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General strain theory and parenting:

Do parental support and parental control influence the way we cope with strain?

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Abstract

This study examined the conditioning effect of parenting on the relation between strain and criminal coping among twelve to fifteen-year-old youth in the Netherlands. Existing studies on the conditioning effect of parenting on the relation between strain and criminal coping are still scarce, and a clear distinction between different types of criminal coping has not been made. Therefore, this study focused on parental support and parental control as influencers on predicting internal, external, and overall criminal coping as a result of strain. This study predicted that parental support and parental control would have positive moderating effects, and that these effects would be stronger for internal criminal coping than for external criminal coping. A binary logistic regression analysis was used to test these predictions. The results show no conditioning effects of parental support and parental control on the positive relation between strain and internal, external, and overall criminal coping.

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Introduction

Strain theory has been an important theory to explain crime and delinquency in the history of social science research. Many well-known scientists such as Merton (1938), Cohen (1955) and Cloward and Ohlin (1960) have used this explanation to develop their own strain model. In 1992, Robert Agnew developed a General Strain Theory which focuses on strain and social environment on a micro level. This theory discusses the following three situations in which strain can arise: (1) the inability to achieve positively valued goals, (2) the loss of positively valued stimuli, (3) the presentation of negatively valued stimuli. These strains can cause individuals to feel stressed or frustrated, which can result in coping with these frustrations through crime (Agnew, 1992).

Over the years, Robert Agnew added multiple extensions to the General Strain Theory. One of these extensions states that strain can be affected by a number of risk factors, which can increase the chance of criminal coping (Agnew, 2013). Examples of such risk factors are delinquent peers, a low level of self-control, and the absence of social bonds (Turanovic & Pratt, 2013). Studies on the conditioning effect of social bonds on the relation between strain and criminal coping show mixed results. This may be because the conditioning effect of social bonds is examined in isolation from possible other risk factors (Agnew, 2011). Mazerolle and Maahs (2000) used a different strategy in which they focused on multiple risk factors. These risk factors were combined to measure respondents' "total risk" for criminal coping as a predictor of crime. Total risk included the extent to which respondents were low in self-control, had delinquent peers and held deviant believes. The study of Mazerolle and Maahs (2000) revealed both cross-sectional and longitudinal evidence that having a high total risk for criminal coping was strongly related to crime.

The risk factors low self-control, exposure to delinquent peers, and the type of believes are also shown to be related to parenting (Hay, 2001; Janssen, Eichelsheim, Deković & Bruinsma, 2016). Studies on the conditioning effect of parenting on the relation between strain and criminal coping are scarce. Therefore, this study will focus on two parenting features, parental support and parental control, as influencers on predicting criminal coping as a result of strain. The study will be conducted among twelve to fifteen-year-old youth in the Netherlands. The choice to examine youth is made because the proportion of the population involved in crime peaks in adolescence (Moffitt, 1993), which makes gaining more insight in influences on coping among youth most relevant. The main question this study will answer is: *Do parental support and parental control influence the relation between strain and criminal coping among twelve to fifteen-year-old youth in the Netherlands?* In

addition, there has not been made a clear distinction between internal and external criminal coping when looking at the conditioning effect of parenting in previous studies. Therefore, three types of criminal coping will be examined. The first type, overall criminal coping, will be used to answer the main question. Overall criminal coping will examine coping ways that are both externally aimed at other people or things, and internally aimed at the adolescent his- or herself. Internal and external criminal coping will also be examined separately. The following sub-question is therefore added to this study: *Does the conditioning effect of parental support and parental control differ on internal criminal coping mechanisms compared to external criminal coping mechanisms among twelve to fifteen-year-old youth in the Netherlands?* If parenting, as one overarching risk factor, shows to influence the relation between strain and criminal coping, more targeted future policies to prevent crime can be made.

Theoretical orientation

General strain theory

As stated in the introduction, General Strain Theory points to three types of strain. The first type of strain arises when an individual is unable to achieve positively valued goals. For example, a child who is unable to obtain high grades in school, or is unable to make friends. The second type of strain arises with the loss of positively valued stimuli. For example, the loss of a house after a fire, or the loss of someone close. The third type of strain arises when a person is presented with negatively valued stimuli. For example, a child that is the victim of bullying, or is abused by its parents (Agnew, 1992). Stress can arise as a result of strain; different mechanisms can be used to cope with this stress.

In addition to these three types of strain, Agnew (2013) argues that General Strain Theory distinguishes between objective strains and subjective strains. Objective strains are events that most people will see as negative. For example, for most people losing their job will be a negative event, and is therefore a strain. Subjective strains are only strains when a person experiences the event as negative. In the same example, for someone who experiences a lot of stress at work, losing the job will be a relieve, and is therefore not a subjective strain. In contrast, positive events can become subjective strains when the person experiences the positive event as negative. For example, getting married is a positive event for most people, but not for people who are forced into marriage. Since an event can only cause stress, and therefore lead to deviant behavior, when an individual experiences the event as negative;

General Strain Theory predicts that subjective strains will have a larger impact on criminal behavior than objective strains (Agnew, 2013).

Furthermore, there are four characteristics a strain can hold, which will increase the likelihood of this strain to cause crime. This likelihood increases when a strain is seen as unjust, high in magnitude, associated with low control, and/ or pushing a person towards criminal coping (Moon, Blurton, McCluskey, 2008; Agnew, 2011). Agnew (2013) names specific strains that contain these four characteristics, can be experienced by adolescents, and will therefore have a high chance in leading to criminal behavior. These strains are: "parental rejection; harsh, erratic discipline; child abuse and neglect; negative school experiences, such as low grades and negative relations with teachers; peer abuse; […]; the failure to achieve selected goals, including thrills and excitement, autonomy, masculine status, and money; criminal victimization; homelessness; discrimination; and residence in economically deprived communities" (Agnew, 2013, p. 148-149). To better understand the link between strain and crime, a closer look is taken at different types of coping.

Coping mechanisms

There are numerous ways in which a person can deal with strain. These so called "coping mechanisms" can be divided in different categories, namely legal and illegal coping mechanisms, and internal and external coping mechanisms (Agnew, 2013). Choosing a coping mechanism can be a rational choice, or it can be emotionally driven (Agnew, 2007). Because most people in society demonstrate and encourage legal coping, and sanction illegal coping, legal coping is the primary choice when experiencing strain (Cloward & Ohlin, 1960). For example, having a conversation with the people that cause the strain in an attempt to solve the problem, is an external legal coping mechanism that can be used to end or reduce strain. Other, internal, examples of legal ways to cope with strain are reinterpreting strains and making them less important, or relieving stress by meditating (Agnew, 2013).

Often, when legal attempts to end or reduce strain do not work, or are not available or promoted, an illegal coping mechanism is used to deal with strain (Agnew, 2013). According to Agnew (2013), external illegal coping mechanisms can be used to, escape from strains, lessen strains, or taking out aggression on the source of the strain or others. Examples of external illegal coping mechanisms are, violence to escape abusers, stealing food to provide in basic needs, or fraud to achieve monetary goals. Internal illegal coping mechanisms can also be used to escape from or relieve strain. An example of an internal illegal coping mechanism is drug-use (Agnew, 2013).

To conclude, an objective strain is not always a subjective strain and vice versa, there are legal/ illegal and internal/ external coping mechanisms, and for most people legal coping is the primary choice when experiencing strain. Still, one question remains: Why do some people use criminal coping mechanisms and others do not?

Conditioning factors

According to Agnew (2007), personal characteristics and social environment strongly influence whether a person will use a criminal coping mechanism to deal with strain (Agnew, 2007). The conditioning factors which influence the way people perceive, and deal with strain are according to Agnew (2013): "coping skills and resources (e.g., problem solving and social skills, negative emotionality and low constraint, low socioeconomic status [SES], prosocial and criminal self-efficacy); conventional and criminal social support; level of social and self-control; association with criminal others; beliefs regarding crime; and exposure to situations where the costs of crime are low and the benefits are high." (Agnew, 2013, p. 149-150). For example, someone with a low socioeconomic status that had to spend a large amount of money on education, will experience the strain of not graduating differently, and possibly more intense compared to someone with a high socioeconomic status, who has money and other resources to add another year to the study, or succeed in other ways. The money that was spent will add extra magnitude to the strain of the person with a low socioeconomic status, because it did not pay off, and cannot as easily be spent again. Another example when looking at the influence of self-control, is that someone with a high level of self-control will be able to control the emotion anger more easily than someone with a low level of self-control; therefore, the chance of this anger leading to violence is smaller.

A study of Simons and Burt (2011) on social factors and individual offending showed that family, peer, and community conditions, which are similar to most conditioning factors referred to by Agnew (2013), are strongly linked, which means that a high score on one of these conditioning variables often predicts a high score on other conditioning variables (Simons & Burt, 2011). A possible cause for this link will be further examined.

Parental support and parental control

This study found that parenting is an overarching factor that can be linked to the different conditioning factors referred to by Agnew (2013), parenting is therefore chosen to be further examined. Starting with the conditioning factor "coping skills and resources", which includes several personality traits such as problem solving abilities and social skills. Baumrind's

(1967) typology of parenting styles, shows that parental behavior and personality traits, that are apparent in parenting, influence the behavior and personality traits of their children. For example, demanding parents are consistent in their disciplinary actions, and monitor their children on a regular basis; while responsive parents are warm, interactive, and clear in communicating and person-centered discourse. Parents who are both demanding and responsive are expected to have children that have a higher social competence than children of parents who are not (Baumrind, 1967; Hendrix, 2017).

Continuing with the conditioning factor "level of social and self-control", Gottfredson and Hirschi (1990) argue that parents need to monitor, recognize, and punish deviant behavior in order to teach a child self-control. Therefore, the lack of this parenting skill can lead to a low level of self-control. In addition to this, Colvin (2000) argues that low self-control can be a result of parents enforcing harsh and erratic discipline. This type of parenting will confuse a child because he or she will not understand which consequences are linked to which actions. From the child's perception, the consequences will appear by chance, and as a result, the child will fail to learn that rule-violations need to be controlled in order to avoid sanctions (Colvin, 2000). Adolescents with low self-control, among other negative personality traits, are more likely to interpret objective strains as subjective strains, which can increase the chance of criminal coping (Agnew, 2011).

The remaining conditioning factors "conventional and criminal social support, association with criminal others, beliefs regarding crime, and exposure to situations where the costs of crime are low and the benefits are high" can also be linked to parenting. It is shown that adolescents who have a positive relation with their parents, which means they are monitored and supervised by their parents, spend less time in criminogenic environments (Janssen, Deković & Bruinsma, 2014). In addition, Warr (2005) argues that adolescents who have a positive relationship with their parents will be less likely to associate with delinquent peers, because they do not want to disappoint their parents. More evident, when adolescents have a negative relationship with their parents, they have a higher chance of associating with criminal others, which will result in more exposure to the beliefs of criminal others regarding crime, and more support and reinforcement for delinquent behavior (Mazerolle & Maahs, 2000). In addition, adolescents who associate with criminal others automatically have a higher chance of experiencing strain, because violence and abuse are more common in delinquent groups (Colvin, 2000).

In addition, there are two criminological theories which specifically explain the effects of parenting on delinquency, Social Control Theory and Social Learning Theory.

According to Social Control Theory, social bonds between adolescents and adult institutions of informal social control, which in this case are parents, influence delinquent behavior over the life course. An explanation given by this theory is that adolescents who have a strong bond with their parents will most likely not act in a delinquent way, because they fear that delinquent behavior will harm this strong bond (Sampson & Laub, 1990). According to Social Learning Theory, children learn and model behavior and beliefs from people around them, such as their parents (Patterson, Reid & Dishion, 1992). For example, if a child is repeatedly confronted with their parent stealing, and the parent does not get caught; the child will only see the positive outcome of stealing, and will know their parents' beliefs regarding theft. As a result, the child will have a high risk of monitoring their parent's behavior. Drawing on these two theories and linking them to General Strain Theory; Agnew, Rebellon and Thaxton (2000) conducted an illustrative analysis where they looked at the conditioning effect of parental attachment on the relation between victimization and delinquency. The results show that parental attachment negatively conditions the effect of victimization on delinquency. Since victimization is only one type of strain, further research is needed (Agnew et al., 2000).

To conclude, there are different conditioning factors that can influence the way people deal with strain, and therefore influence whether people use criminal or non-criminal coping mechanisms. One overarching factor that can affect all conditioning factors named by Agnew (2013) is parenting. Parenting can help a child develop certain personality traits, social skills, and a level of self-control. Parenting can also influence the environment that a child is exposed to, and the people they associate with. Parents that are consistent, warm, and monitoring, will influence their children in a positive way. Based on these assumptions, the first hypothesis was made: *(H1) The lack of parental support and parental control increase the chance of strain leading to criminal coping.*

Different outcomes

In addition to the moderating effects of parental support and parental control on criminal coping as a result of strain as a whole, this study will look at the influence of parental support and parental control on the type of criminal coping as result of strain. In previous studies, there has not been made a clear distinction between internal and external criminal coping when examining the influence of parenting. In order to formulate a second hypothesis, a closer look was taken at differences found in the effects of parenting.

Parenting effects can differ between gender. For example, parents have a stronger impact, and more restrictions, on their daughter's life outside of the family compared to their son's life (Leaper, 2005). This may be due to the positive effect of parental monitoring on their daughter's behavior. This positive effect is shown by a study of Fletcher and Shaw (2000), as they found that parental monitoring is related to daughters' greater involvement in school-based activities. Another explanation can be that parents more often use physical violence when punishing sons compared to punishing daughters (Simons, Wu, Lin, Gordon & Conger, 2000). Physical punishment is associated with a lower quality bond between parent and child; therefore, the impact of parenting on boys may be smaller compared to the impact of parenting on girls (Gershoff, 2002).

When looking at gender differences in the effects of strain, Broidy and Agnew (1997) argue that there is a difference between males and females in the emotional response to strain. To understand this difference, it is important to look at the difference between self-directed and other-directed emotions. Self-directed emotions, such as depression or anxiety, have a high chance of leading to self-directed coping, such as self-harm or drug-use. Other-directed emotions, such as anger and hostility, have a high chance in leading to other-directed coping, such as violence and vandalism. In other words, self-directed emotions have a high chance of leading to internal coping, and other-directed emotions have a high chance in leading to external coping (Broidy & Agnew, 1997).

According to Broidy and Agnew (1997), women experience more self-directed emotions than men. They claim that "although both males and females may experience anger in response to strain, the anger of females is more likely to be accompanied by depression, guilt, anxiety, and related states". Because the emotion anger is accompanied with self-directed feelings in women, they, more often than men, tend to respond with self-directed internal coping (Broidy & Agnew, 1997, p. 287). A more recent study of Francis (2014) shows similar results, she found that "girls' maladaptive responses to strain may be more likely to manifest in self-directed deviance than externally directed deviance, partly due to the role of depression/ anxiety in girls' lives" (Francis, 2014, p. 58). In addition, Broidy and Agnew (1997) argue that gender roles may influence the different coping mechanisms used between men and women. External/ criminal/ confrontational coping mechanisms, such as violence, are inconsistent with the nurturing gender role of women (Broidy & Agnew, 1997). The differences in coping mechanisms used by women and men were also tested by Mazerolle (1998), his results on the aspects and outcomes of anger agree with the arguments of Broidy and Agnew (Mazerolle, 1998).

Because it is argued that parents have a stronger impact on daughters compared to their impact on sons, and women more often use internal coping mechanisms compared to men, it is expected that parenting will have a larger effect on internal criminal coping compared to external criminal coping. Therefore, a second hypotheses is made: *(H2) Parental support and parental control will have a larger effect on the relation between strain and internal criminal coping mechanisms compared to external criminal coping mechanisms*

Data and methods

To answer the research question: *Do parental support and parental control influence the relation between strain and criminal coping among twelve to fifteen-year-old youth in the Netherlands?,* and the sub-question: *Does the conditioning effect of parental support and control differ on internal criminal coping mechanisms compared to external criminal coping mechanisms among twelve to fifteen-year-old youth in the Netherlands?*, and to test hypothesis *(H1) The lack of parental support and parental control increase the chance of strain leading to criminal coping*, and *(H2) Parental support and parental control will have a larger effect on the relation between strain and internal criminal coping mechanisms compared to external criminal coping mechanisms*, a sample from the Second International Self-Report of Delinquency (ISRD-2) study was used. The ISRD-2 study is a cross-national study that examined victimization and delinquency among (mostly) twelve to fifteen-year-old youth in thirty-one (mostly European) countries. The data was collected from 2005 to 2007.

Sample

This study used a sample of the ISRD-2 study that was conducted in the Netherlands. The ISRD-2 study used a sampling procedure with two stages in the Netherlands. In the first stage, three sub-samples were made. The first sub-sample contained one large-sized city, the second sub-sample contained several mid-sized cities, and the last sub-sample contained multiple small-sized cities. In the second stage, a random sample of seventh, eighth, and ninth grade classrooms (which are called first, second and third school classes in secondary schools in the Netherlands) was taken from each sub-sample. The overall response rate of schools was low, only 17.5% of the selected schools agreed to participate, but because the sample included the full variation of classes it was still representative. The response rate of the students that were approached was 99,8%. The surveys were conducted with paper and pencil in a classroom setting, and filled out by students themselves under the supervision of researchers.

The sample contained mostly twelve to fifteen-year-old students. For this study, respondents below age twelve and above age fifteen were removed from the data. The final sample that was analyzed contained 2153 respondents. Both males (50,5%) and females (49,5%) were sufficiently represented. Important to mention is that the percentage of people that belong to an ethnic minority are shown to be higher in urban areas compared to the countryside (CBS Statline, 2018). Because city samples were taken, there is an overrepresentation of ethnic minority groups in the sample (34%). In addition, the family situation is important since this study analyses the influence of parental support and parental control. The sample shows that 75,6% of the respondents live with both their mother and father, 6,3% live partly with their mother and partly with their father, 14,7% live with their mother or with their mother and stepfather, 2% live with their father or father and stepmother, and 7,6% of the respondents live with other family or foster parents. These percentages show an accurate representation of family compositions in the Netherlands (CBS Statline, 2016).

Measurement

In order to test both hypotheses a set of different variables were constructed. The independent variable is Strain. Strain is measured by using items that are related to the strain types named by Agnew (1992). The loss of positively valued stimuli was measured by asking whether the respondent had ever lost someone close, whether the respondent ever experienced a serious illness themselves or with someone close, and whether something was stolen from the respondent in the last twelve months. The confrontation with negatively valued stimuli was measured by asking whether the respondent had ever been discriminated, whether the respondent was threatened, bullied or physically violated in the last twelve months, whether the respondent had ever been in a serious accident, whether the respondent disliked school, and whether their school achievements were below average. The inability to achieve positively valued goals is hard to measure. According to Agnew (1992), this type of strain should be measured as "the disjunction between (1) aspirations and expectations/ actual achievements, (2) expectations and actual achievements, and (3) just/ fair outcomes and actual outcomes" (Agnew, 1992, p.56). Since these measures are very subjective, and the ISRD-2 study mostly includes measures of objective strains, no items are used to measure the inability to achieve positively valued goals. The number of selected items the respondent answered 'yes' to were calculated and resulted in a score on the new Strain variable. Because this variable contains answers on twelve items, a scale was created where respondents could score between 0 and 12. Each score represented the number of strains they experienced in

life. To measure the internal consistency of the Strain variable, and see whether the items used measured the same construct, a measure of Cronbach's alpha was used. Cronbach's alpha on the twelve items used to construct the Strain variable was .384. This low alpha can be explained by the different constructs underlying the Strain variable. As mentioned in the theory section, Agnew (2013) names a few important strains that have a high chance in leading to crime. The items used to construct the Strain variable are similar to the strains named by Agnew (2013). These items can be placed in different categories such as school, health, death, criminal victimization, and bullying victimization. Some of these items measure the same construct, but most of them do not. They measure different types of strain. Since this study is interested in any type of strain that can lead to crime, all items are used to make the Strain variable.

In addition, three dependent continuous variables Internal Criminal Coping, External Criminal Coping and Overall Criminal Coping were made. As stated before, internal criminal coping is a coping mechanism aimed at the individual his- or herself, and can be used to escape from or relieve strain. Therefore, internal criminal coping is measured using two items on alcohol use, two items on drug-use, and one item on truancy. It is important to avoid that children who have tried alcohol once, for example in the presence of family, will be registered as criminal coping; therefore, the item "did you ever get drunk on this?" was used to measure alcohol use. Since the respondents are between the age of twelve and fifteen, all alcohol and drug-use is illegal in the Netherlands and was seen as (apart from the exception on alcohol) criminal coping. External criminal coping is a coping mechanism which is aimed at other people or things. Therefore, external criminal coping was measured using four items on theft, two items on violence, and seven items on vandalism, burglary, hacking, robbery, weapon carrying, extortion, and selling drugs. The category overall criminal coping includes all items on internal and external criminal coping combined. Because this study is only interested in whether the respondent uses a criminal coping mechanism, and not in the amount of criminal coping, a single 'yes' answer on one of the items used to construct the variable resulted in a score of 1 on the Internal-, External-, or Overall Criminal Coping variable. If the respondent answered 'no' on all the items that were used to construct the variable, the respondent scored 0 on the Internal-, External-, or Overall Criminal Coping variable. To measure the internal consistency of Internal-, External-, and Overall Criminal Coping, and see whether the items used measure the same construct, a measure of Cronbach's alpha was used. Cronbach's alpha on the six items used to construct the Internal Criminal Coping variable was .634 which is low, but acceptable for this study because all the

used items measure crime. Cronbach's alpha on the 13 items used to construct the External Criminal Coping variable was a sufficient .783.

The moderating variables are Parental Support and Parental Control. According to Baumrind's (1967) typology of parenting styles, a highly demanding (control) and highly responsive (support) parenting style is most optimal (Baumrind, 1967; Hendrix, 2017). To measure parental support and parental control four items were used. The first two items measured how well the child gets along with their mother and father, the third item measured if the child's parents know their whereabouts when they go out, and the last item measured whether the child has a limit on the time that they need to be home. The category *don't go out* was coded as missing in the original Parents Tell Time variable. One could argue that children who do not go out are better supervised by their parents; therefore, this category is recoded and used in the measure of the Parental Control variable. The scales used to measure these items were not similar. Cohen, Cohen, Aiken, and West (1999) have tested four methods (item sums, averaged item scores, standardized scores, and Percent Of Maximum Possible (POMP) scores) that are commonly used when developing scales. The POMP scores method appeared to provide the most information, but seemed to have its restrictions when using a nonlinear regression model (Cohen et. Al., 1999). Therefore, despite its limitations, Z-transformation was used to give each variable a mean of 0 and a standard deviation of -1 or +1 in order to make a linear transformation possible. By transforming the scales, they could be combined into one variable. To investigate the underlying structure of the four items that measured different aspects of parenting, data collected from 2153 participants were subjected to principal axis factoring with Varimax rotation. Prior to running the principal axis factoring, examination of the data indicated that not every variable was normally distributed. Given the robust nature of factor analysis, these deviations were not considered problematic. As is shown in table 1, two factors (with eigenvalues exceeding 1) were identified as underlying the four items. In total, these factors accounted for 50% of the variance in the items data.

Table 1: Rotated Factor Matrix

	Factor 1	Factor 2
Parents tell time	.743	-
Parents know friends	.736	-
Getting along with mother	-	.691
Getting along with father	-	.634

The variables in factor 1 measure parental control, the variables in factor 2 measure parental support. Therefore, the moderating variables Parental Support and Parental Control consist of two variables each, two measures of support and two measures of control. To measure the internal consistency of the two variables that measured parental control, and the two variables that measured parental support, another measure of Cronbach's alpha was used. Cronbach's alpha on the two items used to construct the Parental Control variable was .710. Cronbach's alpha on the two items used to construct the Parental Support variable was .620. The alpha measure of Parental Control is not high, but seen as adequate for research purposes (Tavakol & Dennick, 2011). The alpha measure of Parental Support is low. The original study recognizes both items as a measure of support, in addition the original study added two more items (how often respondents had dinner together with their parents/ how often respondents and parents spent time together). In the Dutch sample, adding these two items caused the two factors to account for a lower percentage of variance in the items data, therefore only the items that measure getting along with mother and father were used to measure support in the analysis.

Five control variables Gender, Ethnicity, Delinquent Friends, Self-Control, and SES were selected and/ or constructed. Gender was selected as a control variable because previous studies showed a large gender difference in offending, where males have a higher offending rate than females (Steffensmeier & Schwartz, 2009; Lo & Zhong, 2006; Rebellon, Manasse, Agnew, Gundy & Cohn, 2016). In addition, parental support and parental control may have a larger influence on girls than on boys (Leaper, 2005). Gender was measured using a single item with the response options *male* and *female*, a male respondent scored 1 on this variable, and a female respondent scored 0. Whether the respondent is native or migrant was added as a control variable because ethnic minority groups are overrepresented in the sample. The existing variable Native contained one item that measured whether the respondent was born in this country, and two items that measured whether the respondent's mother and father were born in this country. For this study, the variable was recoded into a dichotomous Migrant variable where score 0 meant that the respondent was born in the Netherlands, and score 1 meant that the respondent, or at least one of the respondents parents, was not born in the Netherlands. The variables Delinquent Friends, Self-Control and SES are shown to be predictors for delinquency, and were therefore included as control variables (Agnew, 2011). The variable Delinquent Friends was measured with five items on possible drug-use, theft, violence, robbery and threatening activities of peers. The number of items the respondent answered *yes* to were calculated and resulted in a total score on a five item scale of the

Delinquent Friends variable. To measure self-control, a scale created by Grasmick, Tittle, Bursik and Arneklev (1990) was used which is seen as an accepted measure of self-control (Marshall & Enzmann, 2012). The original scale contains twenty-four items divided in six categories. These categories are: impulsivity, self-centered, temper, risk seeking, simple tasks, and physical activities. The ISRD-2 study only included the first four categories which contained a total of twelve items. To measure the internal consistency of the twelve variables that measured self-control, a measure of Cronbach's alpha was used. Cronbach's alpha for these twelve items was .800 which is sufficient. Finally, four items were used to measure SES. They measured whether the child has their own room, cellphone, computer, and whether the child's parents own a car. The number of items that the respondent answered *yes* to were calculated and resulted in a total score on a four item scale of the variable SES. The average score on this scale is high in this sample. This is probably due to the use of a proxy measure for SES. The use of material indicators to measure household circumstances as a basis when measuring SES, is often used when surveying adult respondents in developing countries (Wardle, Robb & Johnson, 2002).

Table 2 shows an overview of the variables that are constructed, including the mean and standard deviation of each variable.

Table 2: Univariate Analysis

Variables	Min.	Max.	Mean	SD
Independent Variables				
Strain	0	7	1.783	1.346
Dependent Variables				
Internal Criminal Coping	0	1	.376	.485
External Criminal Coping	0	1	.473	.499
Overall Criminal Coping	0	1	.592	.492
Conditioning Variables				
Parental Support	-4.8	.63	-.01	.876
Parental Control	-2.23	1.78	.006	.887

Table 2: Continued

Variables	Min	Max	Mean	SD
Control Variables				
Delinquent Friends	.945	1.307	.945	1.307
Gender	.51	.500	.51	.500
Migrant	0	1	.33	.470
Self-Control	1	4	2.896	.567
Social Economic Status	0	4	3.727	.536

Note: Table is computed using the listwise sample (n=1852)

Missing data

Before starting with the statistical analysis, a closer look was taken at the missing data. An analyses of the constructed variables showed 84.4% of the respondents provided information on all the variables, which meant 15.6% of the data was missing. The analyses showed that the missing data was not completely at random, and that the Strain and External Criminal Coping variables had the most missing cases. Therefore, the missing cases of both these variables were tested to see if they could be explained. Since both variables consisted of multiple items that can belong to different categories, a closer look was taken at each item. The Strain variable had the most missing cases on the item that measured proficiency level in school, and the External Criminal Coping variable had the most missing cases on the item that measured if a respondent had ever snatched something from another person. Therefore, the missing cases on the variables Proficiency, Snatch, Strain, and External Criminal Coping were tested. The missing cases on Strain and Proficiency both correlated positively with Internal Criminal Coping and negatively with Self-Control. The missing cases on External Criminal Coping correlated negatively with Delinquent Friends and SES. In addition, the missing cases on Snatch correlated positively with External Criminal Coping and Gender, and negatively with Parental Control. All correlations were too small to draw any conclusions.

Because single-value imputation methods can cause biased results, multiple imputation was chosen as an appropriate way to handle the missing data (Li, Stuart & Allison, 2015). By using Multiple Imputation, the missing data was imputed in two stages. First, ten different replacement values were created for each missing value, and ten datasets

were made with these imputed values. Second, these ten datasets were analyzed and pooled into one new dataset. The pooled data from these ten imputations was used for further analyses. After analyzing the data, the results from the pooled data were compared to the results when using listwise deletion on the original data. There were no differences found in significance of the output of the main variables.

Statistical analysis

Because the outcome variables are three different dichotomous measures of delinquency, and the predictor variables are continuous measures of strain, parental support, and parental control; multiple Binary Logistic Regressions were used to analyze the data. First, linearity of the logit assumption was checked by testing the linearity between each continuous predictor and the dependent variables. This assumption was met since linearity was found in all comparisons. In addition, a multicollinearity check was performed to see if the correlation between predictors was not too high, and would therefore not make the regression model unstable. The results showed that multicollinearity was not an issue in this dataset.

A total of eighteen Binary Logistic Regression models were used to analyze the data. These models were used to test the direct effect of Strain, Parental Support, and Parental Control on each of the outcome variables. In addition, they test for possible moderating effects of Parental Support and Parental Control. Previous studies have shown that most of the conditioning effects named by Agnew (2013) were interrelated (Janssen, Eichelsheim, Deković, & Bruinsma, 2016). These conditioning effects were also shown to be related to parenting. Therefore, all Binary Logistic Regression analyses were performed with and without including the control variables to see if these variables would (partly) explain the relations that were found. All models were used to test hypotheses *(H1) The lack of parental support and parental control increase the chance of strain leading to criminal coping*, and *(H2) Parental support and parental control will have a larger effect on the relation between strain and internal criminal coping mechanisms compared to external criminal coping mechanisms*. Table 3 shows an overview of the eighteen Binary Logistic Regression models.

Table 3: Overview Binary Logistic Regression models

	Internal Criminal Coping	External Criminal Coping	Overall Criminal Coping
Direct effect excl. control variables	Model 1	Model 7	Model 13
Direct effect incl. control variables	Model 2	Model 8	Model 14
Interaction effect Parental Support excl. control variables	Model 3	Model 9	Model 15
Interaction effect Parental Support incl. control variables	Model 4	Model 10	Model 16
Interaction effect Parental Control excl. control variables	Model 5	Model 11	Model 17
Interaction effect Parental Support incl. control variables	Model 6	Model 12	Model 18

Results

Univariate Analysis

To measure the association between each of the dependent, independent, moderating, and control variables, a bivariate analysis was conducted. Because the variables are not normally distributed, Kendall's tau-b was used. Table 4 presents the correlation outcomes.

Kendall's tau-b indicates that the correlation among Strain and the dependent variables Internal Criminal Coping, External Criminal Coping, and Overall Criminal Coping are all significant and positive with a p-value of <.001. Internal Criminal Coping, External Criminal Coping, and Overall Criminal Coping also show to be significantly and positively correlated with each other.

Correlations among Parental Support and Parental Control and Strain, Internal Criminal Coping, External Criminal Coping, and Overall Criminal Coping are all significant and negative with a p-value of <.001. Furthermore, Parental Support and Parental Control correlate positively with each other.

Table 4: Bivariate Correlation Matrix (N=2153)

	Strain	Internal Criminal Coping	External Criminal Coping	Overall Criminal Coping	Parental Support	Parental Control	Delinquent Friends	Gender	Migrant	Self-Control	Social Economic Status
Strain	1	.157**	.197**	.183**	-.157**	-.081**	.190**	-.028	.068**	-.164**	-.052*
Internal Criminal Coping		1	.333**	.626**	-.168**	-.258**	.399**	.041	-.023	-.247**	.095**
External Criminal Coping			1	.784**	-.158**	-.242**	.417**	.201**	.056*	-.340**	.010
Overall Criminal Coping				1	-.177**	-.267**	.411**	.149**	.029	-.305**	.070**
Parental Support					1	.105**	-.188**	.061**	-.031	.143**	.080**
Parental Control						1	-.254**	-.119**	-.051*	.226**	-.036
Delinquent Friends							1	.035	.071**	-.297	.026
Gender								1	-.051*	-.127**	.056**
Migrant									1	-.099**	-.273**
Self-Control										1	-.018
Social Economic Status											1

** Correlation is significant at the .01 level (2-tailed).

Bivariate analyses Internal Criminal Coping

In order to estimate the probability of internal criminal coping among twelve to fifteen-year-old adolescents, six binary logistic regression analyses were conducted. The probability of Internal Criminal Coping was estimated using data on Strain, Parental Support, Parental Control, and control variables Delinquent Friends, Gender, Migrant, Self-Control, and SES. Table 5 presents an overview of the odds ratio results of the six models used to find the effects on Internal Criminal Coping.

The first overall model for the logistic regression analysis on Internal Criminal Coping presented as model 1 (X^2 (df=3, N=2153) = 242.357, p<.001) is statistically significant. Using an alpha of .05, Strain, Parental Support, and Parental Control all significantly improve the model's predictive capability. The odds ratio for Strain (OR = 1.245, p<.001) indicates that if a respondent receives 1 more unit of Strain, there is a predicted 25% increase in the probability that the respondent will use an Internal Criminal Coping mechanism. The odds ratio for Parental Support (OR = .730, p<.001) indicates that if a respondent receives 1 more unit of Parental Support, there is a predicted 27% decrease in the probability that the respondent will use an Internal Criminal Coping mechanism. The odds ratio for Parental Control (OR = .520, p<.001) indicate that if a respondent receives 1 more unit of Parental Control, there is a predicted 48% decrease in the probability that the respondent will use an Internal Criminal Coping mechanism.

The second overall model for the logistic regression analysis on Internal Criminal Coping presented as model 2 (X^2 (df=8, N=2153) = 532.241, p<.001) is statistically significant. Using an alpha of .05, Strain, Parental Support, and Parental Control all significantly improve the model's predictive capability. This model included the control variables Delinquent Friends, Gender, Migrant, Self-Control, and SES. The odds ratio for Strain (OR = 1.123, p=.004) indicates that if a respondent receives 1 more unit of Strain, there is a predicted 12% increase in the probability that the respondent will use an Internal Criminal Coping mechanism. The odds ratio for Parental Support (OR = .823, p = .002) indicates that if a respondent receives 1 more unit of Parental Support, there is a predicted 18% decrease in the probability that the respondent will use an Internal Criminal Coping mechanism. The odds ratio for Parental Control (OR = .662, p<.001) indicates that if a respondent receives 1 more unit of Parental Control, there is a predicted 33% decrease in the probability that the respondent will use an Internal Criminal Coping mechanism.

Model three to six show no significant moderating effects of Parental Support and Parental Control on the relation between Strain and Internal Criminal Coping.

When looking at the control variables and Internal Criminal Coping, a higher score on Delinquent Friends, Migrant, or SES all account for a significant increase in the probability of using an Internal Criminal Coping mechanism. A higher score on Self-Control accounts for a decrease in the probability of using an Internal Criminal Coping mechanism. Gender seems to have no significant effect on Internal Criminal Coping.

Table 5: Binary Logistic Regressions on Internal Criminal Coping (N=2153)

Variables	Model 1 OR	Model 2 OR	Model 3 OR	Model 4 OR	Model 5 OR	Model 6 OR
Constant	.391**	.319*	.391**	.319*	.386*	.318*
Independent Variable						
Strain	1.245**	1.123**	1.249**	1.126**	1.163**	1.131**
Parental Support	.730**	.823**	.681**	.785*	.731**	.823**
Parental Control	.520**	.662**	.521**	.662**	.467**	.585**
Control Variables						
Delinquent Friends		1.826**		1.825**		1.827**
Gender		.988		.990		.983
Migrant		1.422**		1.424**		1.427**
Self-Control		.581**		.582**		.581**
Social Economic Status		1.359**		1.357**		1.355**
Interaction Variables						
Strain*Parental Support			1.033	1.022		
Strain*Parental Control					1.056	1.066

**. Odds Ratio is significant at the .01 level. *. Odds Ratio is significant at the .05 level.

Bivariate analyses External Criminal Coping

In order to estimate the probability of external criminal coping among twelve to fifteen-year-old adolescents, another six binary logistic regression analyses were conducted. The probability of External Criminal Coping was estimated using data on Strain, Parental Support, Parental Control, and control variables Delinquent Friends, Gender, Migrant, Self-Control, and SES. Table 6 presents an overview of the odds ratio results of the six models used to find the effects on External Criminal Coping.

The seventh overall model for the logistic regression analysis on External Criminal Coping presented as model 7 ((X^2 (df=3, N=2153) = 246.099, p<.001) is statistically significant. Using an alpha of .05, Strain, Parental Support, and Parental Control all significantly improve the model's predictive capability. The odds ratio for Strain (OR = 1.354, p<.001) indicates that if a respondent receives 1 more unit of Strain, there is a predicted 35% increase in the probability that the respondent will use an External Criminal Coping mechanism. The odds ratio for Parental Support (OR = .765, p<.001) indicates that if a respondent receives 1 more unit of Parental Support, there is a predicted 24% decrease in the probability that the respondent will use an External Criminal Coping mechanism. The odds ratio for Parental Control (OR = .576, p<.001) indicates that if a respondent receives 1 more unit of Parental Control, there is a predicted 42% decrease in the probability that the respondent will use an External Criminal Coping mechanism.

The eight overall model for the logistic regression analysis on External Criminal Coping presented as model 8 (X^2 (df=8, N=2153) = 532.241, p<.001) is statistically significant. Using an alpha of .05, Strain and Parental Control improve the model's predictive capability. This model includes the control variables Delinquent Friends, Gender, Migrant, Self-Control, and SES. The odds ratio for Strain (OR = 1.204, p<.001) indicates that if a respondent receives 1 more unit of Strain, there is a predicted 20% increase in the probability that the respondent will use an External Criminal Coping mechanism. The odds ratio for Parental Control (OR = .792, p=.001) indicates that if a respondent receives 1 more unit of Parental Control, there is a predicted 21% decrease in the probability that the respondent will use an External Criminal Coping mechanism. Parental Support does not appear to significantly influence the probability of using an External Criminal Coping mechanism.

Model nine to twelve show no significant moderating effects of Parental Support and Parental Control on the relation between Strain and External Criminal Coping.

When looking at the control variables and External Criminal Coping, a higher score on Delinquent Friends or Gender accounts for an increase in the probability of using an External Criminal Coping mechanism. A higher score on Self-Control accounts for a decrease in the probability that a respondent will use an External Criminal Coping mechanism. The variables SES and Migrant seem to have no significant effect on External Criminal Coping.

Table 6: Binary Logistic Regressions on External Criminal Coping (N=2153)

Variables	Model 7 OR	Model 8 OR	Model 9 OR	Model 10 OR	Model 11 OR	Model 12 OR
Constant	.544**	5.772**	.544**	5.791**	.542**	5.848**
Independent Variable						
Strain	1.354**	1.204**	1.356**	1.207**	1.357**	1.204**
Parental Support	.765**	.876	.738**	.829	.766**	.875
Parental Control	.576**	.792**	.576**	.791**	.517**	.694**
Control Variables						
Delinquent Friends		2.033**		2.033**		2.037**
Gender		2.386**		2.393**		2.380**
Migrant		.993		.993		.996
Self-Control		.343**		.343**		.343**
Social Economic Status		.980		.978		.978
Interaction Variables						
Strain*Parental Support			1.018	1.028		
Strain*Parental Control					1.059	.972

**. Odds Ratio is significant at the .01 level. *. Odds Ratio is significant at the .05 level.

Bivariate analyses Overall Criminal Coping

In order to estimate the probability of criminal coping in general among twelve to fifteen-year-old adolescents, the last six binary logistic regression analysis were conducted. The probability of Overall Criminal Coping is estimated using data on Strain, Parental Support and Parental Control. The control variables Delinquent Friends, Gender, Migrant, Self-Control, and SES were added to the models. Table 7 presents an overview of the odds ratio results of the six models used to find the effects on Overall Criminal Coping.

The thirteenth overall model for the logistic regression analysis on Overall Criminal Coping presented as model 13 (X^2 (df=3, N=2153) = 281.987, p<.001) is statistically significant. Using sing an alpha of .05, Strain, Parental Support, and Parental Control all significantly improve the model's predictive capability. The odds ratio for Strain (OR = 1.321, p<.001) indicates that if a respondent receives 1 more unit of Strain, there is a predicted 32% increase in the probability that the respondent will use an Overall Criminal Coping mechanism. The odds ratio for Parental Support (OR = .693, p<.001) indicates that if

a respondent receives 1 more unit of Parental Support, there is a predicted 31% decrease in the probability that the respondent will use an Overall Criminal Coping mechanism. Finally, the odds ratio for Parental Control (OR = .537, $p<.001$) indicates that if a respondent receives 1 more unit of Parental Control, there is a predicted 46% decrease in the probability that the respondent will use an Overall Criminal Coping mechanism.

The fourteenth overall model for the logistic regression analysis on Overall Criminal Coping presented as model 14 (X^2 (df=8, N=2153) = 696.219, $p<.001$ is statistically significant. Using an alpha of .05, Strain, Parental Support, and Parental Control all improve the model's predictive capability. This model includes the control variables Delinquent Friends, Gender, Migrant, Self-Control, and SES. The odds ratio for Strain (OR = 1.179, $p=.012$) indicates that if a respondent receives 1 more unit of Strain, there is a predicted 18% increase in the probability that the respondent will use an Overall Criminal Coping mechanism. The odds ratio for Parental Support (OR = .788, $p=.010$) indicates that if a respondent receives 1 more unit of Parental Support, there is a predicted 21% decrease in the probability that the respondent will use an Overall Criminal Coping mechanism. Finally, the odds ratio for Parental Control (OR = .705, $p<.001$) indicates that if a respondent receives 1 more unit of Parental Control, there is a predicted 30% decrease in the probability that the respondent will use an Overall Criminal Coping mechanism.

Model fifteen to eighteen all show no significant moderating effects of Parental Support and Parental Control on the relation between Strain and Overall Criminal Coping.

Finally, when looking at the control variables and Overall Criminal Coping, a higher score on Delinquent Friends, or Gender will significantly increase the probability of using an Overall Criminal Coping mechanism. A higher score on Self-Control will decrease the probability of using an Overall Criminal Coping mechanism. The variables SES and Migrant have no significant effect on Overall Criminal Coping.

Table 7: Binary Logistic Regressions on Overall Criminal Coping (N=2153)

Variables	Model 13 OR	Model 14 OR	Model 15 OR	Model 16 OR	Model 17 OR	Model 18 OR
Constant	.934	2.416	.478	2.438	.938	2.480
Independent Variable						
Strain	1.321**	1.179**	1.321**	1.180**	1.317**	1.171**
Parental Support	.693**	.788**	.659**	.745*	.694**	.787**
Parental Control	.537**	.705**	.537**	.704**	.495**	.620**
Control Variables						
Delinquent Friends		2.265**		2.264**		2.270**
Gender		1.786**		1.791**		1.782**
Migrant		1.076		1.076		1.078
Self-Control		.427		.427**		.425**
Social Economic Status		1.254*		1.251*		1.252*
Interaction Variables						
Strain*Parental Support			1.027	1.030		
Strain*Parental Control					1.047	1.076

**. Odds Ratio is significant at the .01 level. *. Odds Ratio is significant at the .05 level.

Discussion

Overall, the results are in line with Agnew's (1992) General Strain Theory since they show that a higher level of strain increases the probability of using a criminal coping mechanism. The probability increases for both internal and external criminal coping mechanisms. These results are similar when controlling for delinquent friends, gender, migration background, self-control, and SES.

Furthermore, receiving more parental support decreases the probability of using a criminal coping mechanism. The probability decreases for both internal and external criminal coping mechanisms. These findings are in line with previous studies which have shown that very supportive and controlling parents are a protective factor, since they reduce the likelihood of adolescent delinquency (Hirschi, 1969; Agnew, 2001). When controlling for delinquent friends, gender, migration background, self-control, and SES, the results on the effect of parental support on criminal coping only show a decrease in internal criminal coping. This means that the relation between parental support and external criminal coping is

partly explained by one of these control variables. One of several explanations for these findings can be that females respond more to emotional stimuli, and use less external criminal coping mechanisms compared to males (Lithari, Frantzidis, Papadelis, Vivas, Klados, Kourtidou-Papadeli & Bamidis, 2010). Because parental support is measured by looking at the emotional bond between parent and child, adding gender to the model would most likely partly explain the relation between parental support and external criminal coping.

In addition, receiving more parental control also decreases the probability of using a criminal coping mechanism. The probability decreases for both internal and external criminal coping mechanisms, which is in line with findings in previous studies (Hirschi, 1969; Agnew, 2001). The effect of parental control on criminal coping does not change when controlling for delinquent friends, gender, migration background, self-control, and SES. Parental control seems to have a larger effect on the probability of using an external criminal coping mechanism compared to the probability of using an internal coping mechanism. This makes sense because when a child receives more parental control, the child's parents most likely know their whereabouts, and the child is more likely to have a time limit when they go out. The child therefore has less opportunities to use an external criminal coping mechanism (Lahey, Van Hulle, D'Onofrio, Rodgers & Waldman, 2008).

Finally, while most results are consistent with theory found in previous studies, the results on the moderating effect of parenting show that both parental support and parental control do not influence the relation between strain and internal, external, and overall criminal coping among twelve to fifteen-year-old youth in the Netherlands. The results are similar when controlling for delinquent friends, gender, migration background, self-control, and SES. Both hypotheses *(H1) The lack of parental support and parental control increase the chance of strain leading to criminal coping*, and *(H2) Parental support and parental control will have a larger effect on the relation between strain and internal criminal coping mechanisms compared to external criminal coping mechanisms.* are therefore refuted. These results may differ when the moderating effects of parental support and parental control on the relation between strain and criminal coping are tested on respondents in earlier or later life stages. In addition, while parental support and parental control as influencers were based on the most optimal parenting style according to Baumrind (1967), other parenting aspects such as consistency in parenting, or the effect of interparental hostility may show different results (Buehler, Benson, & Gerard, 2006).

The results on the control variables show that having more delinquent friends increases the probability of using internal and external criminal coping mechanisms. This

increase is the highest outcome found in the models, which makes delinquent friends a strong predictor for criminal coping. Furthermore, males are more likely to use external criminal coping mechanisms compared to females. Females on the other hand are more likely to use internal criminal coping mechanisms, but not necessarily more compared to males. Therefore, in general, males use more criminal coping mechanisms than females. These findings support previous found evidence on gender differences in crime (Broidy & Agnew, 1997; Francis, 2014). In addition, the results show that having a migration background increases the probability of using an internal criminal coping mechanism, but has no effect on the probability of using an external criminal coping mechanism. A possible explanation for these findings is that people with a migration background have a higher chance of being discriminated. Since different studies have shown that experiencing discrimination can lead to depression, and coping with depression most likely happens using internal coping mechanisms; having a migration background can lead to a higher probability of using an internal criminal coping mechanism (Finch, Kolody, & Vega, 2000; Williams, Neighbors & Jackson, 2003). This theory is supported by the results of the univariate analysis in this study, which showed that respondents with a migrant background were more likely to experience strain, and being discriminated was part of the measurement of Strain. The results on self-control also support findings in previous studies (Agnew, 2011). A higher level of self-control decreases the probability of using a criminal coping mechanism. As expected, the probability decreases for both internal and external criminal coping mechanisms. Finally, the results show that a higher SES increases the probability of using an internal criminal coping mechanism, but has no effect on the probability of using an external criminal coping mechanism. These findings do not support Agnew's (2011) arguments. The use of a proxy measure for SES in this study can be an explanation for these results.

Limitations

A strength to this study was the large sample that was provided by the ISRD-2 study, which showed a lot of variety in information on delinquency. On the other hand, using survey data has its limitations. McClelland and Judd (1993) state that interaction effects are often hard to find in survey data. This can be due to the exacerbation of possible errors in variables when using an interaction term. Errors are more likely in survey data because the measurement of variables is often less reliable (McClelland & Judd, 1993). To elaborate more on this, Strain is a variable that is hard to measure. The types of strain that can increase the likelihood of causing crime (e.g. criminal victimization/ discrimination), on which this study has focused,

have been measured using one item per strain. Information on the four characteristics (strain is seen as unjust, high in magnitude, associated with low control, and/ or pushing a person towards criminal coping) that increase the likelihood of strain to cause crime is not available in the data of the ISRD-2 study. Therefore, the severity of the strain is not measured, which leaves this study with a measure of objective strains only (Agnew, 2011). With no information on the subjective strain, this measure of strain is incomplete (Agnew, 2013). Since adding information on subjective strains would improve the validity of the Strain variable, this is seen as a limitation. Agnew (2007), recommends using vignette studies in order to lessen this problem (Agnew, 2007; Mazerolle & Maahs, 2000).

Another strength of the study is the large amount of items in the ISDR-2 sample that measure criminal coping. Different items were used to question eighteen different types of criminal coping which provided this study with ample information to construct a valid variable. In contrast, the items that were available in the ISRD-2 study offered a limited measure of the variables parental support and parental control. The Parental Control Scale (PCS) is an example of an existing scale developed that measures parental control (Rohner & Khaleque, 2003). The PCS is a self-report measure that includes thirteen items, and respondents can answer each item on a five point Likert scale. The measure of parental control used in this study only included one of the thirteen items used in the PCS. Parental support was measured by asking if the child gets along with their mother and father. Because there are a lot of different ways in which a parent can give support to their child, the use of a measure that would include more items would be more sufficient. The Parental Acceptance-Rejection Questionnaire (PARQ) consists of four four point Likert scales on (1) warmth and affection, (2) hostility and aggression, (3) indifference and neglect, and (4) undifferentiated rejection (Rohner & Khaleque, 2005). The PCS and the PARQ are examples of questionnaires that can be used to construct a more extensive measure of parental support and parental control in future research.

Finally, the link between the strain and parenting is important to mention. A low level of parental support can in itself be experienced as strain. In addition, an extreme high level of parental control can also be experienced as strain (Agnew, 2000). Again, these strains can be measured on an objective and a subjective level. Strains that are caused by parenting are often high in magnitude and associated with low control; therefore, they are important to include (Agnew, 2011). Because the influence of parenting itself was tested, parenting as a strain could not be included in the analyses.

Conclusion

This study examined whether strain is positively related to three types of delinquent outcomes, internal, external and overall criminal coping. The main aim of this study was to explore whether the effect of strain is attenuated for adolescents who gain high support and/ or control from their parents. This resulted in the research question: *Do parental support and parental control influence the relation between strain and criminal coping among twelve to fifteen-year-old youth in the Netherlands?* Additionally, this study aimed to find out whether moderating effects of parental support and/ or parental control would differ between the different types of criminal coping. The sub-question: *Does the conditioning effect of parental support and parental control differ on internal criminal coping mechanisms compared to external criminal coping mechanisms among twelve to fifteen-year-old youth in the Netherlands?* was therefore added to the study.

To answer these questions, data from the Second International Self-Report of Delinquency (ISRD-2) study was analyzed using eighteen Binary Logistic Regression models. The results show no moderating effects of parental support and parental control on the positive relation between strain and internal, external, and overall criminal coping. Which means that both hypotheses *(H1) The lack of parental support and parental control increase the chance of strain leading to criminal coping*, and *(H2) Parental support and parental control will have a larger effect on the relation between strain and internal criminal coping mechanisms compared to external criminal coping mechanisms* were refuted.

To conclude, this study proposes relatively new ideas about testing the influence of parental support and parental control on the relation between strain and different types of criminal coping. Therefore, it provides a strong base for future research. The ISDR-2 sample is a large sample which provides ample information on different types of criminal coping, but it also has its limitations. The ISDR-2 sample includes no data on subjective strains, and little data on parental support and parental control. In order to increase the validity of the outcomes it is suggested to use vignette studies to measure the variables in future research. In addition, PCS and PARQ are two reliable and valid existing scales that measure parental support and parental control. The use of these scales in future research is therefore recommended.

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