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# **DELINQUENCY ABSTENTION**

## THE IMPORTANCE OF MORALITY AND PEERS

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Chrysoulakis, A.P. Delinquency abstention: the importance of morality and peers. *Degree project in Criminology, 15 credits*. Malmö University: Faculty of Health and Society, Department of Criminology, 2013.

The scientific focus of criminological research has since long been on criminal and antisocial behaviours. However, a group of individuals reporting that they have never engaged in delinquent behaviour (delinquency abstainers) have consistently been identified and until only recently not rendered much scientific interest. It has by some been proposed that delinquency abstention is a result of individuals being excluded from peer groups due to undesired characteristics (e.g. high sense of moral beliefs), although this notion is contested. Morality has by others instead been perceived as having a direct effect on abstention, which is the hypothesis tested in this study. It does so by comparing delinquency abstainers to low-frequency non-abstainers with regards to moral belief, delinquent peer association, and time spent unsupervised with peers, and furthermore examines the effects across gender. Logistic regressions were run to examine direct and mediating effects using data from the longitudinal project *Malmö Individual and Neighbourhood Developmental Study* (MINDS). Results indicate that strong moral beliefs have a direct effect on abstention and are not mediated by delinquent peer association. Associating with delinquent peers did in turn predict non-abstention but spending time unsupervised with peers did neither predict abstention nor delinquency. Some gender differences found points towards stronger morality amongst females and that the effect of morality for males depends on peer association. Morality should therefore not be perceived as an undesirable characteristic which excludes individuals from peer groups but rather an important factor in the inhibition of delinquency.

*Key words:* Abstention, delinquency, gender differences, Malmö Individual and Neighbourhood Developmental Study (MINDS), morality, peers.

# ATT AVSTÅ FRÅN BROTT

## BETYDELSEN AV MORAL OCH KAMRATER

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Chrysoulakis, A.P. Att avstå från brott: betydelsen av moral och kamrater. *Examensarbete i kriminologi, 15 högskolepoäng*. Malmö högskola: Fakulteten för hälsa och samhälle, institutionen för kriminologi, 2013.

Kriminologisk forskning har sedan länge fokuserat på brottslighet och antisocialt beteende. Däremot har en mindre grupp individer genomgående uppgett att de aldrig ägnat sig åt antisocialt beteende och avstår således från brottslighet. Forskning inom detta område har varit jämförelsevis begränsad, men det har föreslagits att individens avhållande bygger på ett uteslutande från kamratgrupper som ett resultat av dennes oönskade egenskaper (t.ex. stark moraluppfattning). Andra menar istället att det är den starka moralen i sig som avhåller personer från att begå brott, vilket är en hypotes som testas i denna studie. Det görs genom att jämföra personer som uppger att de aldrig har begått brott, med personer som endast gjort det vid enstaka tillfällen. Detta i ljuset av variablerna moral, umgänge med brottsliga kamrater och tid som spenderas med vänner i ostrukturerade miljöer. Vidare undersöks eventuella könsskillnader. Med utgångspunkt i data från det longitudinella projektet *Malmö Individual and Neighbourhood Developmental Study* (MINDS) har logistiska regressioner använts för att undersöka direkta och medierande effekter. Resultaten visar att hög moral predicerar ett avhållande från brott utan en medierande effekt av brottsliga kamrater. Umgänge med brottsliga kamrater predicerar istället brottslighet hos ungdomarna, medan spenderad tid i ostrukturerade miljöer varken predicerar avhållande eller brottslighet. Könsskillnader som fanns indikerar på starkare moral hos kvinnor och att effekten av densamma hos män är beroende av umgänge. Moral bör därför inte ses som en uteslutande egenskap utan snarare som en viktig brottsämmande faktor.

*Nyckelord:* antisocialt beteende, avhållande från brott, kamrater, könsskillnader, Malmö Individual and Neighbourhood Developmental Study (MINDS), moral.

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## INTRODUCTION

The scientific focus of criminological research has since long been on criminal and antisocial behaviours. In a cross-sectional perspective, various correlates and patterns have been brought to attention and in turn also been supported in longitudinal studies. These are for instance robust findings of a relatively small group of individuals (primarily men) who account for a majority of all crimes over a long period of life (see for instance Piquero et al., 2003). Furthermore, findings regarding the age-crime curve illustrate the fact that most people engage in some form of delinquency during a developmental phase of adolescence (Thornberry & Krohn, 2003) with a peak between 14-17 years of age depending on information source (Moffitt 1993:676). However, there has been some discussion regarding whether the curve represents a peak in frequency of offences, or if it rather illustrates a peak in the amount of offenders (c.f. Hirschi & Gottfredsson 1983; Farrington, 1986).

By and large, these areas of interest exemplify the major focus on adolescent delinquency whether it is of a persistent or a desisting nature. Various longitudinal studies have produced a vast amount of research and findings in this area (see Thornberry & Krohn, 2003, for an overview), and have at the same time consistently identified a group of individuals whom refrain from crime altogether - commonly referred to as *abstainers* (Moffitt, 1993:689; Piquero et al., 2005:28f).

Being one of the first to in a large scale collect longitudinal data regarding crime (Laub & Sampson 1991:1430), Glueck & Glueck (1950) may serve as an early example of acknowledging a group of non-delinquents, although in the context of comparison to delinquents in a criminal career perspective, which was (and usually is) the main focus. Of the 500 non-delinquent boys used as comparison, approximately 74 percent of which “did not misconduct themselves even in... petty ways” (Glueck & Glueck, 1950:29). Following these in adulthood showed that of the 442 from whom information was possible to obtain, only 62 men went from non-delinquency to delinquency (Glueck & Glueck, 1968:46, 143), while the rest remained “essentially law-abiding” (1968:170). This was probably an indicator of an alternative type of “criminal” career.

Since the Glueck’s (1950:28f) fairly blunt categorization of non-delinquents, a number of studies have identified a similar group characterized as abstainers using more precise measurements. Wikström et al. (2012:113) noticed for instance that 29.6 percent of the sample in the longitudinal Peterborough Adolescent and Young Adult Development Study, reported never committing or engaging in any types of crime used in the project, between the ages 12-16. A similar figure was found by Loeber et al. (1991:54f) in the Pittsburgh Youth Study, where they identified a decreasing figure over time from 31 percent non-delinquents at age 7-8, to approximately 14 percent at age 13-14. Maldonado-Molina et al. (2009:161) found a relatively large proportion of abstainers in the cross-cultural Borica Youth Study: 49.1 percent in the sample from the United States and 59.3 percent from Puerto Rico (probably due to a young sample). Further examples points instead towards a relatively small proportion of abstainers ranging from approximately 5-14 percent in a variety of samples (Moffitt et al., 2002:183; Johnson & Menard, 2012:282; Owens & Slocum, 2012:12; Piquero, Brezina & Turner, 2005:38; Boutwell & Beaver, 2008:65). This variation is arguably a result of different compositions of antisocial indicators being used (Johnson & Menard, 2012:279).

Regardless of which, consistent findings reveals a smaller group reporting never engaging in crime or delinquency.

If, as Moffitt states, “ordinary teens take up delinquent behavior, then teens who eschew delinquency must be extraordinary” (2003:60). As such, abstainers grant further interest for research not only since more knowledge regarding delinquency abstention could specify and solidify theoretical notions, but also because it could prove valuable in a crime preventive perspective as possible indicators of what might inhibit delinquency.

### **Purpose**

The aim of this study is to build upon emerging research and examine delinquency abstainers (i.e. those reporting *never* having committed delinquent acts) in comparison to non-abstainers who have engaged only in limited delinquency. The main objective is to examine to what extent abstention and non-abstention can be predicted in regard to moral belief and association with delinquent peers, as well as to what extent this holds true across gender.

### **Definitions**

Some notions and terms that already have been used are central for the study and will as such recur frequently.

**Abstention.** The concept and term *abstainer* refers to an individual reporting never engaging in delinquent or unlawful behavior and puts emphasize on those refraining from crime in comparison to the *non-abstainer* (i.e. a person at some point in time having engaged in delinquency). *Non-delinquents* versus *delinquents* could be another conceptual dichotomy used, but this highlights the normativity of delinquency and hence places the abstainers in a secondary state of importance, even though they are the ones of primary interest here.

**Delinquency and antisocial behavior.** What the abstainers are thought to refrain from can best be conceived as “*actions that breach rules of conduct*” (Wikström, 2010:217; italics in original). Acts and behaviors that are not necessarily considered illegal by criminal law, but still goes against the prevailing thought or notion of what is normatively wrong or right in particular circumstances. *Delinquency* and *antisocial behavior* will as such be intermittently used.

## **PREVIOUS RESEARCH**

As portrayed above, delinquency abstainers have consistently been identified but not comprising a lot of focus, resulting in research characterizing this group as being scarce (Moffitt 1993:689). Both theoretical as well as empirical work on the abstaining group is in comparison to that of delinquency not as well evolved. The former is evident considering that almost no explicit theoretical explanation has been given. Abstention tends instead to be conceived as converse to non-abstention in the sense that theories “imply that individuals will abstain when the causal factors associated with crime are absent, or are somehow ‘turned off’” (Piquero et al., 2005:28). Moffitt (1993:689) did however stipulate hypotheses aiming to explain abstention derived from the theoretical work of the developmental taxonomy.

## **The initial abstainer**

Moffitt (1993) was one of the first to explicitly theorize about delinquency abstention (Piquero et al., 2005:28), as opposed to perceiving conformity as opposite to risk factors or opposite to how theories explain delinquent behavior. Deriving hypotheses from her (1993) developmental taxonomy including *life-course-persistent* (LCP) and *adolescence-limited* (AL), the latter formed the base for hypotheses on abstention-characteristics. These two groups (LCP and AL) are theorized to differ in delinquency behavior, where the former exhibits antisocial tendencies early in life which continues over a long period (thereof *life-course-persistent*) (Moffitt, 1993). Adolescence limited is instead as the name reveals delinquent behavior that is concentrated to a certain period of life and as such transient.

### *Life-Course-Persistent and Adolescence-Limited*

The antisocial behavior of the AL group is according to Moffitt (1993:685) due to a frustration lying in a discrepancy between biological age and social age, creating a maturity gap which the adolescents encounter. The maturity gap has grown during the modernization of societies, leading markers of maturity (i.e. “adult-like” behaviors such as economic and social independence) to be placed further away from adolescence. To relieve the frustration caused by this gap, AL bridges it and in doing so resorts to antisocial behavior. It occurs primarily by imitating the antisocial behaviors of the LCP group, whom through their behaviors does not feel the effects of a maturity gap. The LCP group has instead an early onset of antisocial behavior with more frequent and serious offending than the AL group (Moffitt et al., 2002:187). They are also more often subject to a range of disadvantages in life not necessarily directly linked to crimes (e.g. drinking problems or difficulties sustaining jobs) (Moffitt et al., 2002; Huizinga et al., 1993). Since the adolescents sooner or later naturally grow up and no longer are affected by the maturity gap, their criminal activity is limited and will phase out (Moffitt, 1993:690), provided that their antisocial behavior is not reinforced by for instance a conviction, early pregnancy, or other turning points that hinders desistance (Moffitt, 1993:689; et al., 2002:201).

Perceived this way, causal factors underlying the AL’s behaviors is primarily of a social nature while the factors for individuals with a lifelong antisocial trajectory rather is located in their childhood (Moffitt, 1993:674). As such, LCP and AL are characterized differently. The former are theorized to have underlying dispositions towards antisocial behavior as a result of neuropsychological deficits leading to different developmental and cumulative disadvantages (ibid:682), especially in risky social environments (e.g. inadequate parenting or poor relations with peers and teachers) (Moffitt et al., 2002:180). AL is instead explained by the mimicry and reinforcement of antisocial behavior “belonging to” LCP as means of relieving the frustration due to the maturity gap (ibid: 689). AL is therefore more dynamic and flexible in their behaviors being able to switch between acting pro-socially and antisocially in settings where either of the behavior is more rewarding (ibid: 686).

### *The abstainer*

In addition to these overall groups Moffitt also identified a fraction never incurring convictions or reporting committing any crimes. Drawing on the theoretical components of AL, Moffitt (1993:689) argues that abstention could be

explained as a result of lacking *motivation* to bridge the maturity gap and/or facing few opportunities to *mimic* the antisocial behavior of the LCPs. Lacking the motivation to bridge the maturity gap is thought to be the case for those adolescents who do not experience it (supported by Barnes et al. 2011:704). This could for instance be the case for those experiencing a late pubertal development as these teens are not subject to the frustration derived from the gap (Moffitt, 1993:689). This conclusion could be supported by Felson & Haynie (2002:982, 985) who found that early pubertal development among boys has an effect on adolescent delinquency, especially among younger boys. The idea of early maturation as a risk factor is a notion that holds true for girls as well (Celio et al., 2006; Chen & Adams, 2010:452), especially in mixed-sex schools as early developed girls had more familiarity with delinquent peers than their counterpart in all-girl schools (Caspi et al., 1993:23).

The other aspect of abstention, limited opportunities for imitation, is instead explained as the inability to mimic antisocial peers due to the lack of structural opportunities (Moffitt, 1993:689). These inhibiting structures are argued to be a result of for instance the inaccessibility to urban, inner-city areas where adolescent crime is known to be more prevalent (Osgood et al., 1996; Osgood & Anderson, 2004; Weisburd et al., 2009:456; Wikström, 1995:444). Since it provides adolescents with possibilities of unstructured socialization in the absence of authority figures, it increases the opportunities of offending. Furthermore, structural constraints may also emerge as a result of personal characteristics of the teen making them unattractive to their peers and in turn exclude them from (delinquent) peer groups (Moffitt, 1993:689).

All in all, delinquency abstainers are portrayed as socially inept youths who do not engage in the normative behaviors of their peers that include features of delinquency. Physically developed boys with some degree of delinquency are for instance described as psychologically adjusted, having more friends, engaging in autonomous behavior, and doing better in school (Felson & Haynie, 2002:985). Also drug experimenters have been portrayed in a more favorable light contrary to abstainers, with more positive characteristics such as better social skills, better mother-child relations, and less anxiety (Shedler & Block, 1990:627). Abstainers are instead described as individuals who are “relatively tense, overcontrolled, emotionally constricted [...] socially isolated and lacking in interpersonal skills” (Shedler & Block, 1990: 618), as well as at a young age to be “relatively timid, fearful, and morose” (ibid.:619). Similar unfavorable traits were used by Moffitt et al. (2002:182) to describe the abstainer. However, at the age of 26, the abstainers had evolved in an advantageous manner showing virtually no signs of mental disorder (Vaughn et al. 2011:216) or problems regarding relationships with women and children (i.e. violence or abuse)(Moffitt et al., 2002:194). Nor did they have any problems with economic stability as they tended to either occupy jobs with the highest status, or probably pursuing postgraduate studies (Moffitt et al., 2002:195, 196). A similar development has been discussed regarding alcohol drinking patterns, where early social impairment of abstainers may serve them well in a long-term perspective with regards to lower rates of general problem behaviors (Leifman et al., 1995:121). Also Vaughn et al. (2011:216) identified abstainers to be more likely to hold employment, although they found that abstainers were less likely to finish high school and earning less in comparison to non-abstainers.



Portraying a somewhat discrepant image of a socially awkward, not so well adjusted child growing up to be a successful young adult illustrates the lacking knowledge of what, or how, mechanisms work in a promotive long-term manner. In this light, further research is indeed warranted to determine, as Moffitt emphasizes, whether delinquency abstention “is a sign of good adolescent adjustment or not” (1993:690).

### **Adding to abstention: empirical testing**

Considering the non-unilateral development of the abstainer as presented above, the warrant for further research and empirical testing is crucial to form a more comprehensive knowledge base as to what characterizes abstainers. This could help to confirm, or problematize, the perception formed as to what constitutes delinquency abstention. Since Moffitt’s (1993) explicit hypotheses of why some youths do not engage in antisocial behavior (i.e. not experiencing the maturity gap, lack of opportunities to mimic antisocial behaviors, and/or exclusion from peer groups due to physical characteristics) the matter has gained increasing attention among scholars.

Piquero et al. (2005:32) tested Moffitt’s hypotheses on (i) whether abstainers are troubled introverts as teens and (ii) if abstention is caused by exclusion due to undesirable personality characteristics of the abstainer. Findings show that abstainers do report friendship with peers, but that a higher proportion of these peers instead are involved in pro-social activities; adolescents with higher proportions of delinquent peers are less likely to abstain, and among abstainers, females are more likely to report higher physical maturity than males (Piquero et al., 2005: 40). Additional findings coupled with the hypothesis of exclusion has come to show that those adolescents reporting strong attachment to teachers and high parental monitoring are less likely to associate with delinquent peers, with virtually the same results across gender (ibid., 2005:40). When predicting delinquency abstention, Piquero et al. (2005:45) found that youths with high levels of teacher attachment, parental monitoring, and association with prosocial peers were more likely to abstain; and contrary, those with a higher proportion of delinquent peers, high levels of “sadness/depression”, and frequent dating, were less likely to abstain. Concerning parental monitoring, Kerr & Stattin (2000) highlights that it does not per se prevent children from interacting with delinquent peers, but that the association with conformity is rather explained through the child’s own willingness to disclose information. This could according to Moffitt et al. (2001:120f) explain the closer monitoring of girls. Not that their relatively lower levels of anti-sociality is an effect of higher levels of parental monitoring, but that monitoring follows less anti-sociality and hence less to hide.

When it comes to other effects across gender, some similarities found was that those who dated more frequently as well as those expressing more sadness or depression were less likely to abstain. Differences on the other hand were found in which males who reported stronger attachment to teachers and higher levels of parental monitoring were more likely to abstain, and those with a higher proportion of delinquent peers less likely to abstain. The only finding specific for females was if they reported higher levels of autonomy, which was associated with less likelihood to abstain much because more autonomous females also tended to date more frequently (Piquero et al., 2005:45). Since differences have been found between males and females it illustrates the need to further examine in

what way key variables give rise to an abstaining effect across gender, considering indications that predictors work differently.

Piquero et al. (2005:48) drew the conclusion that “abstention from delinquency may have more to do with positive (but perhaps unpopular) personal characteristics, such as strong commitments to school, [...]” and does insofar present a rather diametrically opposed picture of the abstainer from the previous one pertaining them as depressed and socially inept. The reason for such different views of the abstainers characteristics may however be explained by different interpretations of personal characteristics. While Shedler and Block states that the abstainers drug avoidance is a result of “characterological overcontrol of needs and impulses” (1990:627) and alienation from peers rather than moral beliefs, Brezina and Piquero (2007:436, 443) claims this to be a wrongful interpretation of personality traits. They argue that findings of abstainers’ characteristics such as delay of gratification, favoring of conservative values, and being moralistic (Shedler & Block, 1990:616) should not be viewed as abnormal personality traits, but rather be interpreted as evidence of strong moral beliefs.

### *The importance of morality*

Strong moral beliefs, or morality, has since long been identified as a vital crime-inhibiting factor (Antonaccio & Tittle, 2008:503; Brezina & Piquero, 2007:460). As such, morality has been used as foundation on which criminological theories has been built upon (e.g. Hirschi, 1969; Wikström, 2010) with the basic assumption that individuals with strong moral beliefs refrain from crime. Arguing for moral beliefs as a crucial component of abstention, Brezina and Piquero (2007:443) discuss strong moral beliefs as a factor perceived by peers as an ‘unattractive personal characteristic’ rather than having a direct effect on abstention (Moffitt, 1993:689). Meaning that “isolation from peers... may be the key mechanism underlying delinquency abstention...” (Brezina & Piquero, 2007:443) which has also suggested by Menard and Elliot (1994:185). Looking closer at mainly moral beliefs, time spent with peers, and the degree of delinquent peer association between abstainers and those reporting solely drinking liquor under age (“minor offenders”), results show that abstainers are significantly more likely to hold stronger moral beliefs, spend less time with friends compared to offenders, and with friends less likely to be delinquent (Brezina & Piquero, 2007:451). A comparison of the analysis (abstainers versus offenders and minor offenders respectively) show similar results regarding moral beliefs and the peer variables, speaking in favor of morality as an important predictor (as well as delinquent peers, addressed below). However, they differ when it comes to family involvement, teacher attachment, and commitment to school; where significant differences in comparison to the offenders but not the minor offenders were found (ibid:450f).

Examining the mediating role of the variables *delinquent peers* and *time spent with peers* shows that moral belief still had a direct effect on abstention, and that only a small part is mediated by delinquent peer association (Brezina & Piquero, 2007:456). Johnson & Menard (2012:286) did however conclude that peer influence is of more vital importance than that of moral beliefs, suggesting morality as operating indirectly through exposure to delinquent peers as abstainers tend to be excluded from social groups. Furthermore, there are differences found across gender where for instance Mears et al. (1998:263) concluded that females’

comparatively stronger moral judgment is more likely to eliminate the impact of delinquent peers.

Although findings show that association with delinquent peers is less likely for those with strong moral beliefs, it does not mean that they are isolated from peers altogether. It rather means that the associations primarily includes peers not engaging in delinquency, but at the same time not excludes associations with delinquent peers (Brezina & Piquero, 2007:459, 461). The direct effect of high sense of morality on abstention could therefore be invariant of criminogenic exposure (i.e. “lifestyle risk” including delinquent peers) (Svensson & Pauwels, 2010:619).

### *The importance of peers*

A vast body of research has consistently identified the relationship between delinquent peers and the delinquency of one’s own. Be it in terms of risk factors (Loeber & Farrington, 2000:749; Tiet et al., 2010:369) or in an explanatory fashion (e.g. Akers, 2009). Either way, the holding of delinquent peers has been shown to have a substantial influence on different types of unlawful behaviors (Dishion & Loeber, 1985; Warr 1993; Johnson & Menard, 2012:286) with an effect holding true for both boys and girls (Weerman & Hoeve, 2012:240). The influence of peers is especially pronounced in regard to time spent in unstructured activities away from authority figures (Osgood et al., 1996; Osgood & Anderson, 2004). Also Mahoney and Stattin (2000:122f) found involvement in low structured activities to be associated with highly antisocial behavior, concluding the important issue to be *what* the adolescent engage in, and with *whom*.

Not only presence and place of interaction with delinquent peers has tested to be important but also the peer network structure itself. Haynie (2001:1051) suggests that the influence of delinquent peers is different for different individuals, and highlights the importance of the adolescents’ localization in the network. Those with a more central role and frequent interactions with peers also report more delinquency or behaviors closely resembling it. Although Chen & Adams (2010:460) points out that abstainers are not as popular (and as such not as central in some networks), they emphasize that the characteristic of the network where abstainers are more likely to be in are ones involving prosocial peers.

In sum, abstainers report less time spent with peers (Barnes et al., 2011:704; Johnson & Menard, 2012:286) who are characterized as delinquents (Boutwell & Beaver, 2008:69; Brezina & Piquero, 2007:456; Owens & Slocum, 2012:13), and instead tend to hold prosocial peers (Owens & Slocum, 2012:13; Chen & Adams, 2010:461). The correlations are similar for males and females, respectively (Moffitt et al., 2006:102f)

### **Hypotheses**

The overview above illustrates a discrepant view of how to understand abstention and characterize the abstainer. Building on empirically supported variables for the explanation of abstention, an outlined model is to be tested.

The model primarily predicts the effects of morality, exposure to delinquent peers, and time spent unsupervised with friends, on delinquency abstention. It tests the combated theoretical notion defined above which states that abstention is due to strong morality, rather than morality being a characteristic excluding the abstainer

from peer groups (Moffitt, 1993:689; Brezina & Piquero, 2007:443). At the same time the model controls for family and school oriented variables (such as monitoring, attachment, and commitment) as well as for gender differences.

Building on empirical findings presented above, strong moral beliefs is predicted to have a direct effect on abstention, while the holding of delinquent peers and time spent in unsupervised environments (i.e. opportunities to mimic antisocial peers) are strong predictors of non-abstention. The effect of morality will to some extent be mediated by delinquent peer association, although the loss of effect will not be so substantial as to indicate abstention as an effect of peer exclusion due to strong morality. This is also proposed to be the case when examining the model across gender.

## **METHOD**

### **Data**

The Malmö Individual and Neighbourhood Developmental Study (MINDS) was initiated in 2008 through interviews with 241 parents of children in the ages 12-13. This was the start for the longitudinal project aiming to study the youths upbringing, everyday life, and living conditions through a focus on the individual, the environment, but foremost, the interaction between the two. It entails various data collection methods ranging from interviews, interview-led questionnaires and psychometric tests focusing on the characteristic of the individual, as well as a community survey to determine the characteristics of the settings (environments). The interviews tap amongst other things in to the individuals sense of morality, ability to exercise self-control, and deterrence sensitivity, but also covers a range of traditional aspects important in a developmental perspective (such as the characteristics of family, peers, and neighborhood as well as school experience). The community survey instead enquiring amongst other things: formal and informal social control, fear of crime, and general disorder. Binding these two together is the innovative *space-time budgets* which combine a time-diary method with a geographical component. This enables a more thorough investigation and comprehension regarding *who* spends time *where*, with *whom* doing *what*. It could for instance provide information about the patterns and activities of a young crime prone person, as to where he or she tends to spend time, how often, if these places are characterized by low informal social control, and what kind of delinquent behavior is carried out.

All of the methods and the project as a whole is modeled after the longitudinal project Peterborough Adolescent and Young Adult Development Study (PADS+). As such, the project is thoroughly presented and discussed by Wikström et al. (2012).

MINDS have to date collected data from a sample of 525 randomly selected children at two occasions. The children were born in 1995 and resided in Malmö in the autumn of 2007 (the project including approximately 20 percent of the cohort). The first occasion of data collection (not counting the parental interviews) took place when the adolescents where 13-14 years of age in 8<sup>th</sup> grade (referred to as wave 1) and the other in 9<sup>th</sup> grade when they were 14-15 years (wave 2); both of which are used in the present study. The sample as a whole was not fully

representative for the city of Malmö since adolescents from more wealthy parts of the city were somewhat overrepresented and those from more disadvantaged parts underrepresented. Also adolescents with a foreign background were underrepresented. This brings with it some implications in the form of possible uncertainties regarding generalizability, if the conclusions are based on a biased sample. It could however be less of a concern for the study if one considers that more disadvantaged neighborhoods are more likely to rear adolescents with delinquent behaviors (Wikström & Sampson, 2003), and that a higher proportion of these adolescents also could be the ones that are not of interest for the study. Some uncertainties regarding drawing conclusions from the sample and the possibility to generalize to a larger population should still be taken into account, as it is not exactly clear how the sampling distribution affects the results.

### *Ethical considerations*

Participation was based on informed consent, through information such as the purpose of the study and that participation is voluntary with the right to withdraw at any time (in accordance with the Ethical Review of Research Involving Humans, SFS 2003:460). Written consent was given by the parents and the children, and the children took part in each wave on a voluntary basis.

Ethical considerations that could follow a study of this sort is for instance found in the possible stigmatization of the adolescents whom identify themselves as abstainers, depending on the characterizing descriptions as presented under *previous research*. That is, to be described as socially inept and lacking social skills (amongst other disadvantages) (Shedler & Block, 1990; Moffitt, 1993). However, all results and conclusions are drawn from a group level to assure that no individual would come to identify themselves or to be identified by others.

### *On the subject of self-report*

The data is well suited and even necessary for the research at hand considering that they are comprised of self-reports. As such, it includes delinquent acts that would not have been detected if using official arrest records to identify abstainers and non-abstainers, since most delinquent acts are not officially detected nor registered (Dunford & Elliot, 1984; Farrington et al., 2003). Even though self-reports often have been used as a method of gathering data which are not inherent of the same shortcoming as official statistics (such as the dark figure or potential bias in each step from the discovery of a crime to the clearing up of it) (Coleman & Moynihan, 1996), it does however raise various methodological concerns. The techniques of gathering data (foremost self-administered questionnaires and interviews) exhibit some more or less specific threats against the reliability. For instance the type of design of the questionnaire may bring with it more non-response, or interviews decrease the feeling of anonymity (Coleman & Moynihan, 1996). However, there are some shared overarching concerns with self-reports.

One of these is the matter of sampling. Especially in a school environment, where sampling has been quite common, there is a risk of not including those adolescents who frequently or seriously engage in delinquent activity. These adolescents could be absent due to for instance truancy or not even sampled if institutionalized for their behaviors (Shannon, 2006). An important and interesting group in the study of crime and delinquency is therefore at risk of being overlooked leading to conclusions being drawn about a more conventional or “normal” sample. Another potential problem to some extent intertwined with that

of the sampling has been identified as the matter of under- and over-reporting. In the former circumstance the respondent tend to report *less* of what is studied and the latter *more* of what is studied because of for instance recall problems or deliberate falsification (Huizinga & Elliot, 1986:294, 319). This is of concern in a study of this sort since it could lead to a faulty categorization of abstainers and non-abstainers.

Over- and under-reporting, alongside non-response and attrition rates, has been found to vary between which offences are inquired as more severe offences tend to be less reported. It has also been found that adolescents with more and serious delinquency tend not to answer as trustworthy as those adolescents with limited delinquency (Hindelang et al., 1979:1011; Huizinga & Elliot, 1986:320f). Also the problem of non-response is not random but rather a result of the under-representation of certain key groups (Coleman and Moynihan, 1996:64). The use of self-reports could therefore be perceived as more or less reliable depending on group and/or type of offence being surveyed. If the conclusion is that the method yields satisfactory results with adolescents who are not serious delinquents (Coleman & Moynihan, 1996:68), the use of self-reports should in this study be seen as a methodological strength and a comparatively reliable approach.

## Measures

The predictors and items presented below do by and large follow the same theoretical conceptualization of the variables found in prior research. It regards *abstention* as outcome, *morality* and *peer association* as key predictors, and *family* and *school* covariates as control variables. However, there is no claim of this study being an exact replicate considering the different databases used (with all the differential purposes, measures, and contextual effects which it brings). What is possible on the other hand is using the same theoretical notions but with the individual characteristic of the datasets and through such approach relate results; which if consistent speak in favor of a more valid and sound base of knowledge.

### *Dependent variable: delinquency abstention*

As illustrated above, the proportion of delinquency abstainers differs in the literature as a result of different definitions as well as overall methodological approach being adopted (Johnson & Menard, 2012:279). Some have for instance characterized abstainers as those with no more than *one* antisocial problem (Moffitt et al., 2002:195) while others with no more than *three* crimes committed (Dunford & Elliot, 1984:64).

Also items for delinquency may reflect variations. Wikström et al. (2012:113) identified almost 30 percent of adolescents never reporting any crime between the ages of 12 and 16 using ten crime types. Piquero et al. (2005:33f, 38) found that approximately 13 percent of their sample could be defined as abstainers when using thirteen items for delinquent behavior. Adding indicators does naturally decrease the proportion of adolescents being able to be classified as abstainers, which for instance Johnson and Menard (2012:282) found as almost 7 percent of their total sample met the abstention criterion using eighteen items.

The main question is therefore what type of antisocial behavior, or items, should comprise a composite scale of delinquency that really isolates the group who

closest resembles those refraining from delinquent behaviors. Based on previous research on abstainers (see *Previous research*, pp. 5-8), this group of young people would arguably be more likely to commit minor offences or less serious crimes if ever considering to commit crimes at all. Measures of antisocial behaviors should therefore comprise some items characterized as minor offences or less serious delinquency. At the same time the purpose of the study is to compare the abstainers with those who have engaged in relatively low levels of delinquency, meaning that more serious behaviors should be included. That is why the criterion used follows Johnson and Menard's (2012:280f) relatively strict definition of delinquency, which refers to acts that would most likely result in a response from the criminal justice system. This implies acts where the police for instance could take measures if detected. An example is the misdemeanor *alcohol consumption* where the police could forfeit the alcohol and contact the parents (Grevholm et al., 2010:353).

With this in mind, fourteen items regarding whether or not the respondents in wave 1 (8<sup>th</sup> grade, 13-14 years of age) report *ever* committed any of the following acts were included: (1) consumed alcohol, (2) carried a knife or other weapon in school, (3) carried a knife or other weapon outside (i.e. not in school or home), (4) stolen from another person, (5) stolen from a shop, (6) damaged or destroyed items not belonging to oneself, (7) setting fire to something not supposed to, (8) physically assaulted someone, (9) robbed someone, (10) stolen a car/from a car, (11) broken into someone's home, (12) broken into a non-residential building, (13) tried drugs (e.g. cannabis, cocaine, ecstasy), and/or (14) tried sniffing (e.g. glue or gas). Asking whether the adolescent *ever* committed any of the acts is a strength compared to other studies where only information about the behaviors in the past 12 months was obtained (e.g. Johnson & Menard, 2012:282; Chen & Adams, 2010:446)

These items correspond to others used in different database in means of severity and substance use (Brezina & Piquero, 2007:445; Johnson & Menard, 2012: 282). Studies based on self-reports have been criticized for using only minor crime types and because of it missing out on vital information (Coleman & Moynihan, 1996). It is evident that the type of behaviors used here range from relatively minor to more serious acts and should as such be able to identify a more nuanced view of delinquency. Especially since the focus is on abstainers and low-level non-abstainers. Furthermore, the inclusion of alcohol consumption could be seen as an act on the "minor side" of the delinquency scale possibly covering up for the contingencies of false positives (i.e. identifying individuals as abstainers who are not really abstainers). There is of course the possibility that an important type of act has been omitted which could alter the perception of "true" abstention.

### *Composing a delinquency scale<sup>1</sup>*

The composite scale for wave 1 reveals those reporting *ever* committing any of the delinquent or unlawful acts as well as how many different types committed by those reporting delinquency. However, the index does not disclose enough information to identify those only reporting occasional *acts* (prior to the 8<sup>th</sup> grade)

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<sup>1</sup> All scales used in the study have been created as additive scales. By adding the variables of interest, respondents with non-response on any of the variables are excluded from the index and are as such excluded from all analyses using the scale in question. Although certain measures can minimize the attrition rate (such as imputation), none were taken.

which is to be separated from occasional *types*, since a variable amount of acts may underlie one single type.

The problem of measurement is that while questions regarding *ever* committing a crime type are included (wave 1), information regarding frequency only is available during the year-long period for inquiry during wave 1 and 2. It means that information regarding *number of times* refers to the retrospective twelve month frame ('past year') of wave 1 and 2; asking how many times something has been done in eight respectively ninth grade. The problem is therefore that those reporting ever engaging in for instance only one delinquent type (but not between the ages 13-15) could have committed it very frequently.

The potential bias of an underlying high frequency (as such a blunt indicator for possible LCPs) is perceived as less of an issue considering that their versatility (Piquero et al., 2003) should be filtered out since the criterion is tested in a longitudinal manner. Furthermore, in terms of Moffitts taxonomy (1993; et al. 2002), those reporting a maximum of two crime types are supposedly more likely to be characterized as adolescence limited rather than high-/low-level chronics. This is however an issue of uncertainty since the study is based on prospective data, and predictions include the considerable source of error of false negatives and false positives (Sampson & Laub, 1992:74).

The same approach in wave 2 was used: a composite scale whether the youths *ever* committed any of the acts during the period (9<sup>th</sup> grade, 15-16 years), and then how many times.

A maximum of two delinquent *types* and three *acts* committed was chosen as criterions for low-level non-abstention. The reason is partially based in the effort to include as many as possible potentially similar to the abstainers, but still differing on one vital factor – delinquency. The criterions are mainly derived from the data in the sense that it selects those respondents who are placed below the mean for both the *type* index and *acts* index. In both ninth and eight grade this was equivalent to individuals committing one and two *types* of delinquent acts. Similar was found with three committed acts.

Using the mean as a cut-off point is of course a criteria sensitive to large values. However, the distribution showed a relatively natural drop at both two types and three acts as the categories contained the majority of the sample. 75.9 % of the distribution did for instance range between 0 and 3 committed acts. A maximum of two committed types (and three acts) could also theoretically exclude those who would be characterized by Moffitt (1993) as life-course-persistent (which is a vital objective of the study), especially considering the frequency and versatility these individuals express (Piquero et al., 2003).

### *Identifying abstainers and non-abstainers*

Using this approach to identify the two groups resulted in a sample of 236 adolescents out of total 483 who participated in both waves of data collection. Two individuals were excluded for reasons specified and discussed below, leaving  $n = 234$ : 74 were characterized as abstainers (15,3 % of the total sample; 46 females and 28 males), and 160 as non-abstainers (33,1% of the total sample, 87 females, 73 males). The figures of abstainers are similar to previous research, although in the top section of the range. The distribution also reveals more



females as both abstainers as well as non-abstainers ( “minor” or low level delinquency). This could be a reflection as seen in previous research where a larger proportion of females has been identified to abstain (Piquero et al., 2005; Vaughn et al., 2011) and tend to commit less serious crimes at a lower frequency (Moffitt et al., 2001). However, the frequency distribution between gender and abstention did not indicate significant differences ( $\chi^2(1) = 1.25, p = .26$ ).

In addition to the items used as measures of delinquency, the two groups were controlled whether they have ever had been arrested by the police. Of all the 76 initial abstainers, 75 reported never being arrested why one individual was excluded (the other exclusion will be specified in the section *Regression diagnostics*).

The distribution of the delinquency types showed that none of the more serious crime types such as burglary, assault, robbery, and theft from/of car was present. This is perhaps an indicator that the criterion for exclusion of more “serious” offenders based on two crime types and three acts might have served its purpose. It also shows that none the crime types characterized as “strategic offences” (which indicate higher risk for a continued criminal career) (Svensson, 2002:407f) were present.

There was a relatively large proportion going from delinquency abstention in wave 1 to non-abstention in wave 2. The analyses show that primarily *alcohol consumption* renders the group transition. As such it is probable that a larger proportion will non-abstain through the course of time; a matter further discussed in relation to limitations in the final section. However, there is of course the ever impending discussion regarding validity and whether using especially alcohol consumption in combination with a maximum of three-acts-committed, is a suitable approach of identifying non-abstainers. The implication is that it could be too strict of a criterion. However, taking the scope of the study into account the “strictness” is quintessential in identifying the two groups. It is perhaps less of an issue if considering that well-adjusted adolescents, or those occasionally engaging in minor offences, are less likely to report large amounts of drinking (Eklund & af Klinteberg, 2009:612). Because of its special role as an “offence”, alcohol consumption was categorized as: ever drinking 1 to 5 times in ninth grade indicating *one act*, and 6-10 times *two acts*. This is arguably still a conservative measure considering that drinking maximum five times during almost one year, indicated consumption once every two months.

#### *Independent variables: main predictors*

The variables included in the model are all summarized and presented in table 1 below.

**Morality.** The person’s sense of morality is measured using a scale comprised of 16 items following PADS+ (Wikström et al., 2012:132-135). It taps into a general sense of moral regarding various norm breaking acts, and asks questions about the wrongfulness for someone in the same age as the respondent to for instance: skip doing homework from school, hit another young person who makes a rude comment, and steal a CD from a shop. Answers range from *Not wrong at all* (0) / *A little wrong* (1) / *Wrong* (2) / *Very Wrong* (3); meaning that higher scores indicate higher moral beliefs, or a less tolerant predisposition towards antisocial behavior. Measure of internal consistency, Cronbach’s alpha, indicate

satisfying reliability ( $\alpha = .79$ )<sup>2</sup>, in line with the same items used in Peterborough, U.K ( $\alpha = .89$ ) (built upon questions from the Pittsburgh Youth Study) (Wikström et al., 2012:135).

Compared to Brezina & Piqueros (2007:446) 4-item measure consisting of underage drinking, smoking marijuana, theft of something worth less than ten dollars, and destroying someone else's property ( $\alpha = .75$ ), the morality scale used in this study is more comprehensive. Addressing a wider variety of behaviors, it is possible that it captures a more thorough understanding of the individuals' perception of right and wrong. The index displayed an approximate normal distribution (Kolmogorov-Smirnov test indicating  $D(143) = .07$ , n.s.; skewness = 0.162, S.E. of skewness = .203).

*Table 1.* Descriptive statistics of outcome, main predictors, and control variables

	Mean	Standard Deviation	Minimum	Maximum
Abstainer (1 = yes)	0.32	.47	0	1
Gender (1 = female)	0.57	.50	0	1
Parental attachment	6.04	1.93	0	9
Parental monitoring	6.69	1.76	0	9
Commitment to school (1 = strong)	0.14	.35	0	1
Teacher attachment (1 = strong)	0.45	.50	0	1
Morality	27.31	6.02	13	43
Delinquent peer association	3.88	2.97	0	19
Time spent in city center (1 = never/almost never)	0.56	.50	0	1
Time spent outside in parks/playgrounds etc. (1 = never/almost never)	0.26	.44	0	1

**Delinquent peer association.** The other key variable in the study measures the frequency of delinquent behaviors of the adolescents' closest peer/peers. It is an important factor considering that the role of delinquent peers has been identified as stable over time in predicting non-abstention, concluding that the company one keeps is of importance (Brezina & Piquero, 2007:465).

Seven items were used to inquire about different acts of varying seriousness, asking if it happens that some/any of the closest peers ever: skipped school, got drunk, used drugs, stole from people/stores, vandalized, got into fights, or smoked/used tobacco ( $\alpha = .75$ ). The answers ranging between *No, never* (0) / *Yes, sometimes* (1) / *Yes, fairly often (every month)* (2) / *Yes, very often (every week)* (3), where higher values indicate more serious and frequent delinquency among closest peers (mean = 3.88, SD = 2.97) ( $\alpha = .75$ ). The mean value points towards moderate delinquent peer association in general, although the standard deviation and range (= 19) indicates one or more individuals associating to a large extent with delinquent peers.

<sup>2</sup> Cronbach's alpha,  $\alpha$ , is a measure of construct consistency (or internal reliability), indicating to what extent items comprising an index are correlated with each other (Cronbach, 1951). It does so by an elaboration of the split-half approach; computing the correlation coefficient for every possible split.

This measure differ from that of previous research on abstention since it emphasize the frequency of the peer's delinquency rather than how many of the peers engage in delinquency, as used by Piquero et al. (2005:34), Brezina & Piquero (2007:448), and Johnson & Menard (2012:283). Chen & Adams (2010:447) did however use a similar approach to measure peer deviance, asking how often the respondents friends smoked cigarettes, drank alcohol, got drunk, did something dangerous, and skipped school. Two out of which are similar to the ones used in this scale.

The index indicated skewnewss (= 1.27; S.E. of skewness = 1.59) but was not transformed in any way since logistic regression is not as sensitive to this assumption as OLS. Initial regression diagnostics further revealed that there was no problem with non-linearity in the logit (Menard, 1995) (elaborated under the *Method* section).

**Unsupervised with peers.** Two separate categorical items were used to measure the unsupervised time spent with peers, measuring how often the respondent spends time with his/her friends (i) just hanging around outside in parks or playgrounds, and (ii) in the central parts of the city at night. These items are meant to tap into the informal socialization part of peer interactions. Even though Moffitt (1993:688) claims that a direct interaction is not needed for imitating the behaviors of life-course-persistents, unsupervised time with peers is potentially the most suitable time to engage in delinquency (Osgood et al., 1996; Osgood & Anderson, 2004; Mahoney & Stattin, 2000). As mentioned earlier, a vast body of research has identified the relationship of antisocial behavior to that of delinquent peers, especially regarding frequent informal socializing in the public space (Wikström et al., 2010:69). That is why the items arguably measure exposure to criminogenic settings (Wikström, 1995:444).

The possible answers of the items being: *Never/almost never* (0) / *Once or twice a week* (1) / *several days (3-5 days a week)* (2) / *All, or almost every day of the week (6-7 days a week)* (3). The two items were dichotomized to manage the problem of incomplete information from the predictors (explained in the section *Statistical pitfalls*), taking on either value 1 = *Never/almost never* or 0 = *1 or more days a week*. The mean of 0.26 (SD = 0.44) indicates that a higher proportion tend to spend time "outside" one or more times a week, and that spending time in the city center at night is predominantly something never or almost never done (mean = 0.56, SD = 0.50).

#### ***Independent variables: control variables***

The control variables used in the model are chosen on a theoretical basis based on previous research (presented above) in trying to isolate the effects of moral beliefs and delinquent peer association on delinquency abstention (similar to Brezina & Piquero, 2007:448). It therefore uses known correlates of abstention (and delinquency) which is also important in a statistical sense trying to create a stringent, correctly specified model (Menard, 1995:58f).

**Sex.** Gender was included considering the differences between males (= 0) and females (= 1) on different aspects of abstention and non-abstention (c.f. Moffitt et al., 2001). The distribution showed slightly more females in the sample (mean = 0.57, SD = .50).

**Parental attachment.** Considering the theoretically important notion of attachment as inhibiting force (c.f. Hirschi, 1969), measures of parental attachment were included using three items tapping in to child disclosure and time spent together doing activities. Asking (i) how often the adolescent talk to their parents (or step-parents) about how they are doing in school and getting along with friends. (ii) If they can talk to their parents/step-parents when sad or having problems, and (iii) if they ever spend time together doing enjoyable activities ( $\alpha = .64$ ). The answer alternatives ranging on a four graded scale were high values indicate higher levels of parental attachment (Mean = 6.04, SD = 1.92).

**Parental monitoring.** Respondents who score high on three items measuring parental monitoring, report that their parent(s) to a large extent knows *where* the adolescent is if out alone or with friends, *what* the adolescent is doing, and with *whom* (responses ranging from *no, never* = 0 to *yes, always* = 3). The mean (= 6.69, SD = 1.76) shows relatively high levels of parental monitoring in the sample (range = 0-9) with measures of internal consistency indicating a satisfying  $\alpha = .75$ .

Other questions that have been used in prior research to measure parental monitoring is asking about the mothers supervision (if she for instance knows the child's closest friends, the friends parents, or the teacher at school)(Piquero et al., 2005:38); or ones for instance asking about school achievement and what the child spends its money on (Kerr & Stattin, 2000:1074). If using Kerr & Stattin's operationalization of monitoring as "parents' knowledge of the child's whereabouts, activities, and associations" (2000:1074), the three items used in this study is arguably a condensation of just those operationalized aspects.

**Teacher attachment.** Following Brezina & Piquero (2007:449), teacher attachment was measured using a single item inquiring if the adolescents usually got along with most of their teachers. The variable had responses initially ranging between four options: *Very well* (0) / *Pretty well* / *Not particularly well* / *Not well at all* (3). Frequencies showed that zero respondents did "not fare well at all" with their teachers, leading an already constrained variable becoming even more so. For similar reasons as with *unsupervised with peers* (incomplete information), this variable was also dichotomized with responses ranging between *very well* (= 1) and *other* (= 0) (mean = 0.45, SD = 0.50).

Piquero et al. (2005:36) measured teacher attachment by asking if the teachers "are good" and "interested in the students". As such, it is (to the authors knowledge) one of two studies taking teacher attachment into account in an abstention context. The other being the one presented above (Brezina & Piquero, 2007). Since *teacher attachment* has barely received any attention in the limited area of abstention research it is of importance to further build on existing knowledge.

**Commitment to school.** The items chosen to measure commitment to school where those reflecting an overall attitude towards education: number of hours spent on homework per day (*2 hours or more* (0) / *Between 1 and 2 hours* / *Less than 1 hour* / *I never do my homework* (3)), and whether the respondent finds it important to graduate and seek higher education (*Yes, very important* (0) / *Pretty important* / *Not so important* / *Not important at all* (3)). These items were chosen as indicators for school commitment because they tap in to an investment which reflects an overall attitude towards school and education. They do it more than

questions about for instance whether the adolescents like school or if they have skipped school for any reason. Questions of this character could instead be intertwined with factors such as whether the adolescent for instance is a victim of bullying, which is a factor associated with higher levels of truancy from school (Gastic, 2008).

Cronbach's alpha ( $= .37$ ) indicated weak internal consistency and pointed towards the items not being statistically coherent and therefore possibly not theoretically sound. Including a potentially unreliable scale could make interpretations of the results untrustworthy considering that it is not certain what notion the scale is measuring. On the other hand, the actual reliability could be underestimated if the items "contained in a scale are dependent on more than one dimension, trait, or attribute" (Huizinga & Elliot, 1986:295f). It was however included since it incorporated similar aspect of that of Brezina & Piquero (2007:449), and also dichotomized why the issue of whether the two items in a statistical sense captures "commitment to school" becomes less of a problem.

The index turned out to be significantly skewed why the variable was dichotomized (following Brezina & Piquero, 2007:449). Those receiving a composite value of zero on the scale (individuals spending the most time with homework and finding higher education very important) were categorized as *strongly committed to school* (1) and those not as *otherwise* (0) (mean = 0.14, SD = .35).

### **Analytical approach**

The hypothesized prediction presented above contains *abstention* as an outcome variable. It is categorical assuming only one of two possible outcomes (non-abstainer = 0, or abstainer = 1) why a binary logistic regression is suitable (Field, 2009). There is however some implications to this analytical strategy in regards to the variables included in the model. Menard and Elliot (1994:186) for instance identified reciprocal influences among delinquent bonding, [moral] belief, and illegal behavior (meaning that they all influence one another), concluding that specification of a proper cross-sectional model to be extremely difficult. Being a problem that could be resolved through longitudinal data (of which this study partially uses).

The longitudinal aspect of this study draws strength from the identification of abstainers over time, but uses only data concerning the predictors from wave 2 (9<sup>th</sup> grade) in the analysis. As such, it does not use analytical techniques commonly associated with longitudinal data (for instance trajectory modeling or growth curve analysis (Nagin, 2010; Raudenbush & Chan, 1992)). This is a minor problem since the dependent variable (abstention) is constant over time and as such not possible to analyze through statistical techniques focusing on change over time (Johnson & Menard, 2012:282). In sum, binary logistic regression is sufficient when testing whether moral has a direct effect on abstention, or mediated by exposure to delinquent peers.

To examine the effects of morality and peers on abstention more closely, the binary logistic regression was built upon three models using "forced entry". Model one contained the four control variables: *parental attachment* and *monitoring*, *commitment to school*, and *teacher attachment*. *Morality* was entered in model two as means to assess potential direct effects, and in model three

*delinquent peer association* as well as *time spent in criminogenic environments* was accounted for. This was done for the whole sample as well as across gender.

Bivariate analyses were initially conducted to examine differences between abstainers and non-abstainers, as well as across gender. The mean comparison is based on *t*-tests and the correlations were examined through scale level appropriate methods; Pearson's *r* and Kendall's  $\tau_{(b)}$ . Considering that six of the ten variables included in the correlation matrix (table 3 presented below) are dichotomous, and all variables but gender has an underlying continuum (making it a point biserial correlation,  $r_{pb}$ ), the Pearson's *r* correlations had to be elaborated into biserial correlations,  $r_b$  (Field, 2009:182). This was done through conversion tables provided by Terrell (1982).

### ***Statistical pitfalls***

Utilizing logistic regression as a statistical strategy brings with it some relative advantages compared to other techniques in the sense that it is not as bound by the same strict assumptions and requirements as for instance OLS (although it shares some)(Menard 1995; Field 2009:273f). However, one aspect to consider is the incomplete information from the predictors, also known as zero cell count (Menard, 1995:68). It regards the problem that arises when there is not enough data to cover for all categories. Since the goodness of fit is based on a chi-square distribution it follows the basic assumption that all expected values for every category must be at least 1, and that 20 percent of the categories may not have less than 5 (Field, 2009:269). The problem with incomplete information is thus that it could lead to inflated standard errors, uncertain predictions, and a poorly fitted model. One way of handling the problem is to merge categories. This is the reason why the variables *unsupervised time*, *commitment to school* and *teacher attachment* were dichotomized. A disadvantage with this approach is of course that it forms a somewhat crude measurement possibly obscuring the subtle differences between abstainers and non-abstainers. Menard (1995:69) points out that the strength of the relationship could be biased. However, he also points out that the categorization could be a viable option if there is a conceptual link between categories of the independent variables and the distribution of the outcome (whether a person is predicted an abstainer or nonabstainer). This link is arguably present considering that the categories crystallized are those theoretically relevant in predicting abstention.

Mood (2009) points to a fact commonly overlooked that omitted variables affect the estimates in a logistic regression. This has implications when interpreting coefficients across models within the same sample (which is done here) since it is inherent of some degree of unobserved heterogeneity. In other words, variables controlled for does effect the estimates of the model to some degree, regardless if it is correlated to the other covariates or not. However, there are ways of circumventing the problem and make specific estimate comparisons possible across models. For instance through *y*-standardization of the coefficients, or usage of a linear probability model (Mood, 2010:73, 78). The latter was employed to control the model comparisons since it put emphasize on probability changes (instead of odds ratios and log-odds ratios) which facilitates interpretations.

### ***Regression diagnostics***

Some diagnostic aspect has already briefly been highlighted, as for instance dichotomizations to face zero cell counts. This was done for the variables

*unsupervised time, commitment to school, and teacher attachment*. Besides the problem of zero cell count, the assumption of *linearity in the logit* was also assessed. This is an assumption based on the regression criteria that the change in the logit of Y is constant for every one-unit changes in the variable X (Menard, 1995: 60). If the change in (logit)Y is not constant but rather dependent on the values of X, the assumption is violated since there is *nonlinearity in the logit* present. This is a problem because it obscures and interferes with the individual predictors' relationship and associated effect with the dependent variable. Nonlinearity can be identified through the entering of an interaction term of a predictor and the natural logarithm of the same (i.e. a Box-Tidwell test)(Menard, 1995:61). This procedure did not indicate problems of nonlinearity.

Further analysis assessed the impact of potentially deviating cases where *one* case was identified as both an outlier as well as asserting great influence on the model (Cook's distance = 0.90; Normalized residual = 13.08; Standardized residual = 3.22). However, leverage and DFBeta values did not indicate values of concern (although the case indicated twice the DFBeta value than the next highest case for *delinquent peer association*). A closer examination of this specific case shows that the individual exhibited similar characteristics as non-abstainers in regard to, for instance, delinquent peer association (2.97 standardized deviations above the mean), and parental monitoring (-0.96 std. residuals), but did consistently report abstention. Categorizing delinquent peer association in three groups based on standard deviations (low, medium, high) did not diminish the undue effect the outlier had on the model, as well as the problem of zero cell count became a problem inflating the standard error of the variable. None of the abstainers reported associating with highly delinquent peers. Therefore the case was filtered out of the analysis.

Excluding cases is not preferable and is by some considered as a last option (Bollen & Jackman 1985:512, 538). It could for instance be an indication of omitted variables (some predictors of explanatory importance that would enhance the model if included). Furthermore, excluding cases could be perceived as means to create results fitting the purpose. However, considering the fundamental statistical notion of examining general trends and patterns, the isolated case is an anomaly, criterion wise, and should as such be examined in a more qualitative manner to examine why the deviation exists. The exclusion led to increased Model Chi-square values (60.726 vs. 69.710, both: (9),  $p < .000$  indicating a better fit) and lower -2LL values (204.531 vs. 193.272) less unexplained variance) as well as higher  $R^2_L$  values– all indicating a better fit of the model.

Besides the two possible sources of error, zero cell count and non-linearity of the logit, it could be worthwhile to mention some additional aspects regarding the possible threats to the validity of the model. Turning to the bivariate correlation matrix (table 3) it shows that some of the variables exhibit moderately strong correlations. This could be an indicator of multicollinearity: strong correlations between the predictors leading to inflated standard errors and making it impossible to determine individual estimates. However, running collinearity diagnostics indicate that multicollinearity is not an issue, where the highest VIF value was 1.5 and lowest tolerance value .66 (for the variable *parental monitoring*). It indicated collinearity with *parental attachment* (although not enough to cause a concern). This pattern was similar across gender and did not indicate problems with multicollinearity.

## RESULTS

### Mean score comparison

Table 2 below presents the mean differences between abstainers and non-abstainers, as well as differences across gender in abstention and non-abstention, respectively.

Contrary to prior findings (e.g. Brezina & Piquero, 2007:450; Vaughn et al., 2001:216), females were not significantly more likely to abstain than males, although they formed the majority of both abstainers as well as non-abstainers. The first column indicates significant differences between abstainers and non-abstainers in regard to the continuous variables *parental attachment*, *parental monitoring*, and *morality*, all of which abstainers report significantly higher values (i.e. stronger parental attachment, higher levels of parental monitoring, and stronger moral beliefs). It also shows significant differences in regard to delinquent peer association meaning that non-abstainers have a higher proportion of friends who tend to commit a wider variety of delinquent acts, although abstainers report some delinquency amongst friends. Furthermore, abstainers display a stronger commitment to school and less time spent in the city center.

A comparison of means was conducted for abstainers and non-abstainers separately to look closer at differences across gender. Interesting is that the only gender difference identified was that delinquency abstaining females reported higher morality than abstaining males. This could be interpreted as females to a higher extent consider the delinquent acts as morally wrong. This was not the case when comparing within the non-abstention group, where no significant differences were found concerning any variables. However, the means did however show that females had a larger proportion of delinquent peer association, and the holding of stronger moral beliefs (although the parameters were not significantly distinct with a  $p$ -value for morality of .07). Virtually no differences between males and females indicate homogeneity within groups rather than between groups.

### Bivariate correlations

All of the significant correlates in the sample as a whole (table 3) were as expected in accordance with prior research. Regarding the key independent variables, the correlates show similar results as the  $t$ -test for abstainers having significantly stronger sense of moral, less association with delinquent peers, and less time spent in the city center (as well as no correlation between abstention and time spent just hanging around).

Morality was positively correlated with parental attachment and monitoring, and shown to be stronger amongst females. Females reported significantly higher levels of monitoring. The full model (table 3) also demonstrates that those with higher sense of moral tend to associate less with delinquent peers. However, this is not the case when examining the gender-specific model (appendix, table 7 and 8) where only the females who reported stronger moral beliefs tend to associate less with delinquent peers. Also the correlation between morality and parental attachment holds true for females only.



Table 2. Comparison of means (*t*-test) between abstainers and non-abstainers, and between abstaining/non-abstaining males and females.

Variable	Abstainer (n = 74)		Non-abstainer (n = 160)		Abstainer				Non-abstainer			
	M	SD	M	SD	Male (n = 28)		Female (n = 46)		Male (n = 73)		Female (n = 87)	
Sex (1 = female)	.62	0.49	.54	.50								
Parental attachment	6.51	1.76*	5.82	1.97	6.77	1.42	6.37	1.93	5.76	1.93	5.87	2.01
Parental monitoring	7.30	1.50*** <sup>a</sup>	6.41	1.80	7.14	1.46	7.39	1.53	6.14	1.97	6.64	1.62
School commitment (1 = strong)	.24	.43** <sup>a</sup>	.09	.29	0.18	.39	.28	.46	0.08	.27	0.10	.31
Teacher attachment (1 = strong)	0.51	.50	.42	.50	.46	.51	.54	.50	0.44	.50	0.40	.49
Moral beliefs	30.11	5.32***	26.02	5.9	28.50	4.88*	31.07	5.40	25.04	5.90	26.81	5.82
Delinquent peer association	2.12	.178***	4.70	3.06	2.32	2.04	2.00	1.65	4.28	2.94	5.05	3.13
<i>Time unsupervised with peers</i>												
City center, nights (1 = never/almost never)	0.74	.44*** <sup>a</sup>	0.48	.50	.68	.48	.78	.42	0.54	.50	.43	.50
Outside (1 = never/almost never)	.29	.46	.25	.43	0.22	.42	0.33	.47	0.18	.39	0.3	.46

*n* = 234; abstainers *n* = 74, non-abstainers *n* = 160.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

<sup>a</sup> = differences tested using  $\chi^2$

When comparing the full model (table 3) with the gender-specific (appendix, table 7 and 8), a correlation that is revealed only for females is the one between morality and time spent in the city center. It indicates that females with higher morality also report spending no or very little time in the city center with friends at night. The role of morality is by and large seen to be a more eminent factor for females than for males.

Delinquent peer association was shown for both males and females (table 3) to decrease with higher levels of parental monitoring and parental attachment. Those who report that they never/almost never spend time in the city centre with friends at night, did at the same time to a lesser extent associate with friends engaging in delinquency, as well as tending to spend no or almost no time outside in parks or playgrounds (a correlation only holding true for females; see appendix table 7 and 8). Furthermore, females reported to a higher extent that they never/almost never spend time outside.

*Table 3. Correlation Matrix, Pearson's  $r$ ;  $r_b$ ; Kendall's  $\tau$  (N=234). Full model.*

	1	2	3	4	5	6	7	8	9
1. Abstention (abstainer = 1)	1								
2. Sex (Female = 1)	.07	1							
3. Parental attachment	.22*	-.00	1						
4. Parental monitoring	.31**	.14*	.46**	1					
5. Commitment to school (strong = 1)	.20**	.08	.28**	.20*	1				
6. Teacher attachment (strong = 1)	.09	-.00	-.00	.07	.09	1			
7. Morality	.32**	.19**	.20*	.28**	.07	.06	1		
8. Delinquent peer association	-.52**	-.04	-.15*	-.31**	-.17	-.09	-.26**	1	
9. Time spent in city center, nights (never/almost never = 1)	.24**	-.03	-.02	.20*	-.06	-.02	.08	-.40**	1
10. Time spent outside (never/almost never = 1)	.05	.13*	-.16	-.05	-.04	.06	.07	-.03	.16*

\* $p < .05$ . \*\* $p < .01$ .

As with morality, some gender-specific results for delinquent peer association emerged (appendix, table 7 and 8). Parental attachment was rendered insignificant for both males and females separately, probably due to a loss in statistical power properly assessing the association between the two (Weisburd & Britt, 2007). Commitment to school was furthermore shown to be significantly correlated for females, suggesting that those with strong commitment to school, as opposed to others, had lower levels of associations with delinquent peers. A similar correlation was identified in relation to never or almost never spending time in the city center at night with friends, which was associated with lower levels of delinquent peers. This correlation was evident only for females.

Teacher attachment, that all in all was rendered insignificant in relation to most variables, was significantly related to commitment to school for males: strong commitment to school was associated with strong attachment to teachers. Furthermore, those not spending time in the city centre did not tend to spend time outside in parks and playgrounds either. Instead, spending time outside was significantly an activity among males, while spending time in the city center showed non-significant correlations across gender.

In sum, the bivariate analysis for the full model shows that morality and to some extent delinquent peer association are important key predictors of abstention. This is mainly because they are significantly related to most other variables in the model. Unsupervised time with peers was however generally insignificant across the full model. In regards to the control variables, parental monitoring was correlated to almost all other variables except teacher attachment, which in turn did not indicate significant correlations with any other variables in the full model. This indicates the importance of differentiating between males and females in the analyses since the effects, evidently, varies across gender.

### **Multivariate analysis**

Turning to the full model presented in table 4, model one shows that only *school commitment* is significant, indicating that the odds for abstention is 2.5 times higher for those with strong commitment to school compared to others when controlling for other covariates. This effect was significant with increasing odds ratio across the three models. Considering that parental attachment and parental monitoring were identified as important variables in the bivariate analyses, it is worth pointing out that none of them exhibited a significant effect. However, parental monitoring barely reached significance ( $p = .052$ ) at the same time as it exhibited a relatively strong effect (odds ratio of 1.24; 95% CI: 0.99-1.53). It should as such not be discarded and is an issue that later will be returned to.

Entering *morality* to examine its direct effect on abstention in model two showed that stronger moral beliefs significantly ( $p < .01$ ) increased the odds for abstention. The introduction of morality also reduced the values for Wald and odds ratios for both *parental attachment* and *monitoring*. The latter close to  $p = .05$  in the first model decreased to  $p = .21$  in the second model. This could indicate morality as having a mediating effect on the relationship between parental monitoring and abstention. A probable circumstance considering the bivariate correlations previous presented between monitoring and morality ( $r = .28$ ), monitoring and abstention ( $r = .31$ ), as well as morality and abstention ( $r = .32$ ; all  $p < .01$ ). Model two did furthermore significantly increase the predictive ability as identified by the model chi-square, as  $R^2_L = 14\%$  (in comparison to 8% in model one).

Another interesting issue is what happens in model three when the mediating features of peers are examined. Unsupervised time with peers, be it outside or in the city center, does not exhibit a significant effect on the prediction of abstention. Spending time in environments characterized as criminogenic does not seem to have an important influence on whether an individual refrains from delinquency or not, although delinquent peer association has that effect. It indicates that abstention becomes less likely the more delinquency one's peers engage in. Introducing the peer variables only marginally affected morality, which in turn maintained a significant and virtually identical effect on abstention.<sup>3</sup> Noteworthy is also that commitment to school not only sustained its significant effect, but that the odds ratio also increased in the third model. When controlling for the other variables, those strongly committed to school had approximately three times the

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<sup>3</sup> Linear probability models (not presented here) were also run to examine the problem of omitted variables which can influence the parameters and make comparisons between models in the same sample unreliable (Mood 2009). These analyses showed virtually identical results as those presented using logistic regression (table 4, 5, 6).

*Table 4. Logistic Regression Predicting Abstinence from Delinquency: Full Model (n = 210)*

Variable	<i>Model 1</i>			<i>Model 2</i>			<i>Model 3</i>		
	B (SE)	Wald	Exp(B)	B (SE)	Wald	Exp(B)	B (SE)	Wald	Exp (B)
Sex (1 = Female)	0.12 (.33)	0.14	1.13	-0.09 (.34)	0.08	0.91	0.11 (.38)	0.08	1.12
Parental attachment	0.14 (.10)	2.00	1.15	0.12 (.10)	1.30	1.13	0.12 (.12)	1.09	1.13
Parental monitoring	0.21 (.11)	3.78	1.24	0.14 (.12)	1.58	1.16	0.03 (.12)	0.05	1.03
Commitment to school (1 = Strong)	0.93 (.46)	4.19*	2.54	1.08 (.47)	5.18*	2.93	1.15 (.54)	4.51*	3.15
Teacher attachment (1 = Strong)	0.21 (.31)	0.46	1.24	0.17 (.33)	0.27	1.18	0.29 (.36)	0.63	1.33
Moral beliefs				0.11 (.03)	12.95**	1.11	0.10 (.03)	9.63**	1.11
Delinquent peer association							-0.43 (.10)	20.49***	0.65
<i>Time unsupervised with peers</i>									
City center, nights (1 = Never/almost never)							0.60 (.40)	2.27	1.82
Outside (1 = Never/almost never)							-0.13 (.42)	0.10	0.88
Constant	-3.40 (.81)	17.74**	0.03	-5.70 (1.08)	27.67**	0.00	-3.99 (1.27)	9.89**	0.02
Chi-square /df	20.31 (5)			34.75 (6)			69.71 (9)		
-2 Log likelihood	242.67			228.27			193.27		
R <sup>2</sup> <sub>L</sub>	.08			.14			.27		

\* $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

increased odds for abstention in comparison to those not strongly committed to school. The decreased effect of parental monitoring was furthermore affected in the sense of a substantial loss in Wald statistic from 1.58 in model two, to 0.05 in model three (or in other words from  $p = .21$  to  $p = .82$ ). The substantial loss in effect does not only indicate morality as mediating the relation between parental monitoring and abstention, but that delinquent peer association might have similar characteristics.

Including the peer variables (especially delinquent peer association) substantially improves the models predictive ability with regards to an increase of the model chi-square sum.  $R^2_L$  indicates an explained variance of 27 % (or actually, a proportional reduction in the value of the log-likelihood) (Menard, 1995:22).

### *Gender-specific models*

Turning to the gender-specific models it becomes evident that the overall patterns presented above does not hold true across gender. Commitment to school did not exhibit any significant effects on abstention in any of the models for males. Neither did morality reach significance in the second model (with a  $p$ -value = .065), but did so in the third model ( $p < .05$ ) with the introduction of the peer variables. In model three (Table 5), the pattern was similar to that of the full model (except for school commitment) with similar odds ratios. When controlling for the other variables, higher morality increases the odds for abstention, while more delinquency amongst peers decrease the odds for abstention. Since morality only exhibits a significant effect when controlling for delinquent peers, it could indicate that morality (for males) is an important factor only in predicting abstention depending on the extent of delinquent peer association.<sup>4</sup>

The findings in the full model do by and large reflect those reported for females (Table 6). School commitment is the only significant ( $p < .05$ ) independent variable in model one, predicting the odds for abstention being three times higher for those reporting strong commitment to school. The odds ratio increases to 3.5 when entering morality in model two. Morality in turn having a significant effect also indicates increased odds of abstention with higher morality. Model three followed similar pattern as before with only delinquent peer association being significant. However, the female-specific third model exhibits a noticeable difference contrary to prior tables. School commitment does no longer exert a significant effect in predicting abstention when the peer variables are controlled for in the third model. But this difference is only marginal if considering that the effect size in odds ratios decreased from 3.5 (95% CI: 1.19-10.35) to 3 (95% CI: 0.88-10.59) (and from  $p$ -value = .02, to  $p = .08$ ). The model was all in all shown to be a better fit for females ( $R^2_L = 32\%$ ) than for males ( $R^2_L = 22\%$ ).

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<sup>4</sup> Controlling for possible interactions, the variables *morality* and *delinquent peer association* were centered, multiplied, and entered as a term in the model (as proposed by Aiken & West, 1991). The term was not significant nor did it contribute to the model chi-square, indicating no interaction effects. However, running paired-sample  $t$ -tests to further examine the difference between abstaining and non-abstaining males separately indicated differences in morality and delinquent peer association. Non-abstaining males did *not* exhibit any significant differences in respect to having a certain degree of morality and associating with delinquent peers ( $t(66) = -.99, p = .33$ ). A significant difference was on the other hand evident for abstaining males ( $t(25) = 5.34, p < .001$ ). This could be a part of the explanation of the significance emerging in morality when controlling for peers in model three (table 5), and indicating that morality in itself does not promote abstention, but it does dependent on the kind of company one keeps.

*Table 5. Logistic Regression Predicting Abstention from Delinquency. Gender-specific: Male (n = 85)*

Variable	<i>Model 1</i>			<i>Model 2</i>			<i>Model 3</i>		
	B (SE)	Wald	Exp(B)	B (SE)	Wald	Exp(B)	B (SE)	Wald	Exp (B)
Parental attachment	0.23 (.17)	1.69	1.25	0.20 (.17)	1.30	1.22	0.14 (.19)	0.54	1.15
Parental monitoring	0.32 (.18)	3.16	1.38	0.29 (.19)	2.45	1.34	0.29 (.20)	2.12	1.34
Commitment to school (1 = Strong)	0.48 (.100)	0.23	1.61	0.73 (1.00)	0.54	2.07	1.13 (1.11)	1.04	3.17
Teacher attachment (1 = Strong)	-0.14 (.55)	0.07	0.87	-0.20 (.56)	0.13	0.82	0.12 (.61)	0.04	1.13
Moral beliefs				0.09 (0.05)	3.39	1.09	0.10 (.05)	3.90*	1.11
Delinquent peer association							-0.38 (.15)	6.39*	0.69
<i>Time unsupervised with peers</i>									
City center, nights (1 = Never/almost never)							0.35 (.62)	0.33	1.42
Outside (1 = Never/almost never)							0.22 (.72)	0.09	1.25
Constant	-2.88 (1.00)	8.33**	0.06	-6.42 (1.89)	11.49***	0.00	-5.89 (2.20)	7.17	0.00
Chi-square ( <i>df</i> )	9.76* (4)			13.45* (5)			22.28** (8)		
-2 Log likelihood	91.42			87.730			78.895		
R <sup>2</sup> <sub>L</sub>	.10			.13			.22		

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

*Table 6. Logistic Regression Predicting Abstention from Delinquency. Gender-specific: Female (n = 125)*

Variable	<i>Model 1</i>			<i>Model 2</i>			<i>Model 3</i>		
	B (SE)	Wald	Exp(B)	B (SE)	Wald	Exp(B)	B (SE)	Wald	Exp (B)
Parental attachment	0.10 (.13)	0.65	1.11	0.08 (.14)	0.34	1.08	0.16 (.16)	0.98	1.17
Parental monitoring	0.17 (.14)	1.42	1.19	0.07 (.15)	0.19	1.07	-0.25 (.19)	1.68	0.78
Commitment to school (1 = Strong)	1.12 (.52)	4.58*	3.06	1.25 (.55)	5.14*	3.50	1.12 (.63)	3.11	3.06
Teacher attachment (1 = Strong)	0.43 (.40)	1.15	1.53	0.35 (.42)	0.70	1.42	0.20 (.51)	0.16	1.22
Moral beliefs				0.12 (.04)	9.93**	1.13	0.10 (.05)	5.06*	1.11
Delinquent peer association <i>Time unsupervised with peers</i>							-0.52 (.14)	13.65***	0.59
City center, nights (1 = Never/almost never)							0.90 (.57)	2.51	2.45
Outside (1 = Never/almost never)							-0.31 (.59)	0.28	0.73
Constant	-2.88 (1.00)	8.33	0.06	-5.59 (1.41)	15.80***	0.00	-1.93 (1.89)	1.05	0.15
Chi-square ( <i>df</i> )	11.73* (4)			23.00*** (5)			52.26***		
-2 Log likelihood	149.18			137.91			108.65		
R <sup>2</sup> <sub>L</sub>	.07			.14			.32		

\* $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

## **DISCUSSION AND CONCLUSION**

Having the purpose of the study in mind, several findings grants interest considering the comparison of abstainers and limited delinquency non-abstainers. The study differs from prior research since it makes a distinction within the otherwise homogenously treated group of “offenders” or “non-abstainers”, an aspect which should be kept in mind.

Even though the aim has been to crystallize a group of non-abstainers whom are more similar to the abstainers than the serious or frequent offenders, the question is *what* group has been isolated as non-abstainers (i.e. what characterizes the group). In a statistical sense the non-abstainers could be seen as more similar to the abstainers than the serious delinquents, recalling that the limited delinquency non-abstainers were placed below the mean on the frequency offending scale. Furthermore, the absence of more serious crime types committed in the sample (i.e. lower risk of continuing a criminal career (Svensson, 2002)) or that the offending was characterized by low frequent delinquent behavior, could be indicators of the exclusion of serious/frequent offenders. In addition, all control variables (short of commitment to school) were shown to be non-significant (table 4, 5, and 6) suggesting two quite similar groups. This implies that parental attachment, parental monitoring, and teacher attachment (all important factors associated with delinquency as portrayed in previous research) are unable to predict abstention and/or non-abstention.

Recalling that the variable *delinquent peers association* was measured by asking about if and to what extent the peers engaged in delinquent behavior, a reporting of “no, never” does not necessarily mean that the adolescent holds pro-social friends. It could instead mean that the individual does not have any friends to report behaviors for. Although considering that abstainers (i) did report some interaction with delinquent peers, and (ii) was virtually as likely to spend time outside with friends as non-abstainers, give us reason to believe that abstainers are not isolated. This is particularly true among males (appendix, table 7) as abstainers and non-abstainers are basically as likely to spend time in the city center unsupervised with friends at night.

The gender specific models clearly show that the theoretically driven variables tested here do not work unanimously across gender. In particular considering the role of morality which has been shown significantly stronger among abstaining females in comparison to abstaining males, as well as the finding that females who report higher morale tend to associate less with delinquent peers (while no correlation for males was found). This, together with the logistic regression indicating a direct independent effect on abstention, provides additional support to the conclusion that comparatively stronger moral judgment amongst females is more likely to eliminate the impact of delinquent peers (Mears et al. 1998:263). Furthermore, it could be a reflection of the differences in socialization across gender (Moffitt et al., 2001).

In line with prior research (Brezina & Piquero, 2007) and the predicted outcomes, the effect of moral held true when controlling for the peer variables (in particular delinquent peer association). This indicates that moral belief is a vital factor predicting abstention and does as such warrant scientific interest as to what role it plays in causing abstention, and if these mechanisms work conversely for crime



causation or are more bound to a specific abstention context. However, these effects were not as clear cut for males since the effect of morality only became significant in the third model (Table 5; when controlling for peer variables). It raises questions whether morality really is a more important factor for females or if the results could be due to methodological constructions. To bear in mind is nonetheless the comparison group consisting of minor delinquents, why the results could very well indicate that there is no clear cut distinction between the two groups (abstainers vs. non-abstainers). This brings us back to the question concerning similarities across the groups.

In what way does a person who report only one delinquent type of act over the period of time, differ from one who never has reported any delinquency whatsoever? Arguably, they do not, except for the one crucial and criminological interesting aspect: one delinquent act committed. Finding factors that empirically separates them should at this thin line also mean theoretically important variables that conversely could tap closer into the explanation of crime. Association with delinquent peers has throughout the models been found as such a factor across gender, as well as morality foremost for females (and with some indirect effects for males) that is seemingly important in the prediction of abstention. These results do by and large support the predicted outcomes, and as such ultimately join the ranks of previous research.

Even though two seemingly important factors have been further supported by the empirical evidence presented in the study, it is important to point out that one aspect of the predicted outcome, time unsupervised with friends, did not exhibit any significant effects on abstention (or non-abstention). The notion of a relationship between spending time in potential criminogenic environments and non-abstention did not render any empirical support. Note that the bivariate correlation for female abstainers never/almost never spending time in the city center at night (appendix, table 8) was rendered insignificant when controlling for the other variables. Even though Brezina and Piquero concluded that “it is the type of company one keeps that matter most, and not the amount of time one spends in the company of peers” (2007:456); what was examined here was the importance of amount of time with friends in arguably criminogenic environments. This factor is of explanatory importance since it tests whether abstention could be due to the avoidance of criminogenic environment and as such not facing opportunities to mimic antisocial peers as suggested by Moffitt (1993:689). Considering that the peer variables *spending time* did not exhibit any significant effects in the logistic regression could mean that abstainers and non-abstainers spend roughly equal amount of time and are not affected (perhaps due to a strong morality as suggested by Svensson & Pauwels, 2010:619). Another interpretation could instead stem from a methodological standing point, questioning whether the indicators really captured criminogenic settings. Bivariate aspects of this indicator did although to some extent speak in favor for the items as capturing antisocial environment since non-abstainers, those with lower levels of parental monitoring, and those reporting higher levels of delinquent peers, were all more likely to spend time in the city center at nights.

Two final remarks regarding the finding is one concerning females (table 6) where the large and significant effect of commitment to school on abstention was rendered insignificant when controlling for the peer variables; the other with regards to the diminishing role of parental monitoring across models (table 3).

Statistically this means the identification of a mediating variable, with support in that they all when separately regressed as well (not shown here) are correlated in expected ways: a criterion for mediation according to Baron and Kenny (1986:1177). Looking closer at strong commitment to school, theoretically it would in terms of Moffitt's notion of structural barriers be an excluding characteristic not granting those with strong commitment to school access to the "newly popular delinquent groups" (1993:689). Furthermore, Piquero et al. (2005:48) puts emphasize on exactly this characteristic meaning it to be a positive although perhaps unpopular one, which could lead to abstention. A notion that is supported by Bukowski et al. (2000:153) who concludes that features associated with good classroom-based behavior are less attractive amongst adolescents transiting to middle school.

Looking closer at the indirect relationship between parental monitoring and abstention, it does not necessarily mean that with higher levels of parental monitoring come both higher morality and less association with delinquent peers (Stattin & Kerr, 2000; Kerr & Stattin, 2000). It has instead been argued that adolescents with higher morality and less delinquent behaviors are more prone to disclose information regarding various aspects of their life, especially since they have nothing to hide. What the full models (table 3) then specify is in what way higher levels of parental monitoring can predict abstention; namely through higher levels of moral beliefs or conversely associating less with delinquent peers. The identification of mediators is important in the process of correctly classifying theoretically sound models, and building on the knowledge as to what potentially important factors or mechanisms could underlay the explanation of abstention.

Even though parental monitoring barely reached significance in the first model (table 3), it should not be reasons enough to without a discussion discard the mediating argument. Without going too deep in to the matter, it is however important to mention the discussion regarding putting too much weight and emphasize on the null hypothesis significance testing (NHST), mainly because it presents a critical perspective on an otherwise hegemonic process. Cohen (1994) and Nickerson (2000) for instance argues for a systemic fault and applicability of NHST leading it to have become an approach not unanimously conceived; as well as receiving so much attention and emphasize that it even inhibits the development of science. Cohen (1994:1000) further maintains the general thought of testing a null hypothesis as wrong since it is always false. It is indicated by the fact that large enough samples can produce significant results regarding even the slightest difference. Instead he (ibid.) and Nickerson (2000:278) propose amongst other techniques for a closer examination of effect sizes with focus on confidence intervals. What this very short mentioning of a discrepancy within the area of statistics is meant to emphasize, is not to automatically disregard the effect of parental monitoring solely for the fact that it reached a  $p$ -value of = .052.

Focusing on abstention was earlier referred to as a way of testing theoretical notions as well as being potentially valuable in a crime preventive perspective. In the sense of the latter it does so by offering an additional dimension to crime prevention. Rather than focusing on characteristics and factors which promotes delinquency, more knowledge regarding characteristics and factors that inhibits it could offer an indication on what to pursue rather than what to avoid. It is also important with this type of research to tap in to whether different types of

risk/protective factors work as opposites on a continuous scale or if some have a rather isolated effect. In the light of this study, the crime preventive aspect would therefore be the promotion of pro-social moral beliefs as key variable, although it is known to be facilitated by other important variables such as family involvement and parental monitoring.

When it comes to the notion of testing theories, implications that follow this study is the support of previous research which states that even though some characteristics might exclude the individual from peer groups leading them to abstain from delinquency (as proposed by Moffitt, 1993), *morality* is not one of them. It therefore adds to the knowledge of what factors may, or may not, be the root of peer group exclusion and does insofar contribute to the specification of theoretical notions.

In sum, the importance of foremost two theoretical factors has been replicated in line with previous research. What speak in favor for the robustness of morality and delinquent peer association in a wider context of abstention, is the overall similar results identified across a wide array of databases containing conceptually similar theoretical constructs (but different items). It also exhibits to some extent similarities across countries (although predominantly with findings from the United States). The robustness is also seen to be found in the comparison between two relatively similar groups, as well as it by and large works in similar ways across gender.

### **Limitations**

The result and conclusion of the study should be considered in the light of following limitations.

First and foremost is the matter of what could be referred to as *group consistency*. Meaning to what extent those individuals identified as abstainers and minor delinquency non-abstainers are likely to remain in the same group over time. There was for instance some attrition in the abstention group moving from eight to ninth grade. It is likely to state that the abstaining group will diminish with increasing age of the sample, be it through only one single act of minor delinquency. To be able to draw valid conclusions about “pure” abstainers therefore demands data that over time can control for what individuals really refrain from certain types of crimes.

When running a statistical model it not possible to control for every single variable why a theoretically relevant and stringent model is suggested to be specified. As such, there is an overall risk of omitting variables that could be of great importance in explaining abstention. The present study examined somewhat individual (moral) and more socially (peers) induced variables while previous research has also for instance identified the importance of “sadness/depression” (Piquero et al., 2005:46), or the maturity gap (Barnes et al., 2011:702). These are other examples of factors perceived to work more directly on abstention and could as such be vital in the explanation of it. Leaving them unattended should also mean leaving out explained variance. It could furthermore be of the essence to control for more distal variables, such as for instance neighborhoods or communities since its characteristic could be vital in explaining individual, including moral, development (Wikström & Sampson, 2003).

On the subject of statistics, further limitations lays in the relatively small sample size, especially when running the models separately for males (n = 85) and females (n = 125). It could lead to potentially unreliable models which would affect the results in a faulty manner as well as the conclusions drawn from it. This could to some degree explain the differing results presented in table 5 and 6 with regard to especially *morality* as an important factor, where it was more pronounced for females than for males.

### **Further research**

One area for further research which may contribute a great deal of valuable information is to subject the issue to the method briefly mentioned earlier – space-time-budgets. Being a method enabling the examination of the link between individual and environmental characteristics, it may really tap in to the question what the abstainers tend to do with their time as opposed to the non-abstainers. It could disclose more thorough information not only as to if abstainers tend to spend time with friends or not, but also the nature of these interactions. And furthermore, if abstainers and non-abstainers really spend approximately equal amount of time in potentially criminogenic environments, are the activities the same? Space-time-budgets are therefore perceived as a powerful tool which could enable cutting edge research on abstention and abstainers.

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## APPENDIX

Table 7. Correlation Matrix, Pearson's  $r$ ;  $r_b$ ; Kendall's  $\tau$  ( $n = 101$ ). Gender-specific model: males

	1	2	3	4	5	6	7	8
1. Abstention (abstainer = 1)	1							
2. Parental attachment	.41*	1						
3. Parental monitoring	.41*	.49**	1					
4. Commitment to school (strong = 1)	.14	.63*	.17	1				
5. Teacher attachment (strong = 1)	.02	.01	.25	.24*	1			
6. Morality	.47**	.16	.21*	.04	.04	1		
7. Delinquent peer association	-.53**	-.20	-.23*	-.02	-.01	-.14	1	
8. Time spent in city centre, nights (never/almost never = 1)	.13	-.00	.01	-.22*	-.07	-.03	-.20	1
9. Time spent outside (never/almost never = 1)	.05	.00	-.05	-.08	-.13	.28	-.01	.11

\* $p < .05$ . \*\* $p < .01$ .

Table 8. Correlation Matrix, Pearson's  $r$ ;  $r_b$ ; Kendall's  $\tau$  ( $n = 133$ ). Gender-specific model: females

	1	2	3	4	5	6	7	8
1. Abstention (abstainer = 1)	1							
2. Parental attachment	.12	1						
3. Parental monitoring	.28*	.45**	1					
4. Commitment to school (strong = 1)	.30*	.14	.14	1				
5. Teacher attachment (strong = 1)	.14	-.01	-.00	.00	1			
6. Morality	.44**	.23*	.31**	.05	.07	1		
7. Delinquent peer association	-.60**	-.12	-.39**	-.25*	.14	-.37**	1	
8. Time spent in city centre, nights (never/almost never = 1)	.33**	.03	.40**	.04	.02	.23*	-.50**	1
9. Time spent outside (never/almost never = 1)	.03	-.16	.09	-.03	.18*	-.01	-.05	.20*

\* $p < .05$ . \*\* $p < .01$ .