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How are social bonds to a romantic partner related to criminal offending?

Alva Albæk Nielsenⁱ

Abstract

This study uses a combination of Danish administrative register and survey data on a representative sample aged 18-64 (N=11,114) to investigate the importance of social bonds to a romantic partner. Results show that people with strong social bonds to their romantic partner offend significantly less than people with weak social bonds to their partner. The study finds no difference in offending between people with weak social bonds to their partner and people without a partner. Additionally, one result shows that strong social bonds matter less for the risk of offending if a person is over age 30 – however, this result is mainly suggestive.

Keywords: Social bonds, partner, crime, offending, age

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How are social bonds to a romantic partner related to criminal offending?

Introduction

In 1969, Hirschi formulated what has become the central tenet in social control theory: ‘(...) delinquent acts result when an individual’s bond to society is weak or broken’ (Hirschi, 1969: 16). Building on this work, Sampson and Laub’s age-graded theory of informal social control suggests that the reason why some people start offending, and then either persist or desist – and why some offenders are late starters – is due to formal and informal social control, or lack thereof (Sampson and Laub, 1993; Laub and Sampson, 2003). Throughout one’s life course, a variety of formal and informal institutions are important. According to Sampson and Laub, marriage (and cohabitation) in adulthood is a key institution providing informal social control, provided the social bonds to one’s partner are strong (Sampson and Laub, 1993).

A vast amount of research from countries such as America, England, Holland, Finland, Norway and Denmark has focused on the association between marriage and offending (Andersen et al., 2015; Bersani et al., 2009; Blokland and Nieuwbeerta, 2005; Capaldi et al., 2008; Craig and Foster, 2013; Forrest, 2014; Horney et al., 1995; King et al., 2007; Lyngstad and Skardhamar, 2013; Schellen et al., 2012; Siennick et al., 2014; Theobald and Farrington, 2009; Zoutewelle-Terovan et al., 2014a, 2014b) and cohabitation and offending (Forrest, 2014; Horney et al., 1995; Savolainen, 2009; Siennick et al., 2014). Less focus has so far been placed on the theoretical assumptions made by Sampson and Laub: namely that it is

not a relationship per se, but only a 'cohesive' relationship with strong social bonds that we should expect to reduce the likelihood of crime (Sampson and Laub, 1993). Adding to this theoretical and empirical complexity, newer research is furthermore challenging the notion that strong social bonds to a romantic partner have a uniform impact on offending. An anti-social partner might, for instance, promote anti-social values and opportunities rather than conventional behaviour (see for instance Rhule-Louie and McMahon, 2007; Simons et al., 2002).

The quantitative research that has so far examined the strength of social bonds explicitly is mainly based on American data on young adults (Capaldi et al., 2008; Cobbina et al., 2012; Forrest, 2014; Giordano et al., 2002; Simons et al., 2002). The question of the theory's universality therefore remains open on at least two dimensions. One such dimension is geography, since the structural and cultural contexts of the United States and Europe – especially the Nordic countries – differ in a number of ways, including family and penal politics (Savolainen, 2009). Another is age, since offending usually declines with age (Blokland and Nieuwbeerta, 2005), and social bonds might thus impact offending differently for older individuals.

The present study therefore examines the association between strong social bonds to a romantic partner and offending using data that is from outside the United States and that covers the general population, including individuals above age 30. To this end, I use a large panel dataset on 11,114 individuals aged 18-64, combining survey and detailed administrative register data from Denmark.

Furthermore, I investigate the implicit assumption in the theory that there will be no difference in offending between people with weak social bonds to their romantic partner and people without a partner. I also investigate whether the association between social bonds to a romantic partner and offending depends on gender, age or a partner's criminal history.

Adult social bonds

According to Hirschi, social bonds consist of four elements: attachment to significant others, commitment to – and involvement in – conventional activities and belief in the common value system of society (Hirschi, 1969). Of the four elements, Hirschi emphasizes attachment. Attachment is an emotional closeness to significant others, and the reason a person cares about other people's wishes or the expectation to conform to society's norms and values (Hirschi, 1969). Sampson and Laub build on this work to formulate their age-graded theory of informal social control, which explains both stability and change in individual criminal behaviour over the life course. Changes or continuity in social bonds can thus explain why some individuals begin to offend, why some persist while others desist, and why some are late starters (Sampson and Laub, 1993; Laub and Sampson, 2003).

Important institutions of informal and formal social control change for an individual according to age. However, Sampson and Laub emphasize informal social control as specifically important, and state that 'a major thesis of our work is that social bonds in adulthood – especially attachment to the labour force and cohesive marriage (or cohabitation)

– explain criminal behaviour regardless of prior differences in criminal propensity’ (Sampson and Laub, 1993: 304).

A cohesive romantic relationship is likely to impact offending in several ways. First, and most importantly, an individual invests in the social bonds to their partner, and accumulates social capital. The more investment in the relationship, the more is at stake, and the less likely the individual is to offend. Second, an individual in a relationship usually changes their everyday routines, potentially relocating to live in another area or reducing time spent with (deviant) friends. Third, an individual might be directly monitored by their partner. Finally, entering a cohesive relationship may change an individual’s sense of themselves as being more ‘serious’ or ‘adult’ (Laub and Sampson, 2003; Sampson et al., 2006).

While prior theoretical arguments as to why strong social bonds to a romantic partner might induce conformity assume a uniform effect, empirical research challenges this. Warr (1998), for instance, shows that marriage drastically reduces time spent with friends. If these friends are not anti-social, but in fact assist an individual’s desistance process, we might hypothesize that a romantic partner could reduce a person’s social capital. This is especially relevant if the romantic partner is anti-social, since an anti-social partner might promote anti-social values and opportunities rather than a conventional lifestyle (Rhule-Louie and McMahon, 2007; Simons et al., 2002). For this reason, this study investigates whether the impact of social bonds differs depending on individual and partner characteristics. This is discussed in more detail in the following section.

In their empirical work, Sampson and Laub make use of Glueck's data on 1,000 American boys born in the 1920s and 1930s, 5,000 of whom had an official status as delinquent. In the initial analyses, based on interviews with the men at age 32, social bonds are identified from measures of 'attachment' and 'family cohesiveness' (Sampson and Laub, 1993), although it is not immediately clear how the two measures differ. In the follow-up, Laub and Sampson (2003) use the prevalence of marriage instead of explicitly measuring the strength of the marriages. Acknowledging the seeming inconsistency with their previous emphasis on the quality of the marriage, they explain this choice with data limitation, and admit that they are thus unable to directly model social bonds such as marital attachment (Laub and Sampson, 2003).

Later research investigating the connection between social bonds and offending also uses partner attachment as a way to tap into the mechanisms of social control (Capaldi et al., 2008; Giordano et al., 2002; Simons et al., 2002). Another study does not claim to investigate social bonds, social control, or attachment, but focuses on relationship quality (Forrest, 2014). While some find that the quality of the social bonds to a romantic partner does not predict criminal involvement (Capaldi et al., 2008), others find that it is predictive – but only for women (Simons et al., 2002). One study finds that relationship quality does predict offending, but only if the couple are married (Forrest, 2014), while another study only uses married couples and finds no association (Giordano et al., 2002). One study on released offenders furthermore finds that high-quality social bonds to an intimate partner reduce the

risk of re-arrest for women and for men with a 'below average-level' history of arrests (Cobbina et al., 2012).

While the literature thus presents mixed results regarding the importance of social bonds to offending, the reviewed studies also use a wide range of measures to identify 'social bonds' and 'attachment'. Some use several self-reported items to tap into the quality of the relationship (Capaldi et al., 2008; Giordano et al., 2002; Forrest, 2014), with a wide variety in item wording between the studies. Others use a single measure of relationship satisfaction (Cobbina et al., 2012), and one study uses researcher observations based on 30-minute videos of the couples (Simons et al., 2002).

As this overview demonstrates, there is not a uniform way to measure adult social bonds or informal social control, either theoretically or in the empirical work that has been conducted. What all these studies have in common, however, is a focus on strong emotional ties to one's partner. While Sampson and Laub (1993) also underline the importance of an ongoing investment in the relationship, only Capaldi et al. (2008) engage in a discussion of this investment, and include a measure of relationship stability that turns out to significantly predict desistance.

The impact of adult social bonds to a romantic partner depending on age, gender and partner's criminal history

The impact of being in a romantic relationship is not necessarily uniform; it may depend on an individual's characteristics, as well as those of their partner.

That criminal propensity declines with age is possibly the most widely recognized fact in the criminological literature, while the reason for this still remains under debate (Blokland and Nieuwbeerta, 2005). However, the literature discussed previously, with one exception, uses samples consisting only of adults up to age 30; Sampson and Laub's initial empirical investigations also only included individuals up to age 32. Yet since the age-crime curve is so distinct, there is reason to believe that what affects criminal behaviour might depend on an individual's age. As it has previously been shown that young people are more risk-taking and susceptible to influence from peers than older adults (Gardner and Steinberg, 2005), we might thus hypothesize that the informal social control from strong social bonds matters more to young people, and decreases with age.

In addition to age, gender might also matter. Some find that marriage reduces offending equally for both men and women (Craig and Foster, 2013; Siennick et al., 2014), while others find that while both men's and women's offending are affected by marriage, the 'positive marriage effect' is larger for men (Bersani et al., 2009; King et al. 2007) or indeed only applies to men (Zoutewelle-Terovan et al., 2014a). One study furthermore shows that the

positive marriage effect starts several years before the actual marriage, with crime rates increasing slightly again after the union is formed – the latter more so for women than men (Monsbakken et al., 2012). In terms of relationship quality, one study finds that both women and men with below-average levels of arrests benefit from a high-quality relationship with regard to recidivism (Cobbina et al., 2012). Finally, Simon et al. (2002) find that relationship quality is predictive of criminal behaviour only for women.

While these results regarding gender, romantic relationships and offending show that the evidence is mixed, a small majority of studies do find that a romantic partner aids men more than women in desisting from crime. Why might this be the case? Sampson et al. (2006) outline a scenario in which men are much more likely to marry ‘up’ with respect to crime and deviance while women are more likely to marry ‘down’, simply because men are more deviant than women. Giordano et al. (2002) furthermore show that while many of the processes of desistance are the same for men and women, there are also significant differences, suggesting that social bonds to a romantic partner might have different impacts on offending for men and women. For this reason, I investigate gender in my empirical analyses.

Sampson et al. (2006)’s argument that more women than men marry down with respect to deviance, and that women thus do not gain the positive marriage effect, builds on the idea that a romantic partnership with a deviant person might not aid a desistance process. A deviant partner is not necessarily disapproving of deviant behaviour, meaning that the relationship is not jeopardized if the individual offends. Furthermore, the partner might provide new anti-social opportunities (Rhule-Louie and McMahon, 2007). Nevertheless,

Sampson et al. (2006) find that being married reduces crime for men, even when the spouse is criminally involved. Woodward et al. (2002), on the other hand, find that while young people with a non-deviant romantic partner had a lower offending rate than those without a partner, those involved with a deviant romantic partner had the highest risk of offending (Woodward et al., 2002). Others show similar results, namely that an anti-social romantic partner makes desistance less likely (Andersen et al., 2015; Capaldi, 2008; Simons et al., 2002; Zoutewelle-Terovan et al., 2014b). Schellen et al. (2012) find that this result only applies to men, with women experiencing a crime-reducing effect of being married regardless of their partner's criminal history (Schellen et al., 2012), whereas Monsbakken et al. (2012) find the opposite, namely that mainly women's crime rates increase after marriage if their spouse offends. The consequences of having a deviant partner are thus still debated in the literature, and for this reason I investigate the importance of the partner's offense history.

Research hypotheses

Based on the discussion above, I test three hypotheses:

H1: People with strong adult social bonds to a romantic partner offend less than people with weak adult social bonds to a romantic partner.

H2: People with weak adult social bonds to a romantic partner offend as much as people without a romantic partner.

H3: The association between adult social bonds to a romantic partner and offending varies with age, gender and partner's criminal history.

- Older individuals benefit less from strong social bonds to a romantic partner than do younger individuals.
- Women benefit less from strong social bonds to a romantic partner than do men.
- Individuals whose romantic partners have a history of offending benefit less from strong social bonds to their partner than people whose partners do not have a history of offending.

Testing H2 is essentially a confirmation of the null hypothesis. However, a confirmation of the null hypothesis, i.e. that there is no difference, is logically not proof – finding one black swan in a pond tells you that black swans exist, while not finding a black swan cannot be proof that black swans do not exist somewhere else. The finding here should therefore be interpreted with caution. If the study does not find a difference, it is not proof that the theory is correct. However, if the study does find a difference, it tells us that more work might need to be done on the theory.

In the current study, I do not limit myself to only married couples, but also include cohabiting couples. The most important reason is that Sampson and Laub, especially in their earlier work (1993), explicitly state that cohabitation might have the same qualities as a marriage. Furthermore, as Capalidi et al. (2008) note, the Glueck data is based on men born

between 1924-1935, when cohabitation was very rare. However, a focus only on marriage seems less relevant in contemporary society, perhaps especially in a Nordic context where cohabitation is in many ways considered equal to marriage (Savolainen, 2009). As an example of this, 45 percent of children in Denmark were born out of wedlock in 1999.³ Romantic couples in this study thus consist of couples who are either married or cohabiting.

Data and method

Data

I used a combination of survey data from 2012 and administrative register data from Denmark from 1980-2012.

To measure adult social bonds to a romantic partner, as well as controls for gender and having children, I used the Survey of Health, Impairment and Living Conditions in Denmark (SHILD). SHILD is a survey consisting of 18,957 respondents from a representative sample of 32,810 individuals aged 16-64. The survey includes questions on health, living conditions, lifestyles and societal participation, and was carried out by the Danish National Centre for Social Research (SFI) and Statistics Denmark.⁴

I furthermore used administrative register data to measure individual offenses, as well as controls for income, age, and marital status. Every member of the Danish population has a Central Personal Register (CPR) number, used for almost all contact with the state and municipalities. Statistics Denmark collects this information from the relevant administrative

bodies, and after the CPR number has been replaced with a new personal number to ensure anonymity, researchers can gain access to the data. Using the personal numbers I combined the survey responses with the registers, and thereby compiled a panel of register data of all respondents from 1980-2012 in combination with survey answers from 2012. If participants lived with a partner or were married, I can identify this partner's personal number in the registers, and therefore also obtain the partner's registered offenses.

Data on offenses come from the Central Criminal Register, administered by the National Commissioner of the Danish Police. I used the Central Criminal Register to compile the records of convictions. Convictions are cases of law violations where guilt has been established and a legal decision has been taken, either by the court or the prosecution service. Cases where the sentence is a fine below 1,500 DKK are not usually registered in the Central Criminal Register. This includes, for instance, all fines given under the Road Traffic Act while walking or biking.

The analyses in the current study consist of comparisons between individuals with strong versus weak social bonds to their romantic partner, and between people with weak social bonds to their partner versus people without a partner. I therefore create two groups of individuals, and merge them together to create the final dataset: people with a partner and people without a partner. People with a partner are identified based on a combination of an affirmative answer in the survey to whether they live with a partner, and the presence of a registered partner in the administrative data. To identify people without a partner, I first select the survey respondents who report not having a partner in 2012. However, this method alone

creates a risk that the 'no partner' group includes individuals who had been in relationships very recently, just not in 2012. In that case it would not be surprising if I found no difference between the 'weak social bonds to a romantic partner' and the 'no partner' groups. To ensure that the hypothesis is tested on groups that are as pure as possible, individuals are therefore only included in the 'no partner' group if they state that they had not been in any relationship in the past five years (2008-2012) in which the respondent and a partner had lived together. The disadvantage of this strategy is that it reduces the sample size and thus increases the standard errors, making it less likely to yield significant results.

Of the 18,957 survey respondents, 12,161 report being in a relationship and have an identified partner in the registers. 76 survey respondents reported not having any partner in 2012, nor having had any relationship the past five years. However, not all of these respondents are included in the analyses (see also Table 1). First, I removed respondents if they or their partner were not born in Denmark, as their criminal histories might not be fully registered in Denmark (N=1,045). I then deleted the one person under age 18, because there are different penal practices in Denmark for minors. Lastly, not all respondents had full information in either the registers or in the survey (N=77). That therefore leaves N=11,053 respondents with a partner and N=61 respondents without a partner.

[Table 1 about here]

Measuring offending. I include two measures of offending: *Any offending* is a dichotomous variable, assuming the value 1 if the respondent was found guilty of an offense in 2012.

Number of offenses counts the number of offenses in 2012. Sampson and Laub underline the possible gradual change of criminality, and in Laub et al. (1998) argue that ‘because investment in social relationships is gradual and cumulative, resulting desistance will be gradual and cumulative’. While *Any offending* shows whether an individual broke a law in 2012 and thereby entered the crime statistics, *Number of offenses* will be able to reveal whether individuals with strong social bonds commit fewer offenses than individuals with weak social bonds, thereby possibly catching the gradual change mentioned by Laub et al. (1998).

Adult social bonds measured as partner attachment. As described earlier, adult social bonds to a partner have been measured in a variety of ways, although most studies make use of a measure of partner attachment that includes some notion of emotional ties.

In the current study, I also use partner attachment as a measure for adult social bonds. Partner attachment here is intended to tap into two distinct and important qualities in strong social bonds to a romantic partner: strong emotional ties and an ongoing investment in the relationship. *Partner attachment* is thus a variable combining the survey questions ‘Whom do you primarily talk to about personal and serious problems?’ measuring emotional ties, and ‘If you think of the coming three years of your life, what is the likelihood that you will be living with the same partner?’ measuring current investment, since we should expect respondents to invest more in relationships they assume are going to continue.

Table 2 shows the distribution of answers to the two survey questions. The vast majority chose to talk to their partner about personal and serious problems (83.78 per cent), just as the majority (71.47 per cent) rated the likelihood of being with their current partner in three years at 100 on a 0-100 scale. When strong partner attachment is measured as both going to the partner with problems and believing the likelihood of staying with the current partner is equal to 100, 62.55 per cent of the respondents with a partner show strong partner attachment.

One consideration is whether relationship length should be included in partner attachment or be a separate control. It can be argued that relationship length is an indicator of past investment in the relationship, and thereby an essential part of Sampson and Laub's theory of strong adult social bonds. On the other hand, the item 'If you think of the coming three years of your life...' indicates the extent to which the respondent is willing to invest further in the relationship and currently has something at stake. Furthermore, Capaldi et al. (2008) show that relationship stability is a better predictor for criminal involvement than is partner attachment, while Wyse et al. (2014) show how fleeting and brief romantic relationships can also affect desistance in both positive and negative ways. For these reasons, I investigate the length of the relationship separately.

[Table 2 about here]

Controls. The current study measures several of the individual controls in 2007, due to the likelihood of endogeneity – in this case that offending in the year 2012 will affect the control variable in 2012.

The respondent's offense history is thus measured in 2007, five years before the survey was conducted. The variable counts all previous offenses, either since the age of 15, or if that is not possible, from when the registers began in 1980. The partner's offense history, on the other hand, is measured in 2012, like the dependent variables, and five years back in time, due to the possibility that romantic partners might also be partners in crime. Income is measured in 1,000 2007 DKK and deflated to 2012=100. *Years of relationship* is a variable counting the number of years the respondent reports having been with the romantic partner.

When the study investigates age, this is mainly done using a cut-off point before and after the age of 30.¹ This choice was made both to highlight the difference between the current study and the earlier literature, and because many Danes experience a shift in family obligations around this time, meaning that many find themselves with a new, more 'adult' or 'responsible' social role. The average age for first-time mothers and first-time fathers in 2012 was 29.0 and 31.4, respectively.² *Age* is thus a dichotomous variable taking the value 1 if the respondent is above age 30 in 2012 and 0 otherwise.

Female, *Married* and *Children* are all dichotomous variables measured in 2012 – *Female* and *Married* are based on administrative data, while *Children* is based on survey data.

Method of analysis

When the dependent variable is dichotomous, measuring any offending, this study uses a linear probability model, LPM. In order to check the robustness of this functional form, the appendix displays selected regressions using a logistic model. When the dependent variable counts number of offenses, the study uses linear Ordinary Least Square regressions, OLS. As a robustness check of the functional form, the appendix displays selected negative binominal regressions.

Results

Description of sample

Table 3 shows that almost half of the respondents are female and that the majority of respondents are married and have at least one child. The table also illustrates that the general population does not offend much each year: only 2.2 per cent were convicted in 2012, while the mean number of convictions per person in 2012 was 0.025. However, the convictions accumulate over time: the mean number of past convictions in the sample in 2007 was thus 0.77.

[Table 3 about here]

93 per cent of the sample is above age 30. However, one of the most widely recognized facts in criminology is that age and crime are heavily connected, with most people

‘ageing out’ out of offending (Blokland and Nieuwbeerta, 2005). Could it be that the lion’s share of offending in this sample is done by those under 30, and therefore nothing is gained from having an older sample?

Figure 1 shows that this is not the case. The graph displays the age distribution of respondents who offend at least once in 2012. It illustrates that the sample offends across a span of ages (22-64), which makes the current sample including ages over 30 relevant.

[Figure 1 about here]

Table 4 displays the type of offenses in the sample. Of all offenses, minor offenses against the Road Traffic Act have by far the largest share. The table highlights that the general population of those mainly above age 30 does not consist of hardened criminals, but rather of individuals committing mild traffic violations.

[Table 4 about here]

Hypothesis 1 – People with strong adult social bonds to a romantic partner offend less

Table 5 shows the test of Hypothesis 1, stating that people with strong adult social bonds to a romantic partner offend less than people with weak social bonds to a romantic partner.

Partner attachment is indeed significant in both estimations, concerning any offending and number of offenses, and Hypotheses 1 is thus confirmed. All else equal, a person with strong partner attachment will have a 0.6 percentage point lower risk of ever being convicted in 2012 compared to a person with weak partner attachment. With a baseline risk of 3.3 per cent of being convicted for the reference group (the constant term), this equals a decreased risk of 18 per cent. When the outcome is number of offenses, a person with strong partner attachment has an estimated reduction in number of offenses of 0.008. With a baseline risk of getting 0.044 convictions in 2012 (the constant term), this is also a reduction of 18 per cent.

Years in a relationship is significant with the expected sign when the dependent variable is any offending, but with a quite small estimate, while both the respondent's offending history and gender are significant in both estimations, with the expected signs. Partner's history of offending, income, age, having children and being married are not significant.

[Table 5 about here]

With respect to any offending, a comparison of the LPM with the logistic estimation in Appendix A shows that the main results are the same regarding significance and signs. A comparison of the OLS with the negative binominal regression in Appendix B with respect to number of offenses also shows that all main results are the same regarding significance and signs. The only exception is the control for length of relationship, which becomes significant in the negative binominal regression. However, the conclusions concerning the main variables of partner attachment, age, gender and partner's criminal history do not change.

Hypothesis 2 – People with weak adult social bonds to a romantic partner vs people without a partner

When Sampson and Laub (1993) underline that it is not just any relationship, but a cohesive one with strong social bonds, that impacts offending, there is an implicit assumption that having weak social bonds to a partner might not lower crime. Table 6 therefore shows the test of Hypothesis 2, stating that people with weak adult social bonds to a romantic partner offend as much as people without a romantic partner. This hypothesis is not rejected by the results, as having a partner to whom one has weak partner attachment is not significant in either the estimations for any offending or number of offenses. Offending history and gender are again significant with the expected signs. Compared to the test of strong vs. weak social bonds to a romantic partner, age is now significant and lowers the risk of offending, as expected.

[Table 6 about here]

A comparison of the LPM with the logistic model and the OLS with the negative binominal regression (see Appendices C and D) again shows that the overall conclusions regarding significance and signs do not change with a change in estimation method.

Hypothesis 3 – Do age, gender and partner’s criminal history matter?

Tables 7 and 8 show the tests for Hypothesis 3, that the association between social bonds to a romantic partner and offending varies with age, gender and partner’s criminal history.

[Table 7 about here]

The first row in Table 7 includes the interaction term between attachment and age. The result suggests that, all else equal, individuals under age 30 have a 2.9 percentage point decrease in the risk of any offending if they have strong partner attachment (see the estimate of *Strong attachment to partner*). Compared to the baseline risk found from the coefficient of the constant term (4.6 per cent), this equals a drop of 63 per cent. Using the estimate from the interaction term, people over age 30, on the other hand, have a decreased risk from strong partner attachment of $2.9 - 2.5 = 0.4$ percentage points. This is equivalent to a decrease of only 8.7 per cent of the initial risk. For people over age 30, social bonds thus do

not seem to matter as much as for people under age 30. The interaction term, however, is not significant in the estimation with number of offenses (Table 8).

The current study also investigates whether this result depends on the choice of age groups (see Appendix E). A new split is thus made, with ages in the intervals 18-24, 25-34, 35-44, 45-54, and 55-64. With this specification, the estimates for the interaction term between strong attachment and age are also statistically insignificant.

[Table 8 about here]

In line with Craig and Foster's (2013) and Siennick et al.'s (2014) work on marriage and crime, the results from Tables 7 and 8 do not suggest that the impact of strong adult social bonds varies with gender. Partner's criminal history also does not seem to affect the importance of the social bonds to a partner.

Discussion and conclusion

A large part of the criminological literature points to Sampson and Laub's age-graded theory of informal social control when explaining why marriage and other romantic relationships might affect individual offending. Only a few quantitative studies, however, actually investigate the underlying theoretical assumptions, namely that not any relationship, but only a cohesive one with strong emotional bonds and ongoing investment, should be expected to influence offending. Furthermore, the quantitative literature addressing this issue so far has mainly been

on American data, with the vast majority based on samples under age 30. The question of whether Sampson and Laub's theory is well suited to explain romantic relationships' impact on offending outside an American context and for a general population including individuals above age 30 is therefore not settled.

In light of this, the current study tested three hypotheses on survey and register data from Denmark on a population aged 18-64. The hypotheses are based on the patterns one would expect to see if the age-graded theory of informal social control is well suited for explaining the connection between romantic relationships and offending. To investigate strong adult social bonds to a partner, the study used a measure of partner attachment based on respondents' survey answers.

The first hypothesis, that people with strong social bonds to a partner offend less than people with weak social bonds to a partner, was confirmed, with the partner attachment variable being both significant and in the expected direction. Having strong social bonds to a partner is thus associated with a reduction in offending risk by 18 per cent.

The second hypothesis, that there is no difference in offending between people with weak social bonds to a romantic partner and people without a partner, was not rejected, to the extent that the measure of having a romantic partner is not significant in explaining offending. Although confirmation of the null hypothesis is of course not proof, there thus does not seem to be a difference in offending between the two groups in the current sample.

From these results it therefore seems that the age-graded theory of informal social control has something to offer in a modern Nordic context and can help explain the connection between having a romantic partner and individual offending.

Based on previous research, the current study also tested a third hypothesis, that the impact of strong social bonds to a partner will vary with age, gender, and the partner's history of offending. This hypothesis was only confirmed to a very limited degree. Neither gender nor partner's history is significant. However, age interacted with partner attachment is significant when the dependent variable is *Any offending*. These findings suggest that for the population over age 30, social bonds to a partner might have a more limited impact on offending compared to the population under age 30. While one could speculate that this is because older cohorts have stopped offending altogether, Figure 1 shows very clearly that this is not the case.

When the dependent variable is *Number of offenses*, age interacted with partner attachment is no longer significant. One way of interpreting this is that age might matter in predicting who crosses the line and begins to offend, but once this line is crossed there is no difference in number of offenses. However, when this study uses an alternative categorization of age groups, the results are still not statistically significant. The results should thus be seen as highly suggestive of a difference in the importance of social bonds to a romantic partner between people under age 30 and those over age 30 – but not conclusive. This study is one of the first to investigate how age might moderate the association between social bonds to a romantic partner and offending. The result thus highlights the need for more empirical

research into whether or not the mechanisms which help younger and older adults not to offend differ – and how. This is particularly relevant since Sampson and Laub’s theory is age-graded, and they themselves underline that different institutions and settings have different meanings depending on where an individual is in his or her life course.

One factor to consider in the current study is that partner attachment and offending are measured in the same year. Due to data restrictions, it is not possible for the present study to follow offending later than 2012 and thereby measure partner attachment before offending. This raises the question of reverse causality: How do we know that it is not levels of offending which affect partner attachment?

One important note is that the mean reported length of relationships in the sample is 22.6 years. Many of the couples have therefore had a number of years to affect each other before the measurement of adult social bonds in 2012. Even with a gap of several years between measuring social bonds and offending, there would thus be no guarantee that offending had not affected the social bonds in any way. This is a challenge for any study that does not follow couples immediately after they meet.

While Laub et al. (1998) highlight the gradual and cumulative change in offending if the strength of adult social bonds changes, we must assume that a person’s current social bonds also matter. Leverentz (2006) furthermore points out that romantic relationships can be both destructive and conventionalizing at different points in time. The previous literature does not provide an answer as to the optimal time gap between measuring adult social bonds and offending. By investigating social bonds to a romantic partner and offending in the same year, I

am, however, more likely to measure the relationship as it was when the offense was committed – and this ensures that I do not measure the social bonds at a drastically different time in a couple's earlier life.

Furthermore, this study is susceptible to selection bias if one tries to interpret the estimated associations as causal effects. There might thus be unobserved confounders, for instance personal characteristics such as 'lack of empathy', which could affect both the risk of offending and the attachment to a romantic partner. What is possible here is thus mainly to investigate descriptively, and with as many controls as possible, whether expectations of a couple's behaviour based on Sampson and Laub's theory do in fact capture how couples behave.

Measuring offending and social bonds in the same year also leads to another point of discussion. This study uses convictions as outcome, i.e. cases where guilt has been established by a court, or in milder cases, by the prosecution service. It is a 'truer' measure of crime than the traditional use of arrests in the criminological literature, since guilt has been verified. However, it also raises the question of when the crime was committed. Could it be that the convictions used in this study are for crimes committed before 2012? To a certain extent, yes. However, in its analysis from 2013, the Danish national audit office found that for cases that were closed with a fine without involving the courts, the average time from charge to the fine being sent was 52 days.⁵ For milder offenses not resulting in prison sentences, such as the large number of traffic offenses in this sample, there is thus a high probability that the

offense was committed the same year as the conviction, and that I therefore do measure adult social bonds and offending in the same year.

As is always the case with correlation studies, one should be careful not to interpret the empirical findings as strict causal explanations. The study's results do, however, bring leverage to the theory of informal social control and its usefulness in explaining the relationship between having a romantic partner and individual offending. They do so in a Nordic context with current data, for a population mainly above age 30, while highlighting the importance of new research focusing on how and why the mechanisms which help younger and older individuals not to offend might differ.

Notes

1: The study conducts a robustness check of this choice of age groups, and introduces a new age split: ages 18-24, 25-34, 35-44, 45-54, and 55-64.

2: Number from Statistics Denmark, Statistics Bank, FOD11

3: Number from Statistics Denmark <http://www.dst.dk/da/Statistik/bagtal/2001/2001-08-01-Giftelystne>

4: Statistics Denmark is a state institution under the Ministry for Economic Affairs and the Interior

5: <http://www.ft.dk/statsrevisor/20131/beretning/SB9/1325895.PDF>

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Appendix

Appendix A: Logistic regression (log-odds): Strong adult social bonds' association with offending for people with romantic partners.

	Any offending
Strong attachment to partner	-0.278* (0.136)
Years of relationship	-0.017** (0.006)
Offending history	0.079* (0.032)
Partner's offending history	0.114 (0.068)
Income	-0.000 (0.000)
Above age 30	-0.034 (0.281)
Female	-0.828*** (0.153)
Children	0.344 (0.202)
Married	-0.115 (0.183)
Constant	-3.130*** (0.283)
Observations	11,053

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Appendix B: Negative binominal regression: Strong adult social bonds' association with offending for people with romantic partners.

	Number of offenses
Strong attachment to partner	-0.355** (0.132)
Years of relationship	-0.017* (0.007)
Offending history	0.400*** (0.044)
Partner's offending history	0.081 (0.083)
Income	-0.001 (0.001)
Above age 30	-0.061 (0.268)
Female	-0.395* (0.168)
Children	0.306 (0.209)
Married	-0.037 (0.181)
Constant	-3.564*** (0.273)
Observations	11,053

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Appendix C: Logistic regression (log-odds): Weak social bonds to a romantic partner vs. no partner and the association with offending.

	Any offending
Partner	0.525 (0.997)
Offending history	0.054* (0.027)
Income	-0.000 (0.000)
Above age 30	-0.913** (0.311)
Female	-1.012*** (0.217)
Children	0.426 (0.272)
Constant	-3.270** (1.035)
Observations	4,200
Robust standard errors in parentheses	
*** p<0.001, ** p<0.01, * p<0.05	

Appendix D: Negative binominal regression: Weak social bonds to a romantic partner vs. no partner and the association with offending.

	Number of offenses
Partner	0.488 (0.954)
Offending history	0.402*** (0.070)
Income	-0.000 (0.001)
Above age 30	-0.905** (0.312)
Female	-0.499 (0.257)
Children	0.447 (0.284)
Constant	-3.905*** (1.004)
Observations	4,200
Robust standard errors in parentheses	
*** p<0.001, ** p<0.01, * p<0.05	

Appendix E: Strong adult social bonds' association with offending, depending on age
(alternative age split)

	Any offending	Number of offenses
Strong attachment to partner	-0.013 (0.011)	-0.024 (0.016)
Years of relationship	-0.000* (0.000)	-0.000 (0.000)
Offending history	0.008*** (0.002)	0.010*** (0.003)
Partner's offending history	0.002 (0.003)	0.003 (0.003)
Income	-0.000 (0.000)	-0.000 (0.000)
Age	-0.000 (0.003)	-0.003 (0.004)
Female	-0.012*** (0.003)	-0.015*** (0.004)
Children	0.006 (0.004)	0.006 (0.005)
Married	-0.003 (0.005)	-0.006 (0.006)
Attach # Age	0.002 (0.003)	0.004 (0.004)
Constant	0.035** (0.011)	0.050** (0.018)
Observations	11,053	11,053
R-squared	0.025	0.028

*** p<0.001, ** p<0.01, * p<0.05. Robust standard errors in parentheses, any offending estimated with LPM, number of offenses with OLS. Sample only includes individuals with a partner. Ages split into 18-24, 25-34, 35-44, 45-54, and 55-64.

Tables and figures in the main text

Table 1

N = 18,957 survey respondents	
N = 12,161	report having a partner and are registered with a partner's personal number by Statistics Denmark
N = 76	report not having a partner
N = 11,130	after deleting immigrants
N = 62	after deleting immigrants
N = 11,130	after deleting under age 18
N = 61	after deleting under age 18
N = 11,053	with all information including controls
N = 61	with all information including controls
N = 11,114 survey respondents in the analyses	

Table 2: Partner attachment among respondents with a partner

1) Whom do you primarily talk to about personal and serious problems?	Percent
Partner/spouse/boy-/girlfriend	83.78
Children	0.82
Parents	1.08
Siblings	1.38
Other family	0.29
Friends/colleagues	8.28
Staff	0.09
I don't share this with anyone	3.76
Others	0.52
N = 11,053	100

2) If you think of the coming three years of your life, what is the likelihood that you will be living with the same partner?	Percent
100	71.47
90	19.59
80	4.42
70	1.28
60	0.38
50	1.91
40	0.17
30	0.24
20	0.20
10	0.20
0	0.14
N=11,053	100

'Partner attachment'	Percent
High partner attachment: goes to partner with problems AND estimates the likelihood of a continuing relationship to be 100	62.55

Table 3

Descriptive statistics for respondents	Mean	SD
At least one conviction in 2012	0.022 (N=246)	0.147
Number of convictions 2012	0.025 (N=280)	0.182
Number of convictions before 2007	0.773	2.619
Yearly income in 1,000 DKK in 2007 (2012=100)	247.336	162.400
Above 30 years of age in 2012	0.930	0.254
Female	0.537	0.499
With children	0.830	0.376
<i>For respondents with a partner</i>		
With a strong partner attachment	0.626	0.484
Years in the relationship	22.6	12.2
Being married	0.822	0.383
Partner's number of convictions 2008 - 2012	0.137	0.539
N = 11,114 respondent with and without a partner		

Table 4: Offenses committed by the sample

		N	%
Penal code	Sexual offenses	0	0.00
	Violent offenses	1	0.36
	Property offenses	4	1.43
	Other penal offenses	1	0.36
Road Traffic Act	Road traffic act	229	81.79
Special legislation	Drugs	3	1.07
	Weapons	1	0.36
	Taxes and fees	1	0.36
	Other special laws	40	14.29
Total offenses in sample		280	100

Table 5: Strong adult social bonds' association with offending for people with romantic partners

	Any offending	Number of offenses
Strong attachment to partner	-0.006* (0.003)	-0.008* (0.004)
Years of relationship	-0.000* (0.000)	-0.000 (0.000)
Offending history	0.008*** (0.002)	0.010*** (0.003)
Partner's offending history	0.002 (0.003)	0.003 (0.003)
Income	-0.000 (0.000)	-0.000 (0.000)
Above age 30	-0.002 (0.007)	-0.007 (0.010)
Female	-0.012*** (0.003)	-0.015*** (0.004)
Children	0.007 (0.004)	0.007 (0.004)
Married	-0.003 (0.005)	-0.006 (0.006)
Constant	0.033*** (0.007)	0.044*** (0.013)
Observations	11,053	11,053
R-squared	0.025	0.028

*** p<0.001, ** p<0.01, * p<0.05. Robust standard errors in parentheses, *any offending* estimated with LPM, *number of offenses* with OLS. Sample only includes individuals with a partner.

Table 6: Weak social bonds to a romantic partner vs. no partner and the association with offending

	Any offending	Number of offenses
Partner	0.012 (0.016)	0.021 (0.018)
Offending history	0.006* (0.002)	0.008* (0.003)
Income	-0.000 (0.000)	-0.000 (0.000)
Above age 30	-0.026* (0.011)	-0.040* (0.019)
Female	-0.021*** (0.005)	-0.027*** (0.007)
Children	0.009 (0.006)	0.009 (0.007)
Constant	0.039* (0.019)	0.051* (0.023)
Observations	4,200	4,200
R-squared	0.019	0.021

*** p<0.001, ** p<0.01, * p<0.05. Robust standard errors in parentheses, *any offending* estimated with LPM, *number of offenses* with OLS. Sample only includes individuals with no partner, or weak attachment to partner.

Table 7: Strong adult social bonds' association with offending, depending on age, gender and partner's offense history

	Any offending	Any offending	Any offending
Strong attachment to partner	-0.029* (0.012)	-0.011* (0.005)	-0.006 (0.003)
Years of relationship	-0.000* (0.000)	-0.000* (0.000)	-0.000* (0.000)
Offending history	0.008*** (0.002)	0.008*** (0.002)	0.008*** (0.002)
Partner's offending history	0.002 (0.003)	0.003 (0.003)	0.003 (0.003)
Income	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Above age 30	-0.016 (0.012)	-0.002 (0.007)	-0.002 (0.007)
Female	-0.012*** (0.003)	-0.018*** (0.006)	-0.012*** (0.003)
Children	0.007 (0.004)	0.007 (0.004)	0.007 (0.004)
Married	-0.003 (0.005)	-0.003 (0.005)	-0.003 (0.005)
Attach # Above age 30	0.025* (0.012)		
Attach # Female		0.010 (0.006)	
Attach # Partner offense history			-0.003 (0.006)
Constant	0.046*** (0.012)	0.037*** (0.008)	0.033*** (0.007)
Observations	11,053	11,053	11,053
R-squared	0.026	0.025	0.025

*** p<0.001, ** p<0.01, * p<0.05. Robust standard errors in parentheses, *any offending* estimated with LPM. Sample only includes individuals with a partner.

Table 8: Strong adult social bonds' association with offending, depending on age, gender and partner's offense history

	Number of offenses	Number of offenses	Number of offenses
Strong attachment to partner	-0.047* (0.022)	-0.016* (0.007)	-0.008* (0.004)
Years of relationship	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Offending history	0.010*** (0.003)	0.010*** (0.003)	0.010*** (0.003)
Partner's offending history	0.003 (0.004)	0.003 (0.003)	0.004 (0.004)
Income	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Above age 30	-0.030 (0.021)	-0.007 (0.010)	-0.007 (0.010)
Female	-0.015*** (0.004)	-0.024*** (0.007)	-0.015*** (0.004)
Children	0.008 (0.004)	0.007 (0.004)	0.007 (0.004)
Married	-0.005 (0.006)	-0.005 (0.006)	-0.006 (0.006)
Attach # Above age 30	0.042 (0.022)		
Attach # Female		0.015 (0.008)	
Attach # Partner offense history			-0.003 (0.007)
Constant	0.066** (0.023)	0.049*** (0.014)	0.044*** (0.013)
Observations	11,053	11,053	11,053
R-squared	0.028	0.028	0.028

*** p<0.001, ** p<0.01, * p<0.05. Robust standard errors in parentheses, *number of offenses* estimated with OLS. Sample only includes individuals with a partner.

Figure 1: Age distribution of offenders in 2012

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