

FAMILY SUPPORT & THE SUCCESSFUL REENTRY
OF FORMERLY INCARCERATED INDIVIDUALS

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ABSTRACT

Considering that approximately two-thirds of individuals who are released from prison are re-arrested at least once within three years following release (Langan and Levin 2002), any research that seeks to identify factors associated with successful reentry is certainly warranted. This dissertation investigates the role of family support for individuals who have been deemed serious and violent offenders and recently released from state prisons. Little research has sought to quantitatively measure the extent of the relationship between levels of family support and recidivism after controlling for other known predictors of reoffending. Prior research has largely relied on fairly small sample sizes, short follow-up periods post-release, basic bivariate analyses and inconsistent conceptualizations of family support (La Vigne, Visser and Castro 2004; Nelson, Deess and Allen 1999; Sullivan, Mino, Nelson and Pope 2002; Visser, La Vigne and Travis 2004b).

As part of the evaluation of the Serious and Violent Offender Reentry Initiative (SVORI), 1,697 adult males and 357 adult females were interviewed 30 days prior to their release and then three, nine and 15 months following release. Using the data collected from these interviews, this dissertation explores the relationship between emotional family support and instrumental family support and four measures of reoffending: any self-reported criminal offending, any self-reported violent offending, any self-reported drug offending and whether any arrest occurred (using official records from the National Crime Information Center) during each of the post-release follow-up periods.

Controlling for other known predictors of reoffending, logistic regression models are used to predict the likelihood of reoffending. Considering respondent attrition over successive interview waves, all analyses are conducted using listwise deletion as well as multiple imputation to handle missing data. Results generally reveal that emotional support is associated with a significant decrease in reoffending, while instrumental support is not significantly associated with reoffending.

These findings have implications for correctional policies and programming, sentencing policies, post-release supervision policies and programming, criminological theory and future research.

DEDICATION

This dissertation is dedicated to the millions of individuals who have been separated from their families due to incarceration and their family members who have experienced emotional and financial hardships as a result of separation from their loved ones.

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I am also quite grateful for my relationship with Kay Harris. Our informal conversations have helped to more fully develop my personal views on the justice system as well as influenced my research agenda. The opportunities to build relationships with

those who have been most personally influenced by the criminal justice system have been invaluable. What I have learned from my involvement with the LIFERS Public Safety Initiative at Graterford cannot possibly be summarized in the brief space allotted here. My perspectives on determination, perseverance and optimism have been forever altered.

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before me either started on a path to or could have had careers in academia but the circumstances of their time in history took them on different paths.

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CHAPTER 1: INTRODUCTION

The following dissertation documents an empirical investigation of the relationship between perceived levels of family support and the likelihood of reoffending for individuals who were recently released from state prisons. This chapter will first explore the wider context of mass incarceration and the subsequent effects on ex-offender reentry, which offers a strong justification for the importance of an investigation into an inadequately studied factor in recidivism. A more detailed introduction to the current study on family support and recidivism will then be provided along with an outline of the chapters to follow in this dissertation.

The incarceration and subsequent reentry of a large portion of the American citizenry is arguably one of the most important issues currently facing American society. As of 2009, approximately 2.3 million individuals were incarcerated in state and federal prisons and local county jails in the United States (Glaze 2010). This figure translates into one in every 100 American adults living behind bars (Pew Center on the States 2008). The negative implications of mass incarceration abound for the American economy (McGarry 2010; Stephan 2004), levels of civic engagement and political participation (Uggen, Van Brakle and McLaughlin 2009; Dhimi 2005; Uggen, Behrens and Manza 2005), the perpetuation and escalation of racial inequality (Alexander 2010; Western 2006), family structure and stability (Geller, Garfinkel, Cooper and Mincy 2009; Western and Wildeman 2009; Lopoo and Western 2005; Braman 2004), and neighborhood cohesion (Clear 2007; Lynch and Sabol 2004; Auerhahn and McGuire 2010).

While mass incarceration continues to present a variety of challenges for American social institutions and processes, the subsequent (and in most cases inevitable) return of formerly incarcerated individuals to their communities and families also poses a serious challenge. Approximately 95 percent of all inmates will be released at some point (Hughes and Wilson 2003) and an astounding 700,000 individuals return to their communities from state and federal prisons every year (Sabol, West and Cooper 2009). Considering both the ethical / humanitarian concerns as well as public safety issues, it is in the best interest of American society to aid such individuals in their reintegration.

However, considering the numerous obstacles often faced by formerly incarcerated individuals, ensuring their successful reintegration is certainly no easy task. Ex-offenders are often in need of a variety of social services, including housing assistance (La Vigne, Shollenburger and Debus 2009; Metraux, Roman and Cho 2008; McKean and Raphael 2002; Ditton 1999), education (Harlow 2003; Visher and Lattimore 2007), employment assistance (Yahner, Visher and Solomon 2008; Visher and Lattimore 2007), substance abuse treatment (ADAM 2003; Belenko and Peugh 2005; La Vigne et al. 2009), as well as mental and physical healthcare (Mallik-Kane and Visher 2008, Visher and Lattimore 2007).

In addition to these social service needs, the prison experience can reduce the likelihood that formerly incarcerated individuals may reenter society on a path to desistance (see Maruna and Toch 1999). Sykes' (1958) classic work on prisoner deprivation theory and the five "pains of imprisonment" (deprivations of liberty, goods and services, heterosexual relationships, autonomy and security) emphasized that adaptation to these prison conditions places prisoners at a disadvantage upon release.

The hypermasculine, aggressive, socially isolated psychological and behavioral responses that can help inmates adapt to such prison conditions are not conducive to successful reintegration following their release (Haney 2002; Paterline and Petersen 1999; Hofer 1988).

Additionally, some research suggests that the likelihood of persistence in crime is greater following longer periods of incarceration. While a large meta-analysis of the relationship between sentence length and the likelihood of recidivism found that the research literature measuring the extent of the relationship is inconclusive (Nagin, Cullen and Jonson 2009), there is some evidence that longer periods of incarceration are associated with an increase in the likelihood of reoffending. Gendreau, Goggin and Cullen's (1999) meta-analysis of 50 prison effects studies found that convicts who spent more time in prison (mean of 30 months) compared to less time (mean of 13 months) demonstrated a three percent increase in recidivism.¹ When singling out studies with a higher quality research design, mean effect sizes were even larger (longer prison terms were associated with an 11 percent increase in recidivism).

In light of these challenges related to social service need, the psychological effects of incarceration and the potential compounding of these issues following longer periods of incarceration, it is perhaps not surprising that rates of reoffending for recent prison releasees are quite high. The most recent recidivism study from the Bureau of Justice Statistics (BJS) examined recidivism rates among released individuals in 15 states in 1994 and revealed that within three years following release, 67.5 percent of these individuals were rearrested and 51.8 percent were back in prison (Langan and Levin

¹ The goal of this meta-analysis was to examine general trends in the relationship between sentence length and recidivism. The meta-analysis did not include controls for the severity of offense for which time was being served.

2002). More recently, the Pew Center on the States (2011) partnered with the Association of State Correctional Administrators to examine recidivism rates of state prison releasees in 1999 and 2004. Results revealed that among those released in 1999, 45.4 percent were re-incarcerated in the three years following their release. And among those released in 2004, 43.3 percent were re-incarcerated. The Pew study also highlighted substantial state variation in recidivism rates with some states reporting recidivism rates as high as 65.8 percent (Utah in 1999) and others reporting recidivism rates as low as 22 percent (Oregon in 2004) in the three years post-release.

Many individuals are also likely to cycle in and out of prison multiple times (Clear 2007; Clear, Waring and Scully 2005; Blumstein and Beck 2005). Over 40 percent of the 272,111 releasees included in the BJS 1994 recidivism study had at least one prior prison sentence (Langan and Levin 2002). An examination of reentry cycling in four states between 1995 and 2001 also confirmed the frequency of repeated prison releases and readmissions (Blumstein and Beck 2005). Of those released in 1995, 14.8 percent of Florida releasees, 21 percent of New York releasees, 27.4 percent of Illinois releasees and a shocking 48.2 percent of California releasees were recommitted to prison by the end of 2001 *at least two more times*. In California, 15.6 percent were recommitted *at least five more times* by the end of 2001.

Considering high recidivism rates, the size of the prison population (partially due to commitments) and the negative consequences of the American carceral state, any research that seeks to better understand the processes associated with successful reentry is warranted. Factors currently known to be associated with recidivism can be conceptualized on three levels of aggregation. At the broadest level, factors such as

neighborhood disadvantage (Morenoff and Harding 2011; Mears, Wang, Hay and Bales 2008) and public policies related to sentencing (Gendreau et al. 1999; Blumstein and Beck 2005) or civil disabilities (Bushway and Sweeten 2007) can influence the likelihood that a recently released individual engages in crime and/or is re-arrested or reincarcerated. At the individual, or micro, level, a large number of individual risk factors have been found to increase the likelihood that a recent releasee becomes involved in crime and/or the justice system. Examples of these factors include (but are not limited to) a history of substance abuse (Dowden and Brown 2002; Gendreau, Little and Goggin 1996; Nurco, Hanlon and Kinlock 1991) or mental illness (Lovell, Gagliardi and Peterson 2002; Marzuk 1996), age (Laub and Sampson 2003; Farrington 1986; Hirschi and Gottfredson 1983), and criminogenic thinking (Walters 2006; Taxman, Rhodes and Dumenci 2011). In between these macro and micro level predictors of reoffending, meso level factors may include engagement in criminal peer groups (Warr 2002; Friedman and Terras 1999) as well as criminogenic family processes (Laub and Sampson 2003; Gottfredson and Hirschi 1990).

Focusing on this meso level, the current study explores one family process (support from family members) while also taking into account a number of macro and micro level factors. Despite a variety of criminological theories that offer explanations for a potential relationship between family support and reoffending (Laub and Sampson 2003; Hirschi 1969; Meisenhelder 1982; Maruna, LeBel, Mitchell and Naples 2004; Braithwaite 1989; Colvin 2000), research that actually measures the extent of the relationship between levels of family support and the likelihood of reoffending for recently released individuals is lacking. As will be detailed in chapter two, prior research

has largely relied on fairly small sample sizes, short follow-up periods post release, basic bivariate analyses and inconsistent conceptualizations of family support (La Vigne, Visher and Castro 2004; Nelson, Deess and Allen 1999; Sullivan, Mino, Nelson and Pope 2002; Visher, La Vigne and Travis 2004b). This dissertation is the first study to quantitatively measure the relationship between perceived levels of family support and recidivism longitudinally while controlling for other predictors of reoffending.

More specifically, this project focuses on two different types of family support – emotional and instrumental. Emotional support relates to the extent to which individuals report having emotional attachments to family members and family members who can be relied on for advice. Instrumental support refers to the degree to which releasees have family members who can assist them with housing, substance abuse problems, employment, transportation and general financial assistance. Analyses investigate whether emotional and/or instrumental family support has an independent effect on recidivism. The possibility that the relationship varies for different types of individuals, such as across different genders or stress levels, is also explored. And lastly, this dissertation investigates potential changes in levels of family support over time and the extent to which these changes may influence reoffending over time.

Following an outline of specific research questions and hypotheses in chapter three, chapter four details how data that were collected as part of the Serious and Violent Offender Reentry Initiative (SVORI) evaluation were used for this study. As part of the SVORI evaluation, 1,697 adult males and 357 adult females were interviewed 30 days prior to release, three months post-release, nine months post-release and 15 months post-release. Respondents were asked about family support, family history, reoffending and a

variety of other factors related to their reentry experiences. Logistic regression is used to measure the relationship between family support and reoffending.

Chapter five presents the results of this dissertation using two analytical strategies. Using listwise deletion to handle missing data, this first set of results revealed emotional support significantly predicted reoffending in certain time periods. When predicting whether *any arrest* took place in any of the three time periods (during the first three months post-release, between three and nine months post-release and between nine and 15 months post-release), higher levels of emotional support are associated with a reduction in the likelihood of being arrested. Neither type of support was significant in the other two time periods. Emotional support was also associated with a significant reduction in the likelihood of *any self-reported crime* being committed in the first three months post-release and nine to 15 months post-release. In terms of any *self-reported violent crimes*, emotional support was associated with a reduction in the nine to 15 months post-release. And lastly, emotional support was associated with a reduction in the likelihood of a *self-reported drug offense* in both the three months post-release and nine to 15 months post-release. Instrumental support was not a significant predictor of reoffending in any of the final models.

The same analyses were then conducted using multiple imputation to handle missing data. These results revealed generally similar trends as the results using listwise deletion. Higher levels of emotional support significantly predicted a reduction in the likelihood of any self-reported crime and any self-reported drug crime in the three months post-release. Higher levels of emotional support were also associated with a decrease in the likelihood of any self-reported crime, any self-reported drug crime and

any arrest in the other two time periods. Once again, instrumental support was not significant in any of the models using multiple imputation.

Chapter six offers an interpretation of the results covered in chapter five and then highlights implications for correctional policies and programming, sentencing policies, post-release supervision policies and programming and future research.

CHAPTER 2: THE LITERATURE ON FAMILY SUPPORT & REOFFENDING

This chapter will identify applicable theoretical frameworks and offer a synthesis of previous research relevant to this study. The chapter begins with a brief discussion of the wider literature on social support, social bonds and social ties. This dissertation is then situated within a variety of sociological and criminological theories that may explain a relationship between family support and reoffending. The focus is then directed to a narrower examination of previous research that offers a descriptive account of the role of family support in the reentry process. In order to identify other factors that may be associated with reoffending in addition to family support, a brief overview of the literature on risk for reoffending is provided. A section on previous empirical research on the family support–reoffending relationship and the limitations of this research concludes the chapter.

Conceptualizing Social Support, Social Ties and Social Bonds

Although this study focuses specifically on the role of family support, this research is rooted in a larger literature on social support, social ties and social bonds. Considering that these concepts have sometimes been used interchangeably in the research literature and that measures of these concepts are often similar, reviewing research on the relationship between all of these concepts and reoffending is relevant.

Nonetheless, it is important to emphasize that support, ties and bonds can represent distinct social processes. Social ties can be conceptualized as a necessary, yet

insufficient, precondition for supportive relationships to be developed and maintained.²

Not all ties provide support and some ties may provide different types or levels of support in different situations (see Wellman and Wortley 1990; Wellman 1988). Additionally, many measures of social support often resemble some components of social bonds. As will be further detailed in a section below, social bonds entail some measures of attachment and commitment, which often overlap with measures of individual-level social support.

Considering the family measures available in the SVORI data set, the concept of social support (rather than ties or bonds) is the primary focus of this study.³ Sociologist Nan Lin (1986) provided a comprehensive explanation of social support as “the perceived or actual instrumental and/or expressive provisions supplied by the community, social networks, and confiding partners” (18). Drawing from both Lin’s (1986) work and that of psychologist Alan Vaux (1988), criminologist Frank Cullen (1994) conceptualized social support as having four key dimensions. First, assessments of social support can be based on the “objective delivery” or the “perception” of support (Cullen 1994: 530). Second, social support can be in the form of instrumental or expressive support. Instrumental support is focused on a particular end goal and involves either providing financial aid or advice and guidance. Expressive support involves “meeting the needs for love and affection, esteem and identity, and belonging and companionship” through “emotional support, feedback and social reinforcement, and socializing” (Vaux 1988: 21). Third, social support functions on different levels. At the micro level, support can

² Despite this important difference between ties and support, some research confounds these concepts by referring to a measurement of social ties as a measurement of support (see, for instance, Duwe and Clark 2011).

³ However, considering that the distinctions between bonds, ties and support are often muddled in prior research, prior work on all three of these concepts is reviewed.

be provided by one individual to another individual, such as a friend, parent, or loved one. Social support can also function on macro level units, such as when individuals receive support from social networks, neighborhoods or even countries. Fourth, support may be received from a formal agency, such as an educational institution or a probation department, or via an informal relationship, such as friends or family members.

Despite this dissertation's narrower focus on *family* support, Cullen's four dimensions of *social* support help to clarify the focus of this study. First, considering that measurements of family support rely on the self-report assessments of individuals who are currently or were previously incarcerated, this study is concerned with perceptions of support as opposed to more objective assessments. This dissertation also investigates both types of support – instrumental and expressive (also referred to as emotional in this study).⁴ Cullen characterizes social support as functioning on either the micro or macro level. Multiple-item indicators of instrumental and emotional family support with indicators tapping into both macro- and micro-level manifestations of support are also used in this study.⁵ This dissertation directly evaluates informal relationships between recent releasees and their family members. However, results on the importance of these informal relationships have implications for how formal agencies can increase the likelihood of support through informal family relationships.

⁴ See Appendix B for measures of family emotional and instrumental support.

⁵ The following is an example of an item related to family support at the macro level: I feel close to my family. The following is an example of an item related to family support at the micro level: I have someone in my family who understands my problems.

Family Support & Offending: Theoretical Processes

A variety of sociological, psychological and criminological theories detail processes that may explain a potential link between family support and reoffending. This section will explore six of these theories: social support, social bond theory, age-graded informal social control, certification/delabeling, reintegrative shaming and differential coercion theory.

Social Support Theory

A central concept for criminological theory (see Cullen 1994), the importance of social support is also very well established in the public health and psychological literatures. Much of the pioneering work on social support has examined the role of support in general health and well-being (for reviews see Uchino, Cacioppo and Kiecolt-Glaser 1996; Cohen and Wills 1985; and House, Umberson and Landis 1988). Research has documented a relationship between social support and a wide variety of outcomes, including the likelihood of mortality among elderly populations (Temkin-Greener, Bajorska, Peterson, Kunitz, Gross, Williams and Mukamel 2004), psychological adjustment during pregnancy (Liese, Snowden and Ford 1989), alcohol use among college students (Menagi, Harrell and June 2008), academic success among minority youth (DeGarmo and Martinez 2006), and low-income families' material well-being (Henley, Danziger and Offer 2005).

While social support's effect on outcomes related to physical or mental health is outside the scope of this study, the work done on the main effects hypothesis versus the buffering hypothesis in this literature is particularly relevant. The main effects model

contends that all individuals can benefit from social support regardless of whether or not they are experiencing particularly stressful life events. In contrast, the buffering model maintains that social support is most important for individuals who are experiencing stressful life events and are thus at an elevated risk for some negative outcome; for high stress individuals, social support can “buffer” or protect against negative outcomes.

While research has revealed evidence for both the main effects and the buffering model (see Cohen and Wills 1985), it was important to consider possible buffering effects in the current study. Although the reentry experience is undoubtedly stressful for all individuals exiting prison, the experience is arguably more stressful for some individuals than others. The potential moderating effects of factors related to stress are explored in the examination of family support and reoffending.

The wider social support and general well-being literature is also relevant to the current study because it has documented interesting gender differences for the effects of social support. Some research has found that although men may report higher levels of social support than women, the degree to which social support influences health-related quality of life is identical for both genders (Gallicchio, Hoffman and Helzlsouer 2007). Depending on how social support is measured, other research has identified different effects for men and women. One study revealed that the effect of social support on reducing depressive symptoms is stronger among rural white females than rural white males (Husaini, Newbrough, Neff and Moore 1982). Other work has found buffering effects of acquaintanceship, friendship and reassurance of worth on neurosis for males, but not for females (Henderson, Byrne and Duncan-Jones 1981).

While much of the applicable psychological literature on social support and health outcomes focus on the individual level, some of the criminological literature has focused on the relationship between social support and crime at the cross-national level (Alzheimer 2008; Pratt and Godsey 2003, 2002). Using the percent of a nation's gross domestic product (GDP) spent on healthcare to measure social support, Pratt and Godsey (2003) found that social support was inversely related to homicide rates across 46 nations. An interaction of social support and economic inequality also explained cross-national variation in homicide rates.

Alzheimer (2008) used five different measures of social support to investigate variation in homicide rates across 51 nations. The five measures included general social support (the percentage of the GDP spent on pensions, healthcare, employment injury, sickness, family, housing and social assistance benefits), education expenditures (the percentage of the GDP spent on education), public health expenditures (the percentage of the GDP spent on public health), the decommidification index (the percent of the GDP spent on social welfare, average annual benefit expenditures, and the percent of benefit expenditures allocated to employment injuries) and the human development index (life expectancy, educational attainment and standard of living). Results revealed that general social support, the decommidification index and the human development index had direct effects on national homicide rates.

A variety of mechanisms may explain macro-level relationships between social support and crime. As effectively summarized by Pratt and Godsey (2003), high levels of social support may encourage appropriate coping mechanisms in response to straining life events (Agnew 1999), aid in earlier desistance from crime over the life course

(Sampson and Laub 1993), function as a necessary requirement for effective social control (Braithwaite 1989), or increase the likelihood of effective parental monitoring and care (Currie 1985; Wright, Cullen and Miller 2001). As will be discussed in more detail in following sections, several of these mechanisms also provide an explanation for how social support from family members may influence reoffending at the individual level.

Social Control or Bond Theory

Classic work by Hirschi (1969) proposed that individuals with stronger bonds to other individuals and/or institutions are less likely to be involved in criminal activity. Although Hirschi's social control or social bond theory was originally developed in relation to juveniles, the processes associated with the theory can also be applied to adult populations. Hirschi identified four elements of a social bond. The first element, attachment, refers to the emotional component of the bond. When individuals care about what others think of him or her, he or she is less likely to engage in criminal behavior. Commitment, the second element, embodies a rational decision-making process. Individuals who have invested time and energy in building relationships and a stake in conformity, consider that they have much more to lose by criminal activity (see also Toby 1957). The third element, involvement, can be conceptualized as the temporal component of the bond. The more time an individual spends with non-deviant individuals and participating in pro-social activities, the less time the individual will have available for crime. The belief element of the bond refers to the notion that some individuals have internalized a belief in the legitimacy and morality of following the laws. Those without such beliefs are more likely to break the laws. The absence or

weakness of such bonds is associated with an increase in the likelihood of criminal activity. As such, bonds to family members may enable several processes through which engagement in crime is less likely.

Hirschi's (1969) own surveys of over 4,000 junior and senior high school students in California confirmed that the presence of bonds related to these four elements were associated with lower levels of delinquency. While a variety of other research has offered support for social bond theory (Cretacci 2003; Jenkins 1997; Junger and Marshall 1997; Junger-Tas 1992; Agnew and Peterson 1989; Wiatrowski, Griswold and Roberts 1981), some research has also identified limitations of the theory or failed to find support for the theory (Kempf-Leonard and Decker 1994; Agnew 1985b; LaGrange and Raskin White 1985; Liska and Reed 1985; Krohn and Massey 1980; Hindelang 1973).

Age-Graded Theory of Informal Social Control

Much of the desistance literature offers an explanation for how family members can play a role in reducing the likelihood of criminal offending. Laub and Sampson's (2003) and Sampson and Laub's (1993) age-graded theory of informal social control suggests that recently released individuals who are closely involved with and supported by family members will be less likely to reoffend. Receiving support from family members increases the likelihood that the recently released individual will feel obligated to family members and perceive the costs of criminal behavior as greater. Additionally, family involvement alters the routine activities of individuals previously involved in crime and potentially decreases the time spent with criminal peers. Family members,

particularly spouses, who are involved can also provide direct social control over recently released individuals.

While Laub and Sampson's work explains why family *involvement* may be associated with desistance from crime, it does not directly address the distinct concept of family *support*. While bonds to family members may increase the likelihood that recently released prisoners reevaluate the costs of crime, alter their routine activities in ways that distract them from criminal peers, and live under the surveillance of family members, emotional and instrumental support from family members may be associated with other distinct processes.

Decertification Process & Desistance

Other work suggests that family support can promote desistance by playing a crucial role in the certification process of individuals as *former* offenders. Meisenhelder's (1982) classic work revealed that family provided individuals with a "significant group of close associates that could overtly testify to [their] noncriminality and trustworthiness" (148). As part of the desistance process, an ex-offender must demonstrate to others that he or she should "no longer be considered a criminal but rather should now be treated as a normal member of the social group" (142). When a family welcomes an ex-offender as a "noncriminal" (141), this welcoming is displayed to the larger society who can then welcome the individual as a noncriminal also. As family members and others embrace the individual as a noncriminal, the individual is then more likely to internalize this identity.

Also in support of the certification and delabeling perspective, Maruna, LeBel, Mitchell and Naples' (2004) research on ex-prisoners in a residential reentry program confirmed that the desistance process is often dependent upon prosocial labeling from others. Utilizing a "looking-glass self-concept," Maruna and colleagues concluded that until the ex-prisoners "recognize that others recognize them as 'success stories,' they appear to not quite believe it themselves" (277). Similar to Meisenhelder's findings, although desistance is rooted in internal motivations, external support is a crucial part of the process. When an individual is able to identify with and internalize a noncriminal, pro-social identity, he or she may be less likely to reoffend.

Family support may play a valuable role in creating and maintaining this noncriminal identity. Although the current study was unable to directly test for this, some forms of family support may be associated with the process of prosocial labeling. By receiving emotional support, the individual may feel worthy of inclusion in the family unit and by receiving instrumental support, the individual may feel that the family trusts him or her to use the resources in a non-criminal manner. Such research on the certification process thus suggests that family support may matter in the desistance process not because of the substantive support that is provided, but rather what the provision of support represents (namely, a belief on the part of the family that the former prisoner is no longer a criminal).

Reintegrative Shaming Theory

Braithwaite's (1989) reintegrative shaming theory also emphasizes the importance of internalized non-criminal identities and offers another theoretical perspective to

explain the potential link between family support and reoffending. Braithwaite highlighted a crucial distinction between disintegrative shaming and reintegrative shaming. Disintegrative shaming occurs when a criminal offender perceives signs of harsh disapproval from family, friends, community members and/or the criminal justice system. Due to the lack of any signs of reacceptance back into the group, disintegrative shaming stigmatizes the offender and encourages secondary deviance by pressuring the offender into a criminal subculture. Conversely, reintegrative shaming transpires when a criminal offender receives signs of disapproval, but is then welcomed back into the group or community.

The key difference in reintegrative shaming is that the focus is placed on an offender's bad *act* and not on him or her as a bad *person*. Reintegrative shaming, in theory, is an effective method of crime control because the offender is encouraged to recognize that he or she committed a bad act, but that the bad act is not representative of him or her as a person. Despite some mixed results (Botchkovar and Tittle 2005; Zhang and Zhang 2004), many empirical tests of reintegrative shaming theory have revealed promising results. In an Australian study that randomly assigned some offenders to reintegrative shaming conferences and others to traditional court proceedings, Sherman, Strang and Woods (2000) found that violent youth offenders who participated in conferencing reoffended at lower rates than the comparison group. Similar effects were not found for other types of offenders, including juvenile property offenders and drunk driving offenders. Hay's (2001) test of reintegrative shaming theory revealed direct effects of both reintegration and shaming on predatory delinquency, but failed to find the expected interaction effect of reintegration and shaming. In strong support of the theory,

Makkai and Braithwaite's (1994) study of regulatory compliance in nursing homes did find a positive effect of reintegrative shaming from health inspectors on compliance.

Reintegrative shaming theory provides an applicable framework to explain a link between family support and reoffending. Some family members may be hesitant to provide support to a recently released individual as a result of their previous criminal behavior; family members may see an individual's past criminal acts as evidence that the individual is a bad person (Shollenberger 2009; Shapiro and Schwartz 2001). It is possible that the individual then interprets the lack of support as stigmatization from the family and also internalizes the bad person label. According to reintegrative shaming theory, this individual would then be more likely to reoffend because they would behave according to their (criminal / bad person) label.

Differential Coercion Theory

Lastly, Colvin's (2000) differential coercion theory can offer insight into a relationship between family support and reoffending. As an integrated theory of criminality that draws on a variety of other theories including Tittle's (1995) control balance theory, Patterson's (1995) coercion theory, Agnew's (1985a, 1992) general strain theory, Hirschi's (1969) social control theory, Gottfredson and Hirschi's (1990) self-control theory, Cullen's (1994) social support theory, differential coercion theory proposes that individuals encounter varying degrees of coercive and supportive environments, which yield different social-psychological outcomes and subsequently varying propensities for criminality. Individuals can encounter combinations of coercion

and support in a variety of social environments, including the family, the workplace, schools and peer groups.

Colvin identified four typologies to organize these different combinations of coercive and supportive environments. Type one, labeled *non-coercive consistent control*, is characterized by the use of normative (symbolic rewards) and remunerative (material rewards) control as well as the provision of consistently strong expressive and instrumental social support. Individuals who encounter this type are likely to exhibit high self control and self efficacy, strong moral bonds and low anger, which are in turn associated with the tendency to engage in pro-social, non-criminal behaviors. Type two, labeled *non-coercive erratic control*, involves the use of erratic control and differential social support. Colvin characterizes this type as “lenient, lax and permissive with detached interest” (44). Type two is associated with low self-control, high self-efficacy and an intermediate, calculative social bond, which yields a strong predisposition to explore pleasurable deviant activities, non-predatory street crime as well as white collar crime. Type three is labeled *coercive consistent control* and involves the use of coercive (i.e., threatening or forceful) controls and low levels of social support. Social-psychological outcomes such as a self-directed anger, an external locus of control, and weak social bonds explain the low probability of criminal behavior, but the high probability of mental health problems. Type four, labeled *coercive erratic control*, involves the use of erratic coercive controls and low levels of social support, which result in anger directed towards others, low self-control and weak social bonds. Individuals who most frequently encounter this combination of control and support are the most

likely to engage in hostile acts towards others and continued involvement in predatory street crime.

Considering that differential coercion theory is an integrated theory with many complex components, empirical tests of the theory have been rather limited. Based on a survey of middle school students, Unnever, Colvin and Cullen (2004) found results that were generally consistent with Colvin's (2000) theory. Students who were exposed to coercive family, school and neighborhood environments were more likely to experience the social-psychological deficits proposed by the theory and were subsequently more likely to engage in delinquent behaviors.

In reference to this dissertation, differential coercion theory would predict that recently released individuals who encounter non-coercive, supportive family environments will be less likely to reoffend. In contrast, individuals who return to family environments characterized by the use of coercive control and a lack of social support will be predisposed to a variety of social-psychological deficits that are associated with an increased likelihood of reoffending. While this dissertation does not assess coercive versus non-coercive family dynamics, the existence of a relationship between family support and reoffending would be consistent with differential coercion theory.

Although this dissertation is not concerned with explicitly testing differential coercion theory, reintegrative shaming theory, decertification, the age-graded theory of informal social control social bonding, or social support theory, it is nonetheless important to situate this dissertation's findings within applicable theoretical frameworks that may help to explain the findings and illuminate potential implications of the findings. These criminological theories also provide important context for the following review of

prior research on the relationship between family support and reoffending. And, as will be evident in the following chapter, these theoretical frameworks also influence the research questions under investigation.

Descriptive Accounts of Family Support & Reentry

Before exploring the small body of research that has attempted to measure the relationship between family support and the likelihood of reoffending, it is first important to review the literature that has documented the role of family support more generally for recently released individuals. The following descriptive data on releasees' support from family offers a detailed perspective that guides the interpretation of the limited prior research on the relationship between family support and reoffending. These descriptive accounts also influenced the development of research questions for the current dissertation. This section will describe the relationships between formerly incarcerated individuals and their family members and then explore the types and prevalence of support provided by family members.

Much of the existing research on family support and reentry has come from the Urban Institute's four state reentry study entitled, *Returning Home: Understanding the Challenges of Prisoner Reentry* (Visher, La Vigne and Farrell 2003; La Vigne, Visher and Castro 2004; Visher and Courtney 2006; Visher, Kachnowski, La Vigne and Travis 2004a; Visher, La Vigne and Travis 2004b; and Shollenberger 2009). At each of the four study sites (Baltimore, Chicago, Cleveland and Houston), approximately 400 incarcerated individuals were surveyed one month prior to their release. Interviews were then conducted with some of these individuals at varying points following their release and

with varying rates of participation across the sites. In the Returning Home studies, “family” was defined as a blood or legal relative, someone with whom the prisoner has a child in common, or a significant other or guardian that the respondent lived with prior to his or her incarceration or plans to live with after release (Visher et al. 2004b: 107).

Based on this body of work, families do appear to be an important part of ex-prisoners’ lives. In the Returning Home study in Chicago, 94 percent of the 400 male respondents who were interviewed prior to their release indicated that they wanted their families to be involved in their lives and 86 percent reported that they feel close to their families (Visher et al. 2003). In Cleveland, 43 percent of the 400 male respondents reported close relationships with at least four family members prior to incarceration, 42 percent reported close relationships during incarceration and nearly 60 percent reported close relationships after incarceration (Visher and Courtney 2006). Similar reports were also found in Chicago, where 46 percent of respondents reported close relationships before prison, 43 percent during prison and 52 percent after prison (La Vigne et al. 2004).

Among individuals who do have relationships with family members, evidence suggests that family relationships go through a variety of changes when a family member returns home from prison and that these changes can influence the likelihood of a family offering support. As part of the Returning Home study in Houston, interviews were conducted with family members of individuals who were released two to five months previously. Over half of the family members indicated that their relationships had become stronger or easier following the individual’s release. Approximately 30 percent believed there had been no change in their relationship and fewer than 15 percent reported that their relationship became weaker or more difficult (Shollenberger 2009). In

a different study, repeat offenders have also described changing family relationships following release and the subsequent changes in the support provided (Breese, Ra'el and Grant 2000). Interviews with 21 male prisoners who were incarcerated for at least the second time revealed that the initial period following release can be characterized as a “honeymoon phase” (16), during which family members are particularly excited for the individual to be home and thus treat the individual particularly well. The following period can be labeled “disenchantment” (17) because family members gradually return to the daily routines they had when the individual was incarcerated. Conflict and hostilities can also develop during this period if the ex-prisoner is unable or unwilling to find employment or secure their own housing. This work provides evidence that levels of family support are likely to fluctuate over time and that releasees perceive these changes.

Also tracking change over time, the Returning Home study in Baltimore closely measured overall levels of family support using two scales (Visher et al. 2004b: 220). One scale, labeled *family support*, was measured by asking respondents the extent to which they strongly agreed, agreed, disagreed or strongly disagreed with the following items: (1) felt/feel close to your family, (2) want(ed) your family to be involved in your life, (3) consider(ed) yourself a source of support for your family, and (4) family was/is a source of support for you.⁶ Another concept labeled *family relationship quality* closely resembles how emotional support has been conceptualized in other research, including the evaluation of the Serious and Violent Offender Reentry Initiative.⁷ Family

⁶ The family support scale was developed by the Urban Institute. Cronbach's alpha ranged from .799 to .880 at different interview times (pre-release, post-release), indicating the reliability of this scale.

⁷ The family relationship quality scale was borrowed from the Medical Outcomes Study (MOS) Social Support Survey (Sherbourne and Stewart 1991) and includes items from the emotional support, affectionate support and positive social interaction scales. Respondents were asked the extent to which they strongly agreed, agreed, disagreed or strongly disagreed with each of the statements. Cronbach's alpha scores ranged from .962 to .983.

relationship quality was measured by asking respondents whether there was someone in their family with whom they could do the following: (1) Someone you could count on to listen to you when you needed to talk, (2) Someone to talk about yourself or your problems, (3) Someone whose advice you really wanted, (4) Someone to share your most private worries and fears with, (5) Someone to turn to for suggestions about how to deal with a personal problem, (6) Someone who understood your problems, (7) Someone to love you and make you feel wanted, (8) Someone to have a good time with, (9) Someone to get together with to relax, (10) Someone to do something enjoyable with, and (11) Someone to spend time with to help you get your mind off things.

Table 1 summarizes mean levels of family support based on the two scales for both men and women at different points in time (Visher et al. 2004b). These results indicate that study participants generally reported high levels of family support.

Although Visher and colleagues did not report any tests of significance for change over

Table 1. Mean levels of family support in the Returning Home Baltimore study

		Prior to incarceration (N=301)	During prison (N=302)	30-45 days post release (N=149)	4-6 months post release (N=142)
Mean family support	Males	3.14	3.26	3.34	3.28
	Females	3.05	3.11	3.20	3.08
		Prior to incarceration (N=296)	Post-release expectations (N=288)	30-45 days post release (N=147)	4-6 months post release (N=100)
Mean family relationship quality	Males	3.27	3.42	3.38	3.40
	Females	3.12	3.36	3.14	3.05

Note: Adapted from Visher et al. (2004b).

time, levels of family support do appear to vary slightly over time. These data also reveal differences between perceived levels of family support for males and females, with males reporting higher levels of family support on both scales at all time periods. Interestingly, expectations for the level of family relationship quality for both males and females are fairly high. For males, these expectations appear to be realized following release; however, for females, reported levels of family relationship quality decline following release.

It is important to emphasize that the Returning Home study in Baltimore appears to be the only prior research that has examined gender differences in levels of family support for recently released individuals. While some other research has interviewed both male and female releasees, it did not explore differences in family support based on gender (Nelson, Deess, and Allen 1999). The other Returning Home studies only interviewed males leaving correctional facilities (Visher and Courtney 2006; La Vigne et al. 2004).

Despite the many changes that family relationships may endure in the months following the release of a family member, research has shown that families support newly released individuals in a variety of ways, including providing financial support, housing, employment opportunities, and assistance with abstaining from drugs.

Individuals' expectations for the level of financial support they will receive are often exceeded following release. In the Returning Home study in Baltimore, 42 percent of the approximately 320 male and female respondents expected that family members would be a source of financial support following release. In the three months following their release, over 50 percent of the respondents reported actually receiving financial

support from family members (Visher et al. 2004a). Similarly, in Cleveland, half of the respondents expected family members to provide financial support following their release and nearly 80 percent received financial support in the month following their release (Visher and Courtney 2006). This trend was also evident in Chicago where 45 percent of respondents expected financial support and 59 percent reported receiving financial support from family members following release (La Vigne et al. 2004).

Housing is also a crucial component of successful reentry (Makarios, Steiner and Travis 2010; Metreax, Roman and Cho 2008; Zhang, Roberts and Callanan 2006; Roman and Travis 2004) and appears to be a common form of support offered by families. In the Vera Institute of Justice's *First Month Out* study, 49 people released from New York State prisons and New York City jails were interviewed two weeks prior to release, the day of release, 24 to 48 hours post release and 30 to 35 days post release (Nelson, Deess and Allen 1999). Forty out of these 49 subjects were living with a relative or spouse/partner two days following release. The majority of the subjects who lived with relatives reported that they would be welcome to reside there indefinitely. Similar to financial support, expectations were also exceeded for families' likelihood of offering housing assistance in the Returning Home studies. Seventy two percent of Chicago respondents (La Vigne et al. 2004), 78 percent of Cleveland respondents (Visher and Courtney 2006) and 66 percent of Baltimore respondents (Visher et al. 2003) expected to live with family members post release. Nearly 90 percent of Chicago respondents (La Vigne et al. 2004), 80 percent of Cleveland respondents (Visher and Courtney 2006), and 80 percent of Baltimore respondents resided with family in the four to eight months following release. Interviews with family members of ex-prisoners returning to Houston

revealed that family members who allowed ex-prisoners to live in their homes were more likely to have also provided other types of assistance compared to family members who never allowed ex-prisoners to reside with them (Shollenberger 2009).

Overcoming substance abuse problems poses another challenge for many recently released individuals (Belenko and Peugh 2005; Gendreau, Little and Goggin 1996). The *First Month Out* study revealed that family members can help ex-prisoners with substance abuse problems (Nelson et al. 1999). Ex-prisoners in this study reported that family members helped them to overcome substance abuse obstacles by providing positive praise and encouragement as well as accompanying them to Narcotics Anonymous meetings.

Securing employment is also a key factor in successful reentry (Makarios et al. 2010; Petersilia 2003) and family members seem to play an important role in helping recently released individuals find employment. In the *First Month Out* study, the majority of subjects who were working during the first month following release were either re-hired by former employers or they received assistance from family members (Nelson et al. 1999). Another study based on interviews with 200 probationers revealed that it was common for probationers' family members to aid the probationer with employment by directly offering the ex-offender a job (if the family member was self-employed) or by asking friends to give the ex-offender a job (Farrall 2004). Among family members interviewed in the Houston Returning Home study, 55 percent reported that they helped their formerly incarcerated family member find work. Although expectations were high for family members' ability to help with finding employment in the Chicago Returning Home study (nearly 50 percent of respondents expected to talk

with a family member about employment), only 33 percent of those who were employed post-release had spoken with a family member to find their job (La Vigne et al. 2004).

Considering the close relationships between many former prisoners and their family members and the degree of support offered by family members, it is not surprising that formerly incarcerated individuals have commonly identified family support as a central component of their reentry experiences. In the Chicago Returning Home study, 58 percent of individuals interviewed prior to their release indicated that family support would be at least one of the important factors in helping them to avoid prison. Following release, 71 percent of respondents mentioned family support as one of the important factors (La Vigne et al. 2004). Interestingly, 63 percent of Cleveland respondents mentioned family support as something that they expected would prevent them from returning to prison, but finding employment, housing, and abstaining from drug use were all anticipated to be more important factors than family support. In the few months following release, 26 percent of the respondents indicated that family support was the *most* important factor preventing their recidivism and the factors they had expected to be most important (employment, housing, sobriety) were now all rated as less important than family support (Visher and Courtney 2006).

In contrast to the supportive family relationships reported by many ex-prisoners and the value placed on family support as key in successful reentry, many family members also struggle with their own personal problems and may thus have difficulty providing support to recently released individuals. In the sample of releasees in the Returning Home studies, approximately 60 percent of respondents had at least one family

member who had been convicted of a crime.⁸ Approximately 30 percent of respondents in Cleveland and Chicago had a family member who was currently incarcerated (Visher and Courtney 2006; Visher et al. 2003). High rates of family involvement in the criminal justice system are significant in light of research on the intergenerational aspects of incarceration (Murray and Farrington 2005, 2008).

Considering that many ex-prisoners' family members have a history of substance abuse, the possibility of family members helping ex-prisoners with substance abuse problems may seem surprising. According to the Baltimore Returning Home study, over 25 percent of respondents reported having at least three family members with a history of substance abuse (Visher et al. 2004a). Fifty eight percent of Chicago respondents (Visher et al. 2003) and 64 percent of respondents in Cleveland (Visher and Courtney 2006) indicated that someone in their family had a history of substance abuse.

Family relationships can also be complicated as a result of abusive histories. Research has identified a link between physical and sexual abuse in the home during childhood and future offending (Harlow 1999; Weeks and Widom 1998; Dutton and Hart 1992; Smith and Thornberry 1995). Abusive relations between family members are certainly not limited to childhood. In the Chicago Returning Home sample, 12 percent of adult respondents indicated that they had been physically abused or threatened by a family member in the six months before entering prison (Visher et al. 2003). In the Baltimore study, 12 percent reported that a family member had threatened or harassed them and six percent reported that a family member had physically hurt them in the year before entering prison (Visher et al. 2004b). Considering evidence that family abuse is

⁸ Fifty nine percent of respondents in Chicago (Visher et al. 2003), sixty four percent in Cleveland (Visher and Courtney 2006) and sixty percent in Baltimore (Visher et al. 2004a) had at least one family member who had been convicted of a crime.

associated with criminal behavior (Harlow 1999; Laub and Sampson 1988), these findings are particularly relevant. It is also important to note that the damaging effects of family abuse on future criminal activity and violent behaviors are particularly salient for females (Makarios 2007; Siegel and Williams 2003; Widom and White 1997).

Considering the prevalence of family members' criminal justice system involvement, history of substance abuse and abusive relationships, it is perhaps surprising that many ex-prisoners report supportive relationships with family members and an even greater percentage of ex-prisoners report the desire for close, supportive family relationships. While there is some evidence that levels of family support may change over time, research has documented that families often provide individuals with financial support, housing, employment opportunities, and assistance with abstaining from drugs.

Criminogenic Risk for Reoffending

While families often provide support in the above described ways, the extent to which such family support predicts the likelihood of reoffending is still unknown. Before examining the few studies that have sought to measure the relationship between family support and reoffending, it is important to briefly review other factors that are also known to predict the likelihood of reoffending (and that may influence the relationship between family support and recidivism). In order to isolate the unique effect of family support on reoffending, it is necessary to also control for these other predictors of reoffending in this dissertation.

A variety of previous research has identified both static and dynamic factors that are associated with the likelihood of reoffending across diverse populations. Based on a

meta-analysis of over 130 recidivism studies, classic work by Gendreau, Little and Goggin (1996) identified adult criminal history, history of antisocial behavior, social achievement (related to education, employment and finances), age/gender/race and criminogenic needs (including antisocial thinking and values, substance abuse, antisocial companions and interpersonal conflict) as the strongest predictors of recidivism. More recent research by Andrews and Bonta (2006) and Andrews and Dowden (2007) has built on this work and emphasized the “Big 8” risk factors that account for the largest amount of variance in predicting recidivism, which include a history of antisocial behavior, antisocial personality patterns, antisocial cognitions, antisocial associates, family problems, low levels of performance in school/work, low levels of involvement with noncriminal leisure activities, and substance abuse. As will be detailed in following chapters, many of these factors are included as controls in models testing the relationship between family support and reoffending.

While much of the research on risk assessment tools have found these “gender neutral” tools to be valid in predicting female recidivism (Smith, Cullen and Latessa 2009; Holsinger, Lowenkamp and Latessa 2003; Dowden and Andrews 1999; Coulson, Ilacqua, Nutbrown, Giulekas and Cudjoe 1996), others have engaged a feminist perspective and argued that most recidivism prediction relies on male-centered theories of criminality and fails to account for the distinctive contexts of female criminality (see Reisig, Holtfreter and Morash 2006 for a review of this perspective). In light of this feminist perspective, a variety of research has investigated criminogenic characteristics that are either unique predictors of reoffending for females or stronger predictors of reoffending among female populations compared to male populations. Van Voorhis,

Wright, Salisbury and Bauman (2010) have effectively organized these characteristics into the following seven domains: victimization and abuse, relationship problems, mental illness, drug abuse, self-concept, poverty and parental issues.

While it is outside the scope of this dissertation to test whether the traditional set of recidivism prediction factors effectively predict female recidivism, insight into this debate between gender-neutral and gender-responsive prediction strategies offers context for why recently released females and males may respond differently to family support (as will be explained further in the research questions and hypotheses discussed in chapter three).

The Limited Quantitative Research on Family Support & Reoffending

Despite the research that has documented the types and prevalence of family support and ex-prisoners' perceptions of how family support may influence their future criminal behavior, very little research has empirically measured the extent to which family support affects reoffending. While the importance of family support for reducing the likelihood of recidivism may be intuitive and supported by criminological theory, very little research has confirmed the existence of an empirical relationship. Through the following review of the small body of work that has investigated this relationship, gaps in this research literature will be highlighted.

Although distinct from family support, it is relevant to briefly discuss the relationship between family *ties* and reoffending. Recall that social ties are a necessary precondition for the existence of supportive relationships, but that social ties and social support are distinct concepts. Nonetheless, understanding the influence of family *ties* on

reoffending may help to at least partially explain a potential relationship between family *support* and reoffending. Research has documented that various efforts devoted to maintaining family ties during incarceration, primarily through visitations from family members, are associated with better post-release outcomes, including recidivism (Duwe and Clark 2011; Bales and Mears 2008; Hairston 1988), parole success (Holt and Miller 1972) and mental health (Ekland-Olson, Supancic, Campbell and Lenihan 1983).

Recent work by Berg and Huebner (2011) used data from the Level of Service Inventory – Revised (LSI-R) for approximately 400 male releasees to investigate the relationship between family social ties, employment and the likelihood of being re-arrested in the 46 months post-release. After controlling for demographics and other known predictors of reoffending, Cox proportional hazard models revealed that ties to relatives (but not ties to intimate partners or parents) significantly reduced the likelihood of rearrest. However, after controlling for employment in the post-release period, the effect of ties to relatives was no longer significant.

Although Berg and Huebner’s work perhaps represents the most methodologically rigorous investigation of the role of family on the likelihood of reoffending prior to this dissertation, the current study builds on this work in two key ways. First, by using self-reported measures of reoffending in addition to arrest data, this dissertation offers a more complete picture of the relationship between family and reoffending. The use of both self-reported measures of reoffending and measures from official records also reduces mono-method bias, which can pose a threat to validity (Shadish, Cook and Campbell 2002; Cook and Campbell 1979).

Second, the measure of social ties in Berg and Huebner's study likely taps into a number of different social processes, yet all of these processes are represented by one construct labeled "ties." The LSI-R ranks ties as *unsatisfactory* (relationships are absent, hostile, punishing or uncaring, or in cases when no contact is maintained, or if the offender has contact but the family condones antisocial attitudes), *relatively unsatisfactory* (relations marked by significant conflicts, dissatisfaction, or indifference regarding the relationship on either part; when there is irregular contact or personal contact), *relatively satisfactory* (relationships that are mostly reward, positive, and when there are good attempts at caring and positive influence with regular contact) or *highly satisfactory* (relationships that are highly satisfying with obvious caring and positive influence, and one in which the offender maintains regular contact). For their analysis, Berg and Huebner collapsed these categories into unsatisfactory ties and satisfactory ties. This measure of ties appears to include several distinct processes ranging from frequency of contact to emotional quality to satisfaction with relationships. Collapsing this into one construct limits what can be explained because important variation is masked. Despite some insightful interpretations in the discussion section of Berg and Huebner's work, meaningful policy implications are limited as a result of the confounding of different family processes in the tie measure. In contrast, this dissertation isolates two distinct types of support from family members using two distinct scales. This allows for a clearer understanding of the family processes that may matter (or not) for reoffending.

Turning to the body of work that has actually measured the relationship between family *support* and reoffending, two of the Returning Home sites examined the relationship between family support and the likelihood of reconviction and

reincarceration. In the Chicago Returning Home study, select items from both the family support and family relationship quality scales were combined to develop a new family support scale (La Vigne et al. 2004: 19).⁹ After controlling for age, race, criminal history and other predictors of recidivism, regression analyses revealed that individuals who reported higher levels of family support *before* they entered prison were less likely to be reconvicted in the six months following release (La Vigne et al. 2004). Unfortunately, the Chicago study did not investigate or did not report results on whether levels of family support following release were related to post-release reoffending outcomes. The size of the effect was also not reported.

The Baltimore Returning Home study offered a much more comprehensive analysis (Visher et al. 2004b). Surveys were completed by 324 individuals 30 to 90 days prior to their release. As part of this survey, participants reported levels of family support prior to incarceration, levels during prison as well as expectations for family support following release. Due to budget constraints, follow up interviews were completed with only 153 of these individuals 30 to 45 days following their release and only 104 of these individuals four to six months following their original release. Table 2 below details the mean levels of family support for recidivists and non-recidivists prior to incarceration and following release. Using both self-report and official records as measures of recidivism, no statistically significant differences were found in levels of family support pre-prison or post-prison among recidivists and non-recidivists.

⁹ The family support items used in the Chicago study included “whether prisoners felt loved by, close to and supported by their family, and whether they had a family member they could talk to about problems, turn to for advice, and get together with to relax” (La Vigne et al. 2004: 19). Unfortunately, measures of reliability for this scale were not provided in the research brief on the Chicago study.

Table 2. Mean levels of family support among recidivists and non-recidivists in the Baltimore Returning Home study

	Recidivists	Non-Recidivists
	(N=96)	(N=203)
Pre-prison family support	3.09	3.13
Pre-prison family relationship quality	3.20	3.25
Post-release family support	3.22	3.35
Post-release family relationship quality	3.36	3.34

Note: Adapted from Visher et al. (2004b).

This preliminary investigation of the relationship between family support and reoffending in the Returning Home studies certainly makes a substantial contribution to this literature. However, it is important to recognize a few critical limitations of Returning Home. First, the post-release follow up period was only six months, which is rather short. Second, the intervals at which individuals were surveyed and interviewed were very wide. Considering that levels of family support might change over time, grouping individuals who were interviewed at four months following release with individuals who were interviewed at six months following release may mask important temporal differences.

Third, the first post-release interviews were conducted with less than half of the original sample and the second post-release interviews were conducted with less than one-third of the original sample. Attrition analyses revealed that although there were no significant differences between those who completed the first post-release interview and those who did not in terms of age, race, gender or criminal history, those who did not complete the first post-release interview were more likely to have been arrested in the six month period. And although there were also no demographic differences between those

who completed the second post-release interview and those who did, those who did not complete the second interview were more likely to have been reincarcerated for a supervision violation (Visher et al. 2004b).

The *First Month Out* study also conducted some basic bivariate correlations between perceived levels of family support and a variety of outcomes (Nelson et al. 1999). Based on however each participant defined family support for him or herself, participants were asked to rate their level of family support on a scale from one to five. Family support ratings were combined with items measuring family cohesion, family members' involvement with drugs and the extent to which family members accepted phone calls from the incarcerated individual to develop a family strength index.¹⁰ Higher family strength index scores were correlated with lower drug use, an increased likelihood of finding employment and less criminal offending. Although the *First Month Out* study documented the initial reentry experience in great detail, this study was limited by a small sample size of forty nine individuals, a very short study period of one month and unsystematic / inconsistent definitions of family support (participants were not given a particular definition of support).

Research has also investigated the role of family support in reducing the likelihood of relapse and reoffending among substance abusing populations. One such study investigated the role of families for substance abusers under some form of criminal justice supervision in New York City (Sullivan, Mino, Nelson and Pope 2002). The study compared a group of 90 users and their families who were enrolled in the La Bodega de la Familia program to a comparison group identified through the parole office

¹⁰ Unfortunately, the researchers did not provide any further details regarding how this measure was constructed or the reliability of this measure.

or local clinics. The La Bodega program offered case management and social services to entire families. Users and their families had access to workshops and support groups on issues from relapse prevention and job readiness to recreational/expressive activities such as creative writing and dancing. Referrals to other agencies were also made for legal services, parenting classes, healthcare, mental healthcare and housing assistance. The program was designed with the expectation that offering services to families would increase family members' ability to offer support to the substance abusing individual, which in turn would reduce substance use.

The results revealed a decline in substance abuse in the La Bodega group compared to the comparison group, but the exact mechanisms creating this outcome were unclear. The La Bodega group were not more likely to participate in treatment or stay in treatment longer than the comparison group. Additionally, based on the Medical Outcomes Study (MOS) Social Support Survey (Sherbourne and Stewart 1991)¹¹, the La Bodega group actually reported reduced levels of support during the six month study period while comparison group individuals reported increases in support. The researchers hypothesized that family counseling and intensive family case management may initially cause family disruption “as a consequence of having the issues surrounding drug abuse out on the table and having to deal with them openly” (Sullivan et al. 2002: 51). Nonetheless, qualitative interviews with substance users in the La Bodega program indicated that family members did play a central role in helping users maintain sobriety.

¹¹ The MOS survey measures the following five types of social support: emotional support (the expression of positive affect, empathetic understanding, and the encouragement of expressions of feelings), informational support (the offering of advice, information, guidance or feedback), tangible support (the provision of material aid or behavioral assistance), positive social interaction (other people's availability to do fun things with you), and affectionate support (involving expressions of love and affection).

In support of Meisenhelder's (1982) research on the importance of prosocial labeling from family members, users described their desire for families to view them in a positive light. Users also identified family members' threats to end their relationships if the individual returned to drug use as an effective method for helping them to stay off drugs. Perhaps consistent with Colvin's (2000) non-coercive consistent type of control, it was thus a "combination of pressure, encouragement, and assistance" from family members that was reportedly associated with declining drug use (54).

While the La Bodega evaluation revealed the possibility of some interesting family dynamics related to social support, this study focused on a fairly small sample of a very specific type of offender in a very specific geographic location for a fairly short time period. Considering the researchers' hypothesis that family case management and counseling would have an initial stressful effect on families and a subsequent reduction in support provided, it would have been particularly valuable to measure changes in family support over a longer period of time, during which the initial disruptive effect of family counseling may have been worked out. Additionally, it is impossible to disentangle the effects of family case management services from the unique effect of family support in this study.

It is important to recognize that some work has revealed a relationship between family reunification/involvement and increased criminal activity. Based on interviews with recovering drug addicts in a therapeutic community treatment program, it appears that families can have a negative effect on reintegration when family members do not value the importance of treatment and when tensions arise between newly reunited spouses (Gideon 2007). Furthermore, a study of male recidivists in Ontario found that

interpersonal conflicts, especially with romantic partners, are often substantial problems post-release (Zamble and Quinsey 1997). Research based on interviews with female ex-offenders also draws attention to the potential negative effects of females reuniting with spouses or boyfriends following their release (Leverentz 2006). Female ex-prisoners commonly have spouses or boyfriends who are involved with drug use or have criminal histories. Many of these romantic relationships thus become criminogenic for female ex-prisoners (Leverentz 2006).

In sum, the small body of research that has empirically investigated the relationship between family support and reoffending has yielded mixed results. While some work has found that higher levels of family support are associated with lower rates of reoffending (La Vigne et al. 2004; Nelson et al. 1999), other research has failed to identify a clear relationship between family support and reoffending (Sullivan et al. 2002; Visser et al. 2004b). Existing research has largely relied on fairly small sample sizes, short follow up periods post release, and inconsistent conceptualizations of family support.

CHAPTER 3: RESEARCH QUESTIONS & HYPOTHESES

This chapter details this study's research questions and hypotheses. An outline of these research questions and hypotheses can also be found in Appendix A. Many of the research questions entail measuring relationships at several points in time and the following labels are used in the questions and hypotheses below to represent different points in time: wave one refers to 30 days prior to release, wave two refers to three months post-release, wave three refers to nine months post-release, and wave four refers to 15 months post-release. Respondents reported on their *current* levels of family support at each time period, but reoffending is measured over a period of months (the first three months post-release [reported at wave two], between three and nine months post-release [reported at wave three], and between nine and 15 months post-release [reported at wave four]).

Question (Q) 1_A: *Are individuals with higher levels of emotional support from family members at wave two less likely to have reoffended between wave one and wave two (after controlling for other predictors of recidivism)?¹²*

Q1_B: *Are individuals with higher levels of emotional support from family members at wave three less likely to have reoffended between wave two and wave three (after controlling for other predictors of recidivism)?*

Q1_C: *Are individuals with higher levels of emotional support from family members at wave four less likely to have reoffended between wave three and wave four (after controlling for other predictors of recidivism)?*

¹² This direction of relationships was examined due to the nature of the data available. Further details on why this direction of relationships was studied will be covered in the Data Analysis section of chapter four as well as in Appendix E.

Hypothesis (H) 1_{A, B, C}: *Individuals with higher levels of emotional support from family members will be less likely to have reoffended in the time period directly preceding the measurement of family support (after controlling for other predictors of recidivism).*

Q2_A: *Are individuals with higher levels of instrumental support from family members at wave two less likely to have reoffended between wave one and wave two (after controlling for other predictors of recidivism)?*

Q2_B: *Are individuals with higher levels of instrumental support from family members at wave three less likely to have reoffended between wave two and wave three (after controlling for other predictors of recidivism)?*

Q2_C: *Are individuals with higher levels of instrumental support from family members at wave four less likely to have reoffended between wave three and wave four (after controlling for other predictors of recidivism)?*

H2_{A, B, C}: *Individuals with higher levels of instrumental support from family members will be less likely to have reoffended in the time period directly preceding the measurement of family support (after controlling for other predictors of recidivism).*

Overall, I hypothesize that family support will reduce the likelihood that a recently released individual had engaged in criminal activity in the most recent period before the measurement of family support. After controlling for other predictors of recidivism, I expect that both emotional support and instrumental support from family members will have independent effects on reducing the likelihood of recidivism.

Q3: If higher levels of emotional and instrumental support are associated with a lower probability of reoffending, what is the relative influence of each? Does one type of support explain more variance in reoffending at each time period? Do these relationships exhibit variability at different time periods?

H3: Assuming there is an inverse relationship between both levels of emotional and instrumental support and reoffending, instrumental support will have a greater effect on reducing the likelihood of reoffending in all three time periods.

Although I hypothesize that both emotional and instrumental support will be negatively associated with reoffending, I also expect that instrumental support will have a stronger effect on the likelihood of reoffending than the effect of emotional support. Considering prior research on the importance of employment (Laub and Sampson 2003; Uggen 2000) and housing (Makarios, Steiner and Travis 2010) for reducing the likelihood of reoffending, I expect that instrumental support will have a stronger effect on the likelihood of reoffending than the effect of emotional support. The strength of these hypothesized relationships may also vary by the type of new offense committed. More specifically, individuals who report low levels of emotional support may be more likely to commit drug offenses.

Q4: Does the relationship between levels of family support and reoffending vary for males and females? Specifically, is the relationship between family support at wave two and reoffending between wave one and wave two the same for males and females? Is the relationship between family support at wave three and reoffending between wave two and wave three the same for males and females?

Is the relationship between family support at wave four and reoffending between wave three and wave four the same for males and females?

***H4:** Assuming there is an inverse relationship between both levels of emotional and instrumental support and reoffending for both genders, emotional support will have a greater effect on reducing females' likelihood of reoffending than males' likelihood of reoffending at all time periods.*

Although relatively little is known about gender differences in levels of family support for returning prisoners (see Visher et al. 2004b for the only study to investigate gender differences), the effect of family support on reducing the likelihood of reoffending may vary by gender (see Giordano, Cernkovich and Rudolph 2002 for a discussion of gender differences in desisting from crime). Assuming that there is a negative relationship between both emotional and instrumental support and reoffending for both genders, I hypothesize that emotional support will have a greater effect on females' likelihood of reoffending than males' likelihood of reoffending. Female offenders more commonly have histories of physical, emotional and sexual abuse (Greenfeld and Snell 1999). The trauma associated with such abuse can be related to females' involvement in crime (Makarios 2007; Widom and White 1997). Although family members are likely to have been the source of such abuse, other family members may now act as important sources of support. Emotional support from family members may be particularly helpful for females attempting to overcome the trauma associated with prior abuse (see also Gilligan 1982).

***Q5:** If levels of either instrumental or emotional family support reduce the likelihood of reoffending, is the effect greater for individuals who have recently experienced stressful events, such as victimization, compared to individuals who have less experience with stressful events?*

***H5:** In support of the buffering hypothesis, the effect of family support on the likelihood of reoffending will be greater for individuals who have experienced stressful events. Such an effect will be observed at all time points.*

Other individual-level characteristics of the released individual may also influence the relationship between family support and reoffending. Following the buffering hypothesis (Cohen and Wills 1985), the effect of family support may be greatest for individuals who have recently experienced stressful life events, such as verbal or physical victimization. I hypothesize that compared to individuals with less exposure to verbal and physical victimization, family support will act as a “buffer” or protect individuals with higher levels of recent victimization from reoffending.

***Q6_A:** Will levels of family support change over subsequent waves?*

***Q6_B:** Will changes in the level of either instrumental or emotional family support over time influence the likelihood of reoffending?*

***H6_A:** Levels of family support will change over time.*

***H6_B:** Reductions in the level of instrumental family support over time will increase the likelihood of reoffending. Reductions in the level of emotional family support over time will increase the likelihood of reoffending.*

Considering the challenges of the reentry experience, it is expected that levels of family support change over time. Reductions in the level of family support over time may have a particularly negative influence on a recently released individual. For example, if an individual reports a high level of emotional support from family members at wave two and then reports a lower level of emotional support at wave three, I expect that reduction in emotional support over time to predict an increased likelihood of reoffending during that period.

CHAPTER 4: DATA & METHODS

This chapter will describe the data set used to answer the research questions detailed in the previous chapter. A discussion of the research methodology used, including the strategies for handling missing data, will conclude the chapter.

The Serious & Violent Offender Reentry Initiative (SVORI) Data set

Data collected as part of an impact evaluation of the Serious and Violent Offender Reentry Initiative (SVORI) offered an excellent opportunity to explore the research questions. In 2003, several federal agencies provided over \$100 million to states to “develop, enhance, or expand programs” that facilitate prisoner reentry. SVORI funded 69 agencies, which managed 89 separate programs. While SVORI-funded programs varied greatly, programs were generally required to improve criminal justice, employment, education, health and housing outcomes; collaborate with correctional agencies, supervision agencies and other state and local organizations; target participants who were serious or violent offenders and under thirty five years of age; include components of reentry programming in prison, post-release on supervision and post-supervision; and utilize needs and risk assessments to guide programming and service delivery (Lattimore and Visser 2009).

The data used for this dissertation were collected as part of the SVORI impact evaluation, which focused on 12 of the adult programs (11 of which accepted both male and female clients and one which only accepted male clients). The criteria used to select these 12 programs from the 89 total programs included the following: the existence of clearly defined program goals, the status of program implementation, the accessibility

and size of program's target populations, the availability of appropriate comparison populations, the availability of quality administrative data, and the ability of the program to participate in the evaluation. The selected programs were based in Indiana, Iowa, Kansas, Maine, Maryland, Missouri, Nevada, Oklahoma, Pennsylvania, South Carolina and Washington (Lattimore and Steffey 2009).

The evaluation team identified individuals as possible study participants if they were enrolled in the SVORI programs at one of these 12 sites and if their expected prison release date was between July 2004 and November 2005. Strategies for selecting an eligible control group varied by program site. Programs in Iowa and Ohio used random assignment to determine whether consenting releasees would be placed in SVORI programming or continue with the standard release process. In these two sites, possible comparison group individuals were drawn from a list of individuals who had consented to participate in SVORI, but who were not assigned to SVORI programming. To create a pool of eligible comparison group individuals in the other 10 sites, individuals who met SVORI program eligibility criteria (such as offense type, age, history of mental illness, etc.), but who did not participate in a SVORI program were identified. Attempts were made to identify individuals who had the same *individual*-level characteristics as SVORI participants, who were incarcerated in similar correctional *facilities*, and who were returning to similar *communities*. In cases when it was not possible to identify individuals based on these three criteria, comparison group individuals were identified from other correctional facilities (Lattimore and Steffey 2009).

Although the intent of the SVORI evaluation was to determine program-related impacts, this study used a data set that combined both SVORI participants and

comparison group individuals. Interviews at wave one were conducted with nearly 1,700 males and over 350 females approximately 30 days prior to their release. Wave two, three and four interviews were attempted with these same individuals at three, nine and 15 months following their original release. Efforts were made to complete interviews with these individuals even if the individual had subsequently been re-incarcerated and interviews needed to take place in a correctional facility (Lattimore and Steffey 2009). There was some attrition in interview participation over successive interview waves. Table 3 below shows the number of completed interviews at each wave for both SVORI and non-SVORI participants. While nearly 80 percent of all males and 87 percent of females participated in at least one follow-up interview at either wave two, three or four, only 42 percent of males and 55 percent of females participated in all three waves of post-release interviews. Sixty three percent of male respondents completed at least two of the three of the follow-up interviews (Lattimore and Steffey 2009). Issues

Table 3. Completed interviews by wave

	Wave 1 (30 days pre-release)		Wave 2 (3 months post release)		Wave 3 (9 months post release)		Wave 4 (15 months post release)	
	Males	Females	Males	Females	Males	Females	Males	Females
SVORI	863	153	529	110	565	119	582	124
Non-SVORI	834	204	455	134	470	134	531	152
Total	1,697	357	984	244	1,035	253	1,113	276

Note: Adapted from Lattimore and Visser (2009).

related to attrition will be addressed later in this chapter.

A brief review of the findings of the SVORI evaluation is relevant because the findings guided the inclusion of some control variables (particularly SVORI program participation and service receipt, as detailed in the following section). Despite the use of random assignment, some minor differences were observed between SVORI and non-SVORI participants in terms of race, mental health, history of drug use, employment history, and offense type. Propensity score models were thus employed to account for possible selection bias in the study (Lattimore and Visher 2009).

Although all reported needs were certainly not met with services, the SVORI implementation evaluation revealed that males involved in SVORI programs received significantly more services in the areas (or “bundles”) of reentry coordination (including needs assessment, meeting with a case manager, having a reentry plan, etc.), employment/education/skills, and transition services (including mentoring, legal assistance, transportation, etc.) than those not in SVORI programs. There were no significant differences in the receipt of the following services for SVORI males and non-SVORI males: assistance with custody agreements, batterer intervention programs, medical treatment and assistance accessing public financial assistance. Female SVORI participants were also significantly more likely to receive 22 of the total 36 services prior to release. Over time, there were increasingly fewer differences in service receipt between SVORI and non-SVORI females (Lattimore and Visher 2009).

In terms of intermediate outcomes, the evaluation revealed that male SVORI male participants were significantly more likely to report jobs with benefits (at all three post-release interviews) and to report that they supported themselves with a job (at wave four

only). There were no significant differences in terms of number of months worked for males. Female SVORI participants were significantly more likely to report receiving formal pay at all three post-release waves. SVORI females were also more likely to report receiving job benefits (at wave two only) and that they supported themselves with a job (at wave four only). Male SVORI participants generally reported lower levels of substance use, but the differences were only statistically significant for a few measures of use and for a few time periods. There were no significant differences in self-reported substance use between SVORI females and non-SVORI females (Lattimore and Visher 2009).

Regarding measures of criminal behavior, there were no statistically significant differences between SVORI and non-SVORI males in self-reported perpetration of violence. Female SVORI participants were significantly less likely to report perpetration of violence at the 15 month post-release interview. The only significant difference in terms of supervision compliance was at wave four, with higher percentage of SVORI male participants complying with supervision. For females, SVORI participants were more likely to report non-compliance at wave three than non-SVORI participants. There was a statistically significant difference between SVORI and non-SVORI males' reporting of criminal behavior at wave two, but the differences were not significant at any of the subsequent waves. For females, there were no differences in reports of overall criminal behavior at any of the three waves. There were also no significant differences in terms of reincarceration for males or females. Based on the official records, male SVORI participants were generally less likely to be rearrested in the 24 months following release, but these differences were not statistically significant. Female SVORI and non-SVORI

participants were arrested at similar rates at three months following release, but SVORI participants were less likely to be arrested at nine and 15 months post-release (Lattimore and Visser 2009).

Overall, the SVORI evaluation revealed that SVORI participants had greater access to services and that SVORI participation was only moderately associated with improved employment and substance abuse. Very few differences were observed in terms of reoffending outcomes.

Measures

Dependent Variables

All analyses were conducted with four different measures of reoffending. Self-report data from the SVORI evaluation provided the following measures: whether the respondent committed *any type of criminal activity* (including multiple types of offenses), *any violent offenses*, and *any drug-related offenses* since the last interview point.¹³ At waves two, three and four, participants were asked to report their engagement in various types of criminal behavior since their last interview, regardless of whether or not they were arrested for the behaviors. If the respondent had not participated in the last interview, the interviewer then directed the respondent to report on participation in criminal activity in the past six months.

¹³ The data set also includes a measure of whether or not the respondent had committed any property crimes since the last interview. Due to little variation in this item, it was not used in the analyses. Only 1.3 percent of cases reported committing a property crime at wave two, 4.6 percent at wave three and 3.8 percent at wave four. Logistic regression models with this dependent variable yielded large standard errors. While property crimes are some of the most common offenses among the general population of offenders, this study focuses on “serious and violent offenders” and thus low rates of property offending may be less surprising.

As a supplement to the detailed self-report data on reoffending from the interviews, the SVORI evaluation also used administrative data from state Department of Corrections/Probation and Parole agencies and the National Crime Information Center (NCIC). Arrest data were available for the vast majority of subjects (it could not be obtained for only 136 individuals). To be clear, official records were not used to validate self-report data; they simply represent different measures of reoffending. These data are used for the fourth measure of reoffending: whether or not *any arrest* occurred during each of the three time periods.¹⁴

Both administrative records and self-report data have notable limitations. Arrest data fails to capture the “dark figure of crime;” crimes that are never reported to the police and crimes for which an arrest is never made are not included in the measure (see Skogan 1977). Self-report data can also be limited in terms of validity and reliability (see Thornberry and Krohn 2000 for a review). However, evidence suggests that offending measures based on self-reported involvement in crime have generally high levels of reliability (Hindelang, Hirschi and Weis 1981). Additionally, there are several indications that the self-reported dependent variables selected for this dissertation are valid measures of reoffending. In terms of construct validity, the measures correlate with established predictors of reoffending (such as age, gender, and criminal history) in a theoretically relevant manner (see chapter five). Regarding content validity, study participants were asked about a wide variety of specific offending behaviors as opposed to a blanket statement about their involvement in criminal activity. For example, the measure for drug-related offending is based on a series of questions asking respondents to

¹⁴ An official measure of first reincarceration was also obtained from the NCIC and included in the data set. There was also too little variation in this measure for it to be used as an outcome, particularly in early waves. Fewer than one percent of cases experienced their first reincarceration in each of the time periods

report their involvement in a variety of activities related to drug possession, sales and manufacturing (see Appendix B). While there are limitations with measures of reoffending for both administrative records and self-report data, the use of both types of measures minimizes mono-method bias (Shadish, Cook and Campbell 2002; Cook and Campbell 1979).

Table 4 below shows the rates of respondents who engaged in criminal activity during each of the three time periods. This table highlights the importance of using both self-reported and official measures of reoffending. While 23 percent of respondents indicated that they had engaged in some type of crime during the first three months, only 16 percent were arrested during that period. Similarly, 36 percent of respondents reported criminal activity during the three to nine months post- release and during nine to

Table 4. Descriptive statistics for self-reported and official measures of reoffending

		<i>M (SD)</i>	Valid N
3 Months Post-Release	Any criminal offense	.23 (.42)	1228
	Violent offense	.02 (.14)	1226
	Drug offense	.16 (.36)	1222
	Any arrest	.16 (.37)	1918
3-9 Months Post-Release	Any criminal offense	.36 (.48)	1288
	Violent offense	.05 (.22)	1288
	Drug offense	.28 (.45)	1276
	Any arrest	.31 (.46)	1918
9-15 Months Post-Release	Any criminal offense	.36 (.48)	1389
	Violent offense	.06 (.24)	1389
	Drug offense	.26 (.44)	1381
	Any arrest	.29 (.46)	1918

15 months post-release. However, 31 percent experienced an arrest in the three to nine month period and 29 percent experienced an arrest in the nine to 15 month period.

Variation in re-offending behavior is also evident when examining different types of offenses. For example, 28 percent of respondents indicated that they had committed a drug- related offense in the three to nine months following release and only five percent reported committing a violent offense.

Independent Variables

This section will detail all independent variables used in the study. Appendix B provides the interview items from the SVORI evaluation data set that were used to obtain these measures.

The SVORI data set includes a variety of family-related measures, including questions related to emotional family support, instrumental family support, family criminal history, and composition of household. Respondents were told that “family means blood or legal relatives, people you have a child in common with, steady intimate relationships, or guardians you live with or lived with” (Lattimore and Visser 2011). Descriptive statistics for the family-related items can be found in Table 5. *Family emotional support* is a construct that was already established in the SVORI data set. On a four-point scale of strongly agree to strongly disagree, respondents were asked at all four interview waves to indicate their current feelings about the following ten items:

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 support for my family.
4. I fight a lot with my family members.
5. I often feel like I disappoint my family.
6. I am criticized a lot by my family.

7. I have someone in my family to talk to about myself or my problems.
8. I have someone in my family to turn to for suggestions about how to deal with a personal problem.
9. I have someone in my family who understands my problems.
10. I have someone in my family to love me and make me feel wanted.

For items #1, #2, #3, #7, #8, #9, and #10, strongly agree responses were assigned a three, agree responses were assigned a two, disagree responses were assigned a one and strongly disagree responses were assigned a zero. For items #4, #5, and #6, which were reverse coded, strongly disagree responses were assigned a three, disagree responses were assigned a two, agree responses were assigned a one, and strongly agree responses were assigned a zero. The final scale thus ranged from zero to 30 with higher values indicating higher levels of emotional family support. Cronbach's alpha confirmed that this scale has high reliability at wave one ($\alpha = .832$), wave two ($\alpha = .870$), wave three ($\alpha = .871$) and wave four ($\alpha = .871$). As shown in Table 5, respondents generally reported high levels of emotional support with mean levels at 21 or 22 on the 30 point scale over successive waves.

Family instrumental support is also a construct already established in the SVORI data set. On a four-point scale of strongly agree to strongly disagree, respondents were asked to indicate their current feelings about five items. Respondents indicated how much they agreed that they have someone in their family who would provide (1) help or advice on finding a place to live, (2) help or advice on finding a job, (3) support for dealing with a substance abuse problem (4) transportation to work or other appointments if needed and (5) financial support. For all five items, strongly agree responses were assigned a three, agree responses were assigned a two, disagree responses were assigned a one and strongly disagree responses were assigned a zero. The final scale thus ranged

Table 5. Descriptive statistics for family-related independent variables

	N	Min	Max	M	SD	α
Emotional support						
Wave two	1197	0	30	22.34	5.02	.870
Wave three	1191	2	30	21.56	5.13	.871
Wave four	1141	2	30	21.67	5.03	.871
Instrumental support						
Wave two	1198	0	15	11.36	3.10	.888
Wave three	1193	0	15	10.99	3.16	.891
Wave four	1142	0	15	10.94	3.09	.889
Residence with family						
Wave two	1227	0	1	.77	.42	--
Wave three	1284	0	1	.79	.41	--
Wave four	1386	0	1	.78	.41	--
Married or steady relationship						
Wave two	1227	0	1	.57	.50	--
Wave three	1288	0	1	.62	.49	--
Wave four	1389	0	1	.57	.50	--
Antisocial family history						
Wave one	1996	0	1	.58	.49	--

from zero to 15, with higher values representing higher levels of instrumental support. Cronbach's alpha revealed that this scale has high reliability at wave two ($\alpha = .888$), wave three ($\alpha = .891$) and wave four ($\alpha = .889$). Similar to emotional support, respondents also perceived fairly high levels of instrumental support with mean levels near 11 on the 15 point scale.

Respondents were asked to indicate with whom they resided at wave two, three and four interviews. A dummy variable for *residence with family* is used for this study (see Martinez and Christian 2009 for evidence of how residence with family can influence the provision of support). Cases were assigned a one if they resided with at least one family member, including a husband/wife, ex husband/wife, boy/girlfriend/ fiancé, mother/stepmother, father/ stepfather, sister / stepsister, brother / stepbrother, aunt / uncle, cousin, grandparent, foster parent, child / stepchild, niece/ nephew, or in-laws. Cases were assigned a zero if they resided alone or if they resided with a friend, facility/ shelter residents or someone else. As shown in Table 5, nearly 80 percent of respondents resided with at least one family member at each interview wave.

At each of the four interview waves, respondents were asked to indicate whether they were currently married or if they were in a steady intimate relationship. This was included as a control considering research on the relationship between marriage and offending (King, Massoglia and Macmillan 2007; Sampson, Laub and Wimer 2006). For the *marriage or intimate relationship* variable, respondents who were currently married or in a steady intimate relationship were assigned a one and those who were not in either were assigned a zero. Well over half of all respondents indicated that they were married or in a steady relationship at each of the interviews.

Several measures of family history were obtained during the pre-release interviews (wave one). A measure of *family history of criminal activity* was constructed using an item in which respondents were asked to indicate whether or not they had any family members who had ever been convicted of a crime. Respondents who indicated they did have at least one family member who had been convicted of a crime were assigned a one, those who indicated they did not have any family with a conviction history were assigned a two and those who reported not knowing were assigned a three. The same coding scheme was used for the *family history of incarceration* item, which measured whether respondents reported having a family member who had ever been in a correctional facility. The *family history of substance abuse* item also used the same coding scheme and measured whether respondents had a family member who had problems with drugs or alcohol. An *antisocial family* measure is used as a control variable in all analyses and was constructed using the previous three family history measures. Respondents who answered “yes” to all three questions about family history (criminal activity, incarceration and substance abuse problems) were assigned a one and all others were assigned a zero. Nearly 60 percent of respondents had families that could be classified as antisocial on this measure.

Two measures are used to control for the level of supervision an individual received from probation or parole officers.¹⁵ Descriptive statistics for these control variables can be found in Table 6 below. The *in-person contact with PO* variable

¹⁵ An additional measure of supervision, whether or not the respondent was currently on electronic monitoring, was originally included as a control variable. However, due to singularity and partial singularity in a number of the models, the inclusion of electronic monitoring yielded high standard errors. Considering problems with singularity, the fact that less than four percent of respondents were subject to electronic monitoring at any wave, and that it was not a significant predictor of reoffending in any model, electronic monitoring was removed from all models.

Table 6. Descriptive statistics for supervision-related control variables

	N	Min	Max	M	SD	α
Frequency of in-person PO contact						
Wave two	1009	0	6	2.50	1.05	--
Wave three	858	0	6	2.25	.97	--
Wave four	709	0	6	1.99	1.15	--
PO case management scale						
Wave two	988	0	10	4.62	2.53	.704
Wave three	826	0	10	4.75	2.62	.730
Wave four	628	0	10	4.61	2.42	.675

measured the frequency of in-person contact with a probation or parole officer.

Respondents were asked to indicate how often they had contact since their last interview (or in the last six months for individuals missing the previous interview). Cases were assigned a zero if they responded not at all, a one for once or twice, a two for about once a month, a three for two to three times a month, a four for once a week, a five for several times a week, and a six for every day or almost every day. At each time period, the highest percentage of respondents reported meeting with their supervision officer once per month.

The *case management* scale captures whether or not the parole or probation officer and the respondent normally discuss a variety of issues related to successful reentry. These issues include the following: (1) physical health, (2) employment/education, (3) alcohol or drug use, (4) alcohol or drug treatment (5) court ordered payments, (6) housing, (7) mental health treatment, and (8) resolving family issues. Each

of these items was coded with a zero if the respondent indicated (s)he did not normally discuss that issue with their officer or a one if the issue was normally discussed.

To account for missing data within the eight items included in the case management scale, a weighting strategy was used. For all cases, a score was calculated by summing all eight values (with scores ranging from zero to eight). For cases with no missing data (each of the eight items was answered), this score was then divided by eight. For cases with missing data on one item, this score was divided by seven. For cases with missing data on two items, this score was divided by six. All cases thus had a case management score between zero and one. All values were then multiplied by ten to convert to a zero to 10 scale, with higher values indicating higher levels of case management.

The case management scale was found to have acceptable reliability in each of the waves, with a Cronbach's alpha of .704 at wave two, .730 at wave three, and .675 at wave four. Although the weighting for missing data process was used in order to be consistent with the development of other scales, it was not necessary to do additional tests of reliability because there were only one or two cases at each wave that were missing values on a few of the eight items (these few cases would not influence the overall reliability of the scale). As shown in Table 6, respondents normally discussed about four out of the eight issues with an officer.

As shown in Table 7, demographic information is also used for control variables, including the respondent's *age*, *race* and *gender*. A continuous measure of age is used. The mean age of respondents was approximately 30 at each interview wave. Two dummy variables (White and Black) were used for race with Hispanic and other as the

Table 7. Descriptive statistics for demographic control variables

	N	Min	Max	M	SD
Age					
Wave two	1228	18	69	30.15	7.20
Wave three	1288	19	70	30.43	7.13
Wave four	1389	19	70	30.92	7.10
Race					
Wave two Black	1228	0	1	.52	.50
Wave two White	1228	0	1	.37	.48
Wave three Black	1285	0	1	.51	.50
Wave three White	1285	0	1	.39	.48
Wave four Black	1388	0	1	.50	.50
Wave four White	1388	0	1	.40	.49
Gender					
Wave one	2054	0	1	.17	.38

reference category. Approximately 50 percent of respondents were Black and approximately 40 percent were White. While data on age and race were recorded separately for each wave, gender was only collected in the first wave of data collection. Female is coded with a 1.

Table 8 displays the several measures that are used to represent individuals' criminal histories and current incarceration status. *Instant offense type* measured whether or not the instant offense was a property crime or not. Respondents whose instant conviction offense was a property crime were assigned a one and all other offense types were assigned a zero. Considering that property offenders have the highest rates of recidivism (see Kohl, Hoover, McDonald and Solomon 2008), a dummy variable is used

Table 8. Descriptive statistics for criminal history control variables

	N	Min	Max	M	SD
Criminal history					
Instant offense type	2044	0	1	.28	.45
Prior convictions	1991	1	666	6.25	17.25
Instant offense incarceration length (days)	2054	3	9486	867.44	910.32
Re-incarceration status					
Incarcerated at wave two interview	1228	0	1	.07	.26
Incarcerated at wave three interview	1288	0	1	.25	.43
Incarcerated at wave four interview	1389	0	1	.33	.47

for instant offense type with property offense as the reference category. Nearly 30 percent of subjects were originally incarcerated for a property offense. The number of *prior convictions* is also included as a control variable (see Farrington 1979).¹⁶ A variable measuring the *length of incarceration* for the instant offense is also used as a control variable in light of research showing that family ties are more likely to break down over longer periods of incarceration (Holt and Miller 1972; Schafer 1994) and that sentence length influences the likelihood of recidivism (Gendreau, Goggin and Cullen 1999; DeJong 1997). Additionally, a measure of whether or not the individual was *re-incarcerated* at the time of wave two, three or four interviews was included in the models.¹⁷

¹⁶ As shown in Table 8, one case apparently reported having 666 prior convictions. It is certainly likely that this respondent was providing inaccurate information or that this is a coding error. An examination of the other responses for this subject did not reveal anything else that appeared problematic. It did not seem necessary to throw out an entire case as a result of one possibly erroneous value.

¹⁷ It would have been ideal to be able to include a measure on the number of days the individual was incarcerated since the last interview in order to account for time at risk of reoffending. Although the SVORI data set included a variable for the number of days incarcerated, there was a large amount of missing data for this item (data were available for only 206 cases at wave two, 418 at wave three and 422 at

A variety of other control variables were included in the analyses in order to account for other known predictors of reoffending (see Table 9 below for descriptive statistics). A *services received* measure was created to account for the level of social services respondents received (see Seiter and Kadela 2003 and Lattimore and Visser 2009 for research on the relationship between social services and reoffending). Respondents were asked to indicate whether they had received a variety of social services since their last interview (or in the past six months for those missing the previous interview). These services include legal assistance, spiritual/religious assistance, money management, life skills, training to change criminal behaviors, parenting classes, batterer intervention programs, mentoring, anger management, educational services, transportation assistance, housing assistance, help accessing resources such as clothing or food, employment services, medical treatment, mental health treatment, and alcohol or drug treatment. Cases were coded with a one if the respondent indicated that (s)he received that particular service.

A principal components analysis was conducted to determine whether some of these 17 services represented distinct constructs. This analysis did not reveal any clear sub-constructs. The services received scale was thus constructed by first summing the values for all 17 services to get a services score. The final scale was then weighted to account for cases with missing data on some of the 17 items. For cases with data on all 17 items, the final scale was calculated by dividing the services score by 17. For cases with missing data on one item, the final scale was calculated by dividing the services score by 16. The same process was continued for cases with missing data on multiple

wave four). As a result, it was decided that whether or not the individual was currently incarcerated at the time of the interview would be a sufficient control.

Table 9. Descriptive statistics for other independent variables

	N	Min	Max	M	SD
Services received					
Wave two	1228	0	9	1.36	1.41
Wave three	1229	0	7	1.20	1.28
Wave four	1168	0	8	1.01	1.17
Victimization frequency					
Wave two	1228	0	8	.37	.91
Wave three	1288	0	10	.65	1.33
Wave four	1389	0	10	.60	1.24
SVORI participation					
Wave two	1228	0	1	.52	.50
Wave three	1288	0	1	.53	.50
Wave four	1288	0	1	.53	.50
Employed					
Wave two	1227	0	1	.60	.49
Wave three	1225	0	1	.66	.47
Wave four	1169	0	1	.64	.48
Criminogenic neighborhood					
Wave two	1227	0	10	2.68	2.82
Wave three	1228	0	10	2.97	3.03
Wave four	1167	0	10	2.93	3.08
Legal cynicism					
Wave two	1226	0	10	2.69	2.54
Wave three	1287	0	10	2.84	2.62
Wave four	1389	0	10	2.79	2.63
Need substance abuse treatment					
Wave two	1228	0	1	.25	.43
Wave three	1284	0	1	.31	.46
Wave four	1388	0	1	.33	.47

Table 9, continued. Descriptive statistics for other independent variables
Need mental health treatment

Wave two	1226	0	1	.24	.43
Wave three	1285	0	1	.24	.43
Wave four	1386	0	1	.28	.45

items. This process yielded values between zero and one. All values were then multiplied by 10 to aid interpretability. The final scale thus ranged from zero (no services received) to 10 (all services received).

Cronbach’s alpha revealed that the services received scale demonstrated acceptable internal consistency at wave one ($\alpha = .782$), wave two ($\alpha = .718$), wave three ($\alpha = .675$), and wave four ($\alpha = .664$). To confirm that the weighting for missing items did not influence scale reliability, several additional reliability tests were conducted with the exclusion of commonly missing items. The only items with missing data for more than ten cases in any particular wave were parenting classes, medical treatment and mental health treatment. Reliability tests were conducted with the exclusion of each of these items as well as with the exclusion of all three items. Even with the removal of these items, Cronbach’s alpha values were still in acceptable levels (ranging from .640 to .767). As shown in Table 9, respondents reported receiving fairly few services.

Unfortunately, no direct measures of “stress” were available in the SVORI data, which would have been most appropriate for investigating the buffering hypothesis. However, a measure of *victimization frequency* was used with the assumption that victimization represents a serious stressor. Respondents were asked about five different types of physical victimization and instructed to indicate the frequency with which they had experienced such victimization since the last interview (or in the past six months for

those missing the previous interview). Response categories were never (originally coded 1), once (coded 2), a few times (coded 3), about once a month (coded 4), a couple of times a month (coded 5), once a week (coded 6) and several times a week (coded 7).

Variation in the severity of each of the five types of victimization was taken into account when calculating the victimization scale. “Threatened with being hit” and “having something thrown at you” were weighted as the least severe (the original response values were left unchanged and ranged from one for “never” to seven for “several times a week”). Indicating greater severity, response values were doubled for “being pushed/grabbed/shoved” and “slapped/kicked/bitten/hit with fist.” Response values remained one for “never” and then ranged from four for “once” to fourteen for “several times a week.” Denoting the greatest severity, response values were tripled for “being threatened with a weapon or having a weapon used on you.” Response values remained one for “never” and then ranged from six for “once” to twenty one for “several times a week.” Table 10 below clarifies how each item was weighted to account for severity.

The victimization scale was then calculated by summing the values on all five items. This originally yielded a scale between five and 63. To aid in interpretability, this scale was first converted to zero (for answering “never” on all five items) to 58 (for answering “several times a week” on all five items). This scale was then divided by 5.8 to convert the scale to zero (no victimization) to 10 (all victimization types experienced several times a week). Separate scales were developed for all four waves of data collection. Overall, the family violence victimization scale was found to be highly

Table 10. Calculation of values to account for severity in victimization frequency

Items	Original values	Values to indicate severity of victimization type
<ul style="list-style-type: none"> • Threatened with being hit • Something thrown at you 	1 = never	1 = never
	2 = once	2 = once
	3 = a few times	3 = a few times
	4 = about once a month	4 = about once a month
	5 = a couple of times a month	5 = a couple of times a month
	6 = once a week	6 = once a week
	7 = several times a week	7 = several times a week
<ul style="list-style-type: none"> • Pushed/grabbed/shoved • Slapped/kicked/bitten/hit with fist 	1 = never	1 = never
	2 = once	4 = once
	3 = a few times	6 = a few times
	4 = about once a month	8 = about once a month
	5 = a couple of times a month	10 = a couple of times a month
	6 = once a week	12 = once a week
	7 = several times a week	14 = several times a week
<ul style="list-style-type: none"> • Threatened with a weapon or a weapon used on you 	1 = never	1 = never
	2 = once	6 = once
	3 = a few times	9 = a few times
	4 = about once a month	12 = about once a month
	5 = a couple of times a month	15 = a couple of times a month
	6 = once a week	18 = once a week
	7 = several times a week	21 = several times a week

reliable for wave two ($\alpha = .846$), wave three ($\alpha = .893$) and wave four ($\alpha = .868$). As shown in Table 10, on average, respondents reported victimization fairly infrequently.

A control variable was also included to indicate whether or not the individual was a *SVORI participant* or in the comparison group. SVORI participants were assigned a one and comparison group individuals were assigned a zero.

Considering the variety of research on employment and recidivism (see Uggen 2000; Tripodi, Kim and Bender 2010; Berg and Huebner 2011), whether or not the individual was legally *employed* was also included as a control variable. Between 60 and 66 percent of respondents were legally employed to some extent over the interview waves.

Five items were used to generate a measure of whether a respondent lived in a *criminogenic neighborhood*. Respondents were asked to indicate their feelings about the following items on a four-point scale of strongly agree to strongly disagree:

1. It is hard to stay out of trouble in your neighborhood.
2. Drug selling is a major problem in your neighborhood.
3. You think your neighborhood is a good place to live.
4. You think your neighborhood is a good place to find a job.
5. Living in your neighborhood makes it hard to stay out of incarceration.

To accommodate weighting for missing items, response values were collapsed for each item. For items #1, #2 and #5, strongly agree and agree were coded as one and strongly disagree and disagree were coded as zero (a value of one indicated the presence of conditions associated with a criminogenic neighborhood). For items #3 and #4 that are reverse coded, strongly disagree and disagree responses were coded as one and strongly agree and agree responses were coded as zero (a value of one again indicated a criminogenic neighborhood).

The final criminogenic neighborhood scale was then weighted to account for cases with missing data on one to three of the five items. First, the values for available items were summed to obtain a criminogenic neighborhood score, which ranged from zero (missing data on all items or a non-criminogenic neighborhood) to five (most criminogenic neighborhood). For cases with data on all five items, the final scale was calculated by dividing the criminogenic neighborhood score by five. For cases with missing data on one item, the final scale was calculated by dividing the criminogenic neighborhood score by four. The same process was continued for cases with missing data on three items. This process yielded values between zero and one. All values were then multiplied by ten to improve interpretability. The final scale thus ranged from zero (no indication of a criminogenic neighborhood) to 10 (indication of a criminogenic neighborhood on all available items).

Cronbach's alpha revealed that this scale demonstrated acceptable internal consistency at wave two ($\alpha = .798$), wave three ($\alpha = .818$) and wave four ($\alpha = .827$). To confirm that the weighting for missing items did not influence scale reliability, several additional reliability tests were conducted with the exclusion of commonly missing items. The only items with missing data for more than ten cases in any particular wave were #2 (drug selling) and #5 (good place to find a job). Reliability tests were conducted with the exclusion of each of these items as well as with the exclusion of both items. Even with the removal of these items, Cronbach's alpha values were still in acceptable levels (ranging from .616 to .997).

A measure of *legal cynicism* was also included in an effort to partially account for criminogenic thinking styles of respondents (see Gendreau, Little and Goggin 1996). On

a four-point scale of strongly agree to strongly disagree, respondents were asked to indicate their feelings about the following items:

1. Laws are made to be broken.
2. It's okay to do anything you want as long as you don't hurt anyone.
3. To make money, there are no right and wrong ways, only easy and hard ways.
4. Fighting with friends and family is nobody else's business.
5. These days a person has to live pretty much for today and let tomorrow take care of itself.

To accommodate weighting for missing items, response values were collapsed for each item. Strongly agree and agree were coded as one and strongly disagree and disagree were coded as zero (a value of 1 indicated legal cynicism).

The final legal cynicism scale was then weighted to account for cases with missing data on one to three of the five items. First, the values for available items were summed to obtain a legal cynicism score, which ranged from zero (missing data on all items or a no legal cynicism) to five (maximum legal cynicism). For cases with data on all five items, the final scale was calculated by dividing the legal cynicism score by five. For cases with missing data on one item, the final scale was calculated by dividing the score by four. The same process was continued for cases with missing data on three items. This process generated values between zero and one. All values were then multiplied by 10 to aid interpretability. The final scale thus ranged from zero (no indication of legal cynicism) to 10 (legal cynicism on all available items). Cronbach's alpha revealed that this scale demonstrated acceptable internal consistency at wave one ($\alpha = .686$), wave two ($\alpha = .700$), wave three ($\alpha = .704$), and wave four ($\alpha = .719$).

Self-reported *need for alcohol or drug treatment* and *need for mental health treatment* were also included as control variables in the analyses. Respondents were

asked to indicate whether they felt they needed a variety of social services, including alcohol or drug treatment and mental health treatment. Cases were assigned a one if the respondent indicated that (s)he was in need of that service or a zero if (s)he did not report needing the service. As shown in Table 9 above, on average, between 25 and 33 percent of respondents reported needing substance abuse treatment and 24 to 28 percent reported needing mental health treatment over the interview waves.

As will be further explained in the following section, some analyses include variables that represent change in each type of family support between waves two and three and between waves three and four. Table 11 provides the descriptive statistics for these changes in family support over time variables.

Table 11. Changes in support over time

	N	Min	Max	M	SD
Emotional support					
Wave 2 to wave 3 change	921	-19	15	-.608	4.565
Wave 3 to wave 4 change	911	-19	18	-.049	4.372
Instrumental support					
Wave 2 to wave 3 change	923	-14	12	-.359	2.956
Wave 3 to wave 4 change	912	-10	14	-.102	2.791

Data Analysis¹⁸

Research Questions #1 through #6

Considering that the outcome of interest is binary (reoffend or did not reoffend), logistic regression is used to measure the extent to which family support influences

¹⁸ The Institutional Review Board at Temple University approved this study using the SVORI data set. The waiver for secondary data analysis can be found in Appendix C.

reoffending. A series of nested models are employed. The following independent variables are included in the core models for research questions #1 through #3:

- Age
- Gender
- Race
- Index offense type
- Prior convictions
- Days incarcerated for index offense
- Reincarceration status
- Emotional family support
- Instrumental family support
- SVORI participation
- Services received
- In-person contact with PO
- PO case management
- Employment status
- Married / intimate relationship
- Residence with family
- Residence in a criminogenic neighborhood
- Victimization frequency
- Anti-social family
- Legal cynicism
- Self-reported need for substance abuse treatment
- Self-reported need for mental health treatment

Figure I. below demonstrates the direction of relationships that are tested. For research question #1, which investigates the relationship between levels of emotional family support and reoffending, *emotional* support reported at wave two (three months post release) is used to predict reoffending in the first three months after release, after controlling for other predictors of recidivism and other explanatory variables in the model (that were reported at wave two and reflect conditions during the three months since release). Levels of emotional support reported at wave three (nine months post release)

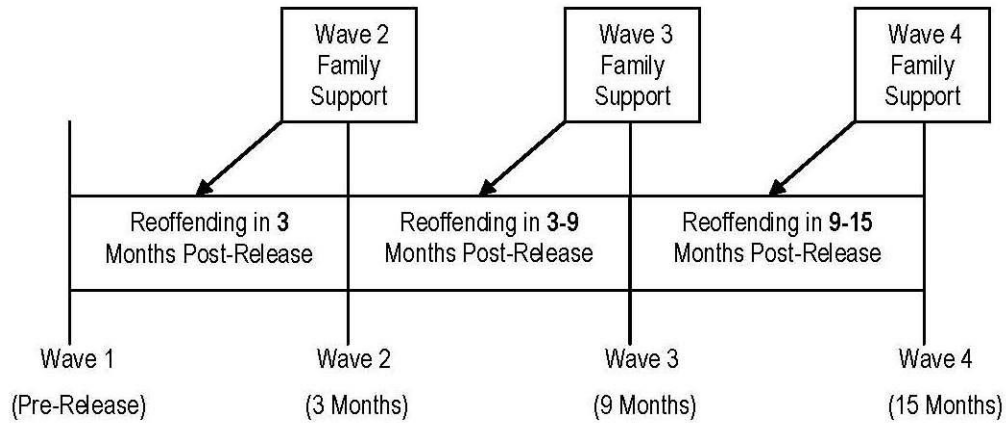


Figure 1. Testing relationships between family support and reoffending

are used to predict reoffending between three and nine months following release, after controlling for other predictors of recidivism and other explanatory variables in the model (that were reported at wave three and reflect the three to nine month period post-release). Levels of emotional support reported at wave four (15 months post release) are used to predict reoffending between nine and 15 months following release after controlling for other predictors of recidivism and other explanatory variables in the model (that were reported at wave four and reflect the nine to 15 month post-release period).

The same order of relationships is examined for research question #2 on the role of *instrumental* support. Levels of instrumental support that are reported at wave two are used to predict the likelihood of reoffending in the first three months post-release, after controlling for all other variables in the model. The same is then done for the two following time periods.

While respondents were asked to indicate their *current* levels of family support at each interview wave, respondents were asked to reflect on their experiences *throughout the previous period* for some other interview items. Thus, some control variables are

representative of current conditions while others represent conditions in the previous period (the past three months for wave two or the past six months for wave three and wave four). As shown in Figure 2 below, the following variables reflect current conditions at each interview point: emotional and instrument family support, employment status, being married or in an intimate relationship, residence with family, living in a criminogenic neighborhood, legal cynicism, the self reported need for mental health treatment and the self-reported need for substance abuse treatment. In contrast, the following variables are reflective of conditions throughout the previous period: reoffending behaviors, the number of services received, the frequency of contact with a probation or parole officer, the level of case management from a supervision officer and the frequency with which the respondent experienced victimization. Items collected at wave two (some of which reflect current conditions and some of which reflect conditions throughout the previous period) are thus used to predict reoffending in the first three months post-release (see boxes with hatched lines in Figure 2). Similarly, items collected

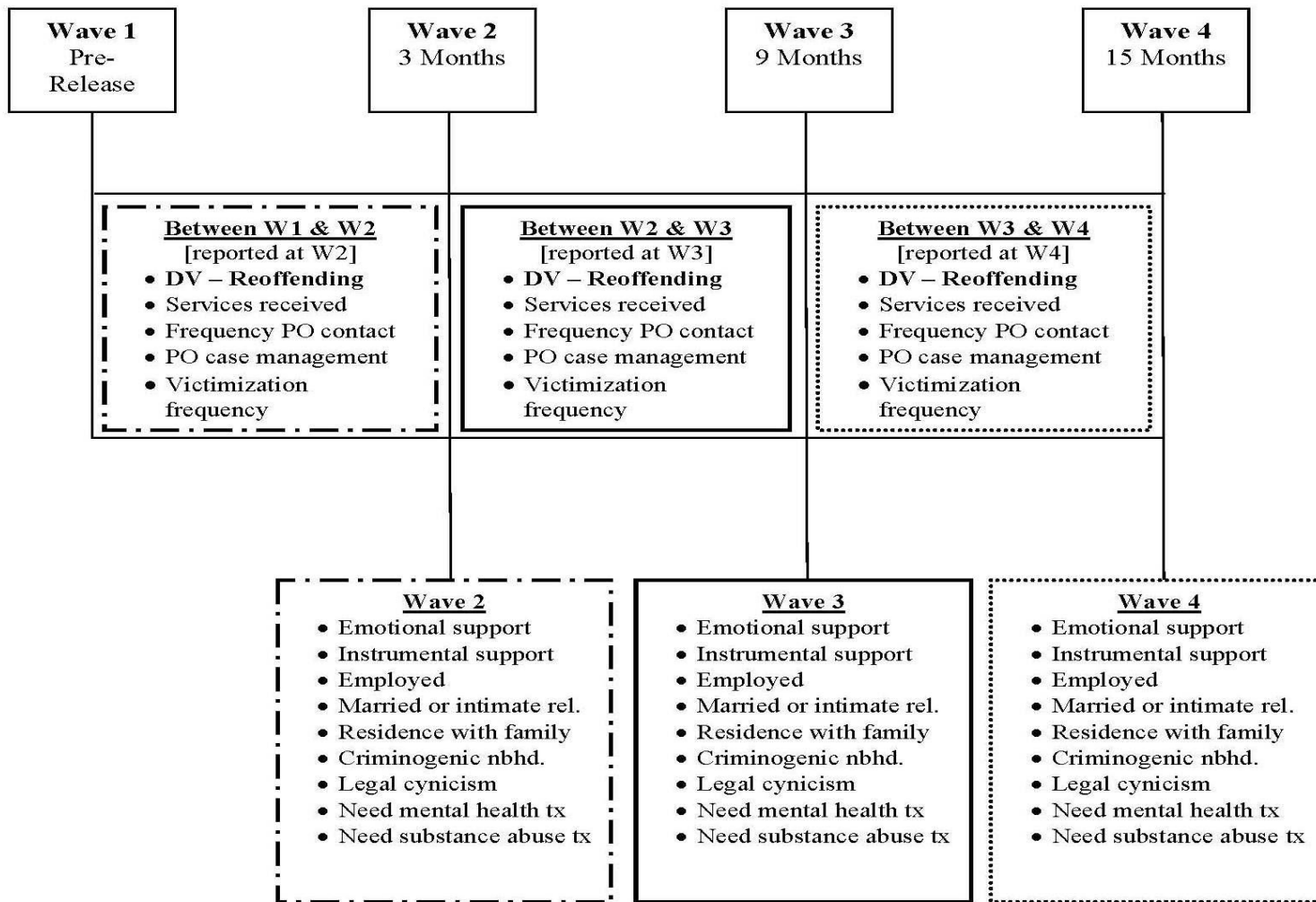


Figure 2. Measures reflective of current or past conditions

at wave three are used to predict reoffending in the three to nine months post-release (boxes with solid lines) and items collected at wave four are used to predict reoffending in the nine to 15 months post-release (boxes with dotted lines).

While it would not make sense to use all items from wave two to predict reoffending in the following time period (because some wave two items reflect the period between wave one and wave two), some exploratory models are conducted using items from multiple waves. Specifically, to predict reoffending in the three to nine months post-release (between wave two and wave three), measures from wave two that reflect current conditions as well as measures from wave three that reflect conditions between wave two and wave three are used. Similarly, to predict reoffending in the nine to 15 months post-release (between waves three and four), measures from wave three that reflect current conditions as well as measures from wave four that reflect conditions between wave three and wave four are used. Appendix E offers a discussion of these mixed wave models, their limitations, and findings as well as a justification for why the order of relationships presented in Figure 1 is used instead of the mixed wave strategy.

Research question #3, which examines whether levels of one type of support (emotional or instrumental) explain more variance in reoffending, relies on a comparison of β values for the two types of support. The significance of the β values are also examined. Comparisons are made for various time points to determine if one type of support may be more important in the earlier stages of reentry compared to the later stages.

Research question #4 explores potential gender differences in the effect of family support on reoffending. To investigate gender effects, a dummy variable (with female

coded as one) as well as cross-product interaction terms for gender and emotional support and for gender and instrumental support are added as explanatory variables into separate models.

For research question #5, which investigates the influence of the frequency of victimization on the relationship between family support and reoffending, the victimization variable as well as an interaction term for victimization level and emotional family support as well as an interaction term for victimization level and instrumental family support are added as explanatory variables in separate models.

Research question #6 examines whether levels of family support change over time and whether potential changes influence the likelihood of reoffending. A t-test of significance is used to determine whether levels of family support are significantly different across interview waves. To investigate whether changes in family support over time influence the likelihood of reoffending, two change variables are added to the models used for research questions #1 through #3. To investigate whether changes in family support between wave two and wave three influence reoffending between wave two and wave three, a change variable was created for each type of support by subtracting values representing wave two support from values representing wave three support. To investigate whether changes in family support between wave three and wave four influence reoffending between wave three and wave four, a change variable was created for each type of support by subtracting values representing wave three support from values representing wave four support. These change variables are then added as independent variables to the models.

Missing Data

Two strategies are employed to handle missing data in these models. First, all analyses are conducted using listwise deletion, in which cases that have missing data for any of the variables included in the models are removed from the data set (Allison 2002). When data are missing at random (MAR), using listwise deletion to handle missing data is less problematic (Allison 2002). The “random” component of MAR can be somewhat misleading because data are considered MAR when the likelihood that a data point is missing is not related to missing data, but may be related to other data points in the same data set (see Rubin 1976; Little 1988). In contrast, missing completely at random (MCAR) occurs when there is absolutely no relationship or pattern between missing data points and other data points in the data set (either missing or observed; see Rubin 1976; Little 1988).

However, the comparison of characteristics of missing and non-missing cases revealed that data are not MAR or MCAR (see Appendix D for tables comparing missing versus non-missing cases at each wave on levels of support, victimization and reoffending). A series of independent t-tests revealed that subjects who did not participate in wave two interviews had significantly lower levels of wave three emotional support, wave four emotional support and wave four instrumental support. Additionally, those who did not participate in a wave two interview had significantly higher scores on the victimization frequency scale at wave three. A series of chi-square tests of significance also confirmed some statistically significant differences for those who participated in the wave two interview and those who did not. Those who did not complete wave two interviews were significantly more likely to report a drug offense in

the three to nine months and the nine to 15 months post-release as well as any crime in the three to nine months and nine to 15 months post-release. No significant differences were found for violent crimes in either the three to nine months or the nine to 15 months post-release. However, subjects who did not complete wave two interviews were significantly more likely to experience an arrest in all three time periods. While 23 percent of cases who missed the wave two interview experienced an arrest in the three months post-release, only 12 percent of those who did participate in the wave two interview experienced an arrest in this period. Similarly, while 40 percent of cases who missed the wave two interview experienced an arrest in the three to nine months post-release, only 25 percent of cases who completed the wave two interview were arrested in this period. And lastly, 34 percent of cases who missed wave two and 26 percent of cases who completed wave two were arrested in the nine to 15 months post-release.

There are also some significant differences between those who completed wave three and those who did not. Subjects who completed wave three reported significantly higher levels of emotional and instrumental family support at wave four as well as significantly lower victimization frequency scores at both wave two and wave four. Wave three completers were also significantly less likely to report committing any criminal offenses in the nine to 15 months post-release period, violent crimes in the first three months post-release and the nine to 15 months post-release period, and any drug offenses in the nine to 15 months post-release. Lastly, those who missed the wave three interview were significantly more likely to be arrested in each of the three time periods.

Although fewer differences are observed between those who completed wave four interviews and those who did not, completers reported significantly higher levels of

emotional family support and lower levels of victimization frequency at wave two.

Subjects who missed the wave four interview were also more likely to report committing any crime and a drug offense in the first three months post-release. Completers were less likely to have been arrested in all three time periods.

Considering these patterns, it is not surprising that Little's MCAR test confirmed that the data are not MCAR (available in the Missing Values module of Statistical Package for Social Sciences). As a result, multiple imputation in the Statistical Package for Social Sciences (SPSS) is used to impute values for independent variables with missing values at different time points. Treiman (2009) has succinctly described Bayesian multiple imputation in the following manner:

First, equations are estimated that predict each variable with missing data from other variables in the data set. Then values drawn at random from the predicted distribution are substituted for the missing values. Because variables with missing data may be among the predictors for another variable with missing data, the process is repeated several times, cycling through the prediction equations and using updated values for the predictor variables. This procedure results in a complete data set, with the missing data imputed (185).

Multiple imputation thus uses regression based models to impute values for missing values.

For the set of models using multiple imputation in this dissertation, values are imputed for nearly all independent variables in the data set. Considering that some measures were collected at the first interview and that there are fewer than 10 cases with missing data on any one of these variables, the following variables are safely assumed to not vary throughout the 15 month follow up period and are thus not imputed: age at release, gender, race and index offense type. However, these variables that are not

imputed (along with all variables that are imputed) are used as predictors of imputed values. Besides these demographic and offense type variables, values are imputed for all other independent variables, including the key constructs of emotional and instrumental family support. Although the “precision of the inference is reduced if a large amount of information is missing” (Zhang 2003: 583), imputing values for key independent variables of interest is generally acceptable (see Schafer and Graham 2002; Sinharay, Stern and Russell 2001).

Additionally, to improve the accuracy of the imputed values, minimum and maximum values were set for each of the imputed values based on the minimum and maximum values of observed data points. For example, even though the emotional support scale ranges from zero to 30, no respondents at wave three had an emotional support value less than two (and some respondents had a value up to 30). The minimum and maximum for imputed values for the wave two emotional support scores were thus set at two and 30, respectively.

The number of imputation iterations was set at five. For all missing values on the selected independent variables, SPSS generated five different imputed values. An average of these five values was used for the set of analyses using multiple imputation.

Results from the analyses using listwise deletion as well as results from the analyses using multiple imputation are discussed in the following chapter. While multiple imputation is an appropriate procedure for analyzing data in which missing values are not MCAR, the extent of missing data (as a result of attrition over interview waves) in this study is a concern. For example, as shown in the following chapter, the models predicting reoffending in the nine to 15 month time period include approximately

480 cases when using listwise deletion, but approximately 1,380 cases (for self-reported reoffending outcomes) or 1,900 cases (for arrest outcome) when using multiple imputation. The results of models that use imputed values for 75 percent of all cases may be subject to criticism. As such, results using both analysis methods are presented. Trends that are observed using both methods are likely to carry much greater credibility.

CHAPTER 5: RESULTS

This chapter is divided into two main sections: the results using listwise deletion and the results using multiple imputation for missing values. As described in the previous chapter, both strategies have advantages and disadvantages for this particular data set. Employing both methods for handling missing data creates greater confidence in the findings if both strategies yield similar trends.

Logistic Regression Results with Listwise Deletion

The first set of analyses conducted to explore research questions #1 through #6 use logistic regression with listwise deletion to handle missing data. These models predict the likelihood of reoffending (measured as any self-reported crime, any self-reported violent crime, any self-reported drug crime and any arrest) in the three time periods between interview waves.

A set of three models was run for each of the four outcomes at each of the three time periods. Variables were entered in a hierarchical fashion in three blocks in order to examine the nature of the effects in detail. This strategy allows the analyst to determine whether the addition of certain variables increases explanatory power and also to observe how the introduction of new variables influences the effects of other variables in the model. The variables in the first block (or Model 1) include several static predictors of recidivism including the respondent's age, gender, race, index offense type, number of prior convictions, number of days incarcerated for the index offense and whether the respondent was re-incarcerated at the time of the interview. Model 2 includes the same block of variables included in Model 1, but also added a set of variables that were

expected to reduce the likelihood of reoffending, including levels of family emotional support, levels of family instrumental support, SVORI participation, the quantity of social services received, the frequency of in-person contact with a probation or parole officer, the level of case management from a probation or parole officer, the employment status of the respondent, whether the respondent was married or in a steady relationship and whether the respondent resided with family members. The final model for each outcome at each time period, Model 3, elaborates Model 2 by including several control variables that were theoretically expected to increase the likelihood of reoffending. These variables entered in the third block include the extent to which the respondent lives in a criminogenic neighborhood, the frequency with which the respondent was victimized, whether the respondent reported having an antisocial family, the respondent's score on a legal cynicism scale, as well as the respondent's self-reported need for mental health treatment and need for substance abuse treatment.

The hierarchical entry of variables was particularly motivated by consideration of prior research that has predominately relied on bivariate associations or the inclusion of a limited number of control variables. Entering variables in a hierarchical manner may illustrate how the addition of certain control variables may eliminate a direct relationship between family support and the likelihood of reoffending.

Considering that some interview items from wave two asked respondents to reflect on their current experiences and other wave two items asked respondents about their experiences in the period since their release, interview data collected at wave two were used to predict the likelihood of reoffending in the first three months since release. Similarly, interview data from wave three were used to predict the likelihood of

reoffending between wave two and wave three interviews (three to nine months post-release) and data from wave four were used to predict the likelihood of reoffending between wave three and wave four (nine to 15 months post-release). It is important to point out that a few static variables were only collected at wave one and are assumed to be consistent throughout subsequent waves. These static variables include gender, index offense type, number of prior convictions, index days incarcerated, and antisocial family.

The possibility of multicollinearity among variables included in the models was examined. The only variables with correlation coefficients above .5 were emotional and instrumental support (correlation values ranged from .741 to .761 at different waves). However, all variables included in the models have tolerance values in acceptable ranges below one. A table of tolerance values can be found in Appendix F.

Reoffending in the First Three Months Post-Release

As shown in Table 12 below, the first set of models use measures from wave two to predict the likelihood of any type of self-reported criminal offending in the first three months post-release. In Model 1, age is inversely associated with a significant reduction in the likelihood of any self-reported crime, while the number of prior convictions and the respondent being re-incarcerated are associated with an increase in the likelihood that any type of crime was committed in the first three months. The addition of the family support variables in Model 2 reveal that emotional support is significantly associated with a reduction in the likelihood of any crime being committed and instrumental support is associated with an increase in the likelihood of the commission of any crime. Considering that the hypotheses regarding both types of support are one-tailed (support is

expected to reduce reoffending), a significance level of .1 is appropriate. Although instrumental support is significant at the .1 level, it is in the direction *opposite* of that which is hypothesized. Thus, a p-value of .05 becomes necessary for declaring significance in this circumstance.

With the addition of the other control variables in Model 3, the effect of instrumental support is washed out, but the effect of emotional support remains significant. Three other significant findings are particularly noteworthy from this final model. The frequency of victimization during the first three months post-release and the extent to which the respondent lived in a criminogenic neighborhood during this time period are associated with an increase in the likelihood of any crime being committed during this period. Additionally, the self-reported need for substance abuse treatment has quite a large and significant effect on the commission of any crime in the first three months.

The next set of models, as displayed in Table 13, use wave two measures to predict whether any self-reported violent crimes were committed in the first three months post-release. While neither emotional nor instrumental family support were significant in either Model 2 or Model 3, the frequency of victimization in the first three months post-release was once again associated with an increase in the likelihood of committing a violent offense in this period. Considering that only two percent of respondents reported committing a violent offense in the first three months post-release, the lack of significant findings for this outcome is perhaps not surprising.

Table 14 shows the next set of models, which predict the likelihood of a self-reported drug offense in the first three months following release. Model 2 shows that

emotional support is associated with a reduction in the likelihood of a drug crime, while instrumental support is associated with a significant increase in the likelihood of committing a drug offense in this period. The protective effects of emotional support remain significant in Model 3, but instrumental support is no longer significant after the inclusion of additional control variables. And as observed consistently throughout all models, the frequency of victimization is associated with an increase in the likelihood of committing a drug offense. More frequent in-person contact with a probation or parole officer, residing in a more criminogenic neighborhood, and reporting a need for substance abuse treatment are also associated with increases in the likelihood of committing a drug offense in the first three months post-release.

The last of the outcomes, any arrest, is the dependent variable that relies on official records as opposed to measures of self-reported criminal activity. As shown in Table 15, neither type of family support significantly predicts the occurrence of an arrest in the first three months post release. Consistent with all other models, victimization frequency significantly increases the likelihood of the first arrest occurring in this period. Being legally employed during the first three months also appears to reduce the likelihood of the first arrest during this time.

There is an increased likelihood of type I error occurring when making multiple comparisons or when testing the same hypothesis repeatedly. Considering that this study explores the same hypothesis over three different time periods, it is appropriate to use a reduced alpha level when assessing model significance. In order to guard against the possibility of type I error resulting from multiple comparisons, the model chi-square values are considered significant when valued at .33 or below. While some adjustments,

such as the Bonferroni correction, suggest that coefficients should be assessed as significant with a reduced alpha level, this strategy may overcorrect for type I error and subsequently increase the likelihood of type II error (see Olejnik, Li, Supattathum and Huberty 1997). It is important to note that model chi-square values are significant with a p-value of .000 for all models predicting reoffending in all time periods.

While there are no tests of significance for pseudo- R^2 statistics, and they cannot be literally interpreted as the amount of variance explained, the Nagelkerke R^2 can be appropriately used to compare the explanatory power of hierarchically elaborated or nested models. As the Nagelkerke R^2 values demonstrate in Tables 12, 13, 14 and 15, the addition of each block of explanatory variables yielded additional explanatory power.

Table 12. Logistic regression model predicting any self-reported crime in the first three months post-release (n=921)

Wave 2 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.045**	.015	.956	-.041**	.015	.960	-.048***	.017	.953
Gender	-.329	.252	.719	-.432	.265	.649	-.517*	.285	.597
Race - White	.033	.286	1.034	-.050	.296	.951	-.145	.317	.865
Race - Black	-.394	.287	.675	-.471	.298	.625	-.493	.320	.611
Index offense (reference = property)	.082	.198	1.085	.080	.205	1.083	.024	.217	1.025
Prior convictions	.059***	.013	1.061	.055***	.014	1.056	.050***	.015	1.051
Index days incarcerated	.000**	.000	1.000	.000**	.000	1.000	.000	.000	1.000
Re-incarcerated	2.169***	.315	8.751	2.195***	.333	8.983	1.946***	.351	7.004
Emotional support				-.132***	.030	.876	-.081**	.032	.922
Instrumental support				.090*	.048	1.094	.063	.051	1.065
SVORI				-.233	.192	.792	-.158	.202	.854
Services received				.084	.073	1.087	-.001	.079	.999

Table 12, continued. Logistic regression model predicting any self-reported crime in the first three months post-release (n=921)

In-person PO contact	.210**	.093	1.234	.190*	.099	1.210
PO case management	-.006	.038	.994	-.037	.040	.964
Employed	-.222	.192	.801	.025	.207	1.026
Married/steady	-.075	.191	.928	-.121	.201	.886
Residence with family	.105	.236	1.111	.142	.251	1.152
Criminogenic neighborhood				.070*	.036	1.072
Victimization frequency				.394***	.103	1.483
Antisocial family				.297	.203	1.346
Legal cynicism				.007	.039	1.007
Need mental health treatment				.263	.253	1.301
Need substance abuse treatment				1.130***	.224	3.096
Constant	-.187	.480	.829	1.344*	.718	3.833
Model χ^2 (df)	113.831***			153.168***		214.461***
Nagelkerke R^2	.184			.243		.329
Hosmer & Lemeshow	3.766			9.225		7.205

*p < .10, ** p < .05, *** p < .01

Table 13. Logistic regression model predicting any self-reported violent crime in the first three months post-release (n=919)

Wave 2 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.004	.047	.996	.007	.050	1.007	.032	.055	1.033
Gender	-1.132	1.093	.322	-1.286	1.217	.276	-1.233	1.304	.291
Race - White	1.622	1.106	5.065	1.053	1.149	2.867	1.284	1.230	3.613
Race - Black	-.244	1.198	.783	-.601	1.256	.548	-.485	1.330	.616
Index offense (reference = property)	-.313	.652	.731	-.349	.718	.706	-.495	.778	.610
Prior convictions	.013	.028	1.013	.036	.033	1.037	.039	.040	1.040
Index days incarcerated	.000	.000	1.000	.000	.000	1.000	.000	.000	1.000
Re-incarcerated	3.136***	.592	23.010	3.252***	.700	25.850	3.336***	.853	28.094
Emotional support				-.083	.093	.920	-.106	.095	.899
Instrumental support				.030	.155	1.031	.094	.169	1.099
SVORI				.807	.701	2.241	.984	.750	2.674
Services received				.291	.236	1.338	.374	.259	1.453

Table 13, continued. Logistic regression model predicting any self-reported violent crime in the first three months post-release (n=919)

In-person PO contact	.120	.264	1.128	.067	.269	1.070		
PO case management	.036	.117	1.036	-.050	.130	.951		
Employed	2.414**	1.225	11.178	3.533**	1.547	34.212		
Married/steady	.454	.743	1.575	.144	.808	1.154		
Residence with family	.604	.730	1.829	.973	.807	2.646		
Criminogenic neighborhood				-.024	.120	.976		
Victimization frequency				.742***	.247	2.100		
Antisocial family				.299	.733	1.348		
Legal cynicism				-.023	.150	.977		
Need mental health treatment				-.777	.873	.460		
Need substance abuse treatment				.189	.780	1.208		
Constant	-5.61***	1.741	.004	-8.37***	2.701	.000	-10.96***	3.375
Model χ^2 (df)		38.273*** (8 df)			51.499*** (17 df)			61.382*** (23 df)
Nagelkerke R ²		.266			.355			.421
Hosmer & Lemeshow		12.654			8.254			15.529

*p < .10, ** p < .05, *** p < .01

Table 14. Logistic regression model predicting any self-reported drug crime in the first three months post-release (n=919)

Wave 2 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.039**	.017	.961	-.031*	.017	.970	-.040**	.019	.961
Gender	-.456	.305	.634	-.709**	.327	.492	-.839**	.354	.432
Race - White	.167	.335	1.182	.022	.357	1.022	-.075	.382	.928
Race - Black	-.195	.336	.823	-.332	.358	.718	-.370	.386	.691
Index offense (reference = property)	-.033	.230	.967	.017	.242	1.017	-.052	.259	.949
Prior convictions	.044***	.013	1.045	.032**	.015	1.033	.024	.017	1.025
Index days incarcerated	.000**	.000	1.000	.000***	.000	1.000	.000	.000	1.000
Re-incarcerated	2.143***	.308	8.525	2.200***	.342	9.022	1.930***	.359	6.888
Emotional support				-.182***	.035	.834	-.125***	.037	.883
Instrumental support				.120**	.055	1.128	.084	.059	1.088
SVORI				-.297	.225	.743	-.236	.237	.790
Services received				.114	.085	1.121	.032	.092	1.032

Table 14, continued. Logistic regression model predicting any self-reported drug crime in the first three months post-release (n=919)

In-person PO contact	.320***	.107	1.377	.305***	.114	1.357
PO case management	.024	.045	1.024	.006	.047	1.006
Employed	-.526**	.221	.591	-.267	.239	.766
Married/steady	.112	.227	1.118	.070	.240	1.072
Residence with family	.010	.272	1.010	.099	.292	1.104
Criminogenic neighborhood				.106***	.040	1.112
Victimization frequency				.311***	.107	1.365
Antisocial family				.137	.239	1.147
Legal cynicism				.015	.045	1.015
Need mental health treatment				.234	.288	1.264
Need substance abuse treatment				1.273***	.257	3.573
Constant	-.794	.555	.452	1.112	.830	3.039
Model χ^2 (df)	87.239***			151.667***		205.170***
Nagelkerke R^2	.164			.276		.362
Hosmer & Lemeshow	5.460			1.241		10.506

*p < .10, ** p < .05, *** p < .01

Table 15. Logistic regression model predicting any arrest (NCIC) in the first three months post-release (n=877)

Wave 2 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.026	.019	.974	-.024	.019	.976	-.023	.020	.977
Gender	-.526	.383	.591	-.553	.399	.575	-.554	.410	.575
Race - White	-.350	.472	.705	-.247	.487	.781	-.214	.505	.808
Race - Black	.782*	.428	2.186	.727	.446	2.069	.832*	.468	2.297
Index offense (reference = property)	-.017	.287	.983	-.061	.293	.941	-.106	.298	.899
Prior convictions	.037**	.016	1.038	.034**	.017	1.035	.030*	.018	1.030
Index days incarcerated	.000**	.000	1.000	.000**	.000	1.000	.000**	.000	1.000
Re-incarcerated	2.756***	.344	15.740	2.826***	.366	16.879	2.805***	.382	16.527
Emotional support				-.033	.040	.968	-.013	.043	.987
Instrumental support				.050	.066	1.052	.062	.067	1.064
SVORI				.073	.256	1.076	.122	.261	1.130
Services received				-.125	.109	.883	-.125	.111	.883

Table 15, continued. Logistic regression model predicting any arrest (NCIC) in the first three months post-release (n=877)

In-person PO contact	.003	.121	1.003	-.044	.124	.957
PO case management	.004	.051	1.004	.000	.053	1.000
Employed	-.950***	.256	.387	-.843***	.264	.431
Married/steady	-.311	.254	.733	-.337	.262	.714
Residence with family	-.007	.335	.993	-.027	.345	.974
Criminogenic neighborhood				.010	.045	1.010
Victimization frequency				.316***	.119	1.371
Antisocial family				.183	.260	1.201
Legal cynicism				.001	.050	1.001
Need mental health treatment				.399	.342	1.491
Need substance abuse treatment				-.308	.346	.735
Constant	-1.88***	.669	.153	-.977	.990	.376
Model χ^2 (df)	89.258***		108.593***		118.568***	
Nagelkerke R^2	.201		.242		.263	
Hosmer & Lemeshow	9.024		6.558		9.194	

*p < .10, ** p < .05, *** p < .01

Reoffending in the Three to Nine Months Post-Release

Similar to the models on the first three months post-release, the models predicting the likelihood of reoffending in the three to nine months post-release used measures collected at wave three (with the exception of the few static variables only collected at wave one). Some interview items collected at wave three (nine months post-release) reflected current experiences and some items related to experiences over the period of time since the last interview (for those who completed wave two) or in the past six months (for those who missed wave two). All variables were entered in three blocks (similar to the models for the first three months). The three models on self-reported offending also included an additional variable in the first block to control for whether the first arrest occurred in the first three months following release.

While emotional support is significant in some of the final models predicting reoffending in the first three months following release, the models focusing on the three to nine months following release reveal fairly different results. First, when examining the likelihood of any self-reported crime, as shown in Table 16, both types of support are significant in Model 2, with emotional support reducing the likelihood and instrumental support increasing the likelihood of any crime being committed. However, when additional control variables are added in Model 3, neither type of support significantly reduces reoffending. Living in a more criminogenic neighborhood, experiencing victimization more frequently and reporting a need for substance abuse treatment are all associated with a significant increase in the likelihood of any crime being committed in this time period.

When examining the second outcome, any self-reported violent crime, at the three to nine month period (see Table 17), the results indicate that neither emotional nor instrumental support is significant in Model 2 or Model 3. However, the frequency of victimization continues to predict a greater likelihood of reoffending.

Table 18 displays the models for any self-reported drug offenses in the three to nine months post-release. Similar to the findings for the any crime outcome, both emotional and instrumental support are significant in Model 2, but their effects are washed out in Model 3. Significant increases in the likelihood of committing a drug offense during this period are attributed to living in a criminogenic neighborhood, experiencing a higher frequency of victimization, having a higher level of legal cynicism and needing substance abuse treatment.

As shown in Table 19, similar to the models for the first three months post-release, neither type of support is significantly associated with being arrested in the three to nine months post-release. Receiving more services (perhaps a proxy for supervision intensity) and the self-reported need for substance abuse significantly predict an increased likelihood of being arrested in this period.

Table 16. Logistic regression model predicting any self-reported crime in the three to nine months post-release (n=714)

Wave 3 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.033**	.014	.967	-.040***	.015	.961	-.042**	.017	.959
Gender	-.706***	.260	.494	-.971***	.283	.379	-1.08***	.319	.339
Race - White	.164	.306	1.178	.161	.320	1.175	.098	.350	1.103
Race - Black	-.183	.300	.833	-.250	.311	.779	-.484	.344	.616
Index offense (reference = property)	.383*	.210	1.467	.407*	.219	1.502	.369	.244	1.446
Prior convictions	.044***	.015	1.045	.040***	.015	1.041	.027*	.016	1.027
Index days incarcerated	.000	.000	1.000	.000	.000	1.000	.000	.000	1.000
Re-incarcerated	1.775***	.248	5.901	1.813***	.269	6.128	1.431***	.294	4.184
First arrest in 3 months period	.707***	.303	2.029	.709**	.317	2.033	.619*	.354	1.857
Emotional support				-.108***	.030	.898	-.032	.034	.968
Instrumental support				.110**	.049	1.116	.060	.052	1.062
SVORI				-.328*	.194	.720	-.186	.212	.830

Table 16, continued. Logistic regression model predicting any self-reported crime in the three to nine months post-release (n=714)

Services received	.122	.075	1.130	.031	.083	1.031			
In-person PO contact	.016	.110	1.016	-.025	.123	.976			
PO case management	.048	.038	1.049	.057	.042	1.058			
Employed	-.783***	.209	.457	-.444*	.236	.642			
Married/steady	-.245	.207	.783	-.144	.227	.866			
Residence with family	-.085	.269	.919	-.147	.299	.864			
Criminogenic neighborhood				.108***	.038	1.114			
Victimization frequency				.493***	.094	1.638			
Antisocial family				.123	.218	1.131			
Legal cynicism				.059	.043	1.061			
Need mental health treatment				.486*	.274	1.626			
Need substance abuse treatment				1.190***	.246	3.288			
Constant	-.369	.488	.692	1.552**	.776	4.721	-.730	.925	.482
Model χ^2 (df)		109.708*** (9 df)			152.006*** (18 df)			241.434*** (24 df)	
Nagelkerke R ²		.203			.274			.410	
Hosmer & Lemeshow		8.787			7.987			1.510	

*p < .10, ** p < .05, *** p < .01

Table 17. Logistic regression model predicting any self-reported violent crime in the three to nine months post-release (n=714)

Wave 3 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.043	.036	.958	-.052	.037	.949	-.017	.040	.983
Gender	-1.702	1.040	.182	-2.298**	1.097	.100	-2.626*	1.383	.072
Race - White	-.875	.615	.417	-.957	.657	.384	-.925	.766	.396
Race - Black	-.611	.568	.543	-.694	.595	.499	-.650	.703	.522
Index offense (reference = property)	.680	.463	1.975	.907*	.490	2.476	1.031*	.543	2.804
Prior convictions	.025	.022	1.025	.016	.025	1.016	.025	.026	1.025
Index days incarcerated	.000	.000	1.000	.000	.000	1.000	.000	.000	1.000
Re-incarcerated	1.003**	.461	2.728	.956*	.494	2.601	.602	.571	1.826
First arrest in 3 months period	.357	.592	1.429	.234	.622	1.263	.239	.682	1.270
Emotional support				-.095	.064	.909	-.056	.073	.945
Instrumental support				.167	.109	1.181	.156	.119	1.168
SVORI				-.370	.434	.691	-.202	.477	.817

Table 17, continued. Logistic regression model predicting any self-reported violent crime in the three to nine months post-release

Services received	.237	.174	1.268	.350*	.199	1.419		
In-person PO contact	-.030	.230	.971	-.123	.261	.884		
PO case management	-.046	.087	.955	-.077	.103	.926		
Employed	-1.34***	.465	.262	-.928*	.521	.395		
Married/steady	.371	.496	1.449	.327	.553	1.387		
Residence with family	-.706	.605	.494	-.226	.678	.798		
Criminogenic neighborhood				.097	.082	1.102		
Victimization frequency				.646***	.138	1.908		
Antisocial family				-.799	.516	.450		
Legal cynicism				-.004	.097	.996		
Need mental health treatment				-.299	.601	.741		
Need substance abuse treatment				.500	.532	1.648		
Constant	-1.915*	1.081	.147	-.123	1.637	.885	-3.320	2.039
Model χ^2 (df)		17.987** (9 df)			32.936** (18 df)			60.994*** (24 df)
Nagelkerke R^2		.095			.172			.313
Hosmer & Lemeshow		8.931			10.581			4.804

*p < .10, ** p < .05, *** p < .01

Table 18. Logistic regression model predicting any self-reported drug crime in the three to nine months post-release (n=714)

Wave 3 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.032**	.016	.968	-.039**	.016	.962	-.043**	.019	.958
Gender	-.798***	.294	.450	-1.10***	.320	.333	-1.29***	.365	.276
Race - White	-.020	.315	.980	-.072	.330	.930	-.103	.364	.902
Race - Black	-.486	.312	.615	-.557*	.324	.573	-.827**	.362	.437
Index offense (reference = property)	.449**	.221	1.567	.519**	.231	1.680	.559**	.257	1.749
Prior convictions	.011	.014	1.011	.007	.015	1.007	-.005	.016	.995
Index days incarcerated	.000	.000	1.000	.000	.000	1.000	.000	.000	1.000
Re-incarcerated	1.271***	.243	3.564	1.192***	.262	3.294	.672**	.296	1.959
First arrest in 3 months period	.581**	.311	1.789	.584*	.325	1.794	.405	.363	1.500
Emotional support				-.113***	.032	.893	-.033	.036	.968
Instrumental support				.106**	.052	1.112	.051	.056	1.052
SVORI				-.185	.206	.831	-.046	.227	.955

Table 18, continued. Logistic regression model predicting any self-reported drug crime in the three to nine months post-release

Services received	.194**	.079	1.214	.123	.088	1.131
In-person PO contact	-.067	.117	.935	-.124	.130	.883
PO case management	.037	.040	1.038	.051	.045	1.052
Employed	-.692***	.223	.501	-.398	.253	.672
Married/steady	-.198	.222	.820	-.074	.245	.929
Residence with family	-.027	.288	.973	-.040	.323	.960
Criminogenic neighborhood				.102**	.039	1.107
Victimization frequency				.401***	.091	1.494
Antisocial family				.286	.239	1.331
Legal cynicism				.103**	.045	1.108
Need mental health treatment				.044	.289	1.045
Need substance abuse treatment				1.511***	.258	4.532
Constant	-.292	.517	.747	1.692**	.816	5.428
Model χ^2 (df)		67.927*** (9 df)			104.414*** (18 df)	
Nagelkerke R^2		.141			.211	
Hosmer & Lemeshow		8.585			10.076	
					192.832*** (24 df)	
					.368	
					8.241	

*p < .10, ** p < .05, *** p < .01

Table 19. Logistic regression model predicting any arrest (NCIC) in the three to nine months post-release (n=714)

Wave 3 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.029*	.017	.972	-.034**	.017	.966	-.033*	.018	.967
Gender	-.085	.288	.918	-.258	.308	.772	-.213	.318	.809
Race - White	-.255	.373	.775	-.274	.385	.761	-.220	.398	.802
Race - Black	.434	.352	1.543	.405	.360	1.499	.430	.374	1.537
Index offense (reference = property)	-.168	.251	.845	-.127	.257	.880	-.115	.262	.891
Prior convictions	.043***	.015	1.044	.042***	.015	1.042	.039**	.015	1.040
Index days incarcerated	.000***	.000	1.000	.000**	.000	1.000	.000**	.000	1.000
Re-incarcerated	2.074***	.248	7.953	2.114***	.266	8.285	1.919***	.279	6.817
Emotional support				-.024	.032	.976	.006	.034	1.006
Instrumental support				-.010	.052	.990	-.034	.053	.966
SVORI				-.430*	.219	.650	-.383*	.223	.682
Services received				.210**	.084	1.234	.196**	.087	1.217

Table 19, continued. Logistic regression model predicting any arrest (NCIC) in the three to nine months post-release (n=714)

In-person PO contact	.066	.124	1.068	.045	.127	1.046
PO case management	.000	.043	1.000	-.001	.044	.999
Employed	-.505**	.231	.603	-.329	.243	.720
Married/steady	-.169	.238	.844	-.125	.244	.883
Residence with family	.247	.314	1.280	.282	.322	1.326
Criminogenic neighborhood				.024	.039	1.024
Victimization frequency				.168*	.086	1.182
Antisocial family				-.019	.232	.981
Legal cynicism				.052	.044	1.053
Need mental health treatment				-.020	.287	.980
Need substance abuse treatment				.515**	.255	1.673
Constant	-.939	.573	.391	-.105	.859	.901
Model χ^2 (df)	101.365***		121.035***		133.139***	
Nagelkerke R^2	.212		.250		.273	
Hosmer & Lemeshow	7.144		7.543		6.329	

*p < .10, ** p < .05, *** p < .01

Reoffending in the Nine to Fifteen Months Post-Release

The most consistent effects of family support on the likelihood of reoffending were observed in the nine to 15 month time period, with emotional support being associated with a significant reduction in reoffending for all four outcomes. As shown in Table 20, emotional support is associated with a significant reduction in the likelihood of any crime being committed during the nine to 15 months post-release, but instrumental support is not significant in either Model 2 or Model 3. Having more frequent contact with a probation or parole officer, living in a more criminogenic neighborhood and experiencing victimization more frequently are all associated with an increase in the likelihood of reoffending. Self-reported need for substance abuse treatment has a particularly large effect on increasing the likelihood of committing any crime during this period.

Table 21 illustrates similar results, with emotional support being associated with a significant reduction in the likelihood of committing a violent crime during the nine to 15 months post-release. Once again, instrumental support does not have a significant effect on reoffending. Receiving a greater number of social services, residing in a more criminogenic neighborhood and experiencing victimization more frequently are also significant predictors of committing a violent crime.

In terms of self-reported drug offenses, the results in Table 22 reveal that emotional support is associated with a significant reduction in the likelihood of committing a drug offense, but instrumental support has no significant effect on drug offending during this period. More frequent contact with a probation or parole officer, residence in a more criminogenic neighborhood and more frequent victimization during

the nine to 15 months post-release significantly predict an increase in the likelihood of drug offending during this period. Logically, self-reported need for substance abuse treatment is also associated with a fairly large increase in the likelihood of drug offenses.

Lastly, when examining the measure of reoffending from official records (whether any arrest took place) during the nine to 15 month post-release period, Table 23 indicates that emotional support is consistently associated with a reduction in the likelihood of an arrest occurring during this period. Instrumental support is associated with an increase in the likelihood of first arrest in the nine to 15 months post-release. However, this finding is significant only at the .1 level and considering that the direction of the effect is the opposite of what is hypothesized, a .05 level would be needed to declare this a significant finding. Additionally, victimization frequency is a significant predictor of being arrested in this same period.

Table 20. Logistic regression model predicting any self-reported crime in the nine to fifteen months post-release (n=480)

Wave 4 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.017	.016	.983	-.022	.018	.978	-.025	.020	.976
Gender	-.171	.286	.842	-.413	.325	.661	-.566	.374	.568
Race - White	-.202	.370	.817	-.248	.408	.780	-.213	.442	.808
Race - Black	-.435	.365	.647	-.650	.399	.522	-.944**	.440	.389
Index offense (reference = property)	.288	.257	1.334	.307	.282	1.359	.330	.313	1.391
Prior convictions	.022	.015	1.022	.013	.016	1.013	-.016	.019	.984
Index days incarcerated	.000	.000	1.000	.000	.000	1.000	.000	.000	1.000
Re-incarcerated	1.202***	.308	3.325	1.069***	.334	2.912	.535	.365	1.707
First arrest in 9 months period	.898***	.244	2.455	.742***	.271	2.100	.750**	.302	2.117
Emotional support				-.138***	.037	.871	-.090**	.043	.914
Instrumental support				.028	.059	1.029	.006	.066	1.006
SVORI				-.239	.243	.787	-.188	.269	.829

Table 20, continued. Logistic regression model predicting any self-reported crime in the nine to fifteen months post-release (n=480)

Services received	.290***	.105	1.337	.193	.121	1.213		
In-person PO contact	.333***	.126	1.395	.290**	.140	1.336		
PO case management	.012	.050	1.012	.022	.056	1.022		
Employed	-.528**	.260	.590	-.306	.293	.737		
Married/steady	.118	.259	1.126	.009	.293	1.009		
Residence with family	.117	.328	1.124	.308	.363	1.361		
Criminogenic neighborhood				.162***	.050	1.176		
Victimization frequency				.406***	.114	1.501		
Antisocial family				.203	.257	1.225		
Legal cynicism				-.021	.055	.979		
Need mental health treatment				-.072	.330	.931		
Need substance abuse treatment				1.767***	.305	5.855		
Constant	-.505	.583	.604	1.741*	.973	5.704	.062	1.117
Model χ^2 (df)		51.228*** (9 df)			111.694*** (18 df)			176.285*** (24 df)
Nagelkerke R^2		.144			.295			.437
Hosmer & Lemeshow		2.686			2.771			5.633

*p < .10, ** p < .05, *** p < .01

Table 21. Logistic regression model predicting any self-reported violent crime in the nine to fifteen months post-release (n=480)

Wave 4 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.059	.040	.942	-.071	.045	.931	-.039	.048	.962
Gender	-.113	.674	.893	-.455	.742	.634	-1.115	.871	.328
Race - White	-.963	.631	.382	-1.412**	.712	.244	-1.135	.820	.321
Race - Black	-1.260**	.629	.284	-1.502**	.688	.223	-1.500*	.794	.223
Index offense (reference = property)	-.395	.587	.674	-.227	.620	.797	-.113	.667	.893
Prior convictions	.019	.025	1.019	.012	.032	1.012	.005	.033	1.005
Index days incarcerated	.000	.000	1.000	.000	.000	1.000	-.001	.000	.999
Re-incarcerated	1.362***	.505	3.906	1.112**	.559	3.040	1.063*	.628	2.894
First arrest in 9 months period	1.152**	.465	3.164	1.004*	.531	2.729	1.009*	.571	2.742
Emotional support				-.168**	.072	.845	-.159*	.081	.853
Instrumental support				-.004	.120	.996	.063	.134	1.065
SVORI				.169	.549	1.184	.260	.620	1.297

Table 21, continued. Logistic regression model predicting any self-reported violent crime in the nine to fifteen months post-release

Services received	.411**	.188	1.508	.501**	.223	1.651
In-person PO contact	.243	.242	1.276	.095	.284	1.099
PO case management	.137	.111	1.147	.152	.129	1.164
Employed	-.132	.578	.876	.312	.673	1.366
Married/steady	.249	.551	1.283	-.062	.643	.940
Residence with family	.747	.737	2.110	1.201	.865	3.323
Criminogenic neighborhood				.192**	.093	1.212
Victimization frequency				.624***	.186	1.867
Antisocial family				-.658	.550	.518
Legal cynicism				.089	.108	1.093
Need mental health treatment				-.426	.666	.653
Need substance abuse treatment				.261	.611	1.298
Constant	-.782	1.241	.458	1.035	1.974	2.814
Model χ^2 (df)		24.323*** (9 df)			48.532*** (18 df)	
Nagelkerke R ²		.155			.301	
Hosmer & Lemeshow		12.151			9.777	
					2.425	.111

*p < .10, ** p < .05, *** p < .01

Table 22. Logistic regression model predicting any self-reported drug crime in the nine to fifteen months post-release (n=479)

Wave 4 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	.007	.017	1.007	.006	.018	1.006	.007	.021	1.007
Gender	.013	.310	1.013	-.166	.341	.847	-.239	.395	.788
Race - White	.408	.464	1.503	.476	.497	1.610	.405	.534	1.499
Race - Black	.398	.458	1.489	.325	.488	1.383	.089	.523	1.093
Index offense (reference = property)	.040	.286	1.040	.087	.308	1.091	.095	.351	1.100
Prior convictions	.012	.017	1.012	-.001	.019	.999	-.035	.021	.966
Index days incarcerated	.000	.000	1.000	.000	.000	1.000	.000	.000	1.000
Re-incarcerated	.953***	.316	2.594	.855**	.341	2.353	.312	.380	1.367
First arrest in 9 months period	.897***	.260	2.451	.728**	.284	2.070	.797**	.319	2.220
Emotional support				-.152***	.039	.859	-.107**	.045	.898
Instrumental support				.074	.063	1.077	.052	.070	1.053
SVORI				.069	.266	1.072	.268	.297	1.308

Table 22, continued. Logistic regression model predicting any self-reported drug crime in the nine to fifteen months post-release

Services received	.150	.106	1.162	-.005	.126	.995			
In-person PO contact	.259**	.131	1.295	.275*	.151	1.317			
PO case management	-.006	.055	.994	-.001	.062	.999			
Employed	-.542*	.278	.581	-.302	.314	.739			
Married/steady	-.308	.270	.735	-.434	.311	.648			
Residence with family	-.226	.333	.798	-.210	.371	.810			
Criminogenic neighborhood				.107**	.051	1.113			
Victimization frequency				.204*	.118	1.227			
Antisocial family				.080	.282	1.084			
Legal cynicism				-.025	.058	.975			
Need mental health treatment				-.282	.355	.754			
Need substance abuse treatment				2.151***	.314	8.595			
Constant	-2.30***	.677	.100	.239	1.033	1.271	-1.248	1.211	.287
Model χ^2 (df)	30.261***	(9 df)	76.046***	(18 df)	137.048***	(24 df)			
Nagelkerke R^2	.095		.228		.387				
Hosmer & Lemeshow	6.119		8.754		8.176				

*p < .10, ** p < .05, *** p < .01

Table 23. Logistic regression model predicting any arrest (NCIC) in the nine to fifteen months post-release (n=480)

Wave 4 Measures	Model 1			Model 2			Model 3		
	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)	β	<i>S.E.</i>	<i>Exp</i> (β)
Age	-.002	.017	.998	-.002	.019	.998	.004	.019	1.004
Gender	-.651*	.372	.521	-.886**	.400	.412	-.922**	.414	.398
Race - White	-.580	.450	.560	-.596	.474	.551	-.491	.486	.612
Race - Black	.386	.421	1.471	.305	.442	1.357	.272	.457	1.313
Index offense (reference = property)	.040	.304	1.040	.099	.320	1.104	.162	.327	1.176
Prior convictions	.024	.016	1.024	.016	.017	1.016	.008	.018	1.008
Index days incarcerated	.000***	.000	1.000	.000**	.000	1.000	.000**	.000	1.000
Re-incarcerated	1.917***	.317	6.801	1.815***	.332	6.144	1.752***	.350	5.766
Emotional support				-.133***	.040	.876	-.123***	.042	.885
Instrumental support				.099	.066	1.104	.112*	.067	1.118
SVORI				-.042	.264	.959	-.010	.271	.990
Services received				.173	.116	1.189	.172	.123	1.187

Table 23, continued. Logistic regression model predicting any arrest (NCIC) in the nine to fifteen months post-release (n=480)

In-person PO contact	.108	.134	1.114	.045	.139	1.046
PO case management	.009	.055	1.009	.018	.057	1.018
Employed	-.516*	.276	.597	-.438	.291	.645
Married/steady	.400	.289	1.492	.259	.305	1.295
Residence with family	-.295	.350	.745	-.233	.361	.792
Criminogenic neighborhood				.087*	.047	1.091
Victimization frequency				.235**	.110	1.264
Antisocial family				.311	.264	1.364
Legal cynicism				.059	.052	1.061
Need mental health treatment				-.552	.353	.576
Need substance abuse treatment				.292	.321	1.339
Constant	-1.188*	.664	.305	.533	1.039	1.704
Model χ^2 (df)	66.177*** (8 df)			92.108*** (17 df)		106.434*** (23 df)
Nagelkerke R^2	.199			.270		.308
Hosmer & Lemeshow	5.796			10.318		11.592

*p < .10, ** p < .05, *** p < .01

Table 24 below helps to synthesize the main findings related to emotional and instrumental support from the final models (Model 3) displayed in Tables 12 through 23 above. After controlling for all other predictors in the models, emotional support reduces the likelihood of committing any crime and any drug crime in the first three months post-release. Emotional support is also associated with a significant reduction in the likelihood of committing any crime, any violent crime, any drug crime and being arrested in the nine to 15 months post-release.

Table 24. Summary of main findings on emotional and instrumental support using listwise deletion

		Any Crime	Any Violent Crime	Any Drug Crime	Any Arrest (NCIC)
3 Months Post-Release (n=877-921)	Emotional support	↓	--	↓	--
	Instrumental support	--	--	--	--
3-9 Months Post-Release (n=714)	Emotional support	--	--	--	--
	Instrumental support	--	--	--	--
9-15 Months Post-Release (n=479-480)	Emotional support	↓	↓	↓	↓
	Instrumental support	--	--	--	--

While there are several circumstances in which instrumental support is associated with a significant increase in reoffending in Model 2 (any crime and drug crime in the three to nine month period), these effects are always washed out by the inclusion of additional control variables in Model 3. Instrumental support was also associated with an

increase in the likelihood of reoffending in Model 3 for any arrest in the nine to 15 months post-release, but this effect was only significant at the .1 level (and considering the effect was in the opposite direction of the hypothesized direction, an alpha level of .05 would be required for significance).

Addition of Support & Victimization and Support & Gender Interactions

Four separate models were also run with the addition of one interaction term in each model. These models elaborate the main effects models for the four outcomes reported above (in Tables 12 through 23). As an exploration of the buffering hypothesis, Model 4 replicates Model 3 in the main-effects analyses above, but adds an interaction term for emotional support and victimization. Model 5 replicates Model 3, but with the addition of an interaction term for instrumental support and victimization. To investigate differential effects of support on reoffending by gender, Model 6 replicates Model 3, but adds an interaction term for emotional support and gender. Model 7 replicates Model 3, but with the addition of an interaction term for instrumental support and gender.

Four separate models were used with a different interaction term in each model in order to aid interpretation and isolate the effects of different variables. For example, if an interaction term for emotional support and gender as well as an interaction term for instrumental support and gender were both included in the same model, the main effects of gender would be interpreted as the effect of being female (female is coded as 1) when both emotional and instrumental support equaled zero (or were both at their mean when support variables are mean centered).

When creating the interaction terms for support and victimization frequency, both types of support and victimization were mean centered. If neither support nor victimization were mean centered, the β for the main effect of victimization would represent the effect of victimization on the likelihood of reoffending when levels of support were equal to zero. Such an interpretation would not have much meaningful value considering that no respondents reported zero emotional support at wave three or wave four and only one individual reported zero emotional support at wave two. Additionally, only 1.1 percent, 1.2 percent and 0.6 percent of cases have zero instrumental support at waves two, three and four, respectively. Therefore, the interpretations of the main effects are much more meaningful if we consider the effect of victimization on reoffending at the average level of support. Such an interpretation is achieved by mean centering victimization and support (the mean is subtracted from the value for each case).

The use of hierarchically well-formulated (HWF) models is also worthy of a brief explanation (see Jaccard 2001). An HWF model helps to ensure that the main effects and the interaction effects are not confounded. To determine whether the interaction term improves model fit, both the main effects and the interaction term need to be included in models. When the interaction term is significant, but the main effects are not, this indicates that the interaction is a better specification of the model.

And lastly, it is important to point out that when including an interaction term in the model, the main effects become conditioned effects. For example, when a mean-centered interaction term is included for emotional support and victimization, the main effects of emotional support represent the effect of emotional support on the likelihood of

reoffending when levels of victimization are at the mean. The main effects of victimization on the likelihood of reoffending indicate the effect of victimization on the likelihood of reoffending when levels of emotional support are at the mean.

In the interest of space and aiding interpretation, results for the complete models with the interaction terms are not displayed.¹⁹ Rather, tables are shown that only display the exponentiated β s for the main effects of support (emotional or instrumental), the main effects of the moderator (victimization or gender), the interaction term (support * moderator), and the change in the Nagelkerke's R^2 values from Model 3. Although Nagelkerke's R^2 is only a pseudo- R^2 and cannot be interpreted as the amount of variance explained, it is appropriate to use it to compare values across different models and examine the amount of explanatory power gained by the inclusion of different interaction terms. Only exponentiated β s that are significant at the .10 level or below are displayed.

Table 25 displays the models predicting whether any self-reported crime was committed in each of the three post-release time periods with the inclusion of the interaction terms. Looking first at Model 4 with the interaction term for emotional support and victimization, the results indicate that at average levels of victimization, emotional support (main effect) is associated with a significant reduction in the likelihood of committing any crime in the first three months and nine to 15 months post-release. When levels of emotional support are at their average, more frequent victimization is associated with a significant increase in the likelihood of reoffending in all three time periods. Additionally, in the first three months and the nine to 15 months post-

¹⁹ Considering that models are run separately for each interaction term, displaying results for 48 models (four interaction terms by four outcomes by three time periods) would be overwhelming, to say the least.

Table 25. Predicting any self-reported crime with interaction terms (listwise deletion)

		Model 4	Model 5	Model 6	Model 7
		Emotional support * victimization	Instrumental support * victimization	Emotional support * female	Instrumental support * female
		Exp(β)	Exp(β)	Exp(β)	Exp(β)
3 Months Post-Release (n=921)	Main effect of support	.910***	--	.935**	1.129**
	Main effect of moderator	1.860***	1.713***	.536**	.511**
	Interaction term	1.074***	1.087***	--	.780***
	Change in Pseudo R ² from Model 3	.329 to .348	.329 to .339	.329 to .333	.329 to .343
3-9 Months Post-Release (n=714)	Main effect of support	--	--	--	--
	Main effect of moderator	1.621***	1.621***	.402***	.385***
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.411 to .412	.411 to .412	.411 to .412	.411 to .412
9-15 Months Post-Release (n=480)	Main effect of support	.911**	--	.931*	--
	Main effect of moderator	1.486***	1.487***	.506*	.494*
	Interaction term	1.040*	--	.878*	.800**
	Change in Pseudo R ² from Model 3	.413 to .420	.413 to .417	.413 to .420	.413 to .422

*p < .10, ** p < .05, *** p < .01

release, emotional support is associated with an increase in the likelihood of reoffending at higher levels of victimization. Turning to Model 5, the main effects of instrumental support are not significant at any time period, but similar results are observed in the first three months post release for the interaction term. Once again, at higher levels of victimization, instrumental support is associated with an increase in the likelihood of committing any crime. For both emotional support and instrumental support, there is no evidence in support of the buffering hypothesis, which would suggest that at higher levels of stressful life events (such as victimization), support could buffer against a negative outcome (reoffending). In some time periods, there is actually evidence contrary to the buffering hypothesis in that at higher levels of victimization, support increases the likelihood of reoffending.

Model 6 in Table 25 reveals that for males, emotional support reduces the likelihood of committing any crime in the first three months post-release and the three to nine months post-release. While the interaction terms are not significant in either the first three months or the three to nine months post-release, the interaction term is significant in the nine to 15 months post-release. This indicates that for females, emotional support also reduces the likelihood of reoffending during this period. A comparison of the coefficients indicates that emotional support has a slightly greater protective effect for females. Examining the models with the interaction term for instrumental support and gender (Model 7), in the first three months post-release, instrumental support increases the likelihood of committing any crime for males, but decreases the likelihood among females. In the nine to 15 months post-release, instrumental support again reduces the likelihood of committing any crime for females. Both instrumental and emotional

support appear to influence the likelihood of reoffending differently for males and females.

Table 26 displays the results of models predicting any self-reported violent crimes in all three time periods with the interaction terms. Models 4 and 5 demonstrate that at average levels of support, more frequent victimization is associated with a significant increase in the likelihood of committing a violent crime in all three time periods. Turning to Models 6 and 7 in Table 26 with the gender and support interaction terms, few coefficients are significant. It is important to note that rates of violent reoffending are fairly low in all three time periods, thus limiting the conclusions that can be drawn from an examination of this outcome. In the three to nine months post-release, emotional support substantially increases the likelihood of committing a violent offense for females. In the nine to 15 months post release, emotional support decreases the likelihood of reoffending among males.

Table 27 features results of the models predicting any self-reported drug offending in all three time periods with the inclusion of the interaction terms. As shown in Model 4, in the first three months and the nine to 15 months post-release, at average levels of victimization, emotional support significantly reduces the likelihood of committing a drug offense. In all three time periods, at average levels of emotional support, more frequent victimization increases the likelihood of drug offending. As observed in both Models 4 and 5, in the first three months post-release, at higher levels of victimization, both emotional support and instrumental support are associated with an increase in the likelihood of reoffending. While the interaction terms are not significant

Table 26. Predicting any self-reported violent crime with interactions (listwise deletion)

		Model 4	Model 5	Model 6	Model 7
		Emotional support * victimization	Instrumental support * victimization	Emotional support * female	Instrumental support * female
		Exp(β)	Exp(β)	Exp(β)	Exp(β)
3 Months Post-Release (n=919)	Main effect of support	--	--	--	--
	Main effect of moderator	2.231***	2.117***	--	--
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.421 to .422	.421 to .421	.421 to .438	.421 to .423
3-9 Months Post-Release (n=714)	Main effect of support	--	--	--	--
	Main effect of moderator	1.934***	1.947***	.009*	--
	Interaction term	--	--	2.020*	--
	Change in Pseudo R ² from Model 3	.354 to .355	.354 to .355	.354 to .382	.354 to .375
9-15 Months Post-Release (n=480)	Main effect of support	.866*	--	.873*	--
	Main effect of moderator	1.834***	1.904***	--	--
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.378 to .389	.378 to .391	.378 to .379	.378 to .384

*p < .10, ** p < .05, *** p < .01

Table 27. Predicting any self-reported drug crime with interactions (listwise deletion)

		Model 4	Model 5	Model 6	Model 7
		Emotional support * victimization	Instrumental support * victimization	Emotional support * female	Instrumental support * female
		Exp(β)	Exp(β)	Exp(β)	Exp(β)
3 Months Post-Release (n=919)	Main effect of support	.862***	--	.889***	1.133**
	Main effect of moderator	1.742***	1.587***	.374**	.352***
	Interaction term	1.069***	1.084**	--	.826**
	Change in Pseudo R ² from Model 3	.362 to .380	.362 to .372	.362 to .364	.362 to .369
3-9 Months Post-Release (n=714)	Main effect of support	--	--	--	--
	Main effect of moderator	1.407***	1.386***	.327***	.292***
	Interaction term	--	--	--	1.195**
	Change in Pseudo R ² from Model 3	.350 to .351	.350 to .351	.350 to .352	.350 to .356
9-15 Months Post-Release (n=479)	Main effect of support	.905**	--	.923*	--
	Main effect of moderator	1.242*	--	--	--
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.359 to .359	.359 to .361	.359 to .364	.359 to .366

*p < .10, ** p < .05, *** p < .01

in the later time periods, such a finding in the first three months post-release is in opposition to the findings expected according to the buffering hypothesis.

Model 6 in Table 27 reveals that in the first three months and nine to 15 months post-release periods, emotional support is associated with a significant decrease in the likelihood of committing a drug offense for males. At average levels of emotional support as well as at average levels of instrumental support, being female substantially reduces the likelihood of drug offending in the first three months and the three to nine months post-release. The effect of emotional support for females is not significant in any time period (as indicated by the interaction term). As displayed in Model 7, in the first three months post-release, instrumental support is associated with an increase in the likelihood of reoffending for males, but a decrease for females. However, in the three to nine months post-release, instrumental support is associated with an increase in the likelihood of drug offending for females.

Table 28 presents the findings of the models with the interaction terms for the final outcome, whether or not any arrest occurred in each of the three time periods. As shown in Models 4 and 5, at average levels of emotional support and instrumental support, more frequent victimization is associated with an increase in the likelihood of the any arrest occurring in all three post-release time periods. In the three to nine months post-release, at higher levels of victimization, emotional support significantly increases the likelihood of being arrested. In the nine to 15 months post-release, at average levels of victimization, emotional support reduces the likelihood of being arrested.

Models 6 and 7 reveal no significant findings in the three month period, but in the three to nine month period, higher levels of instrumental support increase the likelihood

Table 28. Predicting any arrest (NCIC) with interactions (listwise deletion)

		Model 4	Model 5	Model 6	Model 7
		Emotional support * victimization	Instrumental support * victimization	Emotional support * female	Instrumental support * female
		Exp(β)	Exp(β)	Exp(β)	Exp(β)
3 Months Post-Release (n=877)	Main effect of support	--	--	--	--
	Main effect of moderator	1.308*	1.263*	--	--
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.263 to .263	.263 to .266	.263 to .263	.263 to .263
3-9 Months Post-Release (n=714)	Main effect of support	--	--	--	--
	Main effect of moderator	1.240**	1.209**	--	--
	Interaction term	1.021*	--	--	1.151*
	Change in Pseudo R ² from Model 3	.273 to .278	.273 to .275	.273 to .274	.273 to .278
9-15 Months Post-Release (n=480)	Main effect of support	.884***	--	.900**	1.159**
	Main effect of moderator	1.270**	1.271**	.288**	.295**
	Interaction term	--	--	--	.814*
	Change in Pseudo R ² from Model 3	.308 to .308	.308 to .308	.308 to .315	.308 to .315

*p < .10, ** p < .05, *** p < .01

of being arrested for females. For males in the nine to 15 month time period, emotional support is associated with a reduction in the likelihood of arrest and instrumental support is associated with an increase in the likelihood of arrest. At average levels of emotional support as well as instrumental support, being female substantially reduces the likelihood of being arrested. Additionally, instrumental support significantly decreases the likelihood of arrest for females. Instrumental support thus appears to have varying effects on female recidivism at different points in time.

Change in Family Support over Time

Analyses are also conducted to investigate whether levels of family support change between different time periods and whether changes in family support are associated with recidivism. As shown by Table 5 in chapter four, mean levels of family support are very similar in all three time periods. For emotional support, which is on a 30 point scale, mean levels vary less than seven tenths of a point across waves. Mean levels of instrumental support, which is on a 15 point scale, vary by approximately four tenths of a point across waves.

While there does not appear to be much evidence that levels of family support change substantially over time for this population of former prisoners as a whole, analyses were also conducted to determine whether levels of family support were more likely to change for certain subgroups of this population. Mean levels of emotional and instrumental family support were examined separately for the following subgroups: males, females, Whites, Blacks, Hispanics, ages 18 to 25, ages 26-35, ages 36-45 and

ages 45 and older. Within these subgroups, mean levels of family support still do not vary substantially.

To investigate whether individual level change in family support influences the likelihood of reoffending, new variables were created to represent change in each type of family support between wave two and wave three and also between wave three and wave four. These variables were then added to the core models presented above in Tables 12 through 23. None of these changes in family support variables was significant in any of the core models. These analyses support the conclusions that levels of family support remain fairly stable over time and that any changes in levels of support do not have an independent effect on the likelihood of recidivism.²⁰

Logistic Regression Results with Multiple Imputation

All analyses described in the previous section are also conducted using multiple imputation for missing values. In the interest of space and for the purposes of aiding comparisons between the listwise deletion and the multiple imputation results, full results are not shown for the multiple imputation models. Rather, results are displayed only for emotional family support, instrumental family support and the three other independent variables that demonstrated the most consistent and robust effects in the models using listwise deletion (residence in a more criminogenic neighborhood, more frequent victimization and the self-reported need for alcohol or drug treatment).

²⁰ The use of hierarchical growth curve models was proposed in the dissertation prospectus to examine the effects of change in family support over time. However, this was proposed prior to receiving the SVORI data. The change over time analyses described in this section revealed that family support is not a time-varying covariate and thus the growth curve models would not be meaningful.

Table 29 below features the results for the models predicting any self-reported crime in each of the three time periods. It is important to note the substantial increase in the number of cases included in the analyses using multiple imputation, particularly in the later time periods. Similar to the results using listwise deletion, instrumental support is not a significant predictor of committing any crime. While higher levels of emotional support significantly reduce the likelihood of committing any crime in the first three months and the nine to 15 months post-release periods in the models using listwise deletion, the models using multiple imputation reveal that higher levels of emotional support are significant in all three time periods. Following the same trend of results from the models using listwise deletion, living in a more criminogenic neighborhood, experiencing victimization more frequently, and reporting a need for alcohol or drug treatment all increase the likelihood of committing any crime in each of the three time periods. With the exception of the significance of the findings for emotional support in the three to nine month time period, it is worth emphasizing the extent to which the models using listwise deletion closely resemble the models using multiple imputation in terms of the direction of the effects, the significance levels and even the size of the effects.

Table 30 displays results for the models predicting any self-reported violent crime in each of the three time periods. The analyses fail to identify any significant effects of either emotional or instrumental support in any time period when using multiple imputation. The results for frequency of victimization remain consistent throughout all three time periods. Residence in a criminogenic neighborhood also significantly increases the likelihood of violent offending in the three to nine month and nine to 15

Table 29. Comparison of results using listwise deletion and multiple imputation for any self-reported crime

	3 Months Post-Release		3-9 Months Post-Release		9-15 Months Post-Release	
	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)
N	921	1222	714	1282	480	1382
Emotional support	.922**	.941**	--	.939***	.914**	.945**
Instrumental support	--	--	--	--	--	--
Criminogenic neighborhood	1.072*	1.104***	1.114***	1.081***	1.176***	1.085***
Victimization frequency	1.483***	1.647***	1.638***	1.591***	1.501***	1.617***
Need AOD treatment	3.096***	2.734***	3.288***	4.132***	5.855***	2.977***
Model chi square	214.5***	242.3***	241.4***	376.8***	176.3***	369.1***
Nagelkerke R ²	.329	.274	.410	.348	.437	.322

*p < .10, ** p < .05, *** p < .01

Note: Results are based on logistic regression models that also include the following control variables: age, gender, race, index offense type, number of days incarcerated for index offense, re-incarceration status, SVORI participation, services received, in-person contact with a PO, case management from a PO, employment status, relationship status, residence with family, antisocial family status, legal cynicism, and need for mental health treatment.

Table 30. Comparison of results using listwise deletion and multiple imputation for any self-reported violent crime

	3 Months		3-9 Months		9-15 Months	
	Post-Release		Post-Release		Post-Release	
	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)
N	919	1218	714	1275	480	1377
Emotional support	--	--	--	--	.853*	--
Instrumental support	--	--	--	--	--	--
Criminogenic neighborhood	--	--	--	1.103**	1.212**	1.101**
Victimization frequency	2.100***	1.831***	1.908***	1.622***	1.867***	1.434***
Need AOD treatment	--	--	--	2.698***	--	--
Model chi square	61.4***	69.8***	61.0***	126.6***	68.6***	131.7***
Nagelkerke R ²	.421	.299	.313	.278	.417	.246

*p < .10, ** p < .05, *** p < .01

Note: Results are based on logistic regression models that also include the following control variables: age, gender, race, index offense type, number of days incarcerated for index offense, re-incarceration status, SVORI participation, services received, in-person contact with a PO, case management from a PO, employment status, relationship status, residence with family, antisocial family status, legal cynicism, and need for mental health treatment.

month time periods. The self-reported need for substance abuse treatment is associated with an increase in violent offending during the three to nine month post-release period.

As shown in Table 31 below, the models using multiple imputation also fail to find a significant association between instrumental support and the likelihood of self-reported drug offending in any of the three time periods. The results using multiple imputation do reveal, however, that higher levels of emotional support significantly reduce the likelihood of drug offending in all three time periods, after controlling for all other predictors in the models. Residence in a more criminogenic neighborhood, experiencing more frequent victimization and reporting a need for alcohol or drug treatment all appear to increase the likelihood of committing a drug offense.

The final table below, Table 32, features the results of the models predicting whether or not the respondent experienced an arrest during each of the three time periods. While higher levels of emotional support significantly reduce the likelihood of arrest only during the nine to 15 month period in the results using listwise deletion, the models using multiple imputation show that emotional support reduces the likelihood of an arrest in both the three to nine month and the nine to 15 month periods. The frequency of victimization remains a consistent predictor of an increased likelihood of reoffending in all time periods.

Table 31. Comparison of results using listwise deletion and multiple imputation for any self-reported drug crime

	3 Months Post-Release		3-9 Months Post-Release		9-15 Months Post-Release	
	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)
N	919	1216	714	1270	479	1374
Emotional support	.883***	.927***	--	.941***	.898**	.948**
Instrumental support	--	--	--	--	--	--
Criminogenic neighborhood	1.112***	1.134***	1.107**	1.081***	1.113**	--
Victimization frequency	1.365***	1.463***	1.494***	1.319***	1.227*	1.416***
Need AOD treatment	3.573***	2.997***	4.532***	4.767***	8.595***	4.563***
Model chi square	205.2***	219.1***	192.8***	325.5***	137.0***	289.2***
Nagelkerke R ²	.362	.283	.368	.325	.387	.279

*p < .10, ** p < .05, *** p < .01

Note: Results are based on logistic regression models that also include the following control variables: age, gender, race, index offense type, number of days incarcerated for index offense, re-incarceration status, SVORI participation, services received, in-person contact with a PO, case management from a PO, employment status, relationship status, residence with family, antisocial family status, legal cynicism, and need for mental health treatment.

Table 32. Comparison of results using listwise deletion and multiple imputation for any arrest (NCIC)

	3 Months		3-9 Months		9-15 Months	
	Post-Release		Post-Release		Post-Release	
	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)	Listwise Deletion Exp(β)	Multiple Imputation Exp(β)
N	877	1906	714	1906	480	1906
Emotional support	--	--	--	.964*	.885***	.931***
Instrumental support	--	--	--	--	1.118*	--
Criminogenic neighborhood	--	1.064**	--	1.059***	1.091*	1.046*
Victimization frequency	1.371***	1.440***	1.182***	1.117**	1.264**	1.267***
Need AOD treatment	--	--	1.673**	2.184***	--	1.806***
Model chi square	118.6***	136.5***	133.1***	177.8***	106.4***	170.0***
Nagelkerke R ²	.263	.117	.273	.125	.308	.122

*p < .10, ** p < .05, *** p < .01

Note: Results are based on logistic regression models that also include the following control variables: age, gender, race, index offense type, number of days incarcerated for index offense, re-incarceration status, SVORI participation, services received, in-person contact with a PO, case management from a PO, employment status, relationship status, residence with family, antisocial family status, legal cynicism, and need for mental health treatment.

Table 33 below visually summarizes the main findings on the key variables of interest – emotional and instrumental support – for each measure of reoffending in each of the three time periods. The hollow arrows represent the models using listwise deletion while the solid arrows represent the models using multiple imputation. Emotional support appears to reduce the likelihood of reoffending in all time periods, while there is no evidence for an effect of instrumental support.

Table 33. Summary of main findings on emotional and instrumental support

		Any Crime	Any Violent Crime	Any Drug Crime	Any Arrest (NCIC)
3 Months Post-Release	Emotional support	↓ ↓	--	↓ ↓	--
	Instrumental support	--	--	--	--
3-9 Months Post-Release	Emotional support	↓	--	↓	↓
	Instrumental support	--	--	--	--
9-15 Months Post-Release	Emotional support	↓ ↓	↓	↓ ↓	↓ ↓
	Instrumental support	--	--	--	--

Addition of Support & Victimization and Support & Gender Interactions with Multiple Imputation

Interaction terms for each type of support and victimization frequency as well as for each type of support and gender were also added to the models using multiple imputation in an identical manner used for the models using listwise deletion. As shown

in Tables 34 through 37 below, the results are substantively very similar to the results using listwise deletion. While in most circumstances, the only differences in results between the two strategies is a change in the magnitude of an effect, there are a few circumstances in which the effect became significant in the multiple imputation models when it was not significant in the listwise deletion models or vice versa. In the tables below, these coefficients are shown in boldface print. Only interaction terms that have changed substantively from the models using listwise deletion are interpreted in the discussion below.

Table 34 below features the multiple imputation models with the addition of the interaction terms predicting whether or not any self-reported crime was committed. The only substantive changes from the models using listwise deletion are observed in the three to nine month and nine to 15 month periods. As shown in Model 4, at average levels of victimization in the three to nine month time period, emotional support reduces the likelihood of committing any crime during that period. Model 5 in the same three to nine month period features one of only two circumstances in which the coefficient actually changed direction between the listwise deletion and multiple imputation models. In the models using listwise deletion, at average levels of emotional support, victimization increased the likelihood of reoffending; in the models using multiple imputation, victimization decreases the likelihood of reoffending. Model 6 demonstrates that in the three to nine months post-release, emotional support has a greater protective effect against reoffending for females than for males.

Table 34. Predicting any crime with interactions (multiple imputation)

		Model 4	Model 5	Model 6	Model 7
		Emotional support * victimization	Instrumental support * victimization	Emotional support * female	Instrumental support * female
		Exp(β)	Exp(β)	Exp(β)	Exp(β)
3 Months Post-Release (n=1222)	Main effect of support	.945**	--	.947**	1.092**
	Main effect of moderator	1.803***	1.734***	.567**	.562**
	Interaction term	1.040***	1.048**	--	.876**
	Change in Pseudo R ² from Model 3	.274 to .281	.274 to .278	.274 to .275	.274 to .279
3-9 Months Post-Release (n=1282)	Main effect of support	.941***	--	.950**	--
	Main effect of moderator	1.591***	.392***	.384**	.393***
	Interaction term	--	--	.938*	--
	Change in Pseudo R ² from Model 3	.348 to .349	.348 to .349	.348 to .351	.348 to .349
9-15 Months Post-Release (n=1382)	Main effect of support	.945**	--	.949**	--
	Main effect of moderator	1.618***	1.626***	.642**	.643**
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.322 to .322	.322 to .322	.322 to .322	.322 to .323

*p < .10, ** p < .05, *** p < .01

As shown in Table 35, some of the main effects change for the models predicting any self-reported violent crime. Only one of these effects is in a direction that is opposite of the models using listwise deletion. In the three to nine months post-release, Model 6 shows that at average levels of emotional support, the effect of being female is to substantially reduce the likelihood of committing a violent offense.

Table 36 displays the results for the interaction terms using multiple imputation to predict the likelihood of committing any drug offense. Models 4 and 5 confirm that at average levels of emotional support as well as at average levels of instrumental support, more frequent victimization is associated with an increase in the likelihood reoffending. As shown in Model 6, higher levels of emotional support consistently reduce the likelihood of a self-reported drug offense for males.

Table 37 displays the results for the final outcome, whether or not an arrest occurred in each time period. As shown in Model 4, in the three to nine months post-release, at average levels of victimization, emotional support reduces the likelihood of an arrest. Additionally, in the first three months post-release, the effect of being female with average levels of support is to substantially reduce the likelihood of being arrested.

Table 35. Predicting any violent crime with interactions (multiple imputation)

		Model 4	Model 5	Model 6	Model 7
		Emotional support * victimization	Instrumental support * victimization	Emotional support * female	Instrumental support * female
		Exp(β)	Exp(β)	Exp(β)	Exp(β)
3 Months Post-Release (n=1218)	Main effect of support	--	--	.894*	--
	Main effect of moderator	1.958***	1.889***	--	--
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.299 to .300	.299 to .300	.299 to .308	.299 to .304
3-9 Months Post-Release (n=1275)	Main effect of support	--	--	--	--
	Main effect of moderator	1.645***	1.634***	.358***	.391**
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.278 to .278	.278 to .279	.278 to .279	.278 to .278
9-15 Months Post-Release (n=1377)	Main effect of support	--	--	--	.540*
	Main effect of moderator	1.469***	1.458***	--	--
	Interaction term	1.026*	--	--	--
	Change in Pseudo R ² from Model 3	.246 to .253	.246 to .249	.246 to .246	.246 to .247

*p < .10, ** p < .05, *** p < .01

Table 36. Predicting any drug crime with interactions (multiple imputation)

		Model 4	Model 5	Model 6	Model 7
		Emotional support * victimization	Instrumental support * victimization	Emotional support * female	Instrumental support * female
		Exp(β)	Exp(β)	Exp(β)	Exp(β)
3 Months Post-Release (n=1216)	Main effect of support	.927***	--	.933**	--
	Main effect of moderator	1.597***	1.530***	.438*	.443***
	Interaction term	1.031**	--	--	--
	Change in Pseudo R ² from Model 3	.283 to .288	.283 to .286	.283 to .285	.283 to .286
3-9 Months Post-Release (n=1270)	Main effect of support	.941***	--	.947**	--
	Main effect of moderator	1.329***	1.322***	.395***	.404***
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.325 to .326	.325 to .327	.325 to .326	.325 to .326
9-15 Months Post-Release (n=1374)	Main effect of support	.947**	--	.950**	--
	Main effect of moderator	1.409***	1.410***	--	1.415***
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.279 to .280	.279 to .280	.279 to .279	.279 to .279

*p < .10, ** p < .05, *** p < .01

Table 37. Predicting any arrest with interactions (multiple imputation)

		Model 4	Model 5	Model 6	Model 7
		Emotional support * victimization	Instrumental support * victimization	Emotional support * female	Instrumental support * female
		Exp(β)	Exp(β)	Exp(β)	Exp(β)
3 Months Post-Release (n=1906)	Main effect of support	--	--	--	--
	Main effect of moderator	1.525***	1.455***	.606**	.629**
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.117 to .119	.117 to .117	.117 to .118	.117 to .117
3-9 Months Post-Release (n=1906)	Main effect of support	.964*	--	--	--
	Main effect of moderator	1.132**	1.121**	.625***	.648***
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.125 to .126	.125 to .125	.125 to .126	.125 to .125
9-15 Months Post-Release (n=1906)	Main effect of support	.931***	--	.941***	--
	Main effect of moderator	1.263***	1.269***	.663**	.665**
	Interaction term	--	--	--	--
	Change in Pseudo R ² from Model 3	.122 to .122	.122 to .122	.122 to .123	.122 to .123

*p < .10, ** p < .05, *** p < .01

CHAPTER 6: DISCUSSION & CONCLUSIONS

Synthesis of Results with Research Questions

The following section will discuss the results covered in the previous chapter in light of the research questions and hypotheses posed by this dissertation.

***Question (Q) I_A:** Are individuals with higher levels of emotional support from family members at wave two less likely to have reoffended between wave one and wave two (after controlling for other predictors of recidivism)?*

***QI_B:** Are individuals with higher levels of emotional support from family members at wave three less likely to have reoffended between wave two and wave three (after controlling for other predictors of recidivism)?*

***QI_C:** Are individuals with higher levels of emotional support from family members at wave four less likely to have reoffended between wave three and wave four (after controlling for other predictors of recidivism)?*

While it was originally hypothesized that individuals with higher levels of family emotional support would be less likely to reoffend, results indicate that this relationship varies according to different measures of reoffending and by different time periods. The analyses using listwise deletion and multiple imputation reveal that higher levels of emotional support significantly reduce the likelihood of committing any self-reported crime and any self-reported drug crime in the first three months post release. In the three to nine months following release, the multiple imputation analyses find that higher levels of emotional support are associated with a decrease in any offending, drug offending and

any arrests. In the final nine to 15 month period, both types of analyses reveal that higher levels of emotional support reduce the likelihood of committing any crime, any violent crime, any drug crimes, and being arrested. In sum, higher levels of emotional support significantly reduce the likelihood of reoffending in nine out of the twelve core models (four outcomes by three time periods).

While the results of the analyses using listwise deletion and multiple imputation are generally quite similar, the most notable differences are observed in terms of emotional support. Higher levels of emotional support are not significant in the three to nine month period using listwise deletion, but higher levels of emotional support significantly predict any self-reported crime, any self-reported drug crime and any arrest when using multiple imputation. The multiple imputation analyses allow for the inclusion of respondents who missed the wave three interview in the analyses. As shown in Table D2 in Appendix D, there are a variety of significant differences between those who completed the wave three interview and those who did not. Non-completers had significantly lower levels of emotional and instrumental support at wave four, experienced victimization more frequently at wave two and wave four and were more likely to have reoffended in various time periods. It thus appears that there is something about including non-completers that revealed a relationship between emotional support and reoffending in this time period.

Overall, the finding that levels of emotional support have an inverse relationship with recidivism is consistent with the sociological and criminological theories described in chapter two. Although this dissertation did not seek to directly test any of these theories, many of these theories may shed light on the mechanisms that may explain the

relationship between emotional support and recidivism. Emotional family support is one dimension of social support, which has been linked to a variety of positive outcomes, including lower crime rates (Alzheimer 2008; Pratt and Godsey 2003, 2002). Several items included in the emotional support construct also closely resemble components of Hirschi's (1969) social bond. As such, this dissertation's findings are also consistent with social control or social bond theories.

Similarly, Laub and Sampson's (2003) age-graded theory of informal social also proposes that individuals who are bonded to family members, particularly wives, will be less likely to offend. Several processes may explain this association, including direct social control, a change in routine activities and a sense that the costs of crime are greater. While this dissertation was not able to measure direct social control from spouses or changes in routine activities as a result of being involved in a steady relationship, this dissertation did measure the emotional part of the bond to family members more generally. Respondents who perceived higher levels of emotional support (or who perceived closer bonds with family members) were less likely to engage in criminal activity.

The relationship between emotional family support and a decrease in recidivism may also be partially explained by the decertification process (Meisenhelder 1982; Maruna et al. 2004). When family members offer emotional support (and when recent releasees perceive family members as willing to offer support), releasees may perceive this support as a sign that family members see them as noncriminals. As family members embrace the individual as a noncriminal, the releasee may then be more likely to internalize this pro-social, noncriminal identity (and subsequently desist from crime).

The processes associated with reintegrative shaming theory may also explain the link between emotional family support and a reduction in recidivism (Braithwaite 1989). If a releasee experiences a minor setback and then receives signs of disapproval from family members, but ultimately continues to receive emotional support from family members, reintegrative shaming theory would suggest that this individual is less likely to offend. While this dissertation did not measure these specific processes, the findings are generally consistent with reintegrative shaming theory.

Q2_A: Are individuals with higher levels of instrumental support from family members at wave two less likely to have reoffended between wave one and wave two (after controlling for other predictors of recidivism)?

Q2_B: Are individuals with higher levels of instrumental support from family members at wave three less likely to have reoffended between wave two and wave three (after controlling for other predictors of recidivism)?

Q2_C: Are individuals with higher levels of instrumental support from family members at wave four less likely to have reoffended between wave three and wave four (after controlling for other predictors of recidivism)?

Contrary to the hypothesis that higher levels of instrumental support would be associated with a decrease in recidivism, instrumental support is not significant in any of the final core models. There are several circumstances in which instrumental support is associated with a significant increase in reoffending in Model 2 (any crime and drug crime in the three to nine month period), but these effects are always washed out by the inclusion of additional control

variables in Model 3. As will be discussed further in regards to research question #4 below, there is some evidence that instrumental support may reduce the likelihood of reoffending for females in some circumstances.

Considering research that has identified employment (Laub and Sampson 2003; Uggen 2000), housing (Makarios, Steiner and Travis 2010) and substance abuse (Andrews and Bonta 2006; Andrews and Dowden 2007) as critical determinants of recidivism, why would assistance from family members regarding these areas not be associated with a significant reduction in recidivism? One explanation may be related to the measure of instrumental support used for this study, which is based on *perceptions* of support and not the actual *provision* of support. As such, respondents may have perceived family members as willing to offer assistance with employment, housing or finances, but that does not necessarily mean that the respondent actually received such assistance. Conversely, respondents may have perceived family members as unwilling or unable to provide instrumental support, but these respondents may have actually received such support (perhaps in the form of housing assistance or financial assistance) from other parties. As will be further discussed in the Future Research section below, much could be done to parse out whether it is the actual provision of support that matters or simply the perception that a loved one is willing to offer such support.

A second possible explanation for the lack of significant findings for instrumental support is also related to the nature of the measure used in this study. Under the assumption that perceptions of instrumental support may represent or at least be related to the provision of support, there is no way to know the quality or quantity of support actually provided. Although willing to help, family members may not be equipped to

successfully find employment or housing options for recent releasees. Despite their willingness to help, perhaps family members are also not adequately prepared or trained to appropriately help releasees overcome complex substance abuse problems. It is certainly possible that many family members may be struggling with the same challenges as recent releasees. Family members may be willing to help and may even take steps to provide assistance, but the quality or quantity of that assistance may limit the positive influence that support can have for the recent releasee.

Alternatively, it is important to consider possible processes that may explain why instrumental support may increase the likelihood of reoffending in some circumstances. Some family members may be equipped to offer adequate housing or to help a releasee find employment or to provide financial assistance. If a recent releasee perceives family members as always being there to provide essential assistance such as housing or money to pay their bills, then the releasee may feel like they can continue to get into trouble without problematic consequences. In other words, family members may not be creating healthy or appropriate boundaries in the level of assistance they are willing to provide. By providing unrestricted or unlimited financial support, family members may be enabling recent releasees to continue their involvement in criminal activities.

Q3: If higher levels of emotional and instrumental support are associated with a lower probability of reoffending, what is the relative influence of each? Does one type of support explain more variance in reoffending at each time period? Do these relationships exhibit variability at different time periods?

Considering that instrumental support is not found to be significantly associated with reoffending after controlling for all other variables in the core models, emotional support appears to be much more important for reducing recidivism.

Q4: Does the relationship between levels of family support and reoffending vary for males and females? Specifically, is the relationship between family support at wave two and reoffending between wave one and wave two the same for males and females? Is the relationship between family support at wave three and reoffending between wave two and wave three the same for males and females? Is the relationship between family support at wave four and reoffending between wave three and wave four the same for males and females?

As found with the models using an interaction term for gender and each type of support, family support does appear to influence reoffending differently for males and females. In predicting the likelihood of committing any crime, emotional support has a greater protective effect against recidivism for females in the three to nine months (with multiple imputation) and nine to 15 months (with listwise deletion) following release. However, this significantly greater protective effect for females is not found when predicting the likelihood of any self-reported violent crime, any self-reported drug crime or any arrest. Additionally, there are some circumstances in which higher levels of instrumental support are associated with a decrease in reoffending for females, but an increase in reoffending for males (the commission of any crime in the three months and nine to 15 months post-release periods, the commission of a drug crime in the three

months post release, and being arrested in the nine to 15 months post release). However, based on the analyses using listwise deletion, for females, instrumental support can also increase the likelihood of committing a drug offense in the nine to 15 month period and being arrested in the first three months post-release.

These findings are consistent with the variety of research indicating that male and female recidivism involves different processes. In particular, much of this research emphasizes the prevalence of histories of physical and sexual abuse as well as the relationship between past trauma and offending among female offenders (Hubbard and Pratt 2002; Bureau of Justice Statistics 1999a; Owen and Bloom 1995; Daly 1992). Perhaps emotional support is more protective for females in some circumstances because emotional support is particularly important for women attempting to overcome painful past experiences.

Prior research has also emphasized the prevalence of substance abuse problems for female offenders (Bureau of Justice Statistics 1999b; Owen 1998). Part of the instrumental support construct is the extent to which family members can provide support for dealing with substance abuse issues. This may explain the relationship between instrumental support and a reduction in reoffending in some circumstances. Female releasees who have a history of substance abuse problems may particularly benefit from family members' assistance in overcoming these problems.

Interpreting these finding on gender differences in light of the criminological theories presented in chapter two may be problematic. Two of the most applicable criminological theories, social control theory (Hirschi 1969) and age-graded informal social control (Laub and Sampson 2003; Sampson and Laub 1993), were tested or

developed with exclusively male samples. However, the finding that emotional support generally reduces the likelihood of reoffending is consistent with both of these theories. Additionally, findings on the differential impacts of family support for males and females are similar to what has been documented in the social support literature (Husaini, Newbrough, Neff and Moore 1982; Henderson, Byrne and Duncan-Jones 1981).

Q5: If levels of either instrumental or emotional family support reduce the likelihood of reoffending, is the effect greater for individuals who have recently experienced stressful events, such as victimization, compared to individuals who have less experience with stressful events?

Contrary to the hypothesized relationship, the findings on the interaction between victimization frequency and family support are not consistent with the buffering hypothesis. Even at higher levels of emotional or instrumental support, the frequency of victimization is still associated with a significant increase in the likelihood of reoffending. This effect is found in the following circumstances: the commission of any crime in the three months post release and the nine to 15 months post release, the commission of a violent offense in the nine to 15 months post release, the commission of a drug offense in the first three months post release, and being arrested in the three to nine months following release.

Differential coercion theory (Colvin 2000) is particularly applicable when examining the relationship between victimization frequency, family support and reoffending. This theory proposes that individuals who encounter non-coercive (i.e., lack of victimization) and supportive environments will be less likely to engage in criminal

behavior. The findings from this dissertation suggest that individuals who encounter supportive family environments, but also coercive environments (higher levels of victimization frequency) have an increased likelihood of recidivism.

Q6A: Will levels of family support change over subsequent waves?

Q6B: Will changes in the level of either instrumental or emotional family support over time influence the likelihood of reoffending?

Levels of emotional and instrumental family support do not change substantially over time. Additionally, any changes in support are not associated with an independent or significant effect on any measure of reoffending. Both of these findings are contrary to what was hypothesized and what has been found in the small amount of prior work on this topic. Some qualitative research has found that levels of family support vary over time (Breese, Ra'el and Grant 2000) and other quantitative work has revealed very small changes in levels of family support during the first six months post-release (Visher et al. 2004b).

Considering that the data set used for this dissertation is composed of serious and violent offenders and the majority of subjects have fairly lengthy histories of involvement in crime and the justice system, it is possible that family members have become acclimated to the ups and downs of a challenging reentry process. With the knowledge (or perhaps even expectation) that the recent releasee will likely experience setbacks, family members may not withdraw support in response to these setbacks. Additionally, it is important to consider that this dissertation focused solely on the 15 months following release. Breese, Ra'el and Grant (2000) referred to a "honeymoon phase" in which

family members are happy to have their loved ones home from prison and as a result particularly supportive during this time. For individuals who have been separated from their families for long periods of time, perhaps this “honeymoon phase” continues for the entire 15 month period.

Limitations

Despite these important findings, it is important to recognize the limitations of this study. First, although many of the key predictors of reoffending are controlled for, it is not possible to identify many other predictors of reoffending, including the potentially negative influences of some family members. While contact with family members may create an opportunity for positive support to be offered, contact with family members may also increase the likelihood of reoffending as a result of physical or psychological abuse, opportunities for substance use or opportunities for criminal activity. For the purposes of this study, respondents were asked about their recent history of victimization, but were not asked to indicate *who* victimized them (family members or others). Aside from measures of family criminal history and substance abuse, the SVORI data set did not include sufficient data to measure the level of family violence or family dysfunction that may contribute to reoffending.

Additionally, it is not possible to determine the extent to which respondents have a diverse mix of family influences. Although an individual may report having a supportive family member, it may also be possible that this individual has other family members who act as negative influences in his or her life. The negative influence of

some family members may negate or neutralize the positive effects of support from other family members.

Conversely, some individual family members may offer recently released individuals both positive and negative influences. A family member may offer financial support or housing, but may simultaneously expose the releasee to opportunities for substance abuse or criminal activity. It is also possible that a family member offers some level of instrumental support, but is also abusive emotionally. Such a circumstance may be particularly common for female releasees in the study. While this dissertation represents an important step in the empirical investigation of family support and recidivism, this study is not able to sort out many of the complex dynamics associated with family relationships.

As with most longitudinal studies, especially with difficult to reach populations such as the criminally-involved, respondent attrition over successive waves of data collection is also a limitation. As discussed in chapter four, nearly 80 percent of all males and 87 percent of females participated in at least one follow-up interview at either wave two, three or four. However, only 42 percent of males and 55 percent of females participated in all three waves of post-release interviews (Lattimore and Steffey 2009). Although attrition is undoubtedly a serious concern, it is perhaps less of a concern for the current study because many of the research questions could be sufficiently explored with data from only two time successive points. For example, at waves two, three and four, individuals described their current perceptions of emotional and instrumental family support and their involvement in crime since the last interview. In order to determine if

family support predicts criminal activity between wave one and wave two, it is irrelevant whether or not data is available for wave three or wave four.

Also described in chapter four, the extent to which attrition was a limitation is properly assessed by comparing characteristics of respondents with complete data to those without complete data. Data imputation analyses are also conducted in order to partially overcome the problems associated with missing data.

Theoretically, a variety of relationships exist between family support and reoffending over time. This dissertation only tests for one set of these potential relationships, namely the effect of family support at a given point in time on reoffending in the previous period (as represented by the solid arrows in Figure 3 below). As represented by the dotted arrows in the figure below, it is also possible that family support is responsive to reoffending behaviors on the part of the recently released family member in the previous time period. For example, reoffending in the first three months

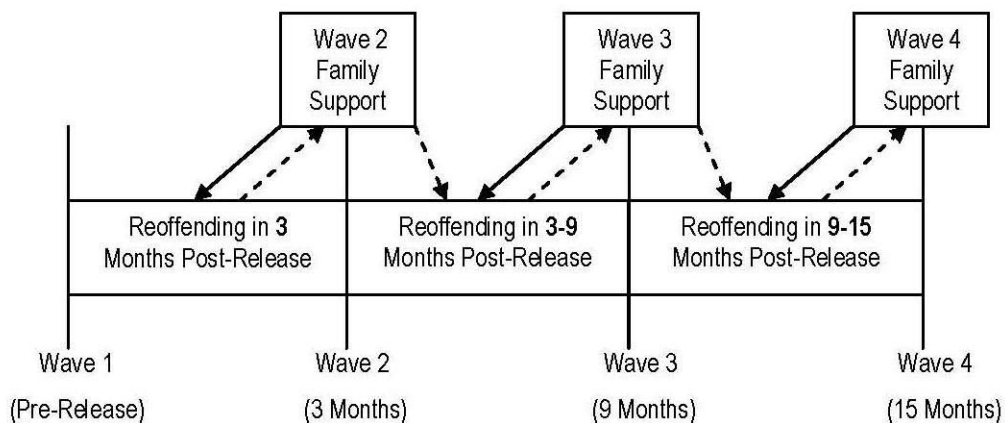


Figure 3. Additional potential relationships between family support and reoffending

following release may influence levels of family support reported at wave two. Current levels of family support that are reported at wave two could also be predictive of future reoffending behavior between waves two and three.

Considering that many other interview items asked respondents to reflect on the previous period (since their release or since their last interview / in the past six months), items that reflect current experiences are used to predict reoffending in the previous period as opposed to the period following the interview. This is an important limitation because perceived levels of family support may fluctuate during each of the three periods, but this study is only capturing perceived levels at the time of the interview.²¹

While it is certainly a limitation of this study that only one potential direction of relationships is being tested, the direction of relationships that is tested represent the most logical strategy considering the nature of the data set. As described previously, some interview items asked respondents to reflect on their current experiences and statuses, while other interview items asked respondents to consider their experiences since their release (at wave two) or since their previous interview / in the past six months (at waves three and four; see Appendix E on the option of mixed wave models). It is impossible to know whether one's current level of family support is most consistent with the previous period or with the period following the interview. However, there is no strong rationale for assuming that levels of family support reported at wave two are more reflective of the following period as opposed to the previous period. If any assumptions were to be made regarding whether current levels of support are more representative of support in the previous period or the future period, it would likely be safe to assume that they are more

²¹ However, as covered in Chapter 5, very little change in levels of perceived family support is observed across the three time periods.

representative of the previous period. Respondents likely reflect on what has happened most recently when formulating their perceptions of current support; it would be impossible for respondents to reflect on what will happen in the future when formulating their responses.

Despite the variety of directions of relationships that still need to be explored in future research, the potential mix of negative and positive influences from family members and the issues related to interviewee attrition, this dissertation is an important first step toward understanding the nature of family support and reentry success.

Implications

Despite these limitations, the results of this study have implications for correctional policies and programming, sentencing policies, post-release supervision policies and programming, criminological theory and future research. In sum, this dissertation has found that emotional support can substantially reduce the likelihood of reoffending throughout the first 15 months post release. Furthermore, in some circumstances and with some types of individuals, instrumental support may increase the likelihood of reoffending.

Correctional Policies & Programming

The finding that higher levels of emotional support can have an independent effect on reducing the likelihood of recidivism offers support for several policies within the corrections system that may improve relationships between family members and individuals who have been involved in the criminal justice system.

Prior research has confirmed that existing ties to family can break down while an individual is incarcerated (Holt and Miller 1972; Schafer 1994). Efforts to maintain family ties, primarily through visitations from family members during incarceration, are associated with better post-release outcomes, including recidivism (Bales and Mears 2008; Hairston 1988), parole success (Holt and Miller 1972) and mental health (Ekland-Olson, Supancic, Campbell and Lenihan 1983). Ties with family members are presumed to be a necessary condition for emotionally supportive relationships to be preserved or formed.

As such, justice system agencies should implement strategies to maintain and even strengthen family ties while an individual is incarcerated in order to increase the likelihood that emotionally supportive relationships will be in place following the individual's release. One relevant strategy for facilitating ongoing contact between family members and prisoners would be to impose stricter restrictions on the pricing of telephone services. Eliminating the use of exploitatively priced collect calls may increase the likelihood that economically disadvantaged families can keep in touch with incarcerated loved ones (Hallinan 2003; Irwin and Owen 2005). Furthermore, increasing the use of videoconferencing, especially affordable options such as Skype, may also help to keep family members connected (as also suggested by Christian, Mellow and Thomas 2006).

Family members' willingness and ability to regularly visit incarcerated individuals is often influenced by a number of factors, including the long distance and expense of transportation to prisons, limited visiting hours and difficult institutional restrictions (Christian 2005; Tewksbury and DeMichele 2005). Providing assistance to

family members travelling to prisons, extending visiting hours and relaxing restrictions on visitors may increase the likelihood that family members maintain contact with the prisoner (see Clear, Rose and Ryder 2001) and are subsequently a potential source of emotional support following a loved one's release.

In addition to facilitating contact, improving the quality of relationships between family members and incarcerated individuals may increase the likelihood of the individual receiving emotional support following release (see Herman-Stahl, Kan and McKay 2008; National Institute of Corrections 2002 for comprehensive reviews of family programs). Programs within correctional institutions could offer family counseling services to assist with mending disrupted family units, building positive relationships and formulating plans to assist the incarcerated individual following release (see Swint 2009; Lindfors and Magnusson 1997). Recreational opportunities, including sporting events, banquets and other events could also offer opportunities for the preservation and improvement of family relationships.

The finding that instrumental support may increase the likelihood of reoffending in some circumstances could also influence programming designed to prepare individuals and their families for release. Although further research would be needed to investigate the specific processes behind the effects of instrumental support and the conditions in which instrumental support may increase the likelihood of reoffending, it is possible that the relationship between higher levels of instrumental support and recidivism could be attributed to an enabling effect. If a recent releasee perceives that family members will always be available to provide financial assistance or housing regardless of the illegal behaviors they are involved in, then the released individual may be less compelled to go

straight. Programs targeting family members of incarcerated individuals could help family members to learn healthy boundaries and the appropriate level of instrumental support that should be provided.

Sentencing Policies

Beyond policy and program changes within correctional institutions, policy decisions made by state legislatures and the court system can also increase the likelihood that released individuals benefit from family support following release. Prior research suggests that family relationships deteriorate the longer an individual is incarcerated (Petersilia 2005; Holt and Miller 1972). Mandatory minimum sentencing requirements and tightened parole restrictions have been largely responsible for increasing the length of prison sentences (Blumstein and Beck 2005) and subsequently increasing the likelihood that family relationships will weaken. Prisoners' likelihood of being able to maintain the positive family ties that are necessary for emotionally supportive relationships to exist will be greater if mandatory minimum requirements are repealed, opportunities for early parole release are created and the overall length of prison sentences is shortened.

Post-release Supervision Policies & Programming

Shifting the focus to post-release strategies, it may prove beneficial for probation and parole officers to expand their efforts to secure emotional support for individuals under correctional supervision. By developing trusting relationships with parolees and probationers, supervision officers would first need to accurately assess the level and

quality of emotional support that family members are capable of providing. An increased amount of training in how to develop close, personal relationships would likely be required to aid supervision officers in making these assessments. The development of new assessment instruments specifically designed to evaluate levels of emotional support from family members may also aid supervision officers' efforts to identify clients who are or who are not in need of additional support.

Officers would then be able to respond according to the results of their assessments. For individuals with potentially supportive family members, officers could encourage individuals to reach out to these family members. Individuals with limited access to emotional family support could be provided additional social services (such as therapy or mentoring) in order to at least partially compensate for the limited emotional support from family members.

Considering that many family members express concerns about the return of a formerly incarcerated family member and that the return can strain family relationships (see Christian and Kennedy 2011; Breese, Ra'el and Grant 2000), probation and parole departments might also benefit from offering family counseling services to create opportunities for family members to engage in open dialogue with recently released individuals. Such situations may create an environment where supervision officers could explain to family members the importance of their support for the individual's successful reentry (see Farrall 2004).

Similar to family-based programming commonly used for juvenile offenders (see Rowland 2007), social services could be targeted to a releasee's entire family. Such programming may increase the likelihood that family members are capable of and

prepared to offer recently released individuals emotional support. A restorative justice approach may help families repair the harms attributed to the releasee's past involvement in crime, the harm caused by family separation during incarceration and the challenges of the reentry experience for all family members (see Bazemore and Erbe 2004).

Considering the findings on the potentially negative influence of instrumental support, such family-based programming could help family members understand boundaries on providing support and how to provide healthy levels of support. Considering that approximately 80 percent of the respondents in the SVORI data set reported living with at least one family member at different interview waves, encouraging family members to participate in family counseling sessions and take advantage of social services may be particularly helpful for releasees.

Post-release social services related to family support could also be targeted to individuals found to be particularly likely to benefit from family support. For instance, emotional support appears to have a particularly strong effect for females in some circumstances. Female releasees and their family members could be directed to counseling services that focus on improving family members' ability to provide emotional support.

Although outside the main scope of this dissertation, this study also revealed particularly consistent findings for the relationship between victimization, the need for substance abuse treatment, residence in a more criminogenic neighborhood and the likelihood of reoffending. Research has long identified a relationship between victimization and offending (Lauritsen and Laub 2007; Loeber and Farrington 2011). In this dissertation, even at high levels of emotional support, more frequent victimization

was still associated with an increase in the likelihood of recidivism. While it was not possible to discern whether study respondents were being victimized by their family members or others, it is possible that family members may be the source of some of the victimization. Family-based programming and counseling may help to identify some of these unhealthy relationships. Probation and parole officers as well as counselors and therapists should be trained to identify released individuals who experience victimization. Helping releasees cope with past victimization and avoid ongoing victimization may reduce their likelihood of recidivism.

The independent effect of self-reported need for substance abuse treatment also emerged as a frequent predictor of reoffending. Despite a plethora of prior research documenting the relationship between substance abuse and recidivism (Andrews and Bonta 2006; Andrews and Dowden 2007), the availability of substance abuse treatment both during incarceration and following release is nowhere close to matching the need for treatment (Belenko and Peugh 2005). This dissertation provides further support for the importance of increasing access to treatment.

Lastly, residence in a more criminogenic neighborhood where selling drugs is common, few jobs are available, and it is difficult to stay out of trouble, was a consistent predictor of recidivism. While it is common for probation and parole agencies to pay attention to the types of neighborhoods in which clients reside, helping releasees and their families (who are likely to reside in the same criminogenic neighborhoods) find stable housing in better neighborhoods may be beneficial. For many recent releasees, residential change may play a crucial role in the desistance process (see Kirk 2012). Embracing a “geography of opportunity” framework that has been a defining feature of

successful housing relocation programs such as the Gautreaux program (Rosenbaum 1995) and Moving to Opportunity (Sanbonmatsu et al. 2011), supervision agencies could develop pilot programs that would provide relocation assistance to probationers and parolees as well as their families. Ensuring that supportive family units are not dismantled as part of such programs, it is likely that improved outcomes may be observed not only for the probationer or parolee, but for other family members as well.

Criminological Theory

Although this dissertation did not directly test any criminological theories, the results of the study may offer partial support for relevant criminological theories. First, the finding that individuals with emotional family support are less likely to reoffend following release is consistent with Laub and Sampson's (2003) age-graded theory of informal social control. Despite the fact that Laub and Sampson's work focuses on *bonds* to family members, it is reasonable to assume that the existence of bonds between family members and recently released individuals may be a necessary condition for the provision of emotional support from family members.

Second, the inverse relationship between the level of emotional family support and the likelihood of reoffending is also consistent with research on certification and "delabeling" (Meisenhelder 1982; Maruna et al. 2004). While it is important to note that this study was not able to discern whether family members openly treated recently released individuals as non-criminals or whether individuals internalized the non-criminal identity, family members may be more likely to have offered emotional support to an individual if they perceived him or her as a non-criminal. Thus, an inverse relationship

between family support and reoffending may be at least partially explained by the processes of certification and delabeling.

Finally, the relationship between levels of emotional family support and the likelihood of reoffending is consistent with Colvin's (2000) theory of differential coercion. According to this theory, individuals who encounter supportive, non-coercive family environments will be least likely to engage in criminal behavior.

Future Research

This dissertation should also be used to guide future research. It is important to recognize that this dissertation examined the influence of family support for a fairly narrow population of individuals who have been involved in criminal activity – individuals who have been classified as serious and violent offenders. It is certainly possible that the effects of family support on recidivism are different for lower level offenders, such as individuals involved in low-level drug sales or petty theft. Future research could investigate the extent to which the relationships between family support and reoffending are similar for different types of offenders.

Further exploration of the relationship between instrumental support and recidivism could be particularly valuable. In order to more closely investigate any of the dynamics related to instrumental support (as well as other possible dynamics related to emotional support), future research should focus not only the recent releasee, but also the entire family unit. Measures on the perception of support could be compared to more objective measures on the actual provision of support as well as the quantity and quality of family support provided. Observations could also be made on how family members

interact with one another and under what circumstances support is available and/or accepted. As Martinez (2007) has also advocated, research in this area should not focus exclusively on the effect of family support on recidivism, but rather attempt to understand how the family unit functions as a whole. A variety of research strategies, such as social network analysis or the Conflict Tactics Scales (Straus 1979), could be valuable for more closely investigating family functioning.

In addition to helping to parse out the dynamics related to instrumental support, studying the entire family unit would also allow for an investigation of the extent to which family members may be both supportive as well as negative influences. For example, it seems possible that many individuals could receive positive emotional support from family members who are regularly engaged in criminal activity, drug/alcohol use or other risky behaviors. Although an individual may feel close to this family member and rely on him or her for advice, the family member's involvement in deviant behaviors may bring the individual into contact with these behaviors. Considering these possibilities, future research should more closely explore the specific dynamics of family support by asking respondents to report both negative and positive influences from family members.

While this dissertation focused on how varying levels of family support may predict recidivism, future research could investigate what predicts different levels of family support. Perhaps an individual's reoffending behaviors may limit the amount of family support provided. Or, an individual's involvement in crime may serve as a warning to family members that this individual is in need of assistance. Are there certain

characteristics about individual family members that make them more likely to provide support?

Beyond individuals' characteristics, future research could explore whether there are environmental or societal circumstances that increase the likelihood that family members provide support to recent releasees. Does social support at higher levels of aggregation, such as at the neighborhood level, influence the provision of support at lower levels of aggregation, such as the family? In neighborhoods where more social services are provided or where public assistance is more widely available or where residents perceive higher levels of general social support, are family members more likely to provide support to recent releasees?

Investigating how family support interacts with other known correlates of recidivism or desistance could also be a valuable contribution. For example, individual agency and/or characteristics, such as perceptions of self-efficacy, locus of control or readiness for change may be more influential in predicting post-release behaviors than any support from family members (see Giordano, Cernkovich and Rudolph 2002 for a theory of individual cognitive transformation). If an individual has experienced a cognitive transformation and is on the path towards desistance, to what extent does family support contribute to the cognitive processes associated with desistance? For individuals who are already determined to go straight, does family support even matter?

Other research could investigate the extent to which family support may be trumped by other environmental influences, such as criminal peer groups (see Warr 2002) or concentrated neighborhood disadvantage (see Mears, Wang, Hay and Bales 2008). To

what extent, if at all, could a supportive family negate other processes that are known to increase the likelihood of recidivism?

While this dissertation represents an important step in understanding the relationship between family support and recidivism for individuals recently released from correctional facilities, there is clearly a variety of future research to be done to more fully understand this relationship.

Conclusions

Despite the need for further research to more completely comprehend the complex processes associated with family support and recidivism, this dissertation has yielded some influential findings on an important factor related to the successful reentry of individuals recently released from state prisons. Considering the limited examination of family support as a predictor of recidivism in prior quantitative research, this study represents a particularly important step forward in understanding the nature of successful reentry. This dissertation represents the first study to quantitatively measure the extent of the relationship between emotional and instrumental family support and several measures of recidivism after controlling for a fairly comprehensive list of other known predictors of reoffending in the first 15 months following release.

While this dissertation revealed evidence in support of the hypothesized relationship between emotional support and recidivism, there was very limited support for the hypothesis related to instrumental support and recidivism. Emotional support significantly reduced the likelihood of reoffending in nine of the twelve core models and instrumental support was not significant in any of the core models. There was also

support for the hypothesis that the effects of emotional support and instrumental support may differ for males and females. In some circumstances, instrumental support was associated with a decrease in reoffending for females, but an increase in reoffending for males. This dissertation did not find support for hypothesis #5 on the buffering effect. Even among individuals with higher levels of support, more frequent victimization was still associated with a rather large increase in the likelihood of reoffending. And lastly, there was no evidence that levels of family support varied over subsequent interview waves or that changes in levels of support influenced the likelihood of recidivism.

Policymakers, corrections agencies, and post-release supervision agencies can all benefit from the main finding that emotional family support has a significant and independent effect on reducing the likelihood of reoffending in the 15 months following release. This finding offers support for initiatives that could facilitate frequent contact between individuals who are incarcerated and their family members, for programs to improve family relationships, for legislative policy reforms reducing the length of prison sentences, and for family-focused correctional supervision strategies.

Revealing the importance of emotional support for recent releasees also contributes to our understanding of the boundaries between informal and formal social control. While punitive responses from the formal criminal justice system dominate current crime control approaches, this study has revealed the potential importance of informal social control (via family members) as a worthwhile approach to reducing crime.

Aside from the implications of this work for policy, practice and theoretical criminology, it is perhaps most appropriate to close with a consideration of how this

dissertation's findings may influence families with incarcerated family members. Many families often feel helpless and out of control while a loved one is involved in the criminal justice system. This study's findings on the importance of emotional support for individuals coming out of correctional facilities might serve as a source of empowerment for families. The knowledge that their love and support matters for a recently released individual may help families to cope with the absence of a loved one during incarceration and be inspired to provide emotional support upon the loved one's return home.

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Appendix A: Research Questions & Hypotheses

Question (Q) 1_A: Are individuals with higher levels of emotional support from family members at wave two less likely to have reoffended between wave one and wave two (after controlling for other predictors of recidivism)?

Q1_B: Are individuals with higher levels of emotional support from family members at wave three less likely to have reoffended between wave two and wave three (after controlling for other predictors of recidivism)?

Q1_C: Are individuals with higher levels of emotional support from family members at wave four less likely to have reoffended between wave three and wave four (after controlling for other predictors of recidivism)?

Hypothesis (H) 1_{A, B, C}: Individuals with higher levels of emotional support from family members will be less likely to have reoffended in the time period directly preceding the measurement of family support (after controlling for other predictors of recidivism).

Q2_A: Are individuals with higher levels of instrumental support from family members at wave two less likely to have reoffended between wave one and wave two (after controlling for other predictors of recidivism)?

Q2_B: Are individuals with higher levels of instrumental support from family members at wave three less likely to have reoffended between wave two and wave three (after controlling for other predictors of recidivism)?

Q2_C: Are individuals with higher levels of instrumental support from family members at wave four less likely to have reoffended between wave three and wave four (after controlling for other predictors of recidivism)?

H2_{A, B, C}: Individuals with higher levels of instrumental support from family members will be less likely to have reoffended in the time period directly preceding the measurement of family support (after controlling for other predictors of recidivism).

Q3: If higher levels of emotional and instrumental support are associated with a lower probability of reoffending, what is the relative influence of each? Does one type of support explain more variance in reoffending at each time period? Do these relationships exhibit variability at different time periods?

H3: Assuming there is an inverse relationship between both levels of emotional and instrumental support and reoffending, instrumental support will have a greater effect on reducing the likelihood of reoffending in all three time periods.

Q4: Does the relationship between levels of family support and reoffending vary for males and females? Specifically, is the relationship between family support at wave two and reoffending between wave one and wave two the same for males and females? Is the relationship between family support at wave three and reoffending between wave two and wave three the same for males and females?

Is the relationship between family support at wave four and reoffending between wave three and wave four the same for males and females?

H4: Assuming there is an inverse relationship between both levels of emotional and instrumental support and reoffending for both genders, emotional support will have a greater effect on reducing females' likelihood of reoffending than males' likelihood of reoffending at all time periods.

Q5: If levels of either instrumental or emotional family support reduce the likelihood of reoffending, is the effect greater for individuals who have recently experienced stressful events, such as victimization, compared to individuals who have less experience with stressful events?

H5: In support of the buffering hypothesis, the effect of family support on the likelihood of reoffending will be greater for individuals who have experienced stressful events. Such an effect will be observed at all time points.

Q6A: Will levels of family support change over subsequent waves?

Q6B: Will changes in the level of either instrumental or emotional family support over time influence the likelihood of reoffending?

H6A: Levels of family support will change over time.

H6B: Reductions in the level of instrumental family support over time will increase the likelihood of reoffending. Reductions in the level of

emotional family support over time will increase the likelihood of reoffending.

Appendix B: SVORI Interview Items

RECIDIVISM MEASURES

3 Month

Now I'm going to ask about various crimes you may have committed since you were released from incarceration, regardless of whether or not you were caught. Remember, your answers will be kept completely confidential and no one except the people working on the study will be able to find out how you've answered.

- Since you were released from incarceration (*if re-incarcerated: the term of incarceration you were serving when we first interviewed you*), have you committed any **violent crimes**, regardless of whether or not you were caught? By violent crimes, we mean things like physical or sexual assault, rape, robbery, manslaughter, attempted murder, murder, vehicular manslaughter, or vehicular homicide, and it doesn't matter whether you did or did not know the person (Yes, No)
- Since you were released from incarceration (*if re-incarcerated: the term of incarceration you were serving when we first interviewed you*), have you committed any **drug possession crimes**, including possession of either drugs or drug paraphernalia, regardless of whether or not you were caught? (Yes, No)
- Since you were released from incarceration (*if re-incarcerated: the term of incarceration you were serving when we first interviewed you*), have you committed any **drug sales crimes**, regardless of whether or not you were caught? (Yes, No)
- Since you were released from incarceration (*if re-incarcerated: the term of incarceration you were serving when we first interviewed you*), have you committed any **other drug crimes, such as manufacturing, trafficking, or prescription fraud**, regardless of whether or not you were caught? (Yes, No)
- Since you were released from incarceration (*if re-incarcerated: the term of incarceration you were serving when we first interviewed you*), have you committed any property crimes, regardless of whether or not you were caught?

Property crimes include things like burglary, larceny, auto theft, bad checks, fraud, forgery, or grand theft. (Yes, No)

9 Month and 15 Month

Same questions as above, but respondents are asked to report criminal activity since their last interview. If re-incarcerated, respondents are asked to report criminal activity since their last interview, but prior to their re-incarceration.

FAMILY / HOUSEHOLD MEASURES

Family emotional support

Wave 1

(If R has people in his life he considers to be family) These next statements describe how you may **currently** feel about your relationships with your family. Please tell me whether you strongly agree, agree, disagree, or strongly disagree with the following statements.

- I feel close to my family.
- I want my family to be involved in my life.
- I consider myself a source of support for my family.
- I fight a lot with my family members.
- I often feel like I disappoint my family.
- I am criticized a lot by my family.
- I have someone in my family to talk to about myself or my problems.
- I have someone in my family to turn to for suggestions about how to deal with a personal problem.
- I have someone in my family who understands my problems.
- I have someone in my family to love me and make me feel wanted.

Wave 2

Same 10 questions from above, but respondents are asked to describe how they feel about family since their release from incarceration. If they have been reincarcerated,

respondents are asked to describe how they feel about their family since their release and prior to their reincarceration.

Waves 3 and 4

Same 10 questions from above, but respondents are asked to describe how they feel about family since the last interview (either 3 month or 9 month interview). If they have been reincarcerated, respondents are asked to describe how they feel about family since the last interview and prior to their re-incarceration.

Family instrumental support

Wave 1

(none)

Wave 2

(If R has people in his life he considers to be family) The following statements describe how you may feel *(if re-incarcerated: have felt)* about your relationships with your family since your release from incarceration on ____ *(if re-incarcerated: but prior to your re-incarceration)*. Please tell me whether you strongly agree, agree, disagree, or strongly disagree with the following statements:

- I have *(if re-incarcerated: had)* someone in my family who would provide help or advice on finding a place to live.
- I have *(if re-incarcerated: had)* someone in my family who would provide help or advice on finding a job.
- I have *(if re-incarcerated: had)* someone in my family who would provide support for dealing with a substance abuse problem.
- I have *(if re-incarcerated: had)* someone in my family who would provide transportation to work or other appointments if needed.
- I have *(if re-incarcerated: had)* someone in my family who would provide me with financial support.

Waves 3 and 4

Same five questions as above, but respondents are asked to describe how they feel about family since the last interview (either 3 month or 9 month interview). If they have been reincarcerated, respondents are asked to describe how they feel about family since the last interview and prior to their re-incarceration.

Composition of household

Wave 1

(none)

Waves 2, 3 and 4

Who do you currently live with (*if re-incarcerated*: did you live with right before your re-incarceration)? Please tell me everyone. (SELECT ALL THAT APPLY: Nobody; Husband or Wife; Ex-Husband or Ex-Wife; Boyfriend, Girlfriend, Fiancé, or Fiancée; Mother or Step-Mother; Father or Step-Father; Sister or Step-Sister; Brother or Step-Brother; Your Aunt, Uncle, Great-Aunt, or Great-Uncle; Your Cousin; Your Grandparent; Your Child or Step-Child; A Friend; Your Foster Parent or Parents; Someone else)

Married or in intimate steady relationship

Wave 1

Are you: (Married, Separated, Divorced, Widowed, Never married)?

(*If R is not married*) During the six months prior to your incarceration this time were you involved in a steady intimate relationship? (Yes, No)

Wave 2

Are you: (Married, Separated, Divorced, Widowed, Never married)?

(*If R is not married*) Are you currently (*if re-incarcerated*: After your release but prior to your re-incarceration, were you) involved in a steady intimate relationship? (Yes, No)

Waves 3 and 4

Are you: (Married, Separated, Divorced, Widowed, Never married)

(If R is not married) Are you currently *(if re-incarcerated: Since our last interview but prior to your re-incarceration, were you)* involved in a steady intimate relationship? (Yes, No)

Family criminal history

Wave 1

(If R has people in his life he considers to be family) Other than yourself, has anyone in your family ever been convicted of a crime? (Yes, No, You don't know)

(If R has people in his life he considers to be family) Other than yourself, has anyone in your family ever been in a correctional facility, such as a jail, prison, or juvenile correctional facility? (Yes, No, You don't know)

(If R has people in his life he considers to be family) Other than any problems you may have had, has anyone in your family ever had problems with drugs or alcohol? (Yes, No, You don't know)

OTHER INDEPENDENT VARIABLES

In person contact with parole or probation officer

Wave 2

(If R is on supervision) How often have you met with your parole or probation officer in person since your release *(if re-incarcerated: the term of incarceration you were serving when we first interviewed you)*? (Not at all, Once or twice, About once a month, Two or three times a month, Once a week, Several times a week, Everyday or almost every day)

Waves 3 and 4

Same question as above, but respondents are asked to report on their supervision since their last interview.

PO case management

Wave 2

When you meet with your parole or probation officer, do you normally cover ... employment, training, and education? (Yes, No) ...housing? (Yes, No) ...drug or alcohol use? (Yes, No) ...drug or alcohol treatment? (Yes, No) ...mental health? (Yes, No) ...physical health? (Yes, No) ...progress in paying fines, fees, or court ordered payments? (Yes, No) (*If R has any children under 18*)...child support? (Yes, No)...resolving any family issues? (Yes, No)

Waves 3 and 4

Same question as above, but respondents are asked to report on their supervision since their last interview.

Electronic monitoring

Wave 2

Is being on electronic monitoring a condition of your supervision? (Yes, No)

Waves 3 and 4

Same question as above, but respondents are asked to report on their supervision since their last interview.

Age

Wave 1

What is your date of birth?

That would make you {calculated age} years old. Is that correct? (Yes, No)

Waves 2, 3 and 4

We show your date of birth as __ {from baseline}. Is that correct? (Yes, No)

(*If no*) What is your date of birth?

That would make you {calculated age} years old. Is that correct? (Yes, No)

Gender

Waves 1, 2, 3 and 4

RECORD RESPONDENT'S GENDER. (MALE, FEMALE)

Race

Waves 1, 2, 3 and 4

Which of the following best describes you? (SELECT ALL THAT APPLY: White; Black or African American; American Indian or Alaska Native; Asian or East Indian; Hispanic, Latino or Spanish; Native Hawaiian or other Pacific Islander)

Instant offense type

Wave 1

What was your conviction offense for this term of incarceration? By “conviction offense” we mean the conviction for which you were originally sent to prison (*if in juvenile facility*: a correctional facility). (List NOT read; SELECT ALL THAT APPLY: Burglary, Robbery – of a business or a person, Assault, Murder, Theft, Car theft, Forgery, Fraud, Drug dealing, Drug possession, A sex offense, Some other offense)

- Are you currently serving time for a parole violation? (Yes, No)
 - (*If yes*) Was the parole violation for a technical violation, like failing to report, or for a new crime? (Technical violation, New crime)

Criminal history

Wave 1

Now I'd like to ask about your experiences with the criminal justice system.

- How many times in your life have you been convicted of a crime?

Waves 2, 3 and 4

(none)

Incarceration length for instant offense

Please tell me the date you were incarcerated. I'm asking for the date you entered incarceration this time, not the date of your sentencing.

- That means you have been incarcerated for {calculated length of incarceration based on current date and response to BDEM9}. Is that correct? (Yes, No)

Services received

Wave 1

- Since you have been incarcerated this time, have you received legal assistance? (Yes, No)
- Since you have been incarcerated this time, have you received spiritual or religious assistance from faith-based providers? (Yes, No)
 - Since you have been incarcerated this time, have you received other services from faith-based providers? For example, faith-based providers may provide services that are not religious or spiritual services and could include things like housing assistance, employment assistance, and mentoring. (Yes, No)
- Since you have been incarcerated this time, have you received assistance with money management? (Yes, No)
- Since you have been incarcerated this time, have you received assistance obtaining documents necessary for employment, such as your birth certificate, social security card, or photo identification card? (Yes, No)
 - Since you have been incarcerated this time, have you received assistance with other life skills? (Yes, No)
- Since you have been incarcerated this time, have you received training on how to change your attitudes related to criminal behavior? (Yes, No)
- Since you have been incarcerated this time, have you received any parenting classes? (Yes, No)
- Since you have been incarcerated this time, have you participated in any batterer intervention programs? A batterer intervention program is a special program to help people who have problems with physically abusing their partner. (Yes, No)

- Since you have been incarcerated this time, have you received any mentoring services? A mentor is a positive role model who tries to help you succeed. (Yes, No)
- Since you have been incarcerated this time, have you participated in any anger management programs? (Yes, No)
- Since you have been incarcerated this time, have you received any educational services, such as GED or basic education classes? (Yes, No)
- Since you have been incarcerated this time, have you received assistance with finding transportation for when you are released? (Yes, No)
- Since you have been incarcerated this time, have you received assistance with finding or keeping a place to live for when you are released? (Yes, No)
- Since you have been incarcerated this time, have you received assistance getting a driver's license for when you are released? (Yes, No)
- Since you have been incarcerated this time, have you received assistance with accessing resources such as clothing banks and food pantries for when you are released? (Yes, No)
- Since you have been incarcerated this time, have you received any employment services or assistance with finding a job for when you are released? (Yes, No)
- Since you have been incarcerated this time, have you received assistance accessing public healthcare assistance, such as Medicare or Medicaid? (Yes, No)
- During this term of incarceration, have you received mental health treatment or health care for emotional problems? (Yes, No)
- Now I'm going to ask about any drug or alcohol treatment you may have received. During this term of incarceration, have you received any drug or alcohol treatment? In addition to counseling by a drug or alcohol counselor, this includes AA or NA groups and drug education classes. (Yes, No)

Wave 2

Same questions as above, but respondents are asked to report any services since their release from incarceration. If re-incarcerated, respondents are asked to report any services since their release from incarceration, but prior to their re-incarceration.

Waves 3 and 4

Same questions as above, but respondents are asked to report any services since their last interview. If re-incarcerated, respondents are asked to report any services since their last interview but before they were re-incarcerated.

Victimization frequency

Wave 2

Since your release from incarceration (*if re-incarcerated: but prior to your current reincarceration*), how often... (either Never, Once, A few times, About once a month, A couple of times a month, Once a week, Several times a week)

- ...have you been (*if re-incarcerated: were you*) threatened with being hit by a fist or anything else that could hurt you?
- ...have you had (*if re-incarcerated: was*) anything thrown at you that could hurt you?
- ...have you been (*if re-incarcerated: were you*) pushed, grabbed, or shoved?
- ...have you been (*if re-incarcerated: were you*) slapped, kicked, bitten, or hit with a fist?
- ...have you been (*if re-incarcerated: were you*) threatened with a weapon or had a weapon used on you?

Waves 3 and 4

Same questions as above, but respondents are asked to report victimization since their last interview. If re-incarcerated, respondents are asked to report victimization since their last interview, but prior to their re-incarceration.

Employment status

Wave 2

How do you currently (*if re-incarcerated: After you were released but before you were re-incarcerated, how did you*) support yourself? (SELECT ALL THAT APPLY: A job, Support from your family, Support from your friends, A government program, Illegal income, Some other type of support [other specified in TEMP2a])

Waves 3 and 4

How do you currently (*if re-incarcerated*: After you were released but before you were re-incarcerated, how did you) support yourself? (SELECT ALL THAT APPLY: A job, Support from your family, Support from your friends, A government program, Illegal income, Some other type of support [other specified in _EMP2a])

Criminogenic neighborhood

Waves 2, 3 and 4

Please tell me whether you strongly agree, agree, disagree, or strongly disagree with the following statements about the neighborhood in which you live (*if re-incarcerated*: lived just prior to your re-incarceration).

- It is hard to stay out of trouble in your neighborhood. (Strongly agree, Agree, Disagree, Strongly disagree)
- Drug selling is a major problem in your neighborhood. (Strongly agree, Agree, Disagree, Strongly disagree)
- You think your neighborhood is a good place to live. (Strongly agree, Agree, Disagree, Strongly disagree)
- You think your neighborhood is a good place to find a job. (Strongly agree, Agree, Disagree, Strongly disagree)
- Living in your neighborhood makes it hard to stay out of incarceration. (Strongly agree, Agree, Disagree, Strongly disagree)

Legal cynicism / criminal thinking

Waves 2, 3 and 4

- Laws are made to be broken. (Strongly agree, Agree, Disagree, Strongly disagree)
- It's okay to do anything you want as long as you don't hurt anyone. (Strongly agree, Agree, Disagree, Strongly disagree)
- To make money, there are no right and wrong ways, only easy and hard ways. (Strongly agree, Agree, Disagree, Strongly disagree)
- Fighting with friends and family is nobody else's business. (Strongly agree, Agree, Disagree, Strongly disagree)

- These days a person has to live pretty much for today and let tomorrow take care of itself. (Strongly agree, Agree, Disagree, Strongly disagree)

Need alcohol or drug abuse treatment

Waves 2, 3 and 4

How much do you need drug or alcohol treatment? (A lot, A little, Not at all)

Need mental health treatment

Waves 2, 3 and 4

How much do you need mental health treatment or mental health care? (A lot, A little, Not at all)

Appendix C: IRB Waiver for Secondary Data Analysis



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Office for Human Subjects Protections
Institutional Review Board
Medical Intervention Committees A1 & A2
Social and Behavioral Committee B

3400 North Broad Street
Philadelphia, Pennsylvania 19140
Phone: 215.707.3390 Fax: 215.707.8387
e-mail: richard.throm@temple.edu

MEMORANDUM

To: **AUERHAHN, KATHLEEN**
LIB ARTS-CRIM JUSTICE (1835)

From: Richard C. Throm
Director, Office for Human Subjects Protection
Institutional Review Board Coordinator

Date: 31-Jan-2011

Re: Exempt Request Status for IRB Protocol:
13664: Family Support and the Successful Reentry of Formerly Incarcerated Individuals

It has been determined by Expedited Review that this study qualifies for exemption status as follows:

45 CFR 46 Protection of Human Subjects

Section 101 (b): Unless otherwise required by department or agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:

Exemption 4: Collection or Study of Existing Data. Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subject.

Nothing further is required from you at this time; however, if anything in your research design should change, you must notify the Institutional Review Board immediately.

If you should have any questions, please feel free to contact me at 215-707-8757.

Thank you for keeping the IRB informed of your clinical research.

Appendix D: Characteristics of Missing and Non-Missing Cases

Table DI. Comparison of Cases with Missing and Non-Missing Wave Two Interviews

	Wave 2 Missing <i>M (SD)</i>	Wave 2 Completed <i>M (SD)</i>
W3 Emotional Support ***	20.43 (5.20)	21.86 (5.07)
W4 Emotional Support ***	20.64 (5.31)	21.97 (4.91)
W3 Instrumental Support	10.71 (3.15)	11.06 (3.16)
W4 Instrumental Support **	10.54 (3.24)	11.06 (3.04)
W3 Victimization Frequency **	0.82 (1.54)	0.60 (1.26)
W4 Victimization Frequency	0.67 (1.30)	0.57 (1.21)
Any Crimes 3-9 Months Post-Release ***	0.45 (0.50)	0.34 (0.47)
Any Crimes 9-15 Months Post-Release ***	0.42 (0.49)	0.34 (0.47)
Violent Crimes 3-9 Months Post-Release	0.06 (0.24)	0.05 (0.22)
Violent Crimes 9-15 Months Post-Release	0.08 (0.27)	0.06 (0.23)
Drug Crimes 3-9 Months Post-Release ***	0.35 (0.48)	0.26 (0.44)
Drug Crimes 9-15 Months Post-Release **	0.30 (0.46)	0.24 (0.43)
Any Arrest 3 Months Post-Release ***	0.23 (0.42)	0.12 (0.33)
Any Arrest 3-9 Months Post-Release ***	0.40 (0.49)	0.25 (0.43)
Any Arrest 9-15 Months Post-Release***	0.34 (0.47)	0.26 (0.44)

*** p<.01, ** p<.05, * p<.10

Table DII. Comparison of Cases with Missing and Non-Missing Wave Three Interviews

	Wave 3 Missing	Wave 3 Completed
	<i>M (SD)</i>	<i>M (SD)</i>
W2 Emotional Support	22.35 (5.11)	22.34 (5.00)
W4 Emotional Support ***	20.37 (5.70)	21.92 (4.85)
W2 Instrumental Support	11.25 (3.13)	11.39 (3.09)
W4 Instrumental Support **	10.46 (3.39)	11.04 (3.02)
W2 Victimization Frequency **	0.49 (1.04)	0.34 (0.88)
W4 Victimization Frequency ***	0.85 (1.65)	0.54 (1.12)
Any Crimes 3 Months Post-Release	0.25 (0.44)	0.22 (0.41)
Any Crimes 9-15 Months Post-Release ***	0.50 (0.50)	0.33 (0.47)
Violent Crimes 3 Months Post-Release *	0.00 (0.07)	0.03 (0.16)
Violent Crimes 9-15 Months Post-Release *	0.09 (0.28)	0.06 (0.23)
Drug Crimes 3 Months Post-Release	0.17 (0.38)	0.15 (0.36)
Drug Crimes 9-15 Months Post-Release ***	0.36 (0.48)	0.24 (0.42)
Any Arrest 3 Months Post-Release ***	0.20 (0.40)	0.15 (0.36)
Any Arrest 3-9 Months Post-Release ***	0.40 (0.49)	0.26 (0.44)
Any Arrest 9-15 Months Post-Release **	0.37 (0.48)	0.25 (0.43)

*** p<.01, ** p<.05, * p<.10

Table DIII. Comparison of Cases with Missing and Non-Missing Wave Four Interviews

	Wave 4 Missing	Wave 4 Completed
	<i>M (SD)</i>	<i>M (SD)</i>
W2 Emotional Support *	21.74 (5.54)	22.46 (4.90)
W3 Emotional Support	20.88 (5.23)	21.64 (5.11)
W2 Instrumental Support	11.27 (3.37)	11.38 (3.04)
W3 Instrumental Support	10.78 (3.28)	11.01 (3.14)
W2 Victimization Frequency **	0.50 (1.07)	0.34 (0.88)
W3 Victimization Frequency	0.61 (1.15)	0.65 (1.35)
Any Crimes 3 Months Post-Release ***	0.30 (0.46)	0.21 (0.41)
Any Crimes 3-9 Months Post-Release	0.33 (0.47)	0.37 (0.48)
Violent Crimes 3 Months Post-Release	0.03 (0.18)	0.02 (0.14)
Violent Crimes 3-9 Months Post-Release	0.06 (0.24)	0.05 (0.22)
Drug Crimes 3 Months Post-Release **	0.21 (0.41)	0.15 (0.35)
Drug Crimes 3-9 Months Post-Release	0.26 (0.44)	0.28 (0.45)
Any Arrest 3 Months Post-Release ***	0.20 (0.40)	0.15 (0.35)
Any Arrest 3-9 Months Post-Release ***	0.34 (0.47)	0.30 (0.49)
Any Arrest 9-15 Months Post-Release ***	0.33 (0.47)	0.28 (0.45)

*** p<.01, ** p<.05, * p<.10

Appendix E: Mixed Wave Models

As described in the Data Analysis section of chapter four, items collected at wave two (some of which reflected current conditions and some of which reflected conditions throughout the previous period) were used to predict the likelihood of reoffending in the first three months post-release. Similarly, items collected at wave three were used to predict the likelihood of reoffending in the three to nine months post-release and items collected at wave four were used to predict the likelihood of reoffending in the nine to 15 months post-release. While it would not make sense to use items collected at wave two to predict the likelihood of reoffending in the three to nine months post-release (because some of the items collected at wave two reflect the first three months post-release), independent variables could be drawn from multiple waves. A series of models were also run using this mixed wave approach.

Specifically, to predict reoffending in the three to nine months post-release (between wave two and wave three), measures from wave two that reflect current conditions as well as measures from wave three that reflect conditions between wave two and wave three were used. Similarly, to predict reoffending in the nine to 15 months post-release (between waves three and four), measures from wave three that reflect current conditions as well as measures from wave four that reflect conditions between wave three and wave four were used.

In consideration of two limitations associated with this mixed wave strategy, it was decided that the non-mixed wave models were the better choice for the dissertation. First, the N is quite a bit lower for the models predicting reoffending in the three to nine months and the nine to 15 months post-release (using listwise deletion, only people with

data on two consecutive waves could be included). For the three to nine month models the N drops from 714 to 594 with the mixed wave models. For the nine to 15 month models, the N drops from 480 to 466. Second, the models predicting reoffending in the first three months would be incomplete because the following control variables are not collected at wave 1: instrumental family support, employment status, residence with family, and criminogenic neighborhood.

Additionally, there is no reason to assume that measures reflecting current conditions at any given wave are more likely to reflect conditions in the following time period (mixed wave models) as opposed to the previous time period (original models). It seems reasonable to assume that assessments of family support are more likely to be influenced by what happened previously instead of what happens in the future.

When examining the results of the mixed wave models, the findings are substantively identical to the original or non-mixed wave models. The coefficients of key variables do not change in terms of direction or significance. The only difference is that in the original models, emotional support significantly predicts reoffending in the three month and nine to 15 month time periods for some outcomes. In the mixed waves models, emotional support is significant in the three month and three to nine month models (which is not surprising considering measures from a different wave are used).

Appendix F: Multicollinearity Diagnostics

Table DIV. Tolerance Values

Variables	Wave 2 Tolerances	Wave 3 Tolerances	Wave 4 Tolerances
Age	.851	.861	.864
Gender	.867	.825	.852
Race – White	.348	.349	.305
Race – Black	.339	.348	.306
Index offense	.913	.882	.844
Prior convictions	.887	.884	.875
Days incarcerated	.882	.893	.869
Re-incarceration	.916	.830	.833
Arrest in previous period	--	.930	.912
Emotional support	.361	.341	.359
Instrumental support	.388	.367	.386
SVORI participation	.902	.939	.881
Services received	.735	.795	.724
In-person PO contact	.926	.879	.862
PO case management	.906	.922	.899
Employed	.902	.865	.865
Married / steady	.944	.902	.860
Residence with family	.843	.814	.839
Criminogenic neighborhood	.837	.814	.811
Victimization frequency	.867	.852	.855
Antisocial family	.965	.920	.947
Legal cynicism	.791	.805	.754
Need mental health treatment	.766	.777	.739
Need substance abuse treatment	.801	.778	.759