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Crime and the transition to marriage

The roles of gender and partner's criminal involvement

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Abstract:

Several previous studies have argued that marriage leads to a decline in criminal propensity. Most of these studies have focused on men and have given little attention to the characteristics of their partner and events related to changes in offending. In this article, we use Norwegian registry data to study changes in the criminal propensity for all persons who married between 1995 and 2001 (117,882 women and 120,912 men). We link data on individuals to data on their marital partners and obtain information on partners' criminal histories. We find that the changes in offending rates related to marriage are anticipatory and strongest for men. The changes in offending vary substantially by partner's criminal history.

Keywords: marriage, crime, social control, gender, assortative mating

JEL classification: J12, K14, K49

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Sammendrag

Ekteskap er fremhevet som et mulig vendepunkt i en kriminell løpebane og er forventet å føre til en reduksjon i kriminalitet hos den enkelte. Det meste av litteraturen har fokusert på menn og fremhevet kvaliteten på båndene til partneren som avgjørende for å iverksette mekanismene bak endring i adferd. Det har i mindre grad vært kontrollert for egenskaper ved partneren og undersøkt tidspunkt for forandring. I denne artikkelen bruker vi registerdata og studerer endringene i kriminalitet over tid for alle personer som giftet seg før første gang mellom 1995 og 2001 (117,882 kvinner og 120,912 menn). Reduksjonen i kriminell deltagelse kommer før ekteskapsinngåelsen og er sterkest for menn. Det er stor heterogenitet i kriminalitetsmønstre etter partnerens siktelser.

1. Introduction

A central tenet of age-graded social control theory (Sampson and Laub, 1993) is that changes in offending occur in relation to key life-course transitions. Marriage in adulthood is one of the most important transitions associated with desistance from crime. A key mechanism assumed to underlie this association is the informal social control exercised by the spouse in inhibiting offending (Blokland and Nieuwbeerta, 2005; Maume, 2003; Sampson and Laub, 1993; Sampson, Laub, and Wimer, 2006; Warr, 1998). It follows that the partner's attitude to offending is of major importance. Because most studies have used men as subjects, it has been assumed that men would usually marry a more law-abiding spouse (Sampson and Laub, 1993). However, assortative mating on a wide range of characteristics is well known from demographic research (see for example Rhule-Louie and McMahon, 2007). Therefore, matching patterns of romantic partners should be central to the study of crime-inhibiting effects of marriage since marrying a partner with similar attitudes and characteristics may not reduce crime for either gender. To our knowledge, no previous work has studied the impact of spouse characteristics on crime for comparable samples of men and women.

According to Sampson and Laub (2005: 17–18), the mechanisms that influence crime and are activated by marriage include new situations that allow a break with the past, provide supervision and monitoring, change and structure routine activities and provide opportunities for identity transformation. At the same time, the stronger social bonds of marriage provide possibilities for personal growth and support. These mechanisms are believed to generally influence crime across socio-historical and demographic contexts (Sampson and Laub, 2005: 34). However, it has been pointed out that "men marry 'up' and women marry 'down' when it comes to exposure to crime and violence by a spouse in heterosexual unions. It thus follows that marriage may reduce women's well being even as at the same time it benefits their male partners" (Sampson, Laub, and Wimer, 2006: 470). A few studies of marriage effects have used female samples; some of these found no statistical relationship between marriage and desistance from crime in women (Giordano, Cernkovich, and Rudolph, 2002; Kreager, Matsueda, and Erosheva, 2010; Zoutewelle-Terovan, 2010). Others have employed representative both-gender samples that allow for direct comparisons of men and women (Bersani, Laub, and Nieuwbeerta, 2009; Graham and Bowling, 1995; King, Massoglia, and MacMillan, 2007). While Graham and Bowling (1995) find that women are most affected by marriage, other both-gender studies find stronger associations between desistance and marriage for men.

In this paper, we compare changes in crime rates before and after marriage for men and women, and allow the rates of offending to vary by partner's criminal record. We use Norwegian register data of

the total population of persons married in Norway between 1995 and 2001 (N=238,794), tracing them through the crime statistics year by year from 1992 to 2004. Our contribution is twofold. First, we describe the changes in likelihood of offending for each of the five years both before and after marriage, which allows us to establish *when* any change in offending occurs. By selecting all individuals who marry for the first time, we compare the individual before and after the year of marriage. This within-individual comparison does not allow for assessing causal effects of marriage in comparison with a control group, but rather describes the rate of change in offending around the time of marriage. Second, we present separate models including the partner's offending to control for the partner's characteristics and attitudes towards crime. To our knowledge, no previous studies with a representative sample of both men and women have used this research design. Our main finding is that both men and women change their offending before entering marriage. We hypothesized that this finding stems from strong selection mechanisms and a reciprocal relationship between desistance and marriage, where only those who change are considered suitable partners. When marrying a partner with a recent criminal history, a change in offending does not follow from marriage, although there is some evidence that partners have similar criminal trajectories and can desist from crime together.

2. How marriage may affect crime

In their theory of age-graded social control, Sampson and Laub (1993, 2001, 2003) suggest that criminal involvement is affected by socialization. Through continued involvement and investment in work, family and school, stakes in conformity are redirected because criminal involvement may jeopardize that investment. In other words, the costs and consequences of crime are higher for a socially integrated individual. Entering institutions such as marriage activates informal social control through a set of mechanisms involving new situations that make it possible to (1) disconnect the past from the present, (2) provide supervision and monitoring, (3) change and structure routine activities, and (4) provide opportunities for identity transformation (Sampson and Laub, 2005: 17–18). Marriage also fosters support and growth. Together, these possibilities make crime less rewarding, both because the cost of being apprehended increases with increased involvement in society, and because crime is a less relevant option as personal fulfilment and growth are secured within stable and safe environments.

While several studies (Burt et al., 2010; Farrington and West, 1995; Sampson and Laub, 1993; Theobald and Farrington, 2009; Warr, 1998) have shown that men are on average less likely to commit a crime when married, Laub, Nagin and Sampson (1998) have systematically studied the *gradual* changes in crime both before and after marriage. They argue that desistance is a gradual process as increasing interactions between partners and investment in their relationship strengthen the

bonds between the man and his partner over time. These bonds will in turn promote desistance. Results from Laub et al.'s (1998) statistical analysis provide little support for any changes before entering marriage, although some of the men in their sample refer to *meeting* their partner as a turning point in their lives (Sampson and Laub, 2003: 134). The idea of investment and gradual change suggests that we should not expect abrupt turning points and sudden change.

Sampson and Laub (1993, 2001) analysed the "Glueck sample" that largely married in the 1950s and early 1960s. The institution of marriage has been altered through interrelated changes in fertility, family formation and partnership behaviour from the 1960s through the second demographic transition (Sobotka, 2008). We expect that interaction and mutual investment commence well in advance of the legal union and therefore expect the level of criminality to decline during the period prior to marriage.

Furthermore, we also expect that the above shifts in social roles are "anticipatory" (Merton, 1968: 438) and men and women who aspire to marry their partners act in concordance with their projected marriage roles (Chen and Kandel, 1998; Lyngstad and Skardhamar, 2011; Rhule-Louie and McMahon, 2007). Any reduction in crime prior to entering marriage may stem from (anticipated) changes in social roles and selection processes.

3. Influences of marriage on crime by gender

The mechanisms that lead to desistance from crime may be general in nature, but men and women do not necessarily respond in the same way to changes in marital status. It has been suggested that deviant men end up marrying less deviant women (Laub and Sampson, 2003: 45–46), which implies that women on average tend to marry more deviant men. This may contribute to different crime rates for men and women. Previous research indicates that men generally benefit from marriage more than women in several domains (Fowers, 1991). Nock (1998) finds that men have a more positive view of marriage than women, which may affect offending patterns, assuming that high marital quality and satisfaction promote desistance (Laub et al., 1998). More specifically, there is evidence that men benefit more, for example in terms of a healthier lifestyle from marriage (Koball et al., 2010; Umberson, 1992). These associations are related to how women exert social control over unhealthy aspects of their husband's lifestyle, while relatively little control effort flows in the opposite direction. It has been suggested that women generally have more close friends and confidants who provide such control, while most married men list their spouses as a primary source for such monitoring and support (Umberson, 1992: 908). The ability to exert social control over behaviours affecting one's own and others' well-being may therefore influence how exertion and receipt of social control vary between

husbands and wives. The costs and benefits of breaking the law differ for men and women because of direct consequences and the long-term effects of stigmatization that are believed to be more severe for women (Steffensmeier and Allan, 1996). Several studies have suggested that variations in female and male crime are explained by women having a more interpersonal and relational focus with continued participation with close friends, school and family throughout adolescence (Alarid, Burton, and Cullen, 2000; Steffensmeier and Allan, 1996: 473, 476; Uggen and Kruttschnitt, 1998: 342). The fact that female behaviour is more stringently monitored and corrected (Steffensmeier and Allan, 1996: 477) may therefore imply that no *new* mechanisms for women are activated by marriage, as most social control functions are already present through other life domains. Strong social control mechanisms are already at play and less *change* is activated by marriage. Marriage is therefore less likely to mark a "turning point" for women than for men. From a theoretical standpoint, the interpersonal focus may make women more responsive to new social roles and relations (Rhule-Louie and McMahon, 2007). Because most studies find no association between marriage and crime for women, other turning points for women have been suggested, in particular the transition to parenthood (Chen and Kandel, 1998; Edin and Kefalas, 2005; Kreager, Matsueda, and Erosheva, 2010; Monsbakken, Skardhamar and Lyngstad, 2012).

For the few studies on the relationship between marriage and crime for women, results are mixed (see Rhule-Louie and McMahon, 2007: 81–82). Several studies found no significant drop in crime for married women (Giordano, Cernkovich, and Rudolph, 2002; Zoutewelle-Terovan, 2010). Bersani, Laub and Nieuwbeerta (2009) found that marriage is associated with a reduction in both male and female crime, although men are most affected. King, Massoglia and MacMillan (2007) found similar results, but after accounting for selection into marriage, only women with a moderate propensity and men with low propensity to marry showed a statistically significant reduction in crime after entering marriage. Kreager et al. (2010) suggest that parenthood rather than marriage is the primary turning point for women. Other studies found that women are affected more than men by marriage and other romantic relationships because of their orientation towards interpersonal relations (Haynie et al., 2005; Simons et al., 2002).

4. Why partner characteristics affect crime

Control theory generally argues that prosocial actions flow naturally from strong attachments (Giordano, Cernkovich, and Rudolph, 2002: 1001; Hirschi, 1969). Social learning, differential association and socialization theories also suggest that social networks might promote criminal involvement (Rhule-Louie and McMahon, 2007: 82). Some studies have directed attention to how

spouses control time their partner spends with delinquent peers and how this might explain the relationship between marriage and crime (Maume, Ousey, and Beaver, 2005; Warr, 1998). Less attention has been directed to characteristics of the spouse, both for their effects on marriage (Andersen, Andersen, and Skov, unpublished; Farrington and West, 1995; Leverentz, 2006; Simons et al., 2002) and in more descriptive studies of who marries whom (Svarer, 2011).

Law-abiding partners are more likely to resist deviant behaviour than partners who are themselves involved in crime and who may in fact even promote and reinforce such tendencies (Rhule-Louie and McMahon, 2007: 54; Simons et al., 2002: 404). Marrying a crime-prone partner is therefore likely to represent continued involvement in networks and lifestyles and may even increase the likelihood of committing crimes (Osborn and West 1979 in King, Massoglia, and MacMillan, 2007: 34). Moreover, marriages in which one or both partners are considered deviant may have a negative influence on the quality of the relationship (Simons et al., 2002). Rhule-Louie and McMahon (2007: 85) have suggested that the role of partner's criminal involvement is especially salient when studying women's marriage and criminal behaviour. Comparisons with men are also salient since previous studies have found that delinquency for women is associated with having a partner involved in crime (Alarid, Burton, and Cullen, 2000; Helgeland, 2009; Uggen and Kruttschnitt, 1998).

Warr's (1998) suggestion that reduced time spent with (delinquent) peers explains the relationship between marriage and crime is supported in some works (Giordano, Cernkovich, and Holland, 2003), while others still show an independent effect of marriage after controlling for time spent with peers (Maume, Ousey, and Beaver, 2005). Efforts to limit time spent with peers can be an important part of how social control is exerted by the spouse and in accordance with social control explanations. This ability to redirect routine activities is highly contingent on the spouse's lifestyle and attitude towards offending. While only law-abiding partners would be expected to discourage continued affiliation with deviant peers, partners with a criminal lifestyle are apt to encourage them (Simons et al., 2002: 426–427). Antisocial behaviours, such as drug use, could also be an integral part of the romantic relationship (Leverentz, 2006; Rhule-Louie and McMahon, 2007: 91). If the relationship between marriage and crime is explained by cutting off the influence of delinquent peers, a deviant spouse may therefore not represent a break with the past, but be a new "partner in crime" (Andersen, Andersen, and Skov, unpublished).

It may also be argued that if motivated to desist, marriage with a person of a similar criminal background could also mean that the support will be greater and more sincere since they have similar

experiences—at least if both partners have a "readiness for change" (Giordano, Cernkovich, and Rudolph, 2002). This might be particularly important in connection with drug use and drug-related crime as partners may support one another in their attempts to escape addiction and build stable lives together (Leverentz, 2006: 481). However, the empirical evidence for such effects is ambiguous (Maume, Ousey, and Beaver, 2005).

A few studies shed light on the importance of partners' characteristics and crime in adult samples (for an extensive review see Rhule-Louie and McMahon, 2007). More effort is now focused on the roles played by peer delinquency and dating relationships in the onset of crime in adolescence (Seffrin et al., 2009). Here, men typically have a negative influence on women's crime (Simons et al., 2002) and the partner's delinquency strongly affects their own engagement in criminal activity (Benda, 2005; Haynie et al., 2005; Lonardo et al., 2009). The literature with adult samples pays more attention to the characteristics of the relationship (Laub, Nagin, and Sampson, 1998). However, as stated by Simons (2002: 426): "It might be the partner's attributes, rather than relationship quality, that influence continuity and change in deviant behaviour". Their analysis supports the supposition that having an antisocial partner indirectly increases crime via peer involvement for both men and women. Farrington and West (1995) found that marrying a law-abiding vs. convicted spouse does not affect offending patterns after marriage for men. Maume (2005) found that the deterrent effect of marriage on marijuana use remained significant after controlling for partner's attitudes towards marijuana use. Sampson (2006) found that the deterrent effect of marriage remained statistically significant after controlling for partner's criminality, although it predicted higher criminal involvement initially. The effects of crime on marriage and cohabitation rates in adulthood are addressed by Svarer (2011) who finds that men with or without a criminal record have the same propensity to marry and cohabit, but diverge in who they form relationships with. Another register based study from Denmark finds that men marrying women with a criminal history themselves or in their immediate family are less likely to reduce crime (Andersen, Andersen, and Skov, unpublished).

The focus on partner characteristics is important in studies using particular kinds of samples (Rhule-Louie and McMahon, 2007). Samples of women drawn from institutions or disadvantaged backgrounds have a lower rate of marriage than for the total population (Giordano, Cernkovich, and Rudolph, 2002; Leverentz, 2006; Zoutewelle-Terovan, 2010). The possible effect of assortative mating (marrying crime-prone men) may be one explanation for their finding that marriage has no crime deterrent effect. Studies with higher proportions of married women, often married to lawabiding partners (Helgeland, 2009), find that marriage helps build stable lives and reduce offending.

5. Research questions

As mentioned above, while a number of studies have indicated a relationship between marriage and crime for men, there is less evidence in studies with female samples (Giordano, Cernkovich, and Rudolph, 2002; Kreager, Matsueda, and Erosheva, 2010; Zoutewelle-Terovan, 2010). Moreover, only a few studies compare men and women from the same population (Bersani, Laub, and Nieuwbeerta, 2009; King, Massoglia, and MacMillan, 2007). Even fewer studies have examined the role of partner characteristics on comparable population samples of both men and women.

Our contribution is twofold: first, we compare the changes in offending relative to the time of marriage for men and women. We follow Laub's (1998) advice to study the changes in offending year-by-year both before and after the year of marriage, but the maximum of 11 years for our observation window is much longer. This allows us to address the *timing* of change in offending: does offending decline before or after marriage? The process leading up to marriage might also involve anticipatory desistance in advance of taking on family roles (Chen and Kandel, 1998: 119; Rhule-Louie and McMahon, 2007: 86), and a potentially reciprocal relationship between desistance and the likelihood of marriage (Bjerk, 2009). It may be useful to distinguish between the process leading up to marriage and in the aftermath of marriage as the hypothesized mechanisms may take effect during the phase of courtship (Laub, Nagin, and Sampson, 1998: 233), suggesting a gradual decrease in offending *before* marriage (for a thorough discussion see Lyngstad and Skardhamar, 2011). If there is an additional effect of *being married*, then the decrease in crime should continue *after* marriage, at least in the absence of other effects.

Second, we explore variations in offending according to the recency of the partner's criminal history. We expect little or no change in offending for those who marry a partner with a recent criminal history, because individuals with a criminal history are less likely to adopt and maintain societal norms regarding delinquent behaviour. We also attempt to capture how a partner's *varying* criminal history affects participation in crime and whether partners display a pattern of desistance or continued participation in crime *together*. Therefore, we employ different measures to account for the timevarying aspects of a partner's criminal history.

6. Data and methods

We extracted data from Norwegian administrative registers. All Norwegian residents have a unique ID number, which is used routinely by a range of governmental agencies, including the police and public prosecutors. This makes it possible to combine information from different government registers. In

this article, we combine data from the crime registers and population registers, organized as time series or event histories (depending on the type of variable) at the individual level for each resident. The data sets we use are maintained by Statistics Norway for purposes of producing official statistics and providing data for research, with their use strictly regulated by the Norwegian Statistical Act. It is important to note that all our data sources include individual-level data for the entire Norwegian population over an extended period of time.

Therefore, our study is not restricted by the limitations associated with survey data, such as being limited to a geographical area or having a small number of observations. The only attrition is due to death and emigration, and the measurements are generally very reliable. Register data are a great untapped potential in criminological inquiries (Skardhamar and Lyngstad, 2011; for a broad discussion of register data see Røed and Raaum, 2003).

The registered offending data are derived from police registers of all solved cases in which the perpetrator is identified by the police or district attorney. These data cover every single offence committed since 1992 and solved by the end of 2009. Each offence is registered with the time and date on which it was committed. This is important since conviction may take place some years later. We set the end of the observational period to 2004 to allow for a time-lag, as some cases take a long time to solve. The data include offences for which the offender has had a legal decision made against them. This is usually a conviction, but the offence is also included if the case has been transferred to mediation, a conditional waiver of prosecution is issued, or the person is not accountable because of young age or mental health issues. The definition of offence is therefore slightly broader than conviction.

We use information on all persons who married for the first time between 1995 and 2001. The individual crime records are examined for a maximum interval of five years before and after getting married (minimum interval of three years both before and after getting married). Where available, the partner's criminal records are also used (99.9 % of the total sample matched). The data set consists of 117,882 women and 120,912 men with a total of 1,216,732 and 1,248,499 person-years, respectively. The proportion having committed at least one offence in the year of marriage was 0.004 for women and 0.023 for men. The standard deviation was 0.067 and 0.151, respectively. The corresponding sample sizes by partner's crime are presented in Table 1.

Table 1. Sample Size by Partner's Offending

	Proportion committed at						
	Sample size	Number of observations	least one offence in t=0	Standard deviation			
Men							
Partner offended before t=0	476	4,909	0.134	0.341			
Partner offended at and after t=0 Partner offended both before and after	573	5,933	0.139	0.346			
t=0	181	1,867	0.486	0.501			
Partner not offending	119,572	123,4741	0.021	0.146			
Women							
Partner offended before t=0	1,835	19,114	0.013	0.113			
Partner offended at and after t=0 Partner offended both before and after	2,150	22,183	0.015	0.124			
t=0	886	9,164	0.105	0.306			
Partner not offending	112,965	1,165,822	0.003	0.058			

It is possible that some persons in the sample spent some time in prison during the observation period. Ideally, imprisonment should be dealt with by interval censoring, but we did not have access to information on imprisonments, which is a limitation our study shares with most other previous studies. One consequence of this limitation might be that the estimated probability of offending is biased downwards in the presence of a tendency to get married while imprisoned (which we find rather unlikely).

7. Research design

Our approach is to study all cases of persons who married, and use their criminal histories year by year before and after the event as the outcome variable. Thus, we are comparing those who married with themselves before and after the year of their marriage. This "within-individual" comparison does not allow for assessing causal effects of relationships or marriage in comparison with a control group, but rather describes the rate of change in offending around the marriage year. In other words, we observe the result of all mechanisms that affect desistance and the quality of any relationship the person is in, as well as all selection processes in and out of those relationships. For our analysis, we select *all* men and women resident in Norway who married between 1995 and 2001.

We adopt an approach inspired by the much-cited study by Laub, Nagin and Sampson (1998) who estimated the timing of change in offending in conjunction with marriage by using a series of dummies for each year before and after marriage. Similar approaches were used by Duncan, England and Wilkerson (2006) to study cessation from drug use and Kreager (2010) to study the changes in likelihood of committing a crime *after* becoming a mother.

Our data on committed offences cover the period from 1992 to 2004. The width of the observation window before and after an event depends on the year of marriage. By selecting those who married in 1995–2001, we follow each person for at least three years both before and after marriage. Individuals are followed for the maximum of five years *both before and after* the year of marriage. This implies that all persons contribute with between seven and 11 observations (person-years) to the analysis. We have no reason to believe that the fact that some contribute fewer person-years should bias our results in any way¹. We only include those whose age at marriage was between 18 and 50 years.

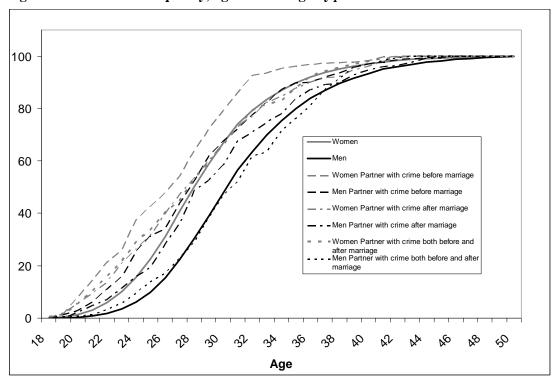


Figure 1. Cumulative frequency, age at marriage by partner's offences.

Figure 1 shows cumulative frequency for marriage by age. Overall, persons marrying a partner with one or more offences in the observational period marry at a younger age. The only clear exception to this pattern is men who marry women who have committed an offence both before and after marriage. They are a very small group, and the timing of marriage resembles the total population of married men. Women married younger than men.

¹ Differences in observational length of time that result from limitations set for the analysis are controlled for by the period dummy variable. We have also checked this assumption by trimming the specifications so that all cases contribute for the full observational period, which gives similar results.

Our outcome variable is defined as a binary indicator of having committed at least one offence in a given year. The variable of interest is *time*, indicating how many years before or after the year of marriage this particular person-year represents. It is a categorical variable, with each category indicating how many years the person-year observation is before or after the year of marriage. It ranges from –5 to 5, where *time* = 0 is the year of marriage. The parameters are interpreted as the yearly likelihood (in log odds) of committing at least one offence up to five years prior to and after the year of marriage. The use of dummy variables allows for a flexible shaping of offending rates over time. Ordinary logistic regression models were estimated on the data set of person-year observations for each gender and category of partner's convictions².

Our prime interest lies not in the magnitude or significance of each one of these coefficients, but rather the pattern in offending they display when considered together. To simplify the presentation, regression parameters are plotted in Figures 2 and 3 as a function of *time before/after marriage*. In these plots, dotted lines represent the limits of 95 per cent confidence intervals around the point estimates for each year. The baseline category is the year of marriage (time = 0), so if the interval between the dotted lines includes the horizontal axis, then the parameter estimate for that time point is not significantly different from the year of marriage.

A major concern is to rule out any possibilities of changes in crime rates resulting from ageing or changes in police priorities, registration routines or other unknown factors that could change over time. We therefore used an extensive battery of dummy variables to control for age and period effects. Age at the year of marriage is entered as a dummy for each one-year group for ages 18 to 30 and additional dummies for 5-year intervals for ages 31–50. The period effects are captured by one dummy for each period-year at the time of marriage between 1995 and 2001.

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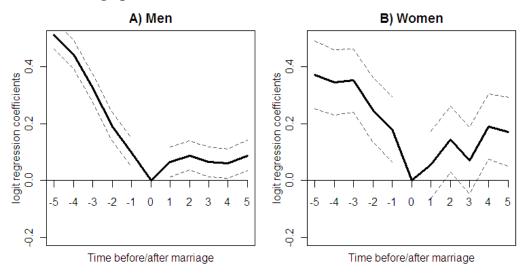
When a data set includes repeated observations for each individual, as is the case with panel designs such as this, several methodological issues arise. First, failing to take account of clustering might underestimate standard errors. This applies to some parameters in our models (those for age and timing), but not to the parameters of interest capturing the trends in offending. The reason for this is that there are no repeated observations within the set of individual observations for the time trend parameters *time*. Thus, the standard errors are appropriately estimated. Second, the results might be seriously biased if the population-averaged effect is not the same as the individual-specific effect. This might occur if X is unevenly distributed in the population and correlated with an unobserved variable, Z, which also determines Y. As our variable of interest is time prior to/after the event, no bias will arise for our time trend parameters. Thus, the choice of model will in our case affect neither the estimates for the parameters of interest nor their associated standard errors. Thus, whether to use ordinary logit models or random effects logit models is of no importance in our case. To assure that the results are not affected by our modelling choice, we have nevertheless estimated both models presented in Figure 2 with also a random intercept term at the person level. The differences in results were not important in any substantive way, and we report the ordinary logit coefficients.

We employ three different and mutually exclusive specifications for partner's criminal history. One is where the partner has offended in the period before and after marriage. The two other specifications consider if the partner has one or more registered offences either before or after marriage. The partners that have committed an offence during the marriage year are included in the "offending after marriage" group.

8. Results

The results of our two regression models are presented as relative offending rates around the time of marriage³. Figure 2 shows the results for panel A for men and panel B for women.

Figure 2. Propensity for offending leading up to and after marriage by gender. Logit parameters.

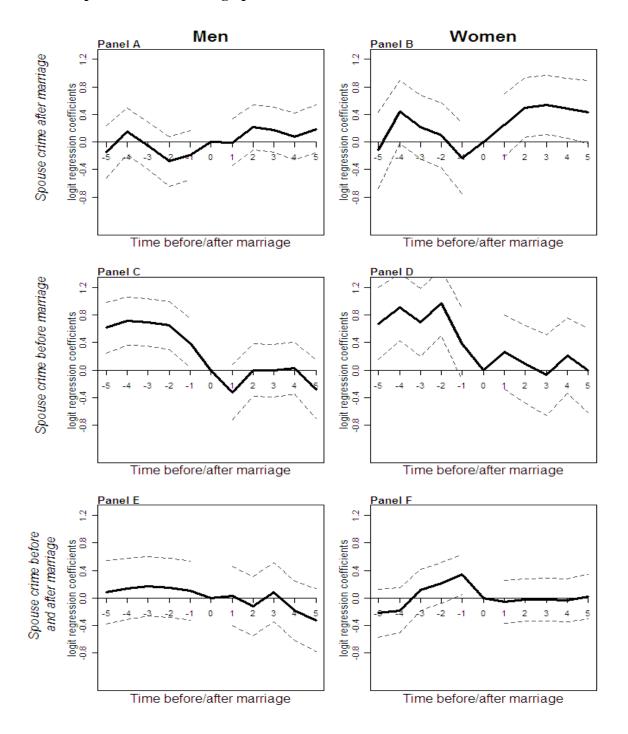


For men, there is a gradual decline in crime preceding marriage followed by a slight increase in the years after marriage. Although there is an increase in the years after marriage, the probability of offending remains at a lower level than before marriage (Lyngstad and Skardhamar, 2011). For women, there is a decrease in offending towards the year of marriage, and some increase in the subsequent years compared with offending in the marriage year. However, the confidence intervals for women are much larger, with mostly overlapping intervals in the periods before and after marriage. Thus, the pattern is less clear for women, although there is a significant decline in offending in the years before marriage.

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³ For each group the mean proportions of charged individuals in t=0 are presented in Table 1. In referring to this table, readers interested in likelihoods and absolute change in offending would see that the magnitude of change is most profound for men. It is also noteworthy that absolute changes in offending are largest for people marrying partners charged in the period before marriage.

Figure 3. Propensity for offending leading up to and after marriage by gender and timing of partner's offences. Logit parameters.



We have argued that a partner's characteristics might be of major importance and that there might be a heterogeneous influence on criminal trajectories conditional on the partner's criminal history. We have estimated models separately for situations 1) where the partner committed any offence in the 5-year period *before* marriage, 2) when the partner committed any offence in the marriage year or the 5-year

period *thereafter*, and 3) when the partner committed any offence in both the 5-year period before *and* after marriage. The results are plotted in Figure 3.

The relative levels of offending for those marrying a man or woman with a recent criminal history are higher compared with the group of married cases as a whole. This implies that there is assortative mating at play, and that criminal activity is affected by the partner's criminal involvement.

When women marry partners who have committed an offence only in the period before marriage (Figure 3, Panel D), their relative level of offending is higher compared with all marriages, and is higher in the period preceding marriage than in the marriage year. The crime rate starts to drop two years prior to marriage. After marriage, the levels of offending are in the same range as for the marriage year. Women whose marriage partners have committed an offence both before and after marriage (Figure 3, Panel F) have a relatively flat rate of offending through the whole period. This leads us to conclude that women who marry a partner with an unbroken criminal history do not benefit from marriage. Women whose marriage partner has committed an offence only in the period after entering marriage (Figure 3, Panel B) display a lowered rate of offending in the short interval around the year of marriage, while there is a statistically significant higher rate of offending in the years after marriage.

For women, the confidence intervals mostly overlap with the line for the marriage year in all tables, but there is a significant increase in offending rates before marriage when the partner has a criminal record before marriage. Similarly, they increase after marriage if the partner has a criminal record after marriage. The difference in offending between groups indicates that *variations* in recent criminal history of the spouse influence offending substantially.

For men whose spouse has a criminal history in the years before marriage (Figure 3, Panel C), the offending rates drop significantly from t=2. After marriage, there are no statistically significant changes in offending compared with the marriage year. For men marrying a partner who commits an offence in the year of marriage or the subsequent period (Figure 3, Panel A), the levels of offending rise through the period, but none of the estimates are statistically significant different to the estimate for the marriage year. For men who marry women who have committed an offence in both periods (Figure 3, Panel E), the slope is relatively flat, indicating that these marriages do not activate the crime-inhibiting mechanisms. Men's offending is thus also affected by variations in the partners' criminal history.

9. Discussion

In this article, we study criminal trajectories in conjunction with marriage for both men and women, and how any changes in offending are contingent on the crime-related behaviour of the partner. The study examined all Norwegian residents who were married for the first time between 1995 and 2002. To capture the time-varying nature of a partner's criminal history and how it may affect desistance, we use three mutually exclusive criteria: the partner's criminal involvement in the period before marriage, where a partner has registered an offence both before and after marriage, and the partner's offending in the marriage year and the five years thereafter. The crime patterns of groups are contrasted to assess the role of a partner with a recent criminal history in desistance from crime.

The results indicate that women and men show a similar crime trajectory in conjunction with marriage, which dips around the time of marriage and rebounds after marriage. However, men have a steeper decline before marriage and a smaller rebound after entering a marital union. The relative levels of offending further indicates that men's offending are affected the most. There is a rise in the probability of conviction in the years after marriage. Thus the mechanisms are not (exclusively) linked to being in the state of marriage (Skardhamar and Lyngstad, 2011) as most of the change in offending happens before entering a marital union and no additional benefits are present during marriage. When conditional on a partner's criminal history, the results are mixed. Overall, persons whose marital partner has a recent criminal history have a higher probability of offending themselves, indicating both an influence of selection and an independent influence of the partner's involvement in crime. These persons have a higher chance of committing crimes in the same period as the spouse. Statistically significant reductions in crime are shown for both men and women marrying a partner who registered offences in the period before marriage. When the partner has registered offences in both the period before and after marriage, the levels of offending are high and stable throughout the observation period, indicating that marriage with a partner defined as less law-abiding does not activate any of the crime-inhibiting mechanisms to any significant degree. If the partner is registered as an offender after marriage, women have a statistically significant increase in offending after marriage. A similar but non-significant tendency is present for men.

The stronger association between marriage and desistance from crime for men may stem from the suggestion that women have control agents other than men. Whereas married men typically list their spouses as a primary confidant and control agent, women list broader networks in relation to health behaviours (Umberson, 1992; Umberson et al., 1996). This tendency is also reflected in studies of crime, where for example "straight best friend" and connection to parents are more important

predictors of crime in women than in men (Alarid, Burton, and Cullen, 2000; Steffensmeier and Allan, 1996). This implies that social control of men is more "age graded", but remains constant over time across ages and social roles for women because they have stronger connections to and persistent involvement in school, family and conventional peers. In this way, men have a greater potential for falling outside ordinary social control. Women's behaviour is more strictly monitored, and sanctioned more severely (Steffensmeier and Allan, 1996: 477). This can have implications for marriage patterns, as women who are considered criminal may not easily attract partners without a criminal history to the same degree as similarly situated men (Giordano, Cernkovich, and Rudolph, 2002; Kreager, Matsueda, and Erosheva, 2010; Leverentz, 2006; Zoutewelle-Terovan, 2010).

For men, it seems that entering a marriage is related to reduced offending, but that the change in offending comes prior to entering marriage. This implies that a change in offending may to some extent explain why offenders marry when they do. Marrying at a favourable time may also explain the "dip" that is exhibited when entering marriage. This dynamic selection (Bjerk, 2009) is captured by our empirical analysis. The findings are consistent with Giordano's (2002) theory of cognitive transformation that holds openness for change must be present before drawing benefits from the hooks/turning points themselves. Marriage does not seem to reduce offending in the long run after the initial reduction in crime when entering cohabitation and beginning courtship. Less support is therefore given to the crime-inhibiting effects of marriage per se, as crime rises after entering a marital union. It is thus uncertain if the mechanisms presented as crime inhibiting within marriage actually provide the control, support and growth that have been suggested, beyond the influence of cohabitation and courtship. It might even be that desistance explains marriage rather than other way around. This leaves considerable doubt over the causal effects of marriage, and it seems as if the deterrent effect of marriage is anticipatory in nature (Rhule-Louie and McMahon, 2007). This leads us to question some of the central tenets of age-graded social control theory and the causal marriage effect, as it seems that marriage per se does not reduce offending beyond the effect of initial courtship and cohabitation.

After marriage, there is a greater rebound in offending for women than for men. Most of the estimates have overlapping confidence intervals that make any claims for the crime-inhibiting effects of marriage for women difficult. The rising curve after marriage also leaves doubts as to whether marriage reduces crime in the long run for women.

Since marriage is associated with higher levels of satisfaction and higher costs of exiting the union compared with cohabitation (Nock, 1995, 1998; Wiik, Bernhardt, and Noack, 2009), marriage may not

deter crime as the risk of dissolution declines when entering the marriage. Dissolution is here viewed as the highest social cost and final strategy for deterring men/women from crime (Rhule-Louie and McMahon, 2007: 91). Little research has been directed at these outcomes, although Loopo and Western (2005) and Svarer (2011) find that incarceration and conviction increase the risk of marriage and partnership dissolution for men. At the same time, it is found that chronic offenders have lower marriage quality (Laub, Nagin, and Sampson, 1998), which may influence these results.

The results conditional on the recent criminal history of the partner reveal that having a partner with a criminal history to a large degree influences the individual's offending patterns. We propose that women and men with a history of offending themselves are less able and willing to exert social control, and may represent continued involvement in criminal peer networks and activities. It is shown that both women and men have a higher probability of being convicted when the partner has a recent registered offence, but the influence is slightly stronger for women when the man offends in the period after marriage. The criminal history of the partner should therefore be taken into consideration in future research, preferably including time-varying measures of the partner's crime in statistical models of offending.

10. Limitations

We acknowledge that registered crime is a subset of all committed crimes, and that the implicit definitions of government registers need careful consideration (Christie, 1997). However, it is not obvious that data from self-reports give more accurate measures (Carlsson and Beckley, 2011; MacDonald, 2002). People who engage in crime usually end up with a registered offence of some sort, although not necessarily for all crimes committed, or for the most serious crime. This is one main reason to use a broad, dichotomized measure of crime, rather than investigating specific types of crime. Moreover, we do not have any direct measures of social control or the other hypothesized mechanisms. This makes it difficult to pinpoint the different mechanisms, how they work and when. In this analysis, we only studied those who actually married and in effect captured all mechanisms surrounding marriage. However, variation in criminal propensities between groups points to important differences in how we believe social control and other mechanisms are activated by the partner.

It might be argued that the Norwegian context of marriage is quite different to other countries and this may influence results. However, most industrialized countries have followed the Scandinavian pattern with increased cohabitation (Fry and Cohn, 2011), postponed marriages, high marriage dissolution rates and increasing child-bearing out of wedlock (Kiernan, 2004). It has been argued by others that

rather than being an "outlier", the Scandinavian countries should be seen as "front-runners" in changing family patterns in recent decades, with other Western countries becoming more similar over time (Sobotka, 2008). This would make the Norwegian case relevant to other countries as well. In addition, the possibility of using population-wide samples with very high quality measures is rare in criminological studies. This makes it possible to study low-rate offender groups such as women. Moreover, register data make it possible to run models for examining characteristics of the partner. This represents additional contributions to the research field of desistance.

11. Conclusion

We conclude that marriage is often *preceded* by lower criminal activity, for both men and women. The rebound after marriage is greater for women, leaving serious doubts over whether marriage represents a lasting influence on criminal activity in women.

As suggested in other studies (Chen and Kandel, 1998: 119; Rhule-Louie and McMahon, 2007: 76), we find that the crime-deterrent influence of marriage is "anticipatory". This shows that the crime-inhibiting mechanisms of being in a union are not exclusively linked to marriage, but that they are manifest at different stages leading up to marriage. We also acknowledge that the relationship between marriage and desistance might be reciprocal, where those who limit harmful behaviours are more likely to marry.

Differences in offending patterns are conditional on the recent criminal history of the spouse. The analyses show assortative mating patterns, where those who marry persons with a criminal history are at greater risk of committing crimes themselves. Analysis of the time-varying definitions of spouses' offending points to the importance of how *changing* characteristics of cases influence criminal involvement over time. Furthermore, indications that partners' crime patterns follow one another support the idea that spouse characteristics are key determinants of desistance from crime. We have thus addressed the need to take the partner's criminal history into consideration, while also showing the need to treat it as a time-varying trait. Although there is compelling evidence of similarities in criminal involvement between partners, it is not clear how much of the association between partners' crime rates is explained by assortative partner selection and how much results from processes of imitation, convergence, socialization or other socio-structural factors (Rhule-Louie and McMahon, 2007: 56).

References

Alarid, Leanne Fiftal, Velmer S. Burton, and Francis T. Cullen. 2000. Gender and crime among felony offenders: assessing the generality of social control and differential association theories. *Journal of Research in Crime and Delinquency* 37 (2):171–199.

Andersen, Lars Højsgaard, Signe Hald Andersen, and Peer Skov. 2011. Partners in crime? On the causal effect of marrying a delinquent vs. a law-abiding spouse. *Unpublished paper* presented at seminar at Statistics Norway 1st February 2011.

Benda, Brent B. 2005. Gender differences in life-course theory of recidivism: A survival analysis. *International Journal of Offender Therapy and Comparative Criminology* 49 (3):325–342.

Bersani, Bianca., John Laub, and Paul Nieuwbeerta. 2009. Marriage and desistance from crime in the Netherlands: Do gender and socio-historical context matter? *Journal of Quantitative Criminology* 25 (1):3–24.

Bjerk, David. 2009. How much can we trust causal interpretations of fixed-effects estimators in the context of criminality? *Journal of Quantitative Criminology* 25 (4):391–417.

Blokland, Arjan A. J., and Paul Nieuwbeerta. 2005. The effects of life circumstances on longitudinal trajectories of offending. *Criminology* 43 (4):1203–1240.

Burt, S. Alexandra., M. Brent Donnellan, Mikhila N. Humbad, Brian M. Hicks, Matt McGue, and William G. Iacono. 2010. Does marriage inhibit antisocial behavior? An examination of selection vs causation via a longitudinal twin design. *Archives of General Psychiatry* 67 (12):1309–1315.

Carlsson, Christoffer, and Amber L. Beckley. 2011. Comparing and contrasting register data and interview data: Examples from the Stockholm study. In *The 25th Conference of the Nordic Sociological Association 2011*. University of Oslo.

Chen, Kevin, and Denise B. Kandel. 1998. Predictors of cessation of marijuana use: An event history analysis. *Drug and Alcohol Dependence* 50 (2):109–121.

Christie, Nils. 1997. Four blocks against insight: Notes on the oversocialization of criminologists. *Theoretical Criminology* 1 (1):13–23.

Duncan, Greg J., Bessie Wilkerson and Paula England. 2006. Cleaning up their act: The effects of marriage and cohabitation on licit and illicit drug use. *Demography* 43 (4):691–710.

Edin, Kathryn, and Maria Kefalas. 2005. *Promises I can Keep: Why Poor Women Put Motherhood before Marriage*. Berkeley, Calif.: University of California Press.

Farrington, David P., Jeremy W. Coid, and Donald J. West. 2009. The development of offending from age 8 to age 50: Recent results from the Cambridge study in delinquent development. *Monatsschrift für Kriminologie und Strafrechtsreform* 92 (2–3):160–173.

Farrington, David P., and Donald James West. 1995. Effects of marriage, separation, and children in offending by adult males. *Current Perspectives on Aging and the Life Cycle* 4:249–281.

Fowers, Blaine J. 1991. His and her marriage: A multivariate study of gender and marital satisfaction. *Sex Roles* 24 (3–4):209–221.

Fry, Richard, and D'Vera Cohn. 2011. Living Together: The Economics of Cohabitation Washington DC: Pew Social & Demographic Trends.

Giordano, Peggy C., Stephen A. Cernkovich, and Donna D. Holland. 2003. Changes in Friendship Relations over the Life Course: Implications for Desistance from Crime. *Criminology* 41 (2):293–328.

Giordano, Peggy C., Stephen A. Cernkovich, and Jennifer Rudolph. 2002. Gender, Crime, and Desistance: Toward a theory of Cognitive Transformation. *American Journal of Sociology* 107 (4):990–1064.

Graham, John, and Benjamin Bowling. 1995. Young People and Crime. Home Office Research and Statistics Department. Croydon, Surrey Great Britain

Haynie, Dana L., Peggy C. Giordano, Wendy D. Manning, and Monica A. Longmore. 2005. Adolescent romantic relationships and delinquency involvement. *Criminology* 43 (1):177–210.

Helgeland, Ingeborg Marie. 2009. *Ungdom i Alvorlig Trøbbel: Veier til Forandring*. [Youth in Serious Trouble: Pathways to Change.] Oslo: Universitetsforlaget. Hirschi, Travis. 1969. *Causes of Delinquency*. Berkeley, California: University of California Press.

Hirschi, Travis, and Michael R. Gottfredson. 1983. Age and the Explanation of Crime. *American Journal of Sociology* 89 (3):552–584.

Kiernan, Kathleen. 2004. Unmarried Cohabitation and Parenthood in Britain and Europe. *Law & Policy* 26 (1):33–55.

King, Ryan D., Michael Massoglia, and Ross MacMillan. 2007. The Context of Marriage and Crime: Gender, the Propensity to Marry, and Offending in Early Adulthood. *Criminology* 45 (1):33–65.

Koball, Heather L., Emily Moiduddin, Jamila Henderson, Brian Goesling, and Melanie Besculides. 2010. What Do We Know About the Link Between Marriage and Health? *Journal of Family Issues* 31 (8):1019–1040.

Kreager, Derek A., Ross L. Matsueda, and Elena A. Erosheva. 2010. Motherhood and Criminal Desistance in Disadvantaged Neighborhoods. *Criminology* 48 (1):221–258.

Laub, John H., Daniel S. Nagin, and Robert J. Sampson. 1998. Trajectories of Change in Criminal Offending: Good Marriages and the Desistance Process. *American Sociological Review* 63 (2):225–238.

Laub, John H., and Robert J. Sampson. 2001. Understanding Desistance from Crime. In *Crime and Justice: A Review of Research, Vol 28*.

——. 2003. *Shared Beginnings, Divergent Lives: Delinquent Boys to Age 70*. Cambridge, Mass.: Harvard University Press.

Leverentz, Andrea M. 2006. The Love of a Good Man? Romantic Relationships as a Source of Support or Hindrance for Female Ex-offenders. *Journal of Research in Crime and Delinquency* 43 (4):459–488.

Lonardo, Robert A., Peggy C. Giordano, Monica A. Longmore, and Wendy D. Manning. 2009. Parents, Friends, and Romantic Partners: Enmeshment in Deviant Networks and Adolescent Delinquency Involvement. *Journal of Youth and Adolescence* 38 (3):367–383.

Lopoo, Leonard M., and Bruce Western. 2005. Incarceration and the Formation and Stability of Marital Unions. *Journal of Marriage and the Family* 67 (3):721–734.

Lyngstad, Torkild Hovde, and Torbjørn Skardhamar. 2011. *Unpublished manuscript* Understanding the Marriage Effect: Changes in Criminal Offending Around the Time of Marriage.

MacDonald, Ziggy. 2002. Official crime statistics: Their use and interpretation. *Economic Journal* 112 (477):85–106.

Maume, David J. 2003. The Package Deal: Marriage, Work and Fatherhood in Men's Lives. *Gender & Society* 17 (3):489–490.

Maume, Michael O., Graham C. Ousey, and Kevin Beaver. 2005. Cutting the Grass: A reexamination of the link between Marital Attachment, Delinquent Peers and Desistance from Marijuana Use. *Journal of Quantitative Criminology* 21 (1):27–53.

Merton, Robert K. 1968. Social Theory and Social Structure. New York: The Free Press.

Monsbakken, Christian W., Torbjørn Skardhamar, Torkild H. Lyngstad. (2012). Crime and the transition to parenthood: The role of sex and relationship status. <u>Discussion Papers</u>. No. 673 Oslo, Statistics Norway: 28.

Nock, Steven L. 1995. A Comparison of Marriages and Cohabitation Relationships. *Journal of Family Issues* 16 (1):53–76.

Osborn, S. G., and Donald West. 1979. Marriage and delinquency: A postscript. *British Journal of Criminology* 18:254–56.

——. 1998.	Marriage i	n Men's	Lives. New	York:	Oxford	University	Press.

Rhule-Louie, Dana M., and Robert J. McMahon. 2007. Problem Behavior and Romantic Relationships: Assortative Mating, Behavior Contagion, and Desistance. *Clinical Child and Family Psychology Review* 10 (1):53–100.

Røed, Knut, and Oddbjørn Raaum. 2003. Administrative Registers: Unexplored Reservoirs of Scientific Knowledge? *The Economic Journal* 113 (488):258–281.

Sampson, Robert J., and John H. Laub. 1993. *Crime in the Making: Pathways and Turning Points through life*. London: Harvard University Press.

———. 2003. Life-course Desisters? Trajectories of Crime among Delinquent boys followed to Age 70. *Criminology* 41 (3):555–592.

———. 2005. A life-course View of the Development of Crime. *Annals of the American Academy of Political and Social Science* 602:12–45.

Sampson, Robert J., John H. Laub, and Christopher Wimer. 2006. Does Marriage Reduce Crime? A Counterfactual Approach to Within-individual Causal Effects. *Criminology* 44 (3):465–508.

Seffrin, Patric M., Peggy C. Giordano, Wendy D. Manning, and Monica A. Longmore. 2009. The Influence of Dating Relationships on Friendship Networks, Identity Development, and Delinquency. *Justice Quarterly* 26 (2):238–267.

Simons, Ronald L., Eric Stewart, Leslie C. Gordon, Rand D. Conger, and Glen H. Elder. 2002. A Test of Life-course Explanations for Stability and Change in Antisocial Behavior from Adolescence to Young Adulthood. *Criminology* 40 (2):401–434.

Skardhamar, Torbjørn, and Torkild Hovde Lyngstad. 2011. Nordic Register Data and their Untapped Potential for Criminological Knowledge. *Crime and Justice: A Review of Research*, vol 40:613-45

Sobotka, Thomas. 2008. The Diverse Faces of the Second Demographic Transition in Europe. *Demographic Research* 19:171–224.

Steffensmeier, Darrell J., and Emilie Andersen Allan. 1996. Gender and crime: Toward a Gendered Theory of Female Offending. *Annual Review of Sociology* 22:459–487.

Svarer, Michael. 2011. Crime and Partnerships. Review of Economics of the Household 9 (3):307–325.

Theobald, Delphine, and David P. Farrington. 2009. Effects of Getting Married on Offending: Results from a Prospective Longitudinal Survey of Males. *European Journal of Criminology* 6 (6):496–516.

Uggen, Christopher, and Candace Kruttschnitt. 1998. Crime in the Breaking: Gender Differences in Desistance. *Law & Society Review* 32 (2):339–366.

Umberson, Debra. 1992. Gender, Marital Status and the Social Control of Health Behavior. *Social Science & Medicine* 34 (8):907–917.

Umberson, Debra, Meichu D. Chen, James S. House, Kristine Hopkins, and Ellen Slaten. 1996. The Effect of Social Relationships on Psychological Well-being: Are Men and Women Really So Different? *American Sociological Review* 61 (5):837–857.

Warr, Mark. 1998. Life-course Transitions and Desistance from Crime. Criminology 36 (2):183–216.

Wiik, Kenneth. A., Eva Bernhardt, and Turid Noack. 2009. A Study of Commitment and Relationship Quality in Sweden and Norway. *Journal of Marriage and the Family* 71 (3):465–477.

Zoutewelle-Terovan, Mioara, Victor van der Geest, Aart Liefbroer, and Catrien Bijleveld. *In press* Criminality and family formation: Effects of marriage and parenthood on criminal behaviour for men and women.



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