

**The effects of prisoner attachment to family on re-entry outcomes: A
longitudinal assessment**

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Abstract

Strong family support networks are regularly identified in the search for effective inhibitors of criminal behaviour, but have rarely been empirically examined in the context of the prison population. Furthermore, we know little about the factors which may weaken, or indeed enhance these bonds during a prison sentence. Using data from a longitudinal survey of male prisoners in England and Wales, we address this deficit. We show that visits from parents are influential in improving prisoners' relations with their family. Furthermore, those prisoners that experience improved family relations are significantly less likely to reoffend, whilst also being more likely to find work and desist from class A drug use.

Keywords:

Family attachment; prison-visits; longitudinal prisoner survey; reoffending

Introduction

Research has highlighted the often strained relationships which exist between prisoners and their family before, during and after their sentence (Hairston, 1991; Niven and Stewart, 2005; Travis, 2005; Visher and Travis, 2003). At the same time, for some prisoners, familial attachments during a prison sentence can be crucial for managing the pressures of prison life, providing hope for when they are released, and granting essential support during the resettlement process (Naser and La Vigne, 2006; Rocque et al., 2013). Desistance research also highlights the critical role of familial bonds for reducing reoffending (Laub, Nagin, and Sampson, 1998; Sampson and Laub 1993). Therefore identifying opportunities for strengthening family relations in prison may be an important way to limit recidivism and aid prisoner resettlement.

For many prisoners, family visits are one of the principal means for maintaining contact with family. Yet despite an established empirical link between visitation and reduced reoffending (e.g., Bales and Mears, 2008; Cochran, 2014; Duwe and Clarke, 2013; Glaser, 1964; La Vigne et al., 2005; Mears et al., 2012; Ohlin, 1951), there has been comparatively little research examining what effect visits have on family relations. One possibility is that visitation improves the *strength* of familial attachment, which in turn reduces the propensity of prisoners to reoffend (Rocque et al., 2013). In other words, improvements to family relations may be the mechanism through which prison visits reduce reoffending. However, prior research has been restricted in its ability to show what happens to prisoner-family ties during the course of a sentence, and the extent to which these ties are shaped by prison visits.

We assess whether prison visits improve family relations amongst a sample of male prisoners in England and Wales, as well as how improving family relations impact on post-release resettlement experience. Drawing on data from a longitudinal

survey of 2,617 male prisoners interviewed between 2005 and 2010, we use a latent change structural equation model to capture changes in the degree of prisoner attachment with family between entry to prison and release. Linking these changes in family attachment to the experiences of prisoners in the first two years after release, we identify the circumstances in which attachments to family play a role in successful resettlement outcomes (covering reoffending, drug use, and employment opportunities). By also incorporating information about the visits that prisoners receive during their sentence – distinguishing between visits from parents, partners, and children, as well as the frequency of visits – we are able to directly assess whether visitation improves family relations during a prison sentence.

Prison visits, family attachment and resettlement outcomes

A prison sentence can be extremely challenging for prisoners and their families, often placing significant strain on personal relationships. This may be because prisoners possess fragile familial ties going into prison (Wildeman and Western, 2010); prisoners choose to withdraw from family members, or family members withdraw from them (Lopoo and Western, 2005); limits on visitation imposed by the prison establishment (Lynch and Sabol, 2001; Niven and Stewart, 2005); as well as prison life placing considerable strains on prisoners and impacting on their ability to continue to maintain or (re)establish relationships with family (Sykes, 1958). And although families may well assist prisoners through their sentence and during the resettlement process, relationships between prisoners and their families are thought to be especially fragile on release (Hairston, 1988; Wildeman and Western, 2010).

Incarceration damaging familial attachments is a common claim made in research. The ‘pains of imprisonment’ thesis (Sykes, 1958; see also Comfort, 2008;

Listwan et al. 2013) argues that the physical separation and emotional trauma caused by incarceration places significant strains on familial relationships. This may culminate in heightened risks of marital breakdown (Lopoo and Western, 2005; Lynch and Sabol, 2001), or having contact with children significantly reduced or cut off altogether (Hairston, 1988; Swanson et al., 2013). These factors, in turn, can lead to deterioration of the emotional security of prisoners during their sentence, as well as limiting the extent of social ties on release. A failure to maintain attachments with family, or otherwise to have few familial contacts before entering prison may manifest in further negative behaviors inside prison, such as violation of prison rules (Cochran, 2012; Siennick, Mears and Bales, 2013).

Less is known about the ways that prisoners' familial attachments might be maintained or improved over the course of a prison sentence. Yet research has shown that in some situations prison visits may provide opportunities for repairing relationships (La Vigne et al., 2005), increasing the chances of 'going straight' upon release (Maruna, 2001; Maruna and Toch, 2005; Petersilia, 2003; Travis, 2005).

Prison visits have regularly been linked to reduced reoffending (Bales and Mears, 2008; Cochran, 2014; Duwe and Clarke, 2013; Glaser, 1964; La Vigne et al., 2005; Mears et al., 2012; Ohlin, 1951). However variations are evident in the degree of influence that different visitors may have on reducing reoffending risks. Bales and Mears (2008) found visitation from both family and friends was associated with reduced reoffending, with spousal visitation producing the most pronounced positive effect. In a follow up study, Mears et al (2012) found that the frequency of visits also moderately lowered the risk of reoffending. From a starting reoffending rate of 45%, the risks lowered to 43% after one visit, followed by a more steady reduction until 8 visits after which the reoffending rate was 37%. After controlling for the number of

visits, Duwe and Clarke (2013) find that visits from fathers, siblings, in-laws and clergy were most important in reducing risks of reconviction. Niven and Stewart (2005) in their Home Office review of prisoner resettlement outcomes also identify that prisoners receiving at least one visit during their sentence were more likely to gain accommodation and employment, and as a result had lower risks of reoffending.

The timing of visits has also been shown to play a part in reducing reoffending, although there is less consistent evidence about the specific nature of this effect. For example, Bales and Mears (2008) showed that visits occurring later in a sentence were more effective in reducing reoffending risks. In contrast Cochran (2014) finds that visits taking place early in a sentence were associated with lower reoffending risks, with these early visits aiding prisoner adjustment to the incarceration process. Other research has focused on the patterning of when visits take place, with Cochran (2012) showing that consistent visitation exerted the largest effect on reducing prisoner misconduct (no post-release measures were available to assess reoffending). Prisoners who were visited early in their sentence but not thereafter, as well as prisoners not visited at all, were more likely to engage in prison misconduct. Relatedly, Siennick, Mears and Bales (2013) demonstrated that in-prison rule infractions were lowest in the time shortly before a visit was due to take place, with infractions increasing after visits – a finding which suggests that visits may only have a temporary impact on prisoner behavior during a sentence. Still less is known about the *quality* of visits, although Derkzen, Gobeil, and Gileno (2009) demonstrate that extended private family visits may have a more notable impact on resettlement outcomes when compared to shorter visits.

The association between being visited in prison and successful resettlement outcomes leads to further questions about *how* visits improve resettlement. The

‘visitation effect’ assumes that visits improve prisoner relations with family, which in turn results in positive outcomes such as reduced reoffending risks. Laub, Nagin and Sampson (1998) argue that the social bonds that exist between offenders and their families can be likened to ‘an investment process in that social bonds do not arise intact and full-grown but develop over time like a pension plan funded by regular installments’ (225). In contrast, offenders who have fewer connective bonds in their lives exhibit delayed desistance from crime (e.g. Sampson and Laub, 1993; Warr, 1998). Visits may contribute to maintaining or improving the quality of family attachments, whilst those prisoners with fragile family attachments may see these relationships further ‘knifed off’ as a result of the stresses induced by incarceration (Maruna and Roy, 2007).

Prison visits can enhance prisoners’ commitment to family roles (Visher and Travis, 2003). Some prisoners may already have been in established familial roles, and through visits these pre-prison roles may be continued or strengthened. The potential stress to familial relationships during the resettlement transition can also be reduced through visitation, with opportunities to discuss and emotionally prepare for a return to family living (Naser and La Vigne, 2006; Nelson, Dees and Allen, 1999). La Vigne et al (2005) show that relationship quality prior to prison influenced the number of visits from partners, as well as the quality of relationships after release. They also found that contact with children during incarceration was not a predictor of post-release relationship quality, although it did lead to greater attachment to children. Similarly Maldonado (2006) and Visher (2011) found that men who maintained attachments with their children during their sentence had better resettlement outcomes. Studies have also found that married men and prisoners employed prior to entering prison are more likely to have more successful resettlement transitions (Berg

and Huebner, 2011; Hairston, 1988; Jiang and Winfree, 2006). Using a sample of first-time inmates, Rocque et al (2013) demonstrate how improved social attachments (with family and friends) between entry to prison and release result in lower levels of reoffending, although they do not examine the role played by prison visitation in bringing about these changes to familial ties. The sample was also restricted to prisoners serving comparatively short sentences (6 months), leaving open the possibility that a longer time in prison may be associated with more substantial changes in the quality of familial relations. Few other studies have been able to employ robust measures to assess *change* (both positive and negative) and *maintenance* of familial attachments during the course of a prison sentence, or link these to prison visit.

A small number of studies have focused on differences in the amount of visits received by different types of prisoner. These have shown that ethnic minority inmates generally receive fewer visits than white prisoners (Cochran, Mears, and Bales, 2014; Naser and La Vigne, 2006; Tewksbury and Connor, 2012). Prison visits are not resource neutral for family members, with costs including transportation, childcare, lodgings, and time off work. The less frequent visiting of minority prisoners may, in part, reflect wider social and economic disadvantage inhibiting regular visits. Some studies find that older prisoners receive fewer visits (Cochran, Mears, and Bales, 2014; Tewksbury and Connor, 2012), with younger prisoners believed to be more likely to have closer attachments with parents, partners and other family members. Older prisoners' familial attachments are more likely to have been weakened or terminated altogether due to a combination of natural ageing (e.g. death of parents, breakdown of romantic relationships) and incarceration. This is especially true in cases of repeat, or lengthy sentences (Crawley and Sparks, 2006). Christian et

al (2006) also find that first-time prisoners are more likely to receive support and care from family.

Some caution should be noted in linking visitation directly with improving strength and quality of family ties (See Codd; 2013; Mills and Codd, 2007). For example, Rocque, Bierie and MacKenzie (2011) fail to find any evidence to support the idea that prisoner–family attachments change during incarceration. In some circumstances, visits may also make relations worse, with negative interactions between a prisoner and family increasing the strain on a prisoner, who is unable to control or remedy such tensions through the limited communication opportunities afforded by the prison (Cochran and Mears, 2014:257). Furthermore if prisoners do not receive visits, this could be because of difficulties for family members in making a visit to the prison. In some instances it may even reflect a choice on behalf of the prisoner to forbid family members from visiting them. In the words of Codd (2013: 153) ‘if a prisoner decides to ‘do hard time’ for the sake of his or her family as he or she does not want them to experience the stress of visiting or to see him or her incarcerated, this may be a consequence of a profound commitment to the family’. The resettlement process – characterized by factors such as negative or antisocial attachments with community and weakened personal ties – may also dent the capacities of family attachments to facilitate resettlement (see Visser and Travis, 2003).

The Current Study

We examine the role that prison visits play in shaping the strength of male prisoners’ attachment to family members during and after incarceration, as well as the resulting effects on one- and two-year reconviction rates, employment success, and class A

drug useⁱ. Incorporating information on both the types of visits received (distinguishing between visits from parents, partners, and siblings) and the frequency of visits, we estimate a latent change structural equation model (McArdle and Hamagami, 2001; Raykov, 1993) to data from a longitudinal survey of prisoners in England and Wales. This combines a factor analysis model measuring ‘attachment’ to family on entry to prison and after release, with path analysis to explore the correlates of changing family relations. Crucially, the degree of *change* in levels of attachment to family is treated as an unobserved latent variable, allowing us to directly examine how changing relations are linked to post-release outcomes. This correctly adjusts for measurement error and ensures that we are able to identify the effects of real changes in levels of attachment. We restrict our focus to male offenders. In doing so, we recognise the potential differences in the meaning of family for female prisoners, who are more likely to be the primary care-givers and maintain different relations with family during their sentences (Casey-Acevedo and Bakken, 2001; Tuerk and Loper, 2006).

Data

Data are from the Surveying Prisoner Crime Reduction (SPCR) survey. This was a nationally representative longitudinal survey of 3,849 offenders sentenced to between one months and four years in prison in England and Wales. Initial interviews were fielded between 2005 and 2006 on reception to prison (wave 1), with offenders interviewed again in the two-weeks prior to release from prison (wave 2). A third interview (wave 3) was then conducted in the community.ⁱⁱ Wave 3 interviews were planned to take place approximately 2 months after release, although this was not always possible.ⁱⁱⁱ The initial sample was generated using a multi-stage clustered

design with samples of newly arrived prisoners (within the first 5 weeks of reception to prison) selected from each prison that had a monthly intake of at least 10 prisoners. This process was repeated until a sufficiently large sample of prisoners had been collected. Initial analyses conducted by the data collection agency (Ipsos-MORI) indicate that the final achieved sample was broadly representative of the prison population, with a response rate of 60% (AAPOR, RR1). Full details on the sample design are included in Cleary et al (2012a; 2012b; 2014).

The survey is comprised of a core sample of 1,435 prisoners that is representative of the prison reception population sentenced to between one month and four years in prison, with an additional sample of 2,414 prisoners serving sentences between 18 months and 4 years. This ensures there is a sufficient number of prisoners serving longer sentences, who would be underrepresented in a random sample because the majority of receptions to prison are serving less than one year. Our analyses control for the different sample types, and examination of each sample separately indicates no substantive differences between them. A total of 737 prisoners – generally serving sentences less than 6 months – were only interviewed once in prison (due to insufficient time necessary to arrange a follow up interview). This group is omitted from the current analysis because no information is available about visits from family during their sentence. Restricting our focus to male offenders, this results in a final analytic sample of 2,617 offenders serving sentences of between 6 months and 4 years in prison.

Family Attachment

Four repeated survey items are used to measure the degree of family attachment on entry to prison (wave 1) and post-release (wave 3). These are all measured on a 5-point likert scale from strongly disagree (0) to strongly agree (4).

1. I feel close to my family
2. I want my family to be involved in my life
3. I consider myself a source of emotional support for my family
4. My family is a source of emotional support for me

These four items are treated as manifest indicators of the underlying unobserved latent variable ‘family attachment’, with higher scores on the latent variable referring to a closer degree of attachment (factor loadings included in appendix Table A.1). The factor loadings and intercepts for the manifest indicators at each time point are constrained to equality. This imposes a consistent metric for family attachment at each measurement occasion, allowing us to measure *changes* in levels of closeness over time, rather than changes in the relative contribution of different indicators (Sturgis et al., 2004). We also include residual correlations between the same indicators over time, reflecting their consistent measurement properties between wave 1 and wave 3.

Positive views about family are evident when considering all 4 items at both wave 1 and wave 3 (table 1). Nevertheless, exploratory analyses revealed considerable changes over time for some prisoners, with nearly half of prisoners reporting feeling less close to their family when re-interviewed (and a third feeling more close). So whilst attachment to family is generally strong, individual prisoner’s bonds with their families can change markedly over the course of their sentence.

Insert table 1 about here.

Visits from Family whilst in Prison

A convicted prisoner is allowed at least two 60 minute visits every four weeks, but there are variations across prisons in terms of how many visits each inmate receives, when the visits take place, and how many visitors can visit at one time (see Gov.uk, 2014). Although there is no statutory requirement to do so, some prisons have implemented schemes to support family members, especially children, visiting prisoners. We include binary indicators distinguishing between visits from parents, children, and partners (current and past), based on prisoner reports (wave 2).

Approximately half of prisoners reported that they had been visited by parents or partners during their sentence, whilst just over one quarter had received visits from children. We also include a measure of the frequency of visits, ranging from no visits (0) to weekly visits (6). A small number of prisoners (n=31) reported that they had lost all contact with family members prior to their most recent prison sentence. These prisoners were omitted from analysis.

Offender Characteristics

Prisoner background characteristics are included, covering: age; ethnicity; prior offending history^{iv}; class A drug use prior to sentence; sentence length, sentenced offence; and first time prisoners. We also include a number of measures characterising prior relations with family. These cover: whether offenders reported living with their family prior to their sentence; have a child under the age of one; had spent time in foster care or a children's institution before the age of 16; and had

received any abuse as a child (mental, physical or sexual). Finally, details of family risk factors are included, covering: whether offenders' parents had spent time in prison; or had alcohol problems.

Post-release Resettlement: Proven Reoffending, Employment, and Class A Drug Use

In assessing the effects of prison visitation on resettlement, prior research has overwhelmingly used measures of reoffending. However, following lifecourse criminological research, successful resettlement may involve a variety of processes including the reduction or cessation of problematic substance use, and success in finding employment. Four post-release outcomes are therefore explored: proven reoffending (one- and two-year); employment; and class A drug use. Looking beyond reoffending allows us to paint a more detailed picture of the role of family contact on resettlement, whilst also ensuring our results are not too reliant on official offending data (which will likely underestimate true levels of offending).

To measure proven reoffending, details from all SPCR offenders were matched to the Police National Computer database. Any offenders that were convicted of another offence within a 12 month and 24 month period after release from prison (conviction in court for the offence may have occurred up to six months later) were identified as reoffending. This includes those offences that resulted in other court disposals (court cautions, warnings, reprimands). Employment status and drug use since release were taken from offender reports during the follow-up interview (wave 3). Ex-prisoners were identified as employed if they reported still being in employment at the time of the follow-up interview. To measure drug use, we identify those ex-prisoners that reported using class A drugs in the 4-weeks prior to the follow-up interview.

Analytic Strategy

Figure 1 provides an overview of the latent change model. This links prison visits to changes in family attachment, and subsequently links changes in family attachment to post-release outcomes (reconviction, employment, and class A drug use). Ellipses are used to represent our unobserved latent variables, whilst rectangles represent manifest variables. All models are estimated in Mplus (Muthén and Muthén, 1998-2012).

Attachment to family at wave 1 and wave 3 are both treated as unobserved latent variables imperfectly measured by observed indicators. This adjusts for measurement error in each of the manifest indicators, meaning the latent variable is a ‘corrected’ measure of family attachment. *Change* in family attachment is also treated as an unobserved latent variable (represented by the dotted ellipse). This ensures that any observed differences over time reflect ‘true’ differences in the strength of attachment to family, rather than simply picking up random measurement error (Steyer, Eid and Schwenkmezger et al. 1997). This is made possible by fixing the (dashed) pathways between attachment to family at wave 1 and attachment to family at wave 3, and between change in family attachment and closeness to family at wave 3, to the value 1. The covariance between change in family attachment and closeness at wave 1 is freely estimated.

Pathway a from prisoner background characteristics to initial levels of family attachment identifies differences in the quality of family relations on reception to prison that exist between different types of prisoner. Controlling for observed differences in closeness that exist on entry to prison means we can more accurately quantify which types of prisoner become closer to their families during their sentence.

Pathway b connects prisoner background details to changes in family attachment. This informs us whether some types of prisoner are more, or less, likely to become closer to (or more distant from) their families during the course of their sentence and following release.

Pathway c is the effect of family visits on changing family relations. Here we distinguish between visits by parents, partners, and children, and also include details of the frequency of family visits.

Finally, pathways d, e, f and g link changing family attachment to post-release outcomes (pathway d), whilst controlling for initial levels of attachment (pathway e), prisoner background characteristics (pathway f) and prison visits (pathway g). This allows us to see whether those offenders that become closer to their family are less likely to go on to be reconvicted one and two years after release from prison, have reduced use of class A drugs, and lower unemployment risks.^v

The probit link function is used when estimating pathways d through g to reflect the categorical nature of the outcome variables. All other pathways are estimated using linear models (Muthén and Muthén, 1998-2012). A total of four models are estimated: for reconviction after one and two years, use of class A drugs, and employment status. Reported results for pathways a-c are taken from the model for reconviction after one year, although results from the remaining three models are almost identical (available from the author on request).

Insert figure 1 about here.

Missing data

Despite repeated interview attempts, SPCR experienced considerable attrition at the second and third interviews, with 62% of the eligible sample successfully re-interviewed before leaving prison and 59% re-interviewed in the community.^{vi} Such high levels of missing data leave open the possibility that models incorporating data from the follow up interviews will have biased estimates and inflated standard errors (Rubin 1987). Detailed analysis of the reasons for prisoner attrition in SPCR have previously been conducted (XXXX, 2014), demonstrating that missing data was not the result of prisoners actively opting out of the survey. At the second interview, insufficient time was allocated during the early phase of data collection to secure re-interviews, with many prisoners released before the interviewer had time to secure a second interview. At the third interview, missingness was primarily linked to unsuccessful re-contact, with no address details available for offenders. At both interviews, less than 10% of respondents actively refused to take part. This suggests that missing data may be less dependent on the characteristics of the prisoners, making the data more amenable to robust missing data adjustment under the assumption they are Missing At Random (MAR: Rubin, 1987) – the chances of data being missing is unrelated to the missing values, conditional on any included covariates.

To correct model estimates, a multiple imputation (MI) procedure was used prior to estimation of the latent change model, with a total of 40 imputed datasets generated. This approach deals efficiently with missing data under MAR. MI is a more robust solution to the problem of attrition than traditional methods (e.g. inverse probability weighting, mean imputation, or casewise deletion), ensuring all useable data from SPCR is retained. Models include a number of fully observed measures that are related to changing family relations *and* resettlement outcomes, including living

with family prior to prison, time spent in a children's institution, and offending history, improving the chances that the MAR assumption holds. Sensitivity analyses including a wider range of auxiliary variables (thought to be potentially related to missingness, but not included within the substantive part of the latent change model), resulted in no appreciable change to model estimates. To further assess the extent that non-responders differ from the observed sample, we compared the distribution of responses to the four items measuring family attachment between the full wave 1 sample and those that were successfully interviewed at wave 2 and wave 3. This revealed no clear bias in the reduced samples. This cannot, of course, tell us whether the completers differ from non-respondents in the extent that their attachment to family changes, nor does it guarantee that the relationship between changing attachment and resettlement will be consistent between these groups. But given the broader reasons for missing data described above, it is difficult to formulate a scenario where we would anticipate that attrition would depend further on family attachment, over and above any potential associations picked up within our substantive model.

Results

Overall, our empirical models fit the data well, with fit indices that are within general thresholds (Bollen and Long 1993). Looking first at the background characteristics and experiences that are associated with attachment to family (table 2, model 1), a number of notable differences in initial levels of attachment are evident. Prisoners that lived with family prior to their sentence and those with young children reported feeling closer to family, confirming the importance of direct contact in shaping family relations. Higher levels of family attachment are also evident amongst prisoners

serving longer sentences. In contrast, relations with family are significantly worse amongst older prisoners. Poorer family relations are also evident amongst prisoners who reported experiencing some form of child abuse (whether physical, emotional or sexual), and who identified their parents as having problems of alcohol abuse. This points to the existence of strongly held historical drivers of poor family relations that play a sustained role in shaping prisoner attachment to family. Relations are also weaker amongst those prisoners that reported use of class A drugs prior to their sentence, and those with a more extensive offending history. These findings resonate closely with existing literature on social bonds and the family background of offenders (e.g. Sampson and Laub, 1993; Wildeman and Western, 2010).

Insert table 2 about here.

We therefore turn to pathways b and c in our empirical model, detailing how family relations *change* by the time offenders are released from prison (table 2, model 2). The model intercept reveals that overall levels of attachment to family (across all prisoners) have not changed significantly since the initial interview. However, this masks considerable intra-individual change (as reflected by the large residual variance), confirming that for some prisoners, relations with family change markedly throughout the duration of their sentence. Offenders who lived with family prior to their sentence report significantly lower levels of attachment with family on release. This may be because these prisoners experience the isolation of prison most acutely, with time in prison representing a greater level of separation from family members than it does for those prisoners that did not live with family prior to imprisonment (and hence were already less connected to their families). In contrast, older offenders

and black and minority ethnic prisoners, report improving levels of attachment to family over the course of their sentence, perhaps suggesting that family takes on greater importance for these groups, or that members are more likely to take an active role in the reintegration process. A similar improvement is also evident amongst those offenders who had spent time in foster care before the age of 17.

Family visits also have a moderate role to play in improving family relations, with those prisoners that reported receiving visits from parents becoming significantly closer to their families. No similar effects of visits from children or partners are evident, and the frequency of visits is also unrelated to changing relations. This suggests is a more localized positive effect of parental visits.

Finally, table 3 summarises the impact of improving family relations on prisoner outcomes post-release. This allows us to quantify the effect of strengthening family bonds on offenders chances of reoffending (controlling for prior offending history), whether they used class A drugs (net of prior drug use), and employment chances. Looking first at reoffending, we identify significantly lower levels of reoffending amongst those ex-prisoners who reported improving relations with their families across the duration of their sentence, an effect that is weakened but still significant when two year reoffending rates are considered. That this effect is evident having controlled for prior offending history (and thus capturing a wide range of unobserved influences on reoffending) highlights the important role that improving family relations can have, even amongst those that have already been drawn into the criminal justice system. Turning to ex-prisoners employment status and drug use since release we find further support for the importance of *improvements* to family relations, over and above positive effects of initial relations with family. By contrast, we find no evidence of consistent independent effects of family visits on resettlement

opportunities. Taken together, this represents strong evidence of the central role that improving family relations can play in the successful reintegration of prisoners, an effect that moves beyond the more localized impact on reoffending.

Insert table 3 about here.

Discussion

The results from our analysis are clear. Strong family relationships on entry to prison do not automatically translate into positive resettlement outcomes upon release.

Rather it is the *strengthening* of these attachments throughout the prison sentence (and beyond) which has a sustained impact on reducing reoffending risks, albeit an effect that is diminished when considered two years after release. This positive effect of improving family relations is also evident when considering abstaining from class A drug use and successfully finding employment on release from prison.

We have shown how improvements to family relations can, under certain conditions, be facilitated by mechanisms to allow contact with family members during a prisoners' sentence. But the influence of visits from different family members is not uniform. Only visits from parents significantly improved family relations, and prison visits were not directly related to resettlement outcomes. The number of visits was also unrelated to family attachment. Following Duwe and Clarke (2013), the failure to identify a positive link with partner visits could be attributed to additional tensions which may exist between prisoners and their partners/spouses. Similarly, visits from children may exacerbate already tenuous relationships within the restricted context of the prison visiting room. It is possible that the failure to identify a stronger role of family visits reflects the decision to only consider who

visits were from, and not when in a sentence visits occurred. Additional analyses identifying those prisoners that received visits in the previous 4 weeks to the pre-release interview, showed no substantive differences from the models reported here. However, a more nuanced assessment of visit timing may still point to ways that the value of visits can be maximized.

Other factors are also influential in improving family relations during a prison sentence, with ethnic minorities, older prisoners and those from foster families exhibiting significantly stronger attachments to family at wave 3. For ethnic minorities, it is likely that these results reflect differences in the meaning of family for these groups. For example, Asians typically place strong cultural emphasis on the role of family (Chao and Tseng, 2005), which may mean that family members are more likely to take an active role in the reintegration process when compared to white British families. The greater levels of hardship experienced by minority prisoners during their sentence (reflecting, for example, their over-representation in the prison system and their reduced opportunities for fair representation, Jackson et al., 2010) may also lead this group to turn to family for support during their sentence.

Older prisoners, on the other hand, may place greater importance on family than younger offenders as their sentence proceeds, making them more inclined to reflect on their relations with families during their sentence and work to repair damaged bridges (Crawley and Sparks, 2006). Within the SPCR more than half of men aged 50 and above were experiencing prison for the first time (see Omalade, 2014: 4), therefore it is possible that the absence of prior incarceration (and thus stigma and separation) may provide greater hope for prisoners to re-establish familial bonds.

We also identified improving family relations amongst those offenders who had lived in foster care before the age of 17, a finding which runs counter to expectations. Only 3% of the sample reported living in foster care before the age of 17 therefore it is difficult to form strong conclusions about the nature of this effect. It may be that time in prison reminds these prisoners of feelings of separation felt during their time in foster care, in turn leading them to reflect more directly on the importance of building and maintaining attachments when released. Conversely, this may be because lower initial levels of family attachment amongst this group limit the extent that relations can further deteriorate during the course of a sentence. However, it is difficult to see why this would be localised to those with a history of foster care, rather than also being observed amongst those who have spent time in other types of care as a child. Further research is needed to unpack the post-release experiences of prisoners with these types of disrupted family background.

Our results also confirm the potentially deleterious impact which prison can have on familial attachments. Many prisoners enter prison with negative attachments to family, resulting from an array of negative life experiences such as growing up in institutional care (e.g. care homes, juvenile facilities), being abused as a child, or having parents with substance misuse problems. For these prisoners, time in prison does little to improve family relations, instead making them more susceptible to continued offending after release (e.g. Burnett, 2004b; Gendreau, Little and Goggin, 1996). However, those prisoners that lived with their families prior to their sentence also experienced deteriorating relations with family. Thus, it is those prisoners with *both least and most* to lose from family that suffer the pains of separation most acutely.

That negative attachments going into prison are not transformed into more positive ties by the end of a sentence is perhaps unsurprising. Existing research has frequently identified the negative effect of prison on prisoners' abilities to maintain contact with family (Cochran and Mears, 2013; Duwe and Clark, 2013; Hairston, 1991), and there is little reason to expect that already damaged relations can be meaningfully repaired in such an environment without substantial intervention. Conversely, for those prisoners with most to lose it may be that relations deteriorate precisely because of strong initial attachments to family. The physical and emotional separation imposed by a prison sentence may be felt more acutely because prisoners are accustomed to a greater level of contact with family, leading to higher levels of social isolation and loneliness (Lopoo and Western, 2005; Massoglia, Remster and King, 2011; Turney, 2015). Some prisoners may even choose to avoid contact with family during their sentence because visits prove too distressing, serving as a painful reminder of the consequences of their offending. Those prisoners with strong familial attachments may also choose to limit contact with family members in a bid to protect them from the negative prison environment (Codd, 2013), with the reduced levels of contact in turn serving to weaken relations.

Limitations

Our analysis has identified a clear link between changing family relations and prisoner outcomes post-release. However, we cannot completely discount the existence of other unmeasured influences that shape both resettlement outcomes *and* changes to family attachment. We have included a number of relevant control variables within our analysis that we might reasonably expect to account for common causes of family attachment and resettlement experience. This includes a detailed

measure of prior offending history, capturing a broad range of unobservable risk factors that lead some people to have more extensive offending biographies than others. Similarly, the inclusion of prior drug use is likely to pick up the effects of other risk factors when considering the link between family attachment and class A drug use post-release. Family attachment on entry to prison, as well as measures of historical connections with family prior to their sentence, further limit the possibility that we have identified a spurious relationship between changing family relations and resettlement. As a result, whilst we cannot definitively discount the possibility that the observed relationships are solely a reflection of other unobserved effects, we believe that it is unlikely.

Our measure of change in levels of family attachment is also less than optimal. The follow up measure of family attachment was collected during the third interview which took place shortly after release from prison. The latent change model ensures that the observed changes are *real* changes (and not simply measurement error, Steyer et al., 1997), but, it is possible that the strength of the observed effects would be more modest if it was restricted to time in prison. As a result, any differences resulting from events occurring within prison may be overshadowed by changes that occur immediately after release, which may go some way to explain the comparatively weak role that family visits played. Future studies should focus attention on the more subtle changes that may occur throughout the lifetime of a prison sentence, with repeated measurements of family attachment taken on entry, throughout the sentence, and prior to release. Only then will be able to fully understand the complex and changing nature of prisoner-family relations, and the impact that this has on the resettlement process.

Conclusion

Prisoners have long been identified as a group at risk of experiencing strained family relations, with time in prison regularly shown to further exacerbate these problems. Our research confirms the negative effect of prison for some prisoners, but also points to the possibility for substantial improvements to family attachment being made for other prisoners. That this manifests so clearly in post-release success (with lower reoffending risks, reduced drug taking, and improved employment levels), suggests that this is an area that future penal policy should be directed towards. Placing greater emphasis on prison-based strategies to enhance family relations presents a real opportunity for measurable success in reducing reoffending (Jeffries, Menghraj, and Hairston, 2001). However, it is important not to overplay the contribution that visits make. We find only a moderate contribution of visits from parents, and no clear evidence that the frequency of visits is important or that visits from partners and children have a similar role to play. As a result, prisons should consider other strategies that may also contribute to prisoners feeling more connected to family during the course of their sentence and on release.

References

- Bales, W. D., and Mears, D. P. (2008). Inmate Social Ties and the Transition to Society: Does Visitation Reduce Recidivism? *Journal of Research in Crime and Delinquency*, 45, 287-321.
- Berg, M. T., and Huebner, B. M. (2011). Reentry and the Ties that Bind: An Examination of Social Ties, Employment, and Recidivism. *Justice Quarterly*, 28, 382-410.
- Bollen, K., and Long, S. (1993). *Testing Structural Equation Models*. Newbury Park: CA, Sage.
- XXXX (2014)
- Burnett, R. (2004). To re-offend or not to re-offend? The ambivalence of convicted property offenders. In S. Maruna, & R. Immarigeon (Eds.), *Ex-Offender Reintegration: Pathways to Desistance from Crime* (pp. 153-180). Albany, NY: SUNY Press.
- Burnett, R. (2004b). To reoffend or not to reoffend? The ambivalence of convicted property offenders. London: Routledge.
- Casey-Acevedo, K., and Bakken, T. (2001). The Effects of Visitation on Women in Prison. *International Journal of Comparative and Applied Criminal Justice*, 25, 48-69.

Chao, R., and Tseng, V. (2002). Parenting of Asians. in M. H. Bornstein, eds., *Handbook of Parenting: Social conditions and applied parenting* (2nd ed). Mahwah, NJ: Lawrence Erlbaum Associates.

Christian, J., Mellow, J., and Thomas, S. (2006) Social and Economic Implications of Family Connections to Prisoners. *Journal of Criminal Justice*, 34, 443-452.

Cleary, A., Ames, A., Kostadintcheva, K., and Muller, H. (2012a). *Surveying Prisoner Crime Reduction (SPCR): Wave 1 (Reception) Samples 1 and 2 Technical Report*. London: Ministry of Justice.

Cleary, A., Ames, A., Kostadintcheva, K., and Muller, H. (2012b). *Surveying Prisoner Crime Reduction (SPCR): Wave 2 (Pre-release) Samples 1 and 2 technical Report*. London: Ministry of Justice.

Cleary, A., Ames, A., Kostadintcheva, K., and Muller, H. (2014). *Surveying Prisoner Crime Reduction (SPCR): Waves 3 and 4 (Post-release) Samples 1 and 2 Technical Report*. London: Ministry of Justice.

Cochran, J. C. (2012). The Ties that Bind or the Ties that Break: Examining the Relationship between Visitation and Prisoner Misconduct. *Journal of Criminal Justice*, 40, 433-440.

- Cochran, J. C. (2014). Breaches in the Wall: Imprisonment, Social Support, and Recidivism. *Journal of Research in Crime and Delinquency*, 51, 200-229.
- Cochran, J. C., and Mears, D. P. (2013). Social isolation and inmate behavior: A conceptual framework for theorizing prison visitation and guiding and assessing research. *Journal of Criminal Justice*, 41(4), 252-261.
- Cochran, J. C., Mears, D. P., and Bales, W. D. (2014). Who Gets Visited in Prison? Individual-and Community-Level Disparities in Inmate Visitation Experiences. *Crime & Delinquency*, online first. doi: 10.1177/0011128714542503.
- Codd, H. (2013). *In the Shadow of Prison: Families, Imprisonment and Criminal Justice*. London: Routledge.
- Comfort, M. (2008). *Doing Time Together: Love and Family in the Shadow of the Prison*. Chicago, IL: University of Chicago Press.
- Copas, J., and Marshall, P. (1998). The Offender Group Reconviction Scale: The Statistical Reconviction Score for use by Probation Officers. *Applied Statistics*, 47, 159-171.
- Crawley, E., and Sparks, R. (2006). Is there life after imprisonment? How elderly men talk about imprisonment and release. *Criminology and Criminal Justice*, 6(1), 63-82.

Derkzen, D. M., Gobeil, R., and Gileno, J. (2009). *Visitation and Post-release Outcome among Federally-sentenced Offenders*. Canada: Correctional Service of Canada.

Duwe, G., and Clark, V. (2013). Blessed be the Social Tie that Binds: The Effects of Prison Visitation on Offender Recidivism. *Criminal Justice Policy Review*, 24, 271-296.

Enders, C. K. (2010). *Applied Missing Data Analysis*. London: The Guilford Press.

Gendreau, P., Little, T., and Goggin, C. (1996). A meta-analysis of the predictors of adult offender recidivism: What works! *Criminology*, 34 (4), 575-607.

Glaser D. (1964). *The Effectiveness of a Prison and Parole System*. New York: Bobb-Merrill.

Gov.UK (2014) Staying in touch with someone in prison, available at <https://www.gov.uk/staying-in-touch-with-someone-in-prison/visiting-someone-in-prison>, accessed 13 June

Hairston, C. F. (1988). Family Ties During Imprisonment: Do They Influence Future Criminal Activity? *Federal Probation*, 52, 48-52.

Hairston, C. F. (1991). Family Ties During Imprisonment: Important to Whom and for What. *Journal of Sociology and Social Welfare*, 18 (1), 87-104.

Jackson, J., Tyler, T. R., Bradford, B., Taylor D. and Shiner, M. (2010) Legitimacy and procedural justice in prisons. *Prison Service Journal*, 191: 4-10.

Jeffries, J. M., Menghraj, S., and Hairston, C. F. (2001). *Serving Incarcerated and Ex-offender Fathers and their Families: A Review of the Field*. New York: Vera Institute of Justice.

Jiang, S., and Winfree, T. L. (2006) Social Support, Gender, and Inmate Adjustment to Prison Life: Insights from a National Sample. *The Prison Journal*, 86, 32-55.

Laub, J. H., Nagin, D. S., and Sampson, R. J. (1998). Trajectories of Change in Criminal Offending: Good Marriages and the Desistance Process. *American Sociological Review*, 63, 225-238.

La Vigne, N. G., Naser, R. L., Brooks, L. E., and Castro, J. L. (2005). Examining the Effect of Incarceration and In-Prison Family Contact on Prisoners' Family Relationships. *Journal of Contemporary Criminal Justice*, 21, 314-35.

Listwan, S. J., Sullivan, C. J., Agnew, R., Cullen, F. T., and Colvin, M. (2013). The Pains of Imprisonment Revisited: The Impact of Strain on Inmate Recidivism. *Justice Quarterly*, 30, 144-168.

Lopoo, L. M., and Western, B. (2005). Incarceration and the Formation of Stability in Marital Unions. *Journal of Marriage and Family*, 67, 721-734.

Lynch, J. P., and Sabol, W. (2001). *Prisoner Reentry in Perspective*. Washington, DC: The Urban Institute.

Maldonado, S. (2006). Recidivism and Paternal Engagement. *Family Law Quarterly*, 40, 191–212.

Maruna, S. (2001). *Making Good: How Ex-Convicts Reform and Build Their Lives*. Washington, DC: American Psychological Association.

Maruna, S., and Toch, H. (2005). The impact of imprisonment on the desistance process. J. Travis, & C. Visher. (Eds.), *Prisoner Reentry and Crime in America* (pp. 139-178). New York: Cambridge University Press.

Maruna, S., and Roy, K. (2007). Amputation or Reconstruction? Notes on the Concept of “Knifing Off” and Desistance from Crime. *Journal of Contemporary Criminal Justice*, 23, 104-124.

Massoglia, M., Remster, B., and King, R. D. (2011). Stigma or separation? Understanding the incarceration-divorce relationship. *Social Forces*, 90(1), 133-155.

McArdle, J. J., and Hamgami, F. (2001). Latent difference score structural models for linear dynamic analysis with incomplete longitudinal data. In M. Collins, & A.G.

- Mears, D. P., Cochran, J. C., Siennick, S. E., and Bales, W. D. (2012). Prison Visitation and Recidivism. *Justice Quarterly*, 29, 888-918.
- Mills, A., and Codd, H. (2008). Prisoners' families and offender management: Mobilizing social capital. *Probation Journal*, 55(1), 9-24.
- Muthén, B., and Muthén, L. (1998-2012). *Mplus User's Guide*. Seventh Edition. Los Angeles, CA: Muthén & Muthén.
- Naser, R. L. and La Vigne, N. G. (2006). Family Support in the Prisoner Reentry Process: Expectations and Realities. *Journal of Offender Rehabilitation*, 43, 93-106.
- Nelson, M., Dees, P., and Allen, C. (1999). *The First Month Out: Post Incarceration Experiences in New York City*. New York: Vera Institute of Justice.
- Niven, S., and Stewart, D. (2005). *Resettlement outcomes on release from prison in 2003*. Home Office Research Findings, 248. London: Home Office.
- Ohlin, L. E. (1951). *Selection for Parole*. New York: Russell Sage.
- Omolade, S (2014) The needs and characteristics of older prisoners: Results from the Surveying Prisoner Crime Reduction (SPCR) survey, London: Ministry of Justice
- Petersilia, J. (2003). *When Prisoners Come Home: Parole and Prisoner Reentry*. New York: Oxford University Press.

Raykov, T. (1993). On Estimating True Change Interrelationships with other Variables. *Quality and Quantity*, 27, 353-370.

Rocque, M., Bierie, D. M., and MacKenzie, D. L. (2011). Social Bonds and Change during Incarceration Testing a Missing Link in the Reentry Research. *International Journal of Offender Therapy and Comparative Criminology*, 55, 816-838.

Rocque, M., Bierie, D. M., Posick, C., and MacKenzie, D. L. (2013). Unraveling Change: Social Bonds and Recidivism among Released Offenders. *Victims and Offenders*, 8, 209-230.

Rubin, D. B. (1987). *Multiple Imputation for Non-response in Surveys*. New York: Wiley.

Sampson, R. J. and Laub, J. H. (1993). *Crime in the Making: Pathways and Turning Points through Life*. Cambridge, MA: Harvard University Press.

Sayer (Ed.), *New Methods for the Analysis of Change* (pp. 137-175). Washington DC: American Psychological Association.

Siennick, S. E., Mears, D. P., and Bales, W. D. (2013) Here and Gone: Anticipation and Separation Effects of Prison Visits on Inmate Infractions. *Journal of Research in Crime and Delinquency*, 50, 417-444.

Steyer, R., Eid, M., and Schwenkmezger, P. (1997). Modeling True Intraindividual Change: True Change as a Latent Variable. *Methods of Psychological Research Online*, 2, 21-33.

Sturgis, P., Smith, P., Berrington, A., and Yiongjean, H. (2004). Using Repeated Measures Data to Analyse Reciprocal Effects: The Case of Economic Perceptions and Economic Values. *Conference Papers from the Department of Sociology*, 4. University of Surrey.

Swanson, C., Lee, C-B., Sansone, F. A., and Tatum, K. M. (2013). Incarcerated Fathers and their Children: Perceptions of Barriers to their Relationships. *The Prison Journal*, 93, 453-474.

Sykes, G. M. (1958). *The Society of Captives*. Princeton, NJ: Princeton University Press.

Tuerk, E. H., and Loper, A. B. (2006). Contact Between Incarcerated Mothers and their Children: Assessing Parenting Stress. *Journal of Offender Rehabilitation*, 43, 23-43.

Turney, K. (2015). Liminal Men: Incarceration and Relationship Dissolution. *Social Problems*, 62(4), 499-528.

Tewksbury, R., and Connor, D. P. (2012). Inmates who Receive Visits in Prison: Exploring Factors that Predict. *Federal Probation Journal*, 76, 343-46.

Travis, J. (2005). *But They All Come Back: Facing the Challenges of Prisoner Reentry*. Washington, DC: The Urban Institute Press.

Visher, C A., and Travis, J. (2003). Transitions from Prison to Community: Understanding Individual Pathways. *Annual Review of Sociology*, 29, 89-113.

Visher, C. A. (2011). Incarcerated Fathers: Pathways from Prison to Home. *Criminal Justice Policy Review*, 24, 9–26.

Warr, M. (1998). Life-Course Transitions and Desistance from Crime. *Criminology*, 36, 183-216.

Wildeman, C., and Western, B. (2010). Incarceration in Fragile Families. *The Future of Children*, 20, 157-177.

Figure 1: Overview of the SEM pathways linking changes family relations to outcomes post-release

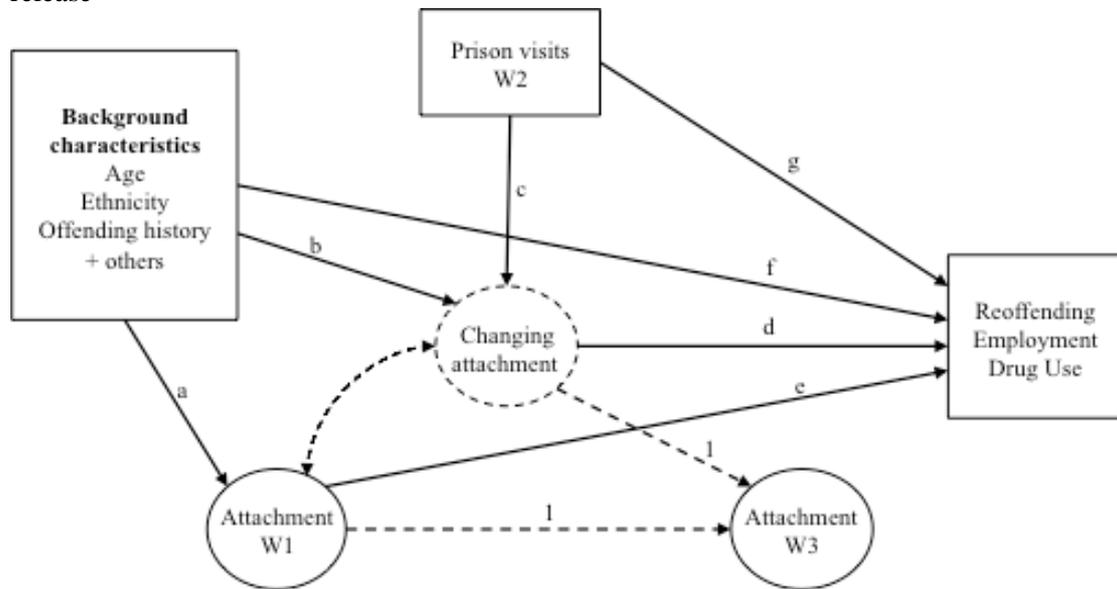


Table 1. Descriptive statistics

	Mean	S.D	Sample size
Family attachment (w1)			
I feel close to my family	3.27	1.09	2592
I want my family to be involved in my life	3.50	0.82	2590
I consider myself a source of emotional support for my family	2.91	1.11	2566
My family is a source of emotional support for me	3.16	1.04	2580
Family attachment (w3)			
I feel close to my family	3.36	0.98	1591
I want my family to be involved in my life	3.40	0.90	1592
I consider myself a source of emotional support for my family	2.89	1.10	1580
My family is a source of emotional support for me	3.14	1.05	1591
Ethnic minority status	0.17	0.38	2617
Age (centred)	0.15	9.96	2617
Offence type (violence)			
Acquisitive	0.29	0.45	2617
Drug	0.20	0.40	2617
Motoring	0.06	0.24	2617
Other	0.21	0.41	2617
No details	0.02	0.15	2617
Sentence length (less than 6 months)			
6 months - 1 year	0.06	0.23	2617
1 year - 18 months	0.13	0.34	2617
18 months - 2 years	0.23	0.42	2617
2 years - 3 years	0.32	0.46	2617
3 years - 4 years	0.15	0.36	2617
First prison sentence	0.37	0.48	2554
Class A drugs (4wks prior to sentence)	0.38	0.49	2617
Lived with family before sentence	0.65	0.48	2617
Children under 1 (at wave 1)	0.52	0.50	2617
In foster care (pre 17)	0.03	0.18	2609
In child institution (pre 17)	0.07	0.26	2609
Experienced child abuse	0.23	0.42	2599
Parent previously served prison sentence	0.11	0.32	2571
Parent alcohol abuse	0.10	0.30	2569
Offending history (copas rate)	-0.98	0.87	2554
Sample type	1.76	0.43	2617
Visit from parents	0.54	0.50	1650
Visit from partner	0.51	0.50	1650
Visit from child	0.27	0.45	1650
Visit frequency	3.77	2.08	1649
Proven reoffending (1 year)	0.33	0.47	2405
Proven reoffending (2 years)	0.50	0.50	2405
Currently using Class A drugs	0.22	0.42	1597
Currently employed	0.26	0.44	1604

Table 2. Family attachment on entry to prison (pathway a) and changing family attachment post-release (pathways b and c)

	Initial family attachment (a)		Changing family attachment (b, c)	
	Effect	S.E	Effect	S.E
Intercept	2.81**	0.11	-0.054	0.14
Ethnic minority status	0.00	0.05	0.14*	0.07
Age	-0.006**	0.00	0.009*	0.00
Offence type (violence)				
Acquisitive	-0.02	0.05	0.06	0.06
Drug	0.05	0.05	-0.04	0.07
Motoring	0.07	0.07	-0.14	0.10
Other	0.009	0.05	-0.003	0.06
No details	0.03	0.10	-0.10	0.15
Sentence length (less than 6 months)				
6 months - 1 year	0.10	0.07	0.02	0.10
1 year - 18 months	0.31***	0.08	-0.10	0.12
18 months - 2 years	0.30***	0.08	-0.06	0.12
2 years - 3 years	0.29***	0.08	-0.04	0.12
3 years - 4 years	0.21*	0.08	0.02	0.13
First prison sentence	0.02	0.05	-0.02	0.08
Class A drugs (4wks prior to sentence)	-0.08*	0.04	0.04	0.05
Lived with family before sentence	0.45***	0.03	-0.22***	0.05
Children under 1 (at wave 1)	0.16***	0.03	-0.06	0.08
In foster care (pre 17)	-0.15	0.08	0.26***	0.12
In child institution (pre 17)	-0.22***	0.06	-0.12	0.09
Experienced child abuse	-0.21***	0.04	0.00	0.05
Parent previously served prison sentence	-0.06	0.05	0.06	0.07
Parent alcohol abuse	-0.23***	0.05	0.007	0.08
Offending history (copas rate)	-0.12***	0.03	0.03	0.04
Sample type	-0.08	0.07	-0.06	0.09
Visit from parents			0.12**	0.05
Visit from partner			-0.02	0.05
Visit from child			0.07	0.05
Visit frequency			0.02	0.03
Residual variance	0.50***	0.03	0.59***	0.04
Sample size	2617			
Chi2/df	591/189			
RMSEA/CFI/TLI	.028/.959/.917			

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

Table 3. The role of changing family attachment on post-release outcomes (pathway d, controlling for e, f and g)

	Proven Reoffending (1 year)		Proven Reoffending (2 years)		Currently using Class A drugs		Currently employed	
	Probit	S.E	Probit	S.E	Probit	S.E	Probit	S.E
+ Controls ¹								
Visit from parents	-0.06	0.07	-0.03	0.07	0.01	0.09	0.04	0.08
Visit from partner	0.02	0.08	-0.01	0.08	-0.01	0.09	0.22	0.10
Visit from child	-0.07	0.09	-0.05	0.08	-0.15	0.11	-0.17	0.10
Visit frequency	-0.01	0.04	-0.02	0.04	0.01	0.05	0.02	0.05
Family attachment (wave 1)	-0.09	0.07	-0.06	0.06	-0.22**	0.07	0.17*	0.08
Change in family attachment	-0.25***	0.07	-0.14*	0.06	-0.25***	0.07	0.12*	0.06
FIML sample size	2617		2617		2617		2617	
Chi2/df	591/189		582/189		592/189		587/189	
RMSEA/CFI/TLI	.028/.959/.917		.028/.959/.919		.029/.959/.919		.028/.959/.917	

¹ Controls: ethnic minority status, age, sentenced offence, sentence length, first sentence, class A drug use, lived with family (wave 1), children under 1 (wave 1), foster care pre 17, child institution pre 17, child abuse victim, parent prison sentence, parent alcohol abuse, offending history, sample type

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

Appendix

Table A.1. Family attachment measurement model (factor loadings and intercepts constrained to equality wave 1 and wave 3)

	Factor loading	S.E
I feel close to my family	1.00	0.00
I want my family to be involved in my life	0.83	0.02
I consider myself a source of emotional support for my family	1.00	0.03
My family is a source of emotional support for me	1.13	0.03

ⁱ Ecstasy, LSD, heroin, crack cocaine, cocaine, and methadone.

ⁱⁱ A subsample of prisoners were re-interviewed a fourth time approximately 6 months after release from prison. We do not consider this subsample further in the current analysis.

ⁱⁱⁱ In practice 53% of interviews took place within 14 weeks of release, 20% between 14 and 20 weeks, and 27% more than 20 weeks after release.

^{iv} Offending history is measured using the Copas rate (Copas and Marshall 1998). This is a measure of the rate at which an offender has built up convictions throughout their criminal career, and is calculated as the natural log of (the number of court appearances or cautions, plus one, all divided by the length of criminal career in years, plus ten).

^v The estimated model includes additional pathways from prisoner background characteristics and initial levels of family attachment to prison visits at wave 2. This ensures our estimates of the effect of prison visits are corrected for differential propensity of particular types of prisoner to receive visits.

^{vi} Attrition was non-uniform, with the original sample all included in the eligible sample frame at each wave.