more offences in the last year, and the ones that had not. This made for the dichotomous variable that we created and used in our analyses.

Self-control

This variable is the independent variable in H1 and H1a, and the dependent variable in H2. In order to measure self-control, we are going to use the variable that describes the self-control of respondents, which is the recoded mean score of 4 subscale scores, respectively the scores on the variables describing impulsivity, risk taking, self-centeredness, and temperament of the respondent. The scores on the scales of these sub-variables of the variable that measures self-control are transformed into the Percentage of Maximum Possible (POMP), with 0 and

100 as lower and upper bounds. This gives a score of the self-control of respondents, varying between 0 and 100. In this case, it means that the higher the score on SELFC, the higher the self-control of that respondent, according to the dataset. The quality and reliability of this scale are guaranteed, according to Cohen et al. (1999), whereas it gives more insight than the data then item sums, average item scores, and standardized scores (Cohen et al., 1999, p. 332).

Country of respondent

This variable is the control variable in H1a.

This variable describes the country the respondent is from. The researchers made three variables which made it possible to select respondents from the age of 12-15 from the Netherlands, Germany, and the Netherlands and Germany together.

Quality of parenting

This variable is the independent variable in H2, H2a, H3 and H3a.

This variable is measured by different aspects that define the quality of parenting, as described in the theory section. These aspects are different variables, that we measured in two different models for a more clear overview.

The first point that defines quality of parenting, is the **parental attachment**. Effective parenting means monitoring and watching the children, recognizing deviant behavior when it occurs, and acting and giving response in an appropriate way to said deviant behavior (Hirschi & Gottfredson, 1990). Next to that, good parenting consists of demandingness and responsiveness (Baumring, 1996). This variable, parental attachment, is measured by the variable that describes family bonding. This is, just like the variable describing self-control, a Percentage of Maximum Possible (POMP), with 0 and 100 as lower and upper bounds. It is based on the scores on 4 items, namely how well the respondent gets along with his mother, his father, how often the respondent has leisure time with his family, and how much he eats the evening meal with (one of) the parents.

Moreover, quality of parenting is defined by direct effects such as **economic resources** of the parents (Hope et al., 2013), which is measured by the variable that describes the family affluence. This is, just like the variables describing self-control and family bonding, a Percentage of Maximum Possible (POMP), with 0 and 100 as lower and upper bounds. It is based on the scores on 4 items, namely if the respondent has his own room, if he uses the computer, if he has his own mobile phone, and if the family owns a car.

Control variables

Next to the main variables, this thesis has some control variables that check the relationship between the main variables. They will be taken into account in every test that is done. These control variables are:

- Delinquency of friends

In line with the Differential Association-Reinforcement Theory of Criminal Behavior, Burgess & Akers (1966) argue that criminal behavior has to be learned. Its strength is, according to them, "a direct function of the amount, frequency, and probability of its reinforcement." This amount, frequency, and probability of reinforcement becomes more present, we argue, when there are delinquent friends in the network of the respondent. This is why we use the variable which describes whether the respondent has delinquent friends, to compare the group of respondents with and without delinquent friends, and see if it makes a difference in the behavior of the respondent. It was measured by simply asking the respondents: *"Do people in your group actually do illegal things (against the law) together?"* To which the respondent can answer "yes" or "no". This makes for a dichotomous variable, with the group of respondents with delinquent friends that act together (score 1), and the group of respondents that are not in such a group (score 0) clearly separated.

- Gender of respondent

As is hypothesized in the article of Gottfredson & Hirschi (1990), the gender of the respondent has an effect on the criminal behavior of that respondent. This effect occurs due to less opportunities of committing criminal behavior. So the differences in delinquency by gender are explained by stating that males are more often in situations which are attractive for crime. However, the mechanisms behind committing crimes are the same for males and females according to the General Theory of Crime, but females just have fewer opportunities to do so (LaGrange & Silverman, 1999). The gender of the respondent was measured by asking the question *"Are you male or female?"* To which the respondent could answer "male" or "female". This made for a variable with the groups female (score 0), and male (score 1).

- School levels

Gottfredson & Hirschi (1990) assume higher educated people being better able of controlling their short term gratification needs. So weighting the long term benefits against the short term gratification, without the mediating effect of getting positive satisfaction, as it the case with criminal behavior. Because of this, higher educated people are committing less crime than

those whom are low educated, according to this theory (LaGrange & Silverman, 1999; Gottfredson & Hirschi, 1990). This is about educational attainment (meaning the highest degree of completed education), and not about the school levels that the respondents are in. However, we argue that in order to get a higher educational attainment, the school level of respondents is probably higher. This makes for a variable in which we use school level as a predictor for future educational attainment, as the respondents have not finished their education yet. In order to create the random sample in the data set (ISRD-2), all samples were stratified to grade level (seventh, eighth and ninth grade), some additional to school type (academic, technical or vocational). This made for a variable, dividing the respondents by school level: low, medium, and high. In this research, the choice was made to divide the high level from the low and medium level, making low and medium into one group.

- Ethnicity

Due to differences in child-rearing practices, Gottfredson & Hirschi (1990) are expecting an effect of ethnicity on the amount of self-control, and thus delinquency. So the General Theory of Crime suggests that nurturing is the underlying factor. Nurturing is done different across different ethnicities, as they have different cultures according to Gottfredson & Hirschi (1990). This causes a relationship between ethnicity and criminal behavior (LaGrange & Silverman, 1999). In order to divide the immigrant respondents, and the native-born respondents, there was a variable made that divided the natives from the first and second generation immigrants.

Results

In this section, the results of the tests that were done will be discussed.

Hypothesis 1: When a person has more self-control, he or she would be less likely to behave criminally in the Netherlands and Germany together.

This hypothesis was tested for respondents from the countries the Netherlands and Germany altogether. As can be seen in Table 1, there seems to be a significant effect of the self-control of a respondent on the expected value of the criminal behavior of that respondent (B=-.048; O.R.=.953, p<.001). All of the control variables also have a significant effect, except for the control variable that divides the groups of second and first-generation immigrants, and natives (B=.115; O.R.=1.122; p=.207).

Table 1

Statistics describing the relationship between self-control and delinquency for respondents from the Netherlands and Germany combined and separarely per country.

	Combined		Netherlands		Germany	
	B (S.E.)	O.R.	B (S.E.)	O.R.	B (S.E.)	O.R.
Self-control	-.048 (.003)***	.953	-.042 (.004)***	.959	-.053 (.004)***	.948
Gender	.677 (.085)***	1.968	.568 (.134)***	1.764	.759 (.112)***	2.136
Group does illegal things	1.239 (.089)***	3.454	1.310 (.142)***	3.707	1.220 (.116)***	3.387
Migrant	.115 (.091)	1.122	.011 (.141)	1.101	.192 (.120)	1.212
School level	-.262 (.091)**	.770	-.507 (.159)**	.602	-.098 (.115)	.906
Constant	1.218 (.178)***	3.379	1.039 (.278)***	2.826	1.322 (.233)***	3.750
Nagelkerke R-square	.359		.336		.379	

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

Hypothesis 1a: The relationship between self-control and delinquency does not vary between respondents from Germany and the Netherlands.

For this hypothesis, we tested for respondents from the countries the Netherlands and Germany separately. In the Netherlands, there seems to be a significant effect of the self-control of a respondent on the expected value of the criminal behavior of that respondent (B=-.042; O.R.=.959, p<.001). All of the control variables had a significant effect, except for the variable that divides second or first-generation immigrant and natives (B=.011; O.R.=1.101; p=.937) (see Table 1).

In Germany, there seems to be a significant effect of the self-control of a respondent on the expected value of the criminal behavior of that respondent (B=-.053; O.R.=.948, p<.001). All control variables also have a significant effect, except for the variables that divides the respondents with different school types (B=.192; O.R.=1.212; p=.110), and the second or first-generation immigrants and natives (B=-.098; O.R.=.906; p=.395) (see Table 1).

There seem to be minor differences between the effect of self-control and delinquency in the Netherlands and in Germany. However, the main effect, in both cases, has a significant effect, and this effect does not differ much between the countries.

Table 2
Statistics describing the relationship between quality of parenting and self-control for respondents from the Netherlands and Germany combined and separately per country.

	Combined			**Netherlands**			**Germany**		
	B (S.E.)	Bèta	T	B (S.E.)	Bèta	T	B (S.E.)	Bèta	T
Constant	50.688 (1.530)***		33.140	54.382 (2.684)***		20.264	49.223 (1.874)***		26.266
Family bonding	.201 (.017)***	.173	11.496	.162 (.030)***	.129	5.362	.217 (.022)***	.194	9.990
Gender	-3.850 (.564)***	-.101	-6.830	-3.584 (.913)***	-.094	-3.927	-4.130 (.720)***	-.109	-5.732
Group does illegal things	-14.570 (.634)***	-.350	-22.988	-14.958 (1.026)***	-.356	-14.574	-14.362 (.808)***	-.346	-17.779
Migrant	-3.119 (.606)***	-.076	-5.146	-4.235 (.957)***	-.105	-4.426	-2.416 (.785)**	-.058	-3.076
School level	2.827 (.588)***	.071	4.811	4.408 (1.012)***	.094	3.971	2.341 (.738)**	.061	3.173
R-square	.216			.209			.222		
Constant	70.336 (2.068)***		34.009	67.606 (3.401)***		19.902	72.210 (2.611)***		27.653
Family affluence	-.033 (.021)	-.024	-1.553	.003 (.035)	.002	.097	-.059 (.027)*	-.043	-2.180
Gender	-3.265 (.570)***	-.086	-5.727	-3.219 (.917)***	-.085	-3.509	-3.518 (.732)***	-.092	-4.808
Group does illegal things	-16.367 (.626)***	-.392	-26.163	-16.180 (1.010)***	-.385	-16.017	-16.478 (.798)***	-.396	-20.639
Migrant	-3.297 (.635)***	-.080	-5.195	-4.408 (.992)***	-.109	-4.444	-2.557 (.825)**	-.062	-3.100
School level	3.150 (.602)***	.079	5.235	4.338 (1.028)***	.101	4.218	2.887 (.750)***	.075	3.811
R-square	.189			.195			.190		

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

H2: There is a positive relationship between the quality of parenting and self-control.
Firstly, this thesis is going to look at the family bonding as an indicator for quality of parenting. This hypothesis was tested for respondents from the countries the Netherlands and Germany altogether. There seems to be a significant effect of the family bonding on the self-

control of that respondent (B=.201; t=11.496, p<.001) . The control variables all have a significant effect (see Table 2, model 1).

Secondly, this thesis is going to look at the family affluence as an indicator for quality of parenting. This hypothesis was tested for respondents from the countries the Netherlands and Germany altogether. There seems to be no significant effect of the family affluence on the self-control of that respondent (B=-.033; t=-1.553, p=.121). The control variables, however, all have a significant effect (see Table 2, model 2).

H2a: The relationship between the quality of parenting and self-control does not vary between the Netherlands and Germany.

Firstly, this thesis is going to look at the family bonding as an indicator for quality of parenting. This hypothesis was tested for respondents from the countries the Netherlands and Germany separately. As can be seen in Table 2, model 1, there seems to be a significant effect of the family bonding on the self-control of that respondent (B=.162; t=5.362, p<.001) in the Netherlands, and the control variables also all seem to have a significant effect.

In Germany, there seems to be a significant effect of the family bonding on the self-control of that respondent (B=.217; t=9.990, p<.001). The control variables all have a significant effect (see Table 2, model 1).

Secondly, this thesis is going to look at the family affluence as an indicator for quality of parenting. This hypothesis was tested for respondents from the countries the Netherlands and Germany separately. In the Netherlands, there seems to be no significant effect of the family affluence on the self-control of that respondent (B=.003; t=.097, p=.923). The control variables all have a significant effect (see Table 2, model 2).

In Germany, there seems to be a significant effect of the family affluence on the self-control of that respondent (B=-.059; t=-2.180, p<.05). However, this effect is not a positive effect, but a negative effect. The control variables all have a significant effect (see Table 2, model 2).

There seem to be no big differences between the effect of quality of parenting and self-control in the Netherlands and in Germany, when looking at family bonding as an indicator for quality of parenting. However, there seem to be differences between the effect of quality of parenting and self-control in the Netherlands and in Germany, when looking at family affluence as an indicator for quality of parenting. The effect in Germany was negative, but significant, and in the Netherlands, it was not significant. The control variables have significant effects in both tests, using family bonding and family affluence.

Table 3

Statistics describing the relationship between quality of parenting and delinquency for respondents from the Netherlands and Germany combined and separarely per country.

	Combined		Netherlands		Germany	
	B (S.E.)	O.R.	B (S.E.)	O.R.	B (S.E.)	O.R.
Family bonding	-.017 (.002)***	.983	-.024 (.004)***	.977	-.014 (.003)***	.986
Gender	.805 (.082)***	2.236	.706 (.131)***	2.026	.879 (.106)***	2.409
Group does illegal things	1.659 (.083)***	5.206	1.697 (.134)***	5.460	1.666 (.107)***	5.289
Migrant	.256 (.086)***	1.292	.184 (.136)	1.201	.285 (.112)*	1.330
School level	-.366 (.087)***	.693	-.624 (.155)***	.536	-.200 (.108)	.811
Constant	-.441 (.209)*	1.643	.310 (.368)	1.364	-.806 (.259)**	.447
Nagelkerke R-square	.254		.271		.248	
Family affluence	.004 (.001)***	1.004	-.002 (.005)	.998	.010 (.004)*	1.010
Gender	.722 (.037)***	2.059	.652 (.128)***	1.919	.831 (.104)***	2.297
Group does illegal things	1.591 (.038)***	4.908	1.799 (.131)***	6.041	1.780 (.105)***	5.930
Migrant	.240 (.043)***	1.271	.203 (.137)	1.225	.340 (.115)**	1.404
School level	-.168 (.039)***	.845	-.653 (.153)	.520	-.268 (.108)*	.765
Constant	-2.343 (.091)***	.096	-1.498 (.473)**	.224	-2.853 (.391)***	.058
Nagelkerke R-square	.179		.245		.243	

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

H3: There is a negative relationship between the quality of parenting and delinquency.

Firstly, this thesis is going to look at the family bonding as an indicator for quality of parenting. This hypothesis was tested for respondents from the countries the Netherlands and Germany altogether. There seems to be a significant effect of family bonding on the criminal behavior of a respondent (B=-.017; O.R.=.983, p<.001). All of the control variables also have a significant effect (see Table 3, model 1).

Secondly, this thesis is going to look at the family affluence as an indicator for quality of parenting. This hypothesis was tested for respondents from the countries the Netherlands and Germany altogether. There seems to be a significant effect of family affluence on the criminal behavior of a respondent (B=.004; O.R.=1.004, p<.001). However, this effect is positive, except for negative, as we expected it to be. All of the control variables also have a significant effect (see Table 3, model 2).

H3a: The relationship between the quality of parenting and delinquency does not vary between the countries the Netherlands and Germany.

Firstly, this thesis is going to look at the family bonding as an indicator for quality of parenting. This hypothesis was tested for respondents from the countries the Netherlands and Germany separately. In the Netherlands, there seems to be a significant effect of the family bonding on the criminal behavior of that respondent (B=-.024; O.R.=.977, p<.001). All of the control variables also have a significant effect, except for the variable that divides whether someone is a second or first-generation immigrant or a native (B=.184; O.R.=1.201; p=.177) (see Table 3, model 1).

In Germany, there seems to be a significant effect of the family bonding on the criminal behavior of that respondent (B=-.014; O.R.=.986, p<.001). All of the control variables also have a significant effect, except for the variable that divides the different school levels of respondents (B=-.200; O.R.=.811; p=.053) (see Table 3, model 1).

Secondly, this thesis is going to look at the family affluence as an indicator for quality of parenting. In the Netherlands, there seems to be no significant effect of the family affluence on the criminal behavior of that respondent (B=-.002; O.R.=.998, p=.735). The control variables that divide migrants and natives (B=.203; O.R.=1.225; p=.138), and describe school level (B=-.653; O.R.=.520; p=.100) do not seem to have a significant effect (see Table 3, model 2).

In Germany, there seems to be a significant effect of the family affluence on the criminal behavior of that respondent (B=.010; O.R.=1.010, p<.05). All control variables also seem to have a significant effect (see Table 3, model 2).

There seem to be no big differences between the effect of quality of parenting on the delinquency of respondents in the Netherlands and in Germany, when looking at family bonding as an indicator for quality of parenting. Both of the effects seem to be significant. However, there seem to be differences between the effect of quality of parenting on delinquency in the Netherlands and in Germany, when looking at family affluence as an

indicator for quality of parenting. The effect in Germany was positive, but significant, and in the Netherlands, it was not significant. This would indicate that, when we look at different aspects of parenting quality, the effects can be different on the criminal behavior of respondents, and these different aspects can have different effects between countries.

H4: Self-control has a mediating effect on the link between parenting quality and criminal behavior in the Netherlands and Germany altogether.

Firstly, this thesis is going to look at the family bonding as an indicator for quality of parenting. This hypothesis was tested for respondents from the countries the Netherlands and Germany altogether. In order to test this hypothesis, we are going to compare the findings from Table 3 and Table 4. In Table 3, self-control was not taken into account in the test that was run, whereas in Table 4 it was.

As established in the results of Hypothesis 3, which tested if there was a negative relationship between the quality of parenting and delinquency, for the both countries combined, there was a negative effect found of family bonding on the criminal behavior of respondents (B=-.017; O.R.=.983, p<.001) (see Table 3). In Table 4, the effects of family bonding (B=-.010; O.R.=.990, p<.001) and self-control (B=-.047; O.R. = .954; p<.001) on criminal behavior are significant. The effect of the family bonding gets somewhat smaller, but there seems to be no evidence for a mediating effect.

In the other part of Hypothesis 3, it was found that family affluence had a significant effect on the criminal behavior (B=.004; O.R.=1.004; p<.001), albeit a positive effect, whereas we expected a negative effect (see Table 3). In Table 4, we can see that the effect of family affluence is not significant anymore (B=.005; O.R.=1.005, p=.109), whereas self-control (B=-.048; O.R.=.953; p<.001) does have a significant effect on the criminal behavior of the respondent. This would indicate that there could be a mediating effect of self-control on the link between family affluence and criminal behavior. However, this is only suggestive evidence.

Table 4

Statistics describing the mediating effect of self-control on the relationship of parenting quality and delinquency for respondents from the Netherlands and Germany combined and separarely per country.

	Combined		**Netherlands**		**Germany**	
	B (S.E.)	O.R.	B (S.E.)	O.R.	B (S.E.)	O.R.
Family bonding	-.010 (.003)***	.990	-.020 (.004)***	.980	-.005 (.003)	.995
Self-control	-.047 (.003)***	.954	-.040 (.004)***	.961	-.052 (.004)***	.949
Gender	.712 (.087)***	2.038	.622 (.138)***	1.862	.777 (.114)***	2.174
Group does illegal things	1.188 (.090)***	3.281	1.257 (.144)***	3.514	1.175 (.118)***	3.237
Migrant	.121 (.092)	1.129	-.010 (.144)	.990	.193 (.121)	1.213
School level	-.254 (.092)**	.775	-.488 (.161)**	.614	-.093 (.116)	.912
Constant	1.923 (.259)***	6.839	2.596 (.447)***	13.411	1.671 (.326)***	5.328
Nagelkerke R-square	.361		.353		.376	
Family affluence	.005 (.003)	1.005	-.001 (.005)	.999	.009 (.004)*	1.009
Self-control	-.048 (.003)***	.953	-.042 (.004)***	.959	-.053 (.004)***	.948
Gender	.675 (.085)***	1.964	.570 (.135)***	1.768	.764 (.112)***	2.147
Group does illegal things	1.231 (.089)***	3.424	1.313 (.143)***	3.716	1.210 (.116)***	3.355
Migrant	.152 (.094)	1.165	.003 (.145)	1.003	.261 (.124)*	1.298
School level	-.278 (.092)**	.757	-.503 (.160)**	.604	-.128 (.116)	.879
Constant	.725 (.355)*	2.065	1.155 (.561)*	3.174	.471 (.462)	1.601
Nagelkerke R-square	.359		.336		.381	

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

H4a: The mediating effect of self-control on the link between parenting quality and criminal behavior does not vary between the Netherlands and Germany.

Firstly, this thesis is going to look at the family bonding as an indicator for quality of parenting. This hypothesis was tested for respondents from the countries the Netherlands and Germany separately. In order to test this hypothesis, we are going to compare the results of Table 3 and Table 4. In Table 3, the statistics that describe the relationship between quality of parenting and delinquency, and Table 4 also describes this relationship, but it also takes the effect of self-control on delinquency into account. In the Netherlands, when looking at family bonding as an indicator for the quality of parenting, there seems to be a significant effect on the delinquency of respondents (B=-.024; O.R.=.977, p<.001) (see Table 3, model 1). When we also take self-control into account, there still seems to be a significant effect for family bonding (B=-.020; O.R.=.980, p<.001), and self-control also seems to have a significant effect (B=-.040; O.R.=.961; p<.001) (see Table 4, model 1). The effect of family bonding has become smaller, but it seems that it has not become that much smaller that it indicates a mediating effect of self-control on this relationship for the Netherlands.

When looking at family bonding as an indicator for parenting quality in Germany, we have seen that the effect of parenting quality on delinquent behavior is significant (B=-.014; O.R.=.986, p<.001) (see Table 3, model 1). When taking self-control into account, the effect of family bonding seems to be not significant anymore (B=-.005; O.R.=.995, p=.136), whereas self-control does seem to have a significant effect on the criminal behavior of the respondent (B=-.052; O.R.=.949; p<.001) (see Table 4, model 1). This would suggest that there could be a mediating effect of self-control on the link between family bonding and delinquency in Germany.

Secondly, this thesis is going to look at the family affluence as an indicator for quality of parenting. In the Netherlands, there seems to be no mediating effect of self-control in the link between family affluence and criminal behavior. When looking at the results of Hypothesis 3a regarding the effect of family affluence on criminal behavior in the Netherlands, it seemed not to be significant (B=-.002; O.R.=.998, p=.735) (see Table 3, model 2). When taking self-control into account, family affluence still does not have a significant effect (B=-.001; O.R.=.999, p=.811), whereas self-control (B=-.042; O.R.=.959; p<.001) does seem to have a significant effect on the criminal behavior of the respondent (see Table 4, model 2). This would indicate that there is no mediating effect of self-control on the relationship between family affluence and delinquency in the Netherlands.

In Germany, there also does not seem to be a significant mediating effect of self-control in the link between family affluence and criminal behavior. The effect of family affluence on criminal behavior seemed to be significant (B=.010; O.R.=1.010, p<.05) (see Table 3, model 2). When taking self-control into account, the effect of family affluence still seems to be significant (B=.009; O.R.=1.009, p<.05), and self-control (B=-.053; O.R.=.948; p<.001) also seems to have a significant effect on the criminal behavior of the respondent (see Table 4, model 2). The effect of family affluence does not change that much that it would indicate a mediating effect for self-control.

All in all, we have only seen a possible mediating effect for self-control on the relationship between family bonding and delinquency in Germany, and for the link between family affluence and delinquency in the countries combined. In all of the other tests, there seemed to be no evidence for a mediating effect of self-control. Lastly, an important statement to keep in mind: these tests only provide suggestive evidence.

Conclusion & Discussion

The main findings will be discussed in relation to the literature and theories extendedly and step-by-step, for a clear structure. Thereafter, recommendations for further research and limitations are being treated.

The main findings consists of four possible relationships, namely:

- Self-control → delinquency
- Parenting quality → self-control
- Parenting → delinquency
- Research questions 1 & 2

Self-control → delinquency

The results show support for a negative relationship between self-control and delinquency. This relationship was found when both countries were taken together, and when they were taken apart. Even when the control variables got added, the relationship was consistent. Also, this relationship was almost the same between the Netherlands and Germany. So this study finds support for the existence of the link between self-control and delinquency, and for this relationship being independent from countries. Hereby, the results of this paper support these

statements made by Gottfredson & Hirschi (1990). According to the General Theory of Crime, it seems that indeed delinquency is the outcome of little self-control. The results are also in line with the findings of Pratt & Cullen (2000) and Moffit et al. (2011), conformity about self-control being a important predictor of delinquency can be established. Since the negative link between self-control and delinquency was almost the same in the Netherlands and Germany, the findings in this paper are in line with the research of Vazsonyi et al. (2001). They found evidence for this relationship in the United States, Switzerland, Hungary and the Netherlands. Summarizing, there is a relationship between self-control and delinquency, and this relationship is the same across countries. This can be concluded based upon the theories and literature used, and the findings in this paper.

Next, the results about a possible relationship between the quality of parenting and self-control will be discussed. Since parenting quality is measured by two indicators, family affluence and family bonding, they will be treated separately for a clear overview. Family bonding is measuring the kids relation with their parents and how 'bonded' they are with their family. Family affluence is about the economic resources of the parents, measured by asking the kids about their belongings.

Family bonding → self control

The results are suggesting a significant effect of family bonding on self control in the Netherlands, Germany and those two together. A finding which was expected, based on the literature of Hay (2001) and the two theories. Namely, the General Theory of Crime (Gottfredson & Hirschi, 1990) and the theory of Baumrind (1996) got supported with these findings. Summarizing, both theories are stating that a low conducted amount of self-control is the result of ineffective parenting. In this case, family bonding is partly measuring parenting quality, so the theories substantiate this finding. Also, these results are in line with the findings of the discussed literature about the two theories, enhancing the validity and reliability of the result. The research of Wright & Beaver (2005) was investigating if parents have a major effect on the development of kids self-control. Their conclusive answer was yes, parenting is highly associated with self-control. With parenting was meant that the parents were simply around, and how loving the relationship was between children and parents. This study is also measuring the quality of parenting by looking at the mutual relationship, finding similar results: self-control is dependent on parents and parental attachment (Wright & Beaver, 2005; Hay, 2001; Gottfredson & Hirschi, 1990; Baumrind, 1996). Last, a study by Paternoster & Na (2012) also came to the conclusion that the efforts parents make in order to

nurture their kids in a loving and caring way, are positively influencing kids self-control. Recapitulating all literature and findings, parenting and parental attachment are very important for kids amount of self-control (Paternoster & Na, 2012).

Family affluence → self control

Family affluence was the second variable used to measure parenting quality, and was supposed to give an indication of the direct effects on parenting quality. Economic resources and parental education are such indirect effects. Family affluence had no significant effect on self-control were both countries were included, and when only the Netherlands was taken into account. Nonetheless, there was found a significant effect between family affluence and self-control in Germany. But this relationship was negative, and not as expected, positive. Studies by Hope et al. (2003) and Thomson et al. (1994) found findings suggesting indirect effects of parental education and economic resources on self-control. More economic resources are leading to a feeling of control over life for parents, making them more effective at parenting. And both researches found a positive relationship between parental education and parenting quality. The explanation: higher educated people are better at recognizing and acting upon deviant behavior. According to our examination, these assumptions cannot be verified. Especially the effects of parental education, since there was no access to such information with the given dataset. And since only in Germany a negative relationship was found between family affluence and self-control, conclusive remarks cannot be made. Perhaps only in some countries this relationship can be found, further research could create clarity. For now, a relationship between family affluence and self-control can only be assumed in Germany and so the support the studies and statements above. Plausible, the confusing findings are due to methodological limitations of this research (Hope et al., 2003; Thomson et al., 1994).

Hypothesis 1 is testing the relationship between self-control and delinquency. Hypothesis 2 is testing the relationship between parenting quality and self-control. All the literature discussed in the previous sections and our findings combined are reason to investigate a direct relationship between parenting quality and delinquency. And so, if this relationship is explained by a mediating effect of self-control. Hypotheses 3 & 4 are examining and outlining this.

Family bonding → delinquency

Both countries combined, a significant negative effect of family bonding on delinquency was found. This was also the case when the countries were taken apart. Based on our findings,

more family bonding is leading to less criminal behavior. Again, family bonding is measuring the mutual attachment between parents and their kids and is used as an indicator of parenting quality. So because of the consistent findings, strong evidence is delivered for a negative relationship between parenting quality and delinquency.

Family affluence → delinquency

When the quality of parenting was measured with family affluence, more contrasting findings were found. A positive relationship, in contrary to what was expected, was found between family affluence and delinquency when the countries were combined and also for Germany alone. In the Netherlands, no significant relationship was found. Because of the contrasting findings, no conclusive remarks can be made. The findings in the Netherlands are in line with what was expected, based on the previous findings and literature. Economic resources are leading to more parenting quality, and thus less delinquency. The finding that in Germany kids who enjoyed better parenting quality are more likely to commit criminal behavior, is interesting. Perhaps other factors are influencing kids to commit crime, despite their parents nurturing quality, but only future research could outline this. Summarizing, the results are not supporting what was expected based on the literature.

Mediating effect of self-control on parenting quality and delinquency

Hypotheses 4 & 4A are in line with our research questions, they will be repeated:

Research question 1: Is there a mediating effect of self-control on the relationship between parenting quality and delinquency?

Research question 2: Is this possible relationship between self-control and delinquency with a mediating effect of self-control the same across countries?

First, the results regarding research question 1 (H4) will be discussed. Self-control was added to the analysis, to see if the relationship between parenting quality and delinquency mediated. When family bonding was used, the effect of parenting of quality was a bit smaller dan without self-control. But still, the relationship was significant. This result would indicate no mediating effect of self-control. When family affluence was used and self-control was added, the positive relationship between parenting quality and delinquency for both countries was no longer significant. So in contrast with family bonding in the analysis, this would suggest a mediating effect of self-control. So the research question cannot be answered with the results in this study.

Now, research question 2 will be answered. First, in the Netherlands there is still a significant effect between family bonding and delinquency when self-control was added. The relationship is a bit affected by self-control, but not enough to conclude that self-control has a mediating effect. Also when family affluence is used, there is still no significant effect on delinquency. For Germany, a mediating effect of self-control is expected. Since the relationship between family bonding and delinquency was first significant, but when self-control was added not anymore. But when family affluence was used, the effect on delinquency is still significant when self-control was added. This would suggest no mediating effect. Overall, our results are suggesting no mediating effect of self control.

Regarding the control variables, having criminal friends (measured by group does illegal things) and gender are consistency significant. Being a migrant (1st/nd generation) and school level are showing different results in the analyses. Therefore, only for having criminal friends and gender can be said that they influence the dependent variables in every hypotheses. So evidence was found for the Differential Association-Reinforcement Theory of Criminal Behavior (Burgess & Akers, 1966) because having criminal friends has an effect on delinquency. Friends operate as effective and available reinforces, making committing crime more attractive. Also, as Gottfredson & Hirschi assumed, males are more often involved in criminal behavior than females. This assumption is explained by stating that males are more often in situations evoking delinquency (Gottfredson & Hirschi, 1990; Burgess & Akers, 1966).

Summarizing, the findings in this study support a negative link between self-control and delinquency. Also, a positive relationship between family bonding and self-control is assumed, but not between family affluence and self-control. Family bonding seems to have an effect on delinquency, but family affluence has not. Moreover, evidence suggest that there is, and that there is not a mediating effect of self-control and the relationship between parenting quality and delinquency.

Limitations

Support for the link between self-control and delinquency being the same across countries was found. But this evidence is not very convincing, because just two countries were compared. This must be kept in mind when interpreting the results, and is also an implication for further research. Cheung & Cheung (2008) found such differences for example, evidence leading to doubting the relationship between self-control and delinquency. In their research,

this relationship is dependent of social factors, since self-control was not predicting delinquency anymore when control variables were added (Cheung & Cheung, 2008).

Some remarks should be made about how parenting quality was measured. The quality of parenting consists mostly out parents recognizing deviant behavior, give the right response, being demandingness and stimulating a loving relationship (Gottfredson & Hirschi, 1990; Baumrind, 1996). The variable family bonding is supposed to measure this aspect of the quality of parenting, so the direct effects. However, limitations were recognized regarding the dataset. Actually, only parental attachment (having a loving and trustworthy relationship) was measured with family bonding. It is just one of the many indicators of effective parenting, whereby the rest of the indicators could not be examined (such as responsiveness). The family bonding variable lacks a complete measure, at the expense of the finding. The second indicator that was used for parenting quality was family affluence. As the literature suggest (Hope et al., 2003; Thomson et al., 1994), this could best be measured by economic resources and parental education. Parental education could not be measured, because it was not included in the dataset. Yet, an estimate of the economic resources could be made, but is far from comprehensive. Since economic resources was only measured by four questions, and mainly about possessions of the kid. This information is not directly reflecting the economic resources, so trustworthy information could not be gathered regarding families economic resources. Missing data made it impossible to included all the factors that are indicators of parenting quality, causing a weak measure of parenting quality.

Moreover, the findings regarding a mediating effect of self-control were contrasting and suggestive. This makes it impossible to conclusive remarks. Especially with how parenting quality was measured.

Implications for further research

For further research, it would be interesting to investigate parenting quality again, but with a comprehensive set of factors. The quality of parenting should be measured by all indicating factors. Future research could also deep digger into a possible mediating effect of self-control on the link between parenting quality and delinquency, because only suggestive evidence was found. This way, more information could be gained regarding the effects of parenting quality and self-control on delinquency.

A second finding worth more research are the effects of having criminal friends, which was big. Also, gender is determinative for delinquency. Future studies could look if this is the same and if those findings are in line with other studies.

Finishing up this study, the effects of parenting policies will briefly be discussed. Perhaps the explaining mechanism behind these findings is different than Gottfredson & Hirschi (1990) thought. Possibly, this 'no differences in the link between self-control and delinquency across countries' is due the almost similar parenting policies and their effects on children's self-control and delinquency. And after all, the neighboring countries have comparable demographic characteristics.

Several private based institutions and governmental policies are together constituting a wide range of available services for parents, in order to increase the parenting quality. Examples of such institutions are Marte Meo, an foundation based in the Netherlands and Germany. Their aim is an individualised intervention, in order to help a child's development. It also contains a wide range of specially developed programmes which are applicable for specific settings, conditions and circumstances. The programme 'Brede Scholen', called 'community schools', is pursuing the same goals as above in the Netherlands. And Germany has a special programme formulated by the 'Kinder und Jugendhilfe' with matching services and intervention programmes. Moreover, the Dutch government has established a programme 'Kansen voor Alle Kinderen', and the German government 'Starke Eltern, Starke Kinder'. Whereby the German policy is based upon the Dutch one, both trying to make sure children have to most promising future. Parents are support in almost each imaginable way with a large set of programmes and services (Kinder- und Jugendhilfe, 2016; Jeugdzorg, 2007-2011; Kruissink & Verwers, 2006; Trzcinski & Camp, 2013).

So both countries have a wide range of advising and supporting opportunities for parents which could cause the same relationships and findings as described above. Further research should, besides the already named suggestions, profoundly outline the effects of parenting support policies. Gaining more knowledge can lead to more effective and appropriate policies. Also, evaluation based research could help to achieve this. This way, the best performing policies can be formulated (Trzcinski & Camp, 2013).

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Appendix 1: Syntax

```
* Encoding: UTF-8.
*Syntax for selecting the countries we want to research.

GET
  FILE='\\soliscom.uu.nl\uu\Users\4269306\My Documents\My Offline '+
    'Files\ICPSR_34658\DS0001\34658-0001-Data.sav'.
DATASET NAME DataSet3 WINDOW=FRONT.

COMPUTE  countrynetherlands = (country = 310).
COMPUTE  countrygermany = (country = 490).

FREQUENCIES countrynetherlands countrygermany.
FREQUENCIES country.

COMPUTE countrynetherlands1215 = (country = 310 and agegroup = 1).
COMPUTE countrygermany1215 = (country = 490 and agegroup = 1).

FREQUENCIES countrynetherlands1215 countrygermany1215.

COMPUTE countries1215 = (countrynetherlands1215 = 1 or countrygermany1215 = 1).

FREQUENCIES countries1215.

CROSSTABS
  /TABLES=countries1215 BY countrygermany1215 countrynetherlands1215
  /FORMAT=AVALUE TABLES
  /CELLS=COUNT
  /COUNT ROUND CELL.

RECODE totallyc (0=0) (1 2 3 4 = 1) into totallycdich.

FREQUENCIES totallyc.
```

```
FREQUENCIES totallycdich.

COMPUTE selfcsuited = selfc/100.

FREQUENCIES selfc.

FREQUENCIES selfcsuited.

COMPUTE fambondsuited = fambond/100.

FREQUENCIES fambond.

FREQUENCIES fambondsuited.

COMPUTE famaffsuited = famaff/100.

FREQUENCIES famaff.

FREQUENCIES famaffsuited.

FREQUENCIES totallycdich.

LOGISTIC REGRESSION VARIABLES totallycdich
  /METHOD=ENTER selfcsuited
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

*H1.
TEMPORARY.
SELECT IF (countries1215 = 1).

LOGISTIC REGRESSION VARIABLES totallycdich
  /METHOD=ENTER selfcsuited
  /METHOD=ENTER MALE
```

```
  /METHOD=ENTER GRPILLDO
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

*H1a.
TEMPORARY.
SELECT IF (countrynetherlands1215 = 1).

LOGISTIC REGRESSION VARIABLES totallycdich
  /METHOD=ENTER selfcsuited
  /METHOD=ENTER MALE
  /METHOD=ENTER GRPILLDO
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

TEMPORARY.
SELECT IF (countrygermany1215 = 1).

LOGISTIC REGRESSION VARIABLES totallycdich
  /METHOD=ENTER selfcsuited
  /METHOD=ENTER MALE
  /METHOD=ENTER GRPILLDO
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

*H2.
TEMPORARY.
SELECT IF (countrynetherlands1215 = 1).

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT selfcsuited
  /METHOD=ENTER fambondsuited
  /METHOD=ENTER MALE
```

```
  /METHOD=ENTER GRPILLDO.

TEMPORARY.
SELECT IF (countrygermany1215 = 1).

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT selfcsuited
  /METHOD=ENTER fambondsuited
  /METHOD=ENTER MALE
  /METHOD=ENTER GRPILLDO.

TEMPORARY.
SELECT IF (countrynetherlands1215 = 1).

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT selfcsuited
  /METHOD=ENTER famaffsuited
  /METHOD=ENTER MALE
  /METHOD=ENTER GRPILLDO.

TEMPORARY.
SELECT IF (countrygermany1215 = 1).

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
```

```
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT selfcsuited
  /METHOD=ENTER famaffsuited
  /METHOD=ENTER MALE
  /METHOD=ENTER GRPILLDO.

*H3.
TEMPORARY.
SELECT IF (countrynetherlands1215 = 1).

LOGISTIC REGRESSION VARIABLES totallycdich
  /METHOD=ENTER fambondsuited
  /METHOD=ENTER MALE
  /METHOD=ENTER GRPILLDO
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

TEMPORARY.
SELECT IF (countrygermany1215 = 1).

LOGISTIC REGRESSION VARIABLES totallycdich
  /METHOD=ENTER fambondsuited
  /METHOD=ENTER MALE
  /METHOD=ENTER GRPILLDO
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

TEMPORARY.
SELECT IF (countrynetherlands1215 = 1).

LOGISTIC REGRESSION VARIABLES totallycdich
  /METHOD=ENTER famaffsuited
  /METHOD=ENTER MALE
  /METHOD=ENTER GRPILLDO
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

```
TEMPORARY.
SELECT IF (countrygermany1215 = 1).

LOGISTIC REGRESSION VARIABLES totallycdich
  /METHOD=ENTER famaffsuited
  /METHOD=ENTER MALE
  /METHOD=ENTER GRPILLDO
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

TEMPORARY.
SELECT IF (countrynetherlands1215 = 1).

DESCRIPTIVES totallycdich selfcsuited fambondsuited famaffsuited MALE GRPILLDO.

TEMPORARY.
SELECT IF (countrygermany1215 = 1).

DESCRIPTIVES totallycdich selfcsuited fambondsuited famaffsuited MALE GRPILLDO.

FREQUENCIES male.
```