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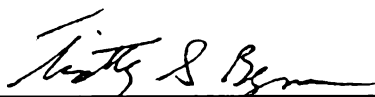
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THE (IN)EFFICACY OF REENTRY BASED PROGRAMS: EXPLORING
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ON OUTCOME INDICATORS

By

Eric L. Grommon

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ABSTRACT

THE (IN)EFFICACY OF REENTRY BASED PROGRAMS: EXPLORING THE DIFFERENTIAL EFFECTS OF PRISONER REENTRY DIMENSIONS ON OUTCOME INDICATORS

By

Eric L. Grommon

Correctional systems continue to develop and implement prisoner reentry programs to ease the process of transition into the community through intervention across multiple reentry dimensions. Three of the most pressing dimensions include housing, employment, and substance abuse treatment. In order to inform future reentry programs, this study explores how these reentry dimensions interact and affect correctional outcomes of relapse and recidivism. Data used for this study consists of a sample of 511 offenders with severe substance dependency histories gleaned from a larger project that assessed the impact of intensive reentry-based programming.

The results indicate that the stability of housing and employment can directly influence substance abuse treatment processes and relapse. Employment stability directly influences re-incarceration likelihood and housing stability appears to directly influence re-arrest likelihood after controls for substance abuse treatment processes. Housing and employment stability influence relapse indirectly by shaping levels of substance abuse treatment dosage and program violations. Employment stability also indirectly effects re-incarceration likelihood by influencing levels of substance abuse treatment dosage and supervision absconds. The findings highlight

the need to further explore reentry dimensions and lead to a number of theoretical, methodological, and policy implications.

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Special thanks go out to my mid- to late-twenties. I appreciate all of your sacrifices and the turmoil you have put yourself through. The amount of stress you have endured over the years has been remarkable and I sincerely hope that the correlation between stress and life span is proven unfounded. Your run-ins with the Olin Death Center have been bizarre and will never be forgotten. Thank you to my social support network of family, friends, and acquaintances. You all know who you are and I will thank you over cocktails or a few high-fives. Without you (and according to criminological theory) I would be a craven criminal without a Ph.D.

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CHAPTER I: INTRODUCTION

The reentry movement is largely a response to the challenges of mass incarceration and its emphasis on individualized accountability, incapacitation, and surveillance (Clear, 2007; Feely & Simon, 1992; MacKenzie, 2006; Useem & Piehl, 2008). It is the realization that punitive “get tough” crime control efforts have been unable to produce evidence of sustained effectiveness in curtailing future criminal behavior at the individual level of analysis¹. It is also the acknowledgement that the pendulum between the philosophical orientations underlying correctional policy and practice is beginning to shift towards rehabilitative or blended rehabilitative-control efforts (Byrne, 2004; Byrne, 2008; Byrne & Taxman, 2005). Beyond philosophical orientations, the logic of the reentry movement is closely interrelated with three problematic trends that have received a substantial amount of focus from correctional administrators, practitioners, and academics in recent years: the growing prisoner population, the relatively stable rate of recidivism, and the individualized process of transition into the community.

Correctional systems are managing populations of prisoners and individuals under community supervision whose size has never before been seen (Petersilia, 2003). There are approximately 1.6 million individuals under state correctional authority in 2007, which is three times the number of those held twenty years ago (Pew Center, 2008). One

¹This observation is independent of potential incapacitation effects associated with incarceration. There is some evidence to suggest that incarceration may impact crime rates at the aggregate or macro level of analysis (Levitt, 2004; Marvell, 2009; Marvell & Moody, 1994; Spelman, 2000; Spelman, 2005; Vieraitis et al., 2007). Periods of decarceration appear to be associated with increases in crime (Clear, 2007; President’s Commission on Law Enforcement and the Administration of Justice, 1967; Vieraitis et al., 2007), while periods of mass incarceration appear to be associated with decreases in crime (Levitt, 2004; Marvell, 2009; Marvell & Moody, 1994; Spelman, 2000; Spelman, 2005; Vieraitis et al., 2007). While still subject to debate, the available evidence suggests that one percent increases in prison populations may

in every 100 adults was incarcerated at least once in 2008 (Pew Center, 2008). At the same time, over 630,000 individuals will be released from correctional institutions and returned to local communities each year (Mears et al., 2008; Pew Center, 2008). The number of individuals currently released annually exceeds the total number of those under state correctional authority nationwide prior to the 1990s (Hughes & Wilson, 2003; Pew Center, 2008).

Pressure is being placed on community-based corrections to assist in the transition process (National Research Council, 2008). It is estimated that nearly one in every 32 adults in the United States is under some form of correctional supervision (Pew Center, 2009). There are approximately five million individuals under supervision, which is three times higher than populations in the early 1980s (Lurigio, 2005; National Research Council, 2008; Useem & Piehl, 2008). Methods of release and supervision have become increasingly less reintegrative with movement towards the abolition of discretionary parole board systems and the implementation of mandatory conditional supervision systems based upon risk management assessments and surveillance (Feeley & Simon, 1992; LaVigne et al., 2003; Nelson et al., 1999; Petersilia, 2003; Simon, 1993). There is even evidence to suggest that some correctional systems have eliminated conditional supervision altogether (Glaze, 2003; National Research Council, 2008; Petersilia, 2003; Travis et al., 2001).

Correctional institutions and community-based field agencies have been, and continue to be, the main components of reentry systems (Glaser, 1964; Irwin, 1970; National Research Council, 2008; Nelson et al., 1999; Petersilia, 2003; Useem & Piehl,

reduce crime rates by approximately one-tenth to one-quarter of a percent (Levitt, 2004; Marvell, 2009; Marvell & Moody, 1994; Spelman, 2000; Spelman, 2005; Vieraitis et al., 2007).

2008). Available research has indicated that a prison sentence is a short-term occurrence that significantly affects one's life trajectory. The average prison sentence is just over two years (Petersilia, 2003). Approximately 93% of the prison population will eventually be released and approximately 40% of the prison population will be released within 12 months (Beck, 2000; Petersilia, 2003; Travis et al., 2001). Unfortunately, the well-documented evidence on recidivism suggests a mediocre level of correctional effectiveness in the reintegration process, which ultimately challenges the legitimacy of corrections and the larger criminal justice system².

Beck and Shipley (1989) concluded that 39% of individuals released from state correctional institutions in 1983 were re-arrested within the first year of their release. Sixty-three percent were re-arrested within three years and 41% were re-incarcerated within three years. More recently, Langan and Levin (2002) replicated the study using a sample of individuals released in 1994 and found that 44% of the sample were re-arrested within the first year of their release, 68% were re-arrested within three years, and 52% were re-incarcerated within three years. The annual recidivism rate among those under correctional community supervision continues to hover around 40% (Glaze & Palla, 2005).

Less than half of community correctional supervision discharges are due to the successful completion of supervision terms (Hughes & Wilson, 2003). The number of re-paroles following an initial parole term increased 300% from the early 1980s to the early

² The determination of correctional effectiveness based upon recidivism levels is highly debatable. An alternative incapacitative-control view can be argued, which suggests that correctional systems should be used as a last resort for those who have continued to be criminally active after being subjected to less severe sanctions (Rosenfeld, 2008). The relatively high and stable rate of recidivism would therefore indicate effectiveness in reaching a target population – those that continue to be criminally active after criminal justice system intervention (Rosenfeld, 2008).

2000s, while the number of new admissions to parole has increased 100% over the same period (Useem & Piehl, 2008). Those who are non-compliant with supervision terms represent a large portion of institutional intakes (Taxman, 2008). The revolving door practice of transitions into and out of institutions has serious implications for correctional administrators and practitioners (Useem & Piehl, 2008), familial and peer relationships (Braman & Wood, 2003; Eddy & Reid, 2003; Hairston, 2003; Parke & Clarke-Stewart, 2003; Rose & Clear, 2003; Rossman, 2003; Uggen et al., 2004), and the community at large (Clear, 2007; Rose & Clear, 2003; Rossman, 2003).

Problem Identification to Response: The Development of Reentry Knowledge

The changing dynamic of corrections and the relatively stable rates of recidivism have led to calls for doing something and correctional academics, practitioners, and policy makers have heeded the call. The number of empirical and non-empirical reentry studies on the state of reentry knowledge has increased dramatically since 2000 (Lynch, 2006; Petersilia, 2004). Most of the available literature is comprised of three overlapping types of information: advocacy information, reentry program models or programming, and connotations concerning the challenges faced upon the transition into the community. Each type of literature identifies problems inherent to reentry and suggests solutions. A small, but growing, body of literature within these categories has focused on the implementation and assessment of programs that can be used to ease the process of transition (Jacobs & Western, 2007; National Research Council, 2008; Lattimore et al., 2004; Lattimore et al., 2005; Lattimore & Visser, 2009; Wilson & Davis, 2006; Winterfield et al., 2006).

Advocacy literature often exposes a reader to the dynamics of the reentry problem and attempts to make the difficulties associated with the reintegration of prisoners into local communities visible across multiple points of view (Lynch, 2006). Emphasis is on the need to shift the focus from piecemeal practices toward continuum of care that blends any and all components that may assist in the reintegration process (Seiter & Kadela, 2003; Taxman et al., 2002; Visser & Travis, 2003). Pre-release and post-release planning is viewed as being the most vital component of the process of reentry. Most of the planning efforts discussed in the literature argue for the need to meet immediate transitional needs of housing, employment, the provision of treatment/social services, and the enhancement of generalized social supports (LaVigne & Cowan, 2005).

Informed by the advocacy line of literature is a secondary focus on program models and programming. Reentry models have been proposed and designed to allow correctional systems to shift their existing reintegration policies and practices towards a reentry focus (National Institute of Corrections, 2008; Taxman et al., 2002). A common structure exists across reentry models and consists of three distinct stages (see Taxman et al., 2002). The first stage, institutional, consists of the assessment and classification of individuals upon admission to an institution and the development of individualized treatment plans that begin within the institution and are matched to services in the community. The second stage, structured reentry, begins at least six months prior to release and continues into the first post-release month. This stage consists of intense preparation for release, the development and maintenance of a reentry plan, the establishment of connections within the community to meet immediate needs, and continued treatment or referrals as necessary. By attempting to meet the needs of

prisoners released into communities and streamline the process of transition, this phase is perceived as being vital for ensuring stability, which may lessen the risk of recidivism (Lynch, 2006). The third and final stage, community reintegration, begins the second post-release month and continues until community-based correctional supervision is successfully completed. The focus of the final stage is to sustain gains made in other stages, the maintenance of reentry plans as changes arise, and the achievement of independence through cooperation with the community.

The three-stage process is assumed to achieve a number of goals. The process seeks to maintain continuity of care between institutional and community based programming in an effort to increase structure and stability that can ease the transition process. Structure and stability are vital to the existing reentry models, but the treatment and intervention processes inherent to each stage of the model are critical to the transition process (Listwan et al., 2006). Progression through the successive stages also transitions from reliance on formal control mechanisms (e.g., police, court, and correctional operations) to informal social control mechanisms (e.g., family, peers, community and community groups, and treatment or social service providers). In totality, staged reentry programs seek to achieve a goal of breaking old criminogenic habits and establishing new civic roles that enhance the social capital of the community (Taxman et al., 2003; Uggen et al., 2004).

Federal funding is available to help state correctional systems design and implement system-wide reentry infrastructures (US Department of Justice, 2008). State correctional systems receiving funds are generally left to their own discretion in the design of reentry programs depending on the specific correctional sub-population they

wish to target (Listwan et al., 2006; Multi-Site Evaluation of SVORI, 2008). The programs are not entirely standardized, but commonly include intake assessments, classifications, programming, reassessments and reclassifications, in-reach opportunities, pre-release planning, post-release programming, and structured phase transitions (Multi-Site Evaluation of SVORI, 2008).

Increased efforts have been made to determine the characteristics of correctional programming that may produce reliable reductions in recidivism and behaviors associated with recidivism. The emphasis is not on the existence of programming, but rather upon the quality of the programming provided (Andrews et al., 1990; Antonowicz & Ross, 1994; Cullen & Gendreau, 2000; Listwan et al., 2006; Lowenkamp & Latessa, 2005; MacKenzie, 2006; MacKenzie, 2005; MacKenzie, 2000; Palmer, 1983). Numerous principles and heuristics of efficacious programs have developed and a plethora of “what works” literature on select components of correctional systems can be found in most academic and trade journals³ (Cullen & Gendreau, 2000; MacKenzie, 2006; MacKenzie, 2005; MacKenzie, 2000; Visher, 2006). The “what works” terminology has been identified as a contemporary paradigm shift within the field of corrections (Byrne, 2008; Cullen & Gendreau, 2000; Listwan et al., 2006; Palmer, 1983). Available principles and heuristics are not without criticism (Antonowicz & Ross, 1994; Byrne, 2008; Rhine et al., 2006; Wilson & Davis, 2006). Research is needed to solidify effective correctional practices, especially those related to the process of transition into the community.

³ “What works,” “best practices,” and “evidence-based” titles have been used interchangeably to explain synonymous concepts in correctional literature and within the field of criminal justice and criminology as a whole. For the sake of this discussion, the term “what works” will be used as an overarching term that includes best practices and evidence-based designations.

While the quality of intervention is paramount within the growing paradigm of “what works,” an overarching consideration is the cost effectiveness of programming. Taxpayers are estimated to spend more than 60 billion dollars annually on corrections (Gibbons & Katzenback, 2006; Lattimore & Visser, 2009). Considering the additional “front end” costs of law enforcement efforts and court processing, taxpayers spend approximately 215 billion dollars on the criminal justice system (Lattimore & Visser, 2009). While most of the correctional population is under some form of community supervision, one in every 10 dollars spent by correctional systems is for community corrections while the vast majority is used simply for institutional corrections (Carver, 2004). This equates to approximately \$2,000 to \$4,000 per parolee per year (National Research Council, 2008), which is substantially lower than the estimated \$25,000 a year to incarcerate one individual (Petersilia, 2003; Stephan, 2004). Even with the substantial reductions in cost associated with community based supervision, it is reasonable to question whether such a small proportion of correctional funding is adequate to transition individuals into the community.

In combination, advocacy and programming efforts are being developed and further elaborated based upon the realization of the disadvantages faced by prisoners returning to communities. This tertiary focus has been a concern in the literature, but has become more pronounced in the era of mass incarceration. Most individuals enter prisons with an assortment of needs that are not being met in prison are even more difficult to meet once released into the community (Useem & Piehl, 2008). Poverty, low educational background, physical or mental illness, and substance abuse problems are common hindrances (Petersilia, 2003; Useem & Piehl, 2008). Reductions in funding for

prison programming, community social services, and community correctional supervision services have corresponded with increased public perceptions of such services being unnecessary expenditures (Harrison, 2001; LaVigne et al., 2003; Listwan et al., 2006; National Research Council, 2008; Petersilia, 2003; Seiter & Kadela, 2003; Taxman et al., 2002; Travis et al., 2001).

The lack of available funding for and attitudes against the provision of services for individuals stigmatized as being “less than the average citizen” (Uggen et al., 2004, p. 261), has marginalized many systematic attempts to provide reentry assistance. The current situation has left prisoners facing dilemmas of returning to local communities having “less treatment, fewer skills, less exposure to the world of work, and less focused attention on planning for a smooth transition” (Travis & Petersilia, 2001, p. 300). By implication, prisoners released to communities are more at risk for continued criminal behavior and recidivism since they are released from a correctional system whose reintegration mission has deteriorated to such an extent that fewer and fewer transitional services are available at release relative to services available during admission to prison (Gibbons & Katzenback, 2006).

Acknowledging the Problems with Available Research on Prisoner Reentry

The focus on reentry brings to the forefront questions of how the flow of prisoners into and out of institutions affects public safety, how correctional institutions should manage release, and what communities can do to absorb and reintegrate released prisoners (Lynch & Sabol, 2001). Equally important are concerns of correctional efficacy, the function of rehabilitative programs, and considerations of governmental responsibility in assisting those released from correctional institutions in the acquisition

of resources such as housing and employment (Petersilia, 2003). While there has been much discussion of the issues surrounding reentry, there is a relative dearth of contemporary empirical evidence available that can inform theories of prisoner reentry or the future design of reentry based programs. The reentry movement is growing, but it is not a well-informed movement.

There are a number of problems that have stunted the development of knowledge on reentry. The inherent variability of reentry-based programming limits abilities to deduce conclusions across studies. Some state and local governments have implemented programming and services specifically for reentry purposes, while others consider reentry to be synonymous with community-based corrections or participation in community-based services (Petersilia, 2003; Solomon et al., 2004b). Moreover, some reentry services are offered within the institution, others are associated with community-based supervision, and some rely upon community-based partnerships between correctional field offices and local service agencies (Wilson & Davis, 2006).

Reentry programming seeks to ameliorate an assortment of dimensions that affect transitional experiences. Dimensions of reentry that can be targeted and incorporated into programming include intra-individual cognitive change, housing assistance, employment assistance, educational assistance, familial relationships, peer relationships, and broader relations with the community or community based institutions. Often the programming focus is placed on select dimensions to the exclusion of remaining dimensions. Variability in the structure, strategy, and content of reentry programs does limit the production of knowledge, but it is also necessary in order to meet the needs of

an overall correctional population or specific sub-population (Andrews et al., 1990; Cullen & Gendreau, 2000; Lipton et al., 1975; Lurigio, 2005; Palmer, 1995).

The funds distributed to local jurisdictions for reentry programming purposes have become a double-edged sword. There has been an increase in the number of reentry programs, strategies, and initiatives that may ease the process of transition. Yet, one of the main criticisms of the study of reentry is the lack of available initiatives and/or programs that are reentry focused (Travis et al., 2001). The increased focus and implementation of reentry based programs without a larger understanding of the meaning of prisoner reentry limits the ability to determine what programs may be the most effective. Useem and Piehl (2008) noted that research on the process of prisoner reentry is still in the formative stages and trial and error should be expected for a number of years before model programs, strategies, or content start to distance themselves from less effective programs.

One of most pressing problems is the relative lack of available knowledge on the process of reentry (Visser & Travis, 2003). All too often the discussion of reentry is tied to measures of recidivism such as re-arrest or re-incarceration after a prolonged follow-up period. Reductions in crime and increases in public protection are primary concerns of correctional policy, but the emphasis on recidivism can mask reentry gains or other improvements in pro-social functioning that influence recidivism outcomes (Listwan et al., 2006; MacKenzie, 2006; Palmer, 1983; Rosenfeld, 2008; Visser & Travis, 2003). Gains in social functioning may include the obtainment of housing, employment, and treatment for medical or mental health needs – all of which have been identified as key dimensions to the reentry process (Petersilia, 2003; Rosenfeld, 2008; Taxman et al.,

2002; Travis et al., 2001; Visher & Travis, 2003). There is a need to further develop the understanding that recidivism is a part of the process of reentry and explore the relationship between reentry dimensions and traditional recidivism outcomes (Rosenfeld, 2008; Visher & Travis, 2003).

There is also a need to explore the differential reentry effects experienced by specific correctional sub-populations. An overwhelming majority of prisoners will eventually be released and reentry is commonly used to describe a reintegrative experience that is expected to be similar for all types of offenders. What becomes lost in such a generalized approach is the complex mix of interrelated reentry dimensions that affect transitions into the community for specific types of offenders. One of the most pressing correctional sub-populations with their own unique reintegrative needs are those with severe substance abuse dependencies.

The enormous growth of state correctional populations has been associated with drug-involved offenders (Blumstein & Beck, 1999; Carver, 2004; Mumola & Karberg, 2006; Tonry, 1995; Useem & Piehl, 2008) and a majority of prisoners have used or been under the influence of drugs preceding their offense leading to incarceration (Mumola, 1999; Mumola & Karberg, 2006). Those with substance abuse and dependency histories often require comprehensive substance abuse intervention and many will also require additional mental health services (Compton et al., 2003). Unfortunately, many of those most in need of treatment will leave prison without it, which places populations of prisoners with substance abuse and dependency histories at risk for recidivism (Byrne, 2008; Byrne & Taxman, 2005; Carver, 2004; National Research Council, 2008; Urban Institute, 2008).

There is a reliance on the local community to meet immediate substance abuse treatment needs (Taxman, 2008; Visser & Farrell, 2005). Many offenders are referred to community-based treatment, but there is relatively little evidence available on the effectiveness of this type of treatment intervention (Chanhathasilpa et al., 2000; Cullen & Gendreau, 2000; Dowden et al., 2003; Lipton et al., 1975; MacKenzie, 2006). It is not clear how community-based substance abuse treatment affects recidivism. More importantly, it is not clear if the treatment intervention can directly or indirectly affect the transition back into the community. Many evaluative undertakings are unable to capture and control for treatment processes that contribute to and affect observed programmatic outcomes such as recidivism (Onifade et al., 2008).

This gap in the knowledge – how treatment interventions affect and are affected by reentry dimensions – also plagues efforts to determine the efficacy of reentry based programs. There is not a clear understanding as to what circumstances, programs, or treatment interventions lead to successful reentry outcomes (National Research Council, 2008; Visser, 2006). There is also no clear understanding if reentry based programs can reduce recidivism or reduce behaviors associated with recidivism (Visser, 2006). Fewer than 5% of all correctional programs and less than 1% of reentry based correctional programs are ever subjected to any type of formal evaluation (Listwan et al., 2006; Petersilia, 2003; Petersilia, 2004; Visser & Travis, 2003). Even among the few reentry based programs that are evaluated, only a handful utilize experimental or quasi-experimental research designs that allow for valid inferences to be made (Farrington, 2003a; Farrington, 2003b; Lipsey & Cordray, 2000; Onifade et al., 2008; Petrosino et al., 2000; Rossi et al., 2004; Shadish et al., 2002; Weisburd, 2000). The “black box” effect is

also very apparent in the evaluation of reentry based programs. The treatment intervention processes that affect outcomes are often overlooked (Onifade et al., 2008). In most cases, there is not enough quality evidence to state that a program does or does not work as well as the type of participants who would or would not benefit from programming (Boruch, 1997; Petrosino et al., 2000).

Current Research

The study reported here sought to remedy some of the issues associated with the current state of knowledge on prisoner reentry. The goal was to examine how specific reentry dimensions interact and affect the transitional process. It is still not clear if a programmatic focus on specific reentry dimensions can ease the process of transition into the community. It is also unclear if specific reentry dimensions can interact with one another to impede the process of transition and produce unintended consequences for programs.

The primary purpose of the study was to explore the process of reentry and determine how specific reentry dimensions influenced and were influenced by other reentry dimensions. Most pressing were the reentry dimensions of housing, employment, and substance abuse treatment, which have been identified as key obstacles to reintegration that may place individuals at substantial risk for recidivism (Brooks et al., 2006; Helfgott, 1997; McGarrell et al., 2005; National Research Council, 2008; Petersilia, 2003; Uggen, 2000; Visser & Farrell, 2005). Borrowing largely from an overarching evaluative theory framework, this research attempts to un-package the “black box” of reentry processes and explore the effect of reentry dimensions on treatment intervention processes and common program outcome indicators. With the growth of

reentry programs and the implementation of such models without rigorous evaluation, this research seeks to inform future models by identifying issues that shape program outcomes.

CHAPTER II: REVIEW OF LITERATURE

The purpose of this chapter is to review and assess the literature on prisoner reentry. The chapter begins with a review of the state of correctional discourse on treatment intervention efficacy. Next will be a discussion of the theoretical frameworks that underlie prisoner reentry. While limited and piecemeal, the empirical validity of reentry will follow. The discussion will transition into the salience of three reentry dimensions: housing, employment, and treatment in the form of substance abuse services. Finally, the chapter will provide information on the theoretical frameworks that are associated with substance abuse treatment and highlight the empirical validity of such efforts. An assessment of the overlap between prisoner reentry and substance abuse treatment will be made based upon the discussion of theoretical frameworks and empirical evidence.

Where Are We? The Contextualized State of Correctional Discourse

Almost any discussion that considers the efficacy of correctional interventions in modifying behavior begins with a mention of the “Scarlett M” (Marlowe, 2006). The “M” refers to the research conducted by Martinson (1974), which implied that correctional rehabilitative programs fail to reduce future recidivism. As such, correctional efforts to rehabilitate were viewed as being futile and ushered in the era of “nothing works” correctional philosophies. The work of Martinson (1974) and the widespread acceptance of his policy implications became an important watershed in the field of correctional programming. In essence, the conclusions shifted correctional discourse from a generalized acceptance of rehabilitation and individualized amendability to intervention towards the dissolution of programs and programming.

Yet, the work of Martinson was later anecdotally prefaced five years later (Martinson, 1979). Rather than being completely futile, there was little evidence to suggest that a specified type of correctional programming or intervention could work. Palmer's (1975; 1983; 1992) replication and re-analysis of Martinson's findings suggested that a number of methodological and program implementation problems biased findings toward the null hypothesis that correctional programming would have no effect on recidivism. The main issue with the research conducted by Martinson, according to Palmer (1975), was the overarching assessment of correctional treatment interventions as a whole. The analytic strategy used by Martinson for determining successful correctional interventions required all of the reviewed studies to produce reductions in recidivism. This is an insurmountable task, especially in consideration of the heterogeneity of correctional interventions within specific subgroups (e.g., individual treatment, group treatment, community based treatment, etc.) and across an overarching intervention framework (e.g., substance abuse treatment, mental health treatment, sex offender treatment, etc.). An alternative analytical strategy focused on intervention components with some degree of success in reducing recidivism may have revealed that programming that is innovative or new, with participants amenable to treatment, and with trained and quality staff may be the most efficacious (Palmer, 1975). The question to be asked is not what works as a whole, but what works for whom under what circumstances (Palmer, 1975; Sherman et al., 1997).

Palmer (1983) has argued for the necessity of relativity. His differential intervention position suggests that some interventions may work, some of the time, under some circumstances. The position arose in the 1980s as a challenge to the nothing works

notion and continues to expand today. It is important to note that the nothing works philosophy has not been replaced. A modified version of the philosophy has been called the treatment amenability position (Palmer, 1983).

The treatment amenability perspective maintains that specific participants will respond to treatment interventions while others will not. The implications of this perspective are controversial because they can lead to conclusions that individuals cannot change or be “fixed” and can lead to calls for selective incapacitation (Palmer, 1983). Moreover, the treatment amenability position suggests a certain degree of futility in treatment interventions, since only a few participants will change by self-selection because they are willing to respond to treatment. The differential intervention position contrasts this perspective with the suggestion that treatment interventions can produce positive program effects if the conditions of treatment are correctly suited for those who are and who are not amenable to treatment. According to Palmer (1983), the reality is that the efficacy of correctional interventions likely resides somewhere between these two modes of philosophical thought.

Even with contemporary movement towards rehabilitative ideals, there remain strong arguments from correctional policy makers and practitioners that treatment intervention efforts still do not work (Farabee, 2005). Commonly cited evidence in support of this notion is usually attributed to the problems of inducing individualized behavioral changes via the criminal justice system (Bean & Nemitz, 2004; Brown et al., 2004; Farabee, 2005; Prendergast et al., 2002; Sherman, 2007). Additionally, the observance of stable overall recidivism rates and highly variable rates among specific sub-populations that have received some form of correctional programming have also led

to implications that correctional interventions may not be effective and should be curtailed (Farabee, 2005). Rebuttals to these claims commonly argue that correctional programs and programming are poor on theoretical and practical levels (Marlowe, 2006; Wilson & Davis, 2006). A “garbage in, garbage out” mentality exists where correctional policy makers, program designers, and evaluators should expect poor outcomes based upon poor programs. Feel good programs or politically conscious programs that are perceived to work are common, despite the fact that many of these types of programs often do not work (Wilson & Davis, 2006).

The Martinson effect is resilient and continues to shape contemporary correctional research implications. Marlowe (2006) has suggested that many correctional researchers selectively look for any explanation that can suggest evidence of a positive program effect in an effort to combat “nothing works” orientations. At the same time, there are an assortment of additional correctional researchers who write off a program entirely with a safe conclusion that poor program implementation explains any and all marginal or negative program effects in an effort to curtail attempts to make an overall “nothing works” implication.

Some researchers continue to advocate the claim that nothing works, but preface the claim by suggesting that such findings are beneficial and support the replication and expansion of correctional programs and programming. Toch (1997; 2002) suggests that many of the null findings found in research on correctional efficacy imply that the control or comparison groups involved are doing just as well, if not better, than program participants in terms of subsequent reformation or behavioral change. This lends some credence to the notion that correctional intervention in any form (including simplistic

incapacitation) has the ability to alter future behavior. The observation also suggests that there is an unknown base rate of behavioral change that can be expected with samples of correctional populations.

Palmer's (1983) differential intervention perspective has given rise to the continued development and refinement of "what works" literature in contemporary correctional research. The focus on contextualized interventions – specific correctional sub-populations, in a specific setting, utilizing a specific treatment modality consistent to individualized need – remains the main focus (Andrews et al., 1990; Maruna, 2001; Sherman et al., 1997). This line of research is an attempt to make corrections more effective, scientific, and is in direct response to past notions that nothing works and the competitive treatment amenability perspective (Corbett, 2008; Harris, 2005; Maruna, 2001; Rosenfeld, 2008). The "what works" perspective relies heavily upon efforts to enhance program design and implementation. Relevant program outcomes are assumed to be largely determined by programs and programming. Individuals are assumed to be amendable and programs must be set up in a specific fashion in order to induce a given effect. The underlying philosophies and assumptions of rehabilitative change may still be important to some degree, but they are secondary to concerns of design and implementation (Andrews et al., 1990; Byrne & Taxman, 2005).

Programming Heuristics from the "What Works" Literature

Most of the available evidence on correctional program or programming efficacy suggests that the best programs can be expected to produce 20% to 30% reductions in recidivism (Aos et al., 1999). Most of the typical programs have slightly less effectiveness but can still expect to produce 5% to 10% reductions (Aos et al., 1999;

Cullen & Gendreau, 2000). This programmatic variability between “best” and “typical” programs is also manifest with assorted offender populations as specific program and individual effects can alter the expected reductions in recidivism (Lowenkamp & Latessa, 2005).

Currently, there is a preference and empirical support for service based programs that can affect individual level change (MacKenzie, 2005; National Research Council, 2008). Cognitive, behavioral, skill-orientated, or multimodal programming interventions continue to be the most promising framework from which to design and implement programs (Andrews et al., 1990; Landenberger & Lipsey, 2006; Lipsey et al., 2001; MacKenzie, 2005). Programs and programming whose service provision increases social opportunities among pro-social others and the broader local community also have support, but to a lesser extent of individual change program or programming models.

Deterrence, incapacitation, surveillance, and other assorted control-based strategies have been unable to demonstrate sustained effectiveness in reducing recidivism, even though they are still widely used⁴ (Byrne & Taxman, 2005; MacKenzie, 2005; National Research Council, 2008). There are exceptions. McGarrell and colleges (2003; Corsaro & McGarrell, 2009; McGarrell et al., 2009) have suggested that strategies utilizing deterrence-based offender notification meetings and social capital-based referrals to community-based social services upon release can prolong time to recidivism, but not necessarily reduce levels of recidivism. Farabee (2005) argues for increases in

⁴ This finding appears to be generalizable to many crime prevention efforts in the field of criminology and criminal justice. Community based efforts in crime control and prevention have documented the relative ineffectiveness of heavy-handed deterrence and enforcement efforts (Bursik & Grasmick, 1993; Decker, 2003). A preference for service delivery and community building continues to be made as an overarching intervention model or, at the very least, a component of an intervention strategy (Bursik & Grasmick, 1993; Decker, 2003; McGarrell et al., 2009).

control and surveillance mechanisms within programs in order to produce long-term behavioral changes. Some research has indicated that combinations of treatment interventions with enhanced control and surveillance mechanisms can reduce recidivism in the short term, but the long term erosion of effectiveness is expected (Byrne & Taxman, 2005; McGarrell et al., 2003; McGarrell et al., 2009; Petersilia & Turner, 1991; Turner et al., 1992).

Additional generalities of program effectiveness suggest that interventions should utilize more than one treatment modality and attempt to intervene across multiple deficits based upon need (Andrews et al., 1990; Cullen & Gendreau, 2000; Listwan et al., 2006; Palmer, 1983). Treatment should be intense and encompass a substantial period of time over the first year of release (National Research Council, 2008). Cullen and Gendreau (2000) suggest that services should occupy at least 40% to 70% of an individual's daily time over the course of three to nine months. Increasingly a focus has been placed on the competency and effectiveness of staff delivering services (Palmer, 1983; Wilson & Davis, 2006). The establishment of working relationships between service providers and participants and the formation of a generalized supportive atmosphere may prove to be beneficial. Palmer (1983) was one of the first to advocate that the provision of fair and humane treatment services, in addition to staff competencies, can foster individual change.

MacKenzie (2006) has recently provided a comprehensive review of correctional programs, policies, and interventions. The overall findings suggest that rehabilitative treatment interventions do work and reinforce the findings of correctional efficacy from prior meta-analyses (see Gaes et al., 1999; Petersilia, 2003). In terms of specific service

frameworks, twelve programs were found to be effective in reducing recidivism. They include academic and vocational education; Moral Reconation Therapy⁵; Reasoning and Rehabilitation⁶; cognitive restructuring, cognitive behavior and behavioral treatment for sex offenders; hormonal/surgical treatment of sex offenders; Multi-Systemic Therapy for juveniles⁷; drug courts; drug treatment in the community, and incarceration based drug treatment (MacKenzie, 2006, pp. 331-333). An additional twelve programs were found to be ineffective in reducing recidivism. They include life skills education; correctional industries; multi-component work programs; psychosocial sex offender treatment; residential treatment and community supervision for juveniles; domestic violence treatment using a feminist perspective; domestic violence programs using cognitive behavioral treatment or arrest interventions; boot camps for adults and juveniles; intensive supervision; and electronic monitoring (MacKenzie, 2006, p. 333).

MacKenzie's (2006) identification of specific treatment frameworks is helpful, but does not capture the variability of program content or service delivery. The variability of programming effectiveness is largely influenced by the types of services delivered to particular offenders in specific settings (Andrews et al., 1990; Antonowicz & Ross, 1994; Cullen & Gendreau, 2000; Listwan et al., 2006; Palmer, 1983). One of the more ever increasing dynamics examined relative to program effectiveness and service delivery are the principles of risk, need, and responsivity (Andrews et al., 1990; Cullen &

⁵ The therapy is based on cognitive development. The overall goal of the therapy is to improve the participant's social, moral, and behavioral deficits (MacKenzie, 2006).

⁶ The therapy is based upon the modification of thought processes by enhancing problem solving and coping skills (MacKenzie, 2006).

Gendreau, 2000; Listwan et al., 2006). The risk, need, and responsivity model of programming suggests that the most appropriate and effective treatment should target high-risk offenders, the specific criminogenic needs of the offenders, and be matched with the learning styles of offenders (Andrews et al., 1990; Cullen & Gendreau, 2000; Listwan et al., 2006). Use of inappropriate treatments – those that do not target high risk offenders and cannot cater to the needs or modes of learning for an offender population – are not likely to produce substantial reductions in recidivism. The key is to design and implement programs that target predictors of recidivism that can be changed or affected.

One of the prevailing arguments is that services should be reserved for those of highest risk⁸ (Lowenkamp & Latessa, 2005). It is often assumed that the delivery of services to those of highest risk will lead to greater outcome benefits. Low-risk offenders will likely complete correctional supervision terms without the need for programming or

⁷ The therapy is focused upon the social network an individual possesses (family, peers, school, and neighborhood). Family members are integrated into the treatment therapy (MacKenzie, 2006).

⁸ Any discussion of risk – whether that risk be at-risk, high risk, or low risk – begs the question of how risk assessment determinations are made. The determinations are controversial and can rely heavily on psychometric properties on one hand and convenience on the other (Byrne & Taxman, 2005; Cheliotis, 2006; Corbett, 2008; Feeley & Simon, 1993; Foucault, 1977; Harris, 2005; Simon, 1993; Wacquant, 2001; Wacquant, 2000). The reliability and validity of most assessment instruments have been well established, but in practice it continues to be very difficult to predict future behavior (Gottfredson & Gottfredson, 1994). Most risk assessments are associated with static factors derived from an immediate context or an individual's history of behavior (Taxman, 2008). Common factors include, but are not limited to, age of first arrest, number of prior arrests, and the number of prior convictions (Taxman, 2008). Need assessments have arisen recently and are based upon dynamic or fluid factors (Taxman, 2008). Common factors include, but are not limited to, substance abuse, negative peer associations, dysfunctional families, and criminal values (Andrews & Bonta, 2003).

Ideally, dynamic assessment procedures should be in place and continually maintained to ensure that potential participants who fit eligibility criteria or are amendable to treatment are actually placed into services. Unfortunately, this notion may be nothing more than wishful thinking rather than a policy of most state correctional systems. Most assessments are made upon intake to an institution and are rarely replicated with the passage of time. Post-release assessments are not built into most state correctional systems or shared across state agencies internal or external to the criminal justice system. Instead, they are a function of correctional field agencies (personal communication 10 September 2008, Doug Kosinski). The growing reentry movement is bringing the issue of risk determinations to the forefront and will continue to modify and enhance determinations with the passage of time.

interventions. In fact, the use of programming and interventions among low risk populations may actually produce undesirable results by draining correctional system resources and increasing the likelihood for recidivism and criminal behavior (Andrews & Bonta, 2003; Lowenkamp & Latessa, 2005; Taxman, 2008). Commonly termed an “iatrogenic effect,” this unintended consequence occurs when low risk offenders are exposed to intense interventions and high risk offenders partaking in such interventions (Dishion et al., 1999; Lowenkamp & Latessa, 2005). The causal mechanism that contributes to this effect is not well understood. Lowenkamp and Latessa (2005) suggest that the effect pertains to poorly implemented programs with subpar service delivery to high risk populations. Dishion and colleagues (1999) argue that the effect has more to do with breakdowns in programming content and goals. The exposure to intense programming with high risk populations can disrupt the pro-social associations that low risk offenders can form with individuals and local institutions. The building and maintenance of such associations are necessary for the prevention of future criminal behavior.

There is some empirical evidence to support the differential effects of high and low risk offenders. Lowenkamp and Latessa (2005) conducted a review of 10,000 offenders in 53 community-based residential service facilities to determine whether the effectiveness of a program differed according to determinations of risk⁹. Overall, the results indicated that programs were more or less effective depending on the risk profiles of the offenders admitted to the programs. Programs with low risk offender populations

⁹ It is important to note that programming content was not a concern of the study. Each program included in the sample was considered to be similar and lumped under the umbrella categorization of halfway house or community-based services.

had higher recidivism rates relative to a comparison group who was not subjected to services, while high risk offender populations had lower recidivism rates relative to the comparison group. These differential outcomes must be balanced against some of the participation outcomes. High risk offender populations were found to be less likely to complete programs compared to low risk offender populations. As such, there is some indication that recidivism, program participation, and completion outcomes are shaped by risk determinations.

The Limitations and Applicability of “What Works” to Reentry

While there is growing body of knowledge on the principles and structure of programs that can reduce recidivism among correctional researchers and evaluators, it is important to recognize that these principles will not ensure success. Antonowicz and Ross (1994) have argued that the principles of effective programs are not widely or consistently found in a review of “what works” literature. Even when the principles are found, the effects are not clear. Listwan et al. (2006) suggested that the lack of evidence and conflicting results is due to the fact that the principles have yet to reach the status of common knowledge or conventional wisdom in the field.

The focus on high-risk offenders provides an illustrative example of the difficulty of relying upon the growing principles of correctional programs and programming. Offenders with the greatest need for treatment intervention are often the least motivated to partake in programming. The notion of matching learning styles of offenders to programming implicitly assumes that motivation for treatment can be gained, which may not be the case for many offenders and especially those considered high risk. Low risk offenders have often been the preferred population to work with among program

providers since the population is easier to manage with few problems and established connections to pro-social individuals and institutions in the community (Byrne & Taxman, 2005; Lowenkamp & Latessa, 2005).

Programs and programming that target high risk populations become precarious interventions. It is likely that these programs will be judged negatively by program administrators and key stakeholders due to relatively high recidivism rates in the short term (Byrne & Taxman, 2005; Listwan et al., 2006). Programs that target high risk populations will also require longer lengths of programming duration to overcome deficits in motivation, resistance, and resentment associated with participation placement before any rehabilitative effect can occur (Wilson & Davis, 2006). The amount of time and resources needed for high risk populations can lead to costly programs and unrealistic expectations of timely results that prove to benefit participants.

Added concerns are fiscal and organizational pressures among the consumers of research on correctional programs and programming (Byrne, 2008; Rhine et al., 2006). Correctional policy makers and administrators need immediate information, which systematically overlooks longitudinal programs that may possess the most valid and reliable outcomes (Byrne, 2008; Zhang & Zhang, 2005). At best, the slightly marginal to positive effects that could be expected with interventions targeting high risk populations can fulfill a utilitarian notion of success for program administrators and research partners. That is, the success of a few of the most difficult participants is likely to reduce far more subsequent criminal behaviors than a low overall recidivism rate with an easier, more amendable low risk population. Unfortunately, the recidivism rate continues to be the bottom line for nearly all correctional programs (Maltz, 1984; Maruna, 2001). Evidence

of high recidivism rates, even in the short term, often leads to claims by correctional policy makers and administrators that a specific program for high-risk participants does not work. This conclusion may subsequently lead to the discontinuation of federal and/or state funding and the dissolution of a program.

The public at large also has a stake in correctional programs and programming, which is a significant source of organizational pressure. There is a necessary balance of providing services while protecting the public and retaining organizational legitimacy (Byrne & Taxman, 2005). Programs and programming can fluctuate depending upon public sentiment with intensive services being provided up until a well-publicized fall out that requires an immediate change in correctional operations (see DiIulio & Piehl, 1991; Newburn & Jones, 2005).

The “what works” discourse continues to expand and become integrated into the language of correctional policy makers, administrators, and practitioners. At the same time, there is no real consensus on how resources, programs, and programming efforts should be structured to ease transition into the community immediately following release from an institution (Wilson & Davis, 2006). A definitive a priori model of reentry does not exist (Lattimore et al., 2005). One must be critical of any reliance on “what works” literature to understand reentry (Maruna, 2001). Byrne (2008; 2009) even goes as far to suggest that no one can claim that there is a “what works” foundation for reentry since there are no systematic reviews of reentry programs to date. All that exists to date are reentry program models, implementation reviews of select reentry programs, and

borrowed “what works” reviews that may or may not be applicable to reentry¹⁰ (Byrne, 2009).

There are a number of concerns related to the development of “what works” literature that are problematic for research on reentry. First, there are issues of definitional and conceptual ambiguity. Existing reviews often lump correctional programming into one overarching construct often considered to be rehabilitation (or some variant of rehabilitation) (see Lipton et al., 1975). This generalized classification ignores the fact that programs may have conflicting theoretical assumptions that cancel out one another when included in analyses to decipher effective correctional efforts from ineffective correctional efforts. For instance, a correctional program based on vocational training is essentially pro-social since the program enhances the human capital of the participant. Another correctional program may be an intervention in which a participant is required to attend in-service training as a result of a positive drug screen. The intervention can enhance human capital, but it is required as part of the punishment process. When the program and the intervention are included in a rehabilitation review

¹⁰ Seiter and Kadela (2003) fit within the notion of borrowed “what works” reviews. In their review of what works, what does not, and what is promising for prisoner reentry, the researchers do not focus on reentry programs or programming. Rather, the focus is placed on an assortment of programs or programming that has been used in corrections that may or may not be consistent with prevailing reentry models. Vocational training and/or work programs were found to be effective in reducing recidivism and increasing job readiness. Drug treatment, halfway house, and pre-release programs were also found to be promising in reducing recidivism. Educational programs were found to increase standardized achievement scores. Each of these categories of programming type has some empirical support individually, but not in an overarching reentry context that would combine all of the programming types in one model.

In some respects, MacKenzie (2006) is guilty of a similar extrapolation to reentry programs with a brief discussion of how specific programs – notably cognitive-behavioral, drug treatment, vocational, and employment programs – were found to be effective in reducing recidivism and should be considered as components of reentry models. What differentiates MacKenzie (2006) from Seiter and Kadela (2003) is the preface made by MacKenzie (2006) that additional research is needed into reentry models to determine how specific programming types influence and are influenced by reentry concerns of housing options, employment opportunities, and familial reunification. Reentry model developers should consider available “what works” evidence, but further research is necessary before making “what works in reentry” claims.

the underlying assumptions of each (i.e., skill building and punishment) are masked, and the effect sizes can cancel one another out and produce unreliable outcomes.

In direct relation to the first concern, the “what works” literature cannot inform researchers of the underlying “black box” dynamics of programs that are determined to be effective. The findings generally provide the exact name (e.g., Multi-Systemic Theory) or categorize (e.g., academic programs) a program and mention the basic theoretical framework used. Implementation information is not provided and there is an underlying assumption that the rehabilitation programs have been implemented in accord to the program model. A second problem with simplified titles or categories of programs is the notion that most rehabilitative programs have multiple dimensions (Palmer, 1995). The focus on academic programming, for instance, may also include drug treatment and family reunification dynamics. These sub-dimensions are not apparent with a focus on the primary rehabilitation mechanism.

Third, the dominant focus in the “what works” literature is on recidivism. The prediction of recidivism has been considered to be one of the most widely studied phenomena in criminology and criminal justice (Maltz, 1984; Maurna, 2001). In practice, recidivism is generally a bottom line measure used by correctional administrators, practitioners, and policy makers to determine if taxpayer monies should continue to fund specific programs (Maltz, 1984). While widely examined and used, measures of recidivism often cannot identify if direct or indirect societal gains were made while in the program. Beneficial results such as mentorship, expanded social ties, education, employment, cognition, and drug abstinence can be overlooked with a strict focus on recidivism.

These concerns reinforce the notion that prisoner reentry does not (and cannot) fit into the findings derived from the “what works” literature. One cannot assume that what will work for rehabilitative programs and programming will work for reentry. At the same time, these concerns provide a foundation for generating knowledge on the processes and events that surround prisoner reentry. There is a need to critically assess, specify, and understand the dynamics of reentry programs how such dynamics shape relevant programmatic outcomes. There is also the need to reconsider the relevance of recidivism in a reentry context to understand how specific dimensions of reentry can affect program processes and subsequently affect levels of recidivism. The following section seeks to provide some indication of what is known about prisoner reentry.

Theoretical Frameworks of Prisoner Reentry

Much of the available research on reentry is atheoretical and relies upon post hoc interpretations of reentry events and processes that may or may not involve correctional programming (Lattimore et al., 2005; Lynch, 2006; Maruna et al., 2004a). Reentry research often relies on a patchwork of existing criminological theories that seek to explain an assortment of criminal behaviors and include a variety of assumptions about human nature and the underlying conditions that may foster crime. It is not clear how applicable existing criminological theories are related to the issue of reentry. It is also not clear if the theoretical frameworks used to inform reentry processes and events are integrated or if they can be integrated.

Often, there is an implicit assumption that reentry programming will positively benefit participants regardless of the underlying theoretical framework that informs program design and content. The logic behind this assumption suggests that the

provision of any type of programming will assist participants more than no programming at all. It is equally possible that the existing theoretical frameworks, program principles, and program content used in reentry programming diverge from one another to such an extent that the anticipated benefits for participants will be negated and produce null program effects. There is also the possibility of unintended consequences that may subject program participants to more harm than good (McCord, 2003).

Without a distinct theoretical emphasis for reentry guiding the development of policies and practices it is difficult to interpret results and identify the components of programming that contributed to the observed results (Harris, 2005; Lattimore et al., 2005; Taxman, 2004). It is even more difficult to develop policy and practice implications from the observed results to inform future programs without a theoretical foundation (Harris, 2005; Lattimore et al., 2005; Taxman, 2004). This situation is especially problematic in today's correctional environment where state correctional systems are looking for immediate methods to manage the ever-increasing population of offenders reentering society.

Since there is a relative lack of reentry specific theories draw upon (and an equally important dearth of information on the empirical validity of reentry programming), it is likely that many correctional systems formulate and implement reentry programming in a reactionary (e.g., response to growing populations, to be released populations, and community correctional populations), mimetic (e.g., some states correctional systems have developed reentry-based infrastructures, the current state should as well), or evolutionary (e.g., existing policies, practices, or programs include a

new reentry dimension or component) manner¹¹. The real danger in proceeding in this manner is the likelihood that reentry programs will be viewed as being ineffective and inefficient. In turn, the evidenced ineffectiveness and inefficiency has the potential to cease reentry movements altogether and shift the correctional continuum towards policies and practices that are less reintegrative and more incapacitative.

Lynch (2006) suggested that in order to develop knowledge on reentry, the criminological field needs to deconstruct individual studies of specific reentry programs and attempt to synthesize and extrapolate findings across studies. In order to accomplish this goal, Lynch (2006) argued for the need to identify the driving (implicit or explicit) theoretical frameworks that are associated with reentry events, processes, and programs. He suggests that reentry programs are largely shaped by four specific emphases. They include those that emphasize social control, social development, methods of supervision, and the immediate transitional experience from prison into the community. It is important to note that these categorizations are not mutually exclusive. Instead, there is likely to be a substantial amount of overlap and interaction between the categories and their theoretical claims. While purported to be “crude” (Lynch, 2006, p. 405), these categorizations serve as a useful heuristic from which to develop a foundation of systematic knowledge on reentry. Each of the respective emphases will be discussed separately.

Social Control Emphasis

Social control theory suggests that individuals partake in criminal behavior because their social bonds to conventional others and social institutions are weak, broken,

¹¹ Similar lines of reasoning can be found within generalized organizational literature (Donaldson, 1999) and organizational literature that is focused upon the operations of criminal justice agencies (Katz, 2001;

or non-existent (Hirschi, 1969; Reiss, 1951). It is the lack of restraint (or guardianship) in one's social environment that fosters criminal behavior, rather than underlying forces that motivate criminal behavior. By implication, the social control perspective maintains a relatively negative view of human nature. Individuals are assumed to possess an inherent drive to participate in criminal behaviors and activities. If left uncontrolled by formal or informal social controls, criminal behaviors and activities are a likely product.

Social bonds are shaped by social ties, networks, and institutions based in one's social environment and posited to impart the normative values and goals of conventional society through a process of internalization (Hirschi, 1969; Reiss, 1951). Each individual is assumed to possess a variable quantity of existing social bonds and opportunities to formulate future bonds. The potential for bonds to be more or less available are contingent upon one's prior behaviors, current situation, or stage in life (Laub & Sampson, 1993; Matza, 1964; Sampson & Laub, 1993). It is not clear how the causal process of internalization is developed, but there is some evidence to suggest that it is the quality of social bonds (rather than the quantity of social bonds) that can affect behavior.

Hirschi (1969) suggests that the strongest and most effective social bonds are those that foster individualized belief in the norms and values of conventional society and consist of elevated levels of attachment to social ties and networks, commitment to conventional society, and involvement in conventional activities. Family members are often relied upon as being vital social bonds for offenders transitioning into the community after release (Berg & Huebner, 2009; LaVigne et al., 2004; Mallik-Kane & Visser, 2008; National Research Council, 2008; Nelson et al., 1999; Petersilia, 2003). Increasing evidence also suggests that specific social bonds, such as marriage and

employment, can significantly reduce levels of criminal behavior and even terminate future criminal behavior independent of prior criminogenic involvement (Giordano et al., 2002; Horney et al., 1995; Huebner, 2005; Laub & Sampson, 1993; Sampson & Laub, 1993; Shover & Thompson, 1992; Warr, 1998). While growing in popularity, the bonding efficacy of marriage and employment continues to be questioned. There are counter instances in which individuals remain single and unemployed and fail to re-offend, particularly when analyses include female samples (Giordano et al., 2002).

Social bonds can provide structure, stability, and accountability to daily life (Maruna et al., 2004a). Bonds can also foster lifestyle changes (Shover & Thompson, 1992). To achieve this level of functioning requires ongoing management of inter-relationships and meeting relational expectations. In this sense, social bonds are a commodity that can be gained or lost.

Sampson and Laub (1993) follow a similar logic in their discussion of the age-graded theory of informal social control. Borrowing heavily from Coleman's (1988) conceptualization of social capital, investments in pro-social relationships and participation in conventional activities can promote one's own conventional goals and provide exposure to conventional others that can build one's skill set and resource potential. The more commitment made to conventional behavior, the more likely one will gain the upward mobility to participate and compete in society (Giordano et al., 2002).

Participation in criminal behavior attenuates the development of pro-social bonds and the resource potential that can be derived from bonds. Criminality comes at a cost as conventional social bonds negatively react to such behavior (via shaming, informal

punishment, or withdrawal/distancing) (Horney et al., 1995; Shover & Thompson, 1992). In turn, an individual is likely to continue involvement in criminal behavior as outlets for the development of pro-social bonds become less available (Sampson & Laub, 1993). This notion of the cumulative loss of bonds is hypothesized to explain why criminal behavior can often become stable over time.

Reentry Implications of a Social Control Emphasis

Reentry programs and programming recognize the importance of building pro-social bonds and inducing participation in conventional activities to curtail future criminal behavior. The task for reentry programs and programming is to affect bonds and build social capital. Many of the existing reentry program models include planning and programming that will assist in the reparation of prior social bonds or the building of new social bonds (see Multi-Site Evaluation of SVORI, 2008; National Institute of Corrections, 2008; National Research Council, 2008; Taxman et al., 2002). Much of the effort is placed on the assessment of individualized need and the identification of specific strengths or deficits from which to build from. Importantly, however, the focus of intervention is only indirectly placed on the individual. Much more of the intervention emphasis is directed towards the individual's external environment – one's social ties, networks, and institutions.

It is not clear if interventions can or should reach external environments. For example, there is mixed evidence to suggest that family reunification efforts can ease the process of reentry (Braman & Wood, 2003; LaVigne et al., 2004; Naser & Visser, 2006; National Research Council, 2008; Nelson et al., 1999; Parke & Clarke-Stewart, 2003; Petersilia, 2003; Western et al., 2004), even though families can provide immediate

avenues for the development of social capital (Berg & Huebner, 2009). Some families may be supportive and involved, other families may refuse to be involved, and some individuals may not want their families subjected to programming that is tied to their past criminal behavior (Braman & Wood, 2003; LaVigne et al., 2004; Naser & Visser, 2006; Nelson et al., 1999; Parke & Clarke-Stewart, 2003; Petersilia, 2003; Western et al., 2004). Efforts to involve one's external environment are also controversial. Post-modern criminological theorists have argued that such efforts extend the reach of punishment beyond the individual who was convicted of a crime to law abiding citizens¹² (Foucault, 1977; Simon, 1993; Wacquant, 2001; Wacquant, 2000).

Reentry programs and programming that utilize a social control emphasis assume that intervention can affect social bonds. The effect is largely driven by the assumption that interventions can provide exposure to sources of social bonds that may increase the quantity of subsequent bonds one possesses. The intervention may in and of itself serve as a social bond that can alter prior criminal behaviors (Laub & Sampson, 2003; MacKenzie & Brame, 2001; Palmer, 1994; Palmer, 1995; Sampson & Laub, 1993). There is some evidence to suggest that the bonding experience between participants and their service providers can enhance pro-social behavior modifications (MacKenzie & Brame, 2001; Palmer, 1994; Palmer, 1995), especially when paired with a quality social bond with one's correctional supervision agent (MacKenzie & Brame, 2001; McCleary, 1978; Nelson et al., 1999; Palmer, 1994; Palmer, 1995). These insights form a relatively

¹² The very notion of informal social control is Foucauldian. Informal social control assumes that social others will provide surveillance and informal punishments for non-normative behavior. These mechanisms of control become ingrained and are posited to control future behavior.

positive view of programming, which contrasts with the negative view of human nature inherently held by the theoretical perspective.

The feasibility of affecting social bonds through programming is not without question. Interventions may provide exposure to bonding sources and increase the quantity of bonds, but the development of quality social bonds is inherently subjective process and is contingent upon the interpersonal skills of an individual. By the theoretical tenants of the social control perspective, prisoners reentering society are expected to lack available social bonds that may have controlled prior criminal behavior¹³. Without a foundation from which to build, it is likely to be difficult to formulate a pro-social network.

The incarceration experience itself is also likely to constrain and damage the utility of one's existing bonds even if they are available prior to prison (Braman & Wood, 2003; LaVigne et al., 2004; Nelson et al., 1999; Parke & Clarke-Stewart, 2003; Petersilia, 2003; Western et al., 2004). Upon release, the pathway to building pro-social relationships does not become much easier. At the individual level, prisoners returning to local communities are likely to be poor, lack education, lack conventional social networks and ties, are disconnected from their families, have suffered abuses, and have substance abuse dependencies or histories (Maruna, 2001; Maruna et al., 2004a; Nelson et al., 1999; Petersilia, 2003; Travis et al., 2001). The communities to which they will return generally have few employment and conventional opportunities, easy access to drugs, high amounts of crime, increased law enforcement presence, and unforgiving

¹³ One of the many criticisms about the social control perspective is its tautological nature: an individual engages in criminal activity because they lack social bonds and an individual is criminal because they lack social bonds. The perspective can be used to explain future criminal behavior (i.e., onset) and explain continued criminal behavior (i.e., continuity or stability of behavior).

community members (Maruna, 2001; Maruna et al., 2004a; Nelson et al., 1999; Petersilia, 2003; Travis et al., 2001). Equally problematic is the stigma associated with a criminal record. Once in the community, individuals are systematically excluded from many activities that would provide access to conventional society and increase levels of social capital. The presence of criminal history records can hamper one's ability to obtain housing (Brooks et al., 2006; Grommon & Devitt, 2003; Helfgott, 1997; Maruna, 2001; Metraux & Culhane, 2004; Nelson et al., 1999; Pager, 2003; Pager, 2007; Petersilia, 2003; Roman, 2004; Travis et al., 2001; Visser & Farrell, 2005; Visser & Travis, 2003) or employment (Grommon & Devitt, 2003; Holzer et al., 2004; Nelson et al., 1999; Pager, 2003; Pager, 2007; Petersilia, 2003; Uggen, 2000; Visser et al., 2005; Western et al., 2001; Western & Pettit, 2005), limit domestic and international travel (Grommon & Devitt, 2003), and prohibit participation in civic duties (Nelson et al., 1999; Petersilia, 2003; Uggen et al., 2004; Uggen & Manza, 2004).

Social Development Emphasis

The social development emphasis of reentry programs and programming overlaps with the social control emphasis to an extent and there have been calls to integrate the two perspectives¹⁴ (Bottoms et al., 2004; Burnett & Maruna, 2004; Farrall & Bowling,

¹⁴ Calls for integration and the acknowledgment of the interaction between these two perspectives have been made in the growing literature on desistance. Desistance has been and continues to be an important consideration within corrections, criminal justice, and criminology as a whole. As a concept, desistance refers to the observation that most offenders will stop offending at some point in time (National Research Council, 2008; Laub & Sampson, 2001). In practice, there is relatively little knowledge on the mechanisms that can induce desistance, whether that desistance is defined as complete termination of criminal offending or short-term cessation of offending (National Research Council, 2008).

What is known about desistance is that it is an encompassing, longitudinal process that leads to a lessened frequency of offending (Laub & Sampson, 2003; Maruna, 2001; National Research Council, 2008; Loeber & LeBlanc, 1990). The focus is generally retrospective or bibliographic with assessments of offending frequency and variability across age-crime curves. Arrest, conviction, institutionalization, and the

1999; Giordano et al., 2002; Maruna, 2001; McNeill, 2006). Similar to social control, the social development emphasis is concerned with trajectories of behavioral change. The emphasis under the social control perspective is how the quantity, quality, and timing of social bonding opportunities and experiences insulate one from further criminal behaviors. By contrast, the social development perspective focuses on one's own self narrative, cognitive belief system, or identity. One will cease or reduce levels of participation in criminal behavior once one has cognitively convinced themselves that a criminal lifestyle is no longer the type of life they would like to live. Maruna et al. (2004a) suggested that this cognitive intra-individual change must occur prior to the development of pro-social bonds. As such, the social development perspective establishes some degree of temporal ordering by suggesting that intra-individual change must precede any efforts to induce pro-social change via program or programming intervention.

The social development perspective is largely informed by the work of Maruna (2001; Maruna et al., 2004a) and Giordano, Cernkovich, and Rudolph (2002). Maruna (2001) suggested that individual offenders must make the choice to change and accept a new crime-free lifestyle. The major difference between those who return to crime and

transition into the community are components of the broader desistance process and may or may not contribute to future offending.

At the same time, research on desistance involves more than just the actions and processing of the criminal justice system. Often the focus is on pro-social relationships and normative behavior. Immediate and extended family (Berg & Huebner, 2009; Haggard et al., 2001; Nelson et al., 1999), peer networks (Giordano et al., 2003; Warr, 1998), marriage (Giordano et al., 2003; Horney et al., 1995; Huebner, 2005; Laub et al., 1998; Laub & Sampson, 2001; Piquero et al., 2002; Sampson & Laub, 1993; Sampson et al., 2006), and employment (Berg & Huebner, 2009; Huebner, 2005; Sampson & Laub, 1993; Uggen, 2000) have all been identified as components of the broader desistance process that may lessen subsequent criminal activity. These components are directly related to the theoretical perspectives of social control and social development in addition to the literature on the age-crime curve. There is merit to theoretical integration, however, the current discussion seeks to highlight the inherent issues to any solitary focus

those who desist from future criminality are the scripts and sense of self that one creates. Borrowing heavily from the social-psychological concept of symbolic-interactionism (Blumer, 1969; Morris, 1962), the social development perspective assumes that individuals can manage their perceptions of self and their identity. Often this management of self perceptions is accomplished via the reciprocal relationship between an individual who affects and is affected by their larger social environment (Blumer, 1969). Those who are ready to desist develop and operate upon a sense of self that is good and conventional. The old criminal sense of self is shed. This process of active internal self change is opposed to perspectives that assume that individuals are passively molded by external social mechanisms¹⁵. Maruna (2001) does not argue that social mechanisms are unimportant. Those individuals who are ready to desist from offending identify with a particular community, group, or cause and attempt to contribute the most they can to their community, family, and group. The process of selective social identification can reinforce the new self and influence future behavior. What is important is the ordering of the process. Returning prisoners must first convince themselves that they are ready to desist before becoming integrated to the community.

(prior to and independent of integration). Moreover, the focal concern of the research is the reentry experience, which is a microcosm that may or may not shape the broader desistance process.

¹⁵ One area where literature on the social development perspective is particularly silent concerns the issue of reinforcement of criminal or offender status. Conditions of community based correctional supervision often include periodic meetings with supervisory agents, assorted tasks (e.g., drug testing, treatment referrals, etc.), and graduated sanctions for non-compliance (e.g., temporary confinement, tether placement, revocation center placement, etc.) that may reinforce one's status as being an offender. The social stigma of being an offender also serves as an important agent of reinforcement. The extent to which these external social mechanisms of status reinforcement influence the creation of a conventional identity needs to be developed and explored further, especially within a reentry context. Some of the available evidence suggests that criminal and conventional identities can be managed depending on the situation (Goffman, 1959; Goffman, 1963; Harding, 2003; Maruna et al., 2004b), but it is unclear how identity management interacts with reentry programs or programming to ease or hinder the transition process.

Giordano et al. (2002) elaborated the work of Maruna (2001) in their development of the theory of cognitive transformations. The focus is placed once again on the individual, with specific emphasis on human agency, and the reciprocal relationships one has with their larger social environment. Paralleling Maruna (2001), individuals specify relationships to form in their social environment to form a new identity. In seeking to change behavior, individuals become opportunistic by latching onto specific catalysts for change (conceptualized by the term “hooks for change”) (Giordano et al., 2002, p. 1000). Once these catalysts for change are identified, one must proceed through a process of internal cognitive change before behavioral change can follow.

Four elements of cognitive change are identified. First, an individual must be open and ready to change their identity and behavior. Second, an individual must perceive the opportunity for change as being worthwhile, salient, and meaningful. Giordano et al. (2002) argue that this element is one of the most important aspects of cognitive change. Openness to change needs to be followed by an inherent connection to an agent of change. Third, an individual must be able to shift identities by viewing oneself in a manner that will allow the old self to be disregarded. The final element of a cognitive transformation concerns the meaningfulness of criminal behavior. Once criminal behavior is viewed as being less positive, meaningful, or salient, the process of cognitive change may occur. In combination, these elements are assumed to produce cognitive changes that can affect behavior and future involvement in crime.

Reentry Implications of a Social Development Emphasis

In terms of implications for reentry programs and programming, the social development perspective provides a continuum of optimistic and pessimistic views on the

utility of intervention. For the former, the perspective suggests that interventions can serve as supplements in the process of change. Efficacious interventions should target the individual and their cognitive processes. The focus must be placed directly on identity change and only indirectly on behavioral change. Once cognitive transformation occurs, one can formulate a new identity or self, abide by pro-social self-narratives, shed old identities, and embrace a non-criminal lifestyle.

The task for reentry programs and planning is to develop methods of intervention that will modify cognitive capabilities, foster conventional self-narratives, and provide numerous role models in the immediate community that can be used as catalysts for cognitive change. Importantly, these efforts must be balanced against the active degrees of human agency and decision-making that individuals possess. Luckily, there is a foundation for cognitive change within the field of corrections. Numerous correctional interventions utilize cognitive-behavioral curriculums or variations of cognitive-behavioral approaches (Landenberger & Lipsey, 2006; Lipsey et al., 2001). A number of reviews have also found cognitive-behavioral approaches to be efficacious in reducing levels of relapse and recidivism (Landenberger & Lipsey, 2006; Lipsey et al., 2001).

The optimism in the utility of intervention is countered by the focus on human agency and its inherent relativity. In a pessimistic sense, the social development perspective can lead to implications of the relative futility of interventions. The decision to change is largely left to the individual independent of any external sources such as programming, life circumstances, or social environment. This decision is a personal and self-reflective question of existential being. Once again, the timing of change becomes a focal concern. If the decision to change is not made and ingrained into one's cognitive

thought prior to release and participation in subsequent interventions or programming, it is unlikely that an individual will benefit from such efforts. Alternatively, if an individual has made a cognitive effort to change their own self narrative, it is likely that the individual would desist or lessen their criminal behaviors by themselves even if intervention or programming is offered.

The social development emphasis assumes that interventions will largely have chance effects. Many of the issues contributing to these chance effects concern treatment amenability and self-selection that are conditioned by the relativity of human agency. To combat these issues, recent efforts have attempted to focus on readiness to change identification instruments, which have long been used for substance abuse treatment (Miller & Rollnick, 1991; Miller & Tonigan, 1996). These instruments can be used to identify individuals who may not be cognitively ready to make behavioral changes and refer the individuals to motivational interventions to increase treatment amenability prior to participation in treatment interventions (Checinski & Ghodse, 2004; Longshore et al., 2004; Miller & Tonigan, 1996; Taxman, 2008). These efforts to induce motivation may increase openness to treatment programming (Miller & Rollnick, 1991), but are not likely to produce comparable levels of motivation for individuals who desire to make cognitive changes without motivational interventions.

The social development emphasis challenges prevailing assumptions of equal and available opportunities for behavioral change via programming and intervention with the suggestion that change is much more variable due to the unpredictability of human agency (Giordano et al., 2002). The importance of the individual is brought to the forefront. Unfortunately, the emphasis on social development is not without limitation.

Giordano et al. (2002) have suggested that there may be differential effects of behavioral change influenced by cognitive transformations. Using qualitative interviews with female offenders, the researchers found that female offenders appeared to be more likely to change their behaviors via cognitive transformations, while a comparison group of males were more likely to change their behaviors via formal control mechanisms¹⁶. This finding also leads to questions of the assumptions of the social development perspective. Individuals may not be as individualistic as the perspective seems to suggest if findings can be interpreted by socio-demographic groupings.

Part of the problem and a cause for confusion is the infancy of the perspective. There is relatively little empirical evidence to support the perspective, which is likely due to the resources needed to longitudinally follow individuals and measure their personal self-narratives. The perspective has spawned and provided support for the methodological utility of life history or event history narratives (see Hepburn & Griffin, 2004; Horney et al., 1995), but it is still unclear if this approach is empirical or bibliographic (see Maruna et al., 2004a). If the narratives are more closely associated with the latter, concerns of ad hoc rationalizations become problematic.

Supervision Emphasis

The supervision emphasis of reentry programs is based upon the complex interrelationship between surveillance, deterrence, and accountability in community corrections. Supervision effects cannot be understood without consideration of surveillance mechanisms. Surveillance effects cannot be understood without

¹⁶ It is important to note that this finding in addition to the conceptualization of cognitive transformation led to the development of the theory of cognitive transformation that is often used by those who focus on the social development perspective.

consideration of deterrence mechanisms. In some instances the threat of punishment associated with being under surveillance is enough to modify behavior. In other instances, surveillance allows for the identification of undesirable behavior for which sanctions of punishments can be used to deter future manifestations of undesirable behavior.

Taxman (2005) argued that any discussion of correctional programming in the community must consider the generalized accountability model that underlies correctional supervision. This model is related to conditional releases that hold individuals to specific standards of behavior while under supervision. The supervisory term functions as a source of formal social control that constrains everyday liberties, structures daily activities, and holds an individual to a specific standard of conduct that is assumed to shape future behavior (Taxman, 2008). Akin to the perspective of routine activities theory (Cohen & Felson, 1979), the perspective suggests that involvement in crime can be shaped by conditions that change daily role and responsibility activities and affect opportunities for crime. It is hoped that once daily activities are constrained and structured, opportunities to partake in crime will be marginalized or greatly diminished.

The goal of behavioral accountability must also be balanced against the provision of services and ensuring public protection (Corbett, 2008). Supervisory terms can expose an individual to a number of agents of formal social control even if the terms are orientated toward the provision of needed services. For instance, substance abuse treatment conditions generally include drug testing conditions. Both of these services attempt to constrain daily activity and available free time, but are also thought to build pro-social skills and functioning through participation in treatment services. At the same

time, these supervisory term conditions can increase the risk for technical violation and re-incarceration if compliance with treatment and testing conditions are not met. The service providers responsible for treatment and testing can become sources of surveillance that can influence an individual's community supervision status (Foucault, 1977; Mobley, 2005; Simon, 1993).

Surveillance is a controversial issue within the field of corrections and the discipline of criminology and criminal justice as a whole. There are opposing viewpoints on the utility of surveillance policies and processes. On one end, some have argued that there are beneficial connections between programming that utilizes surveillance mechanisms in conjunction with the provision of social services (National Research Council, 2008; Petersilia & Turner, 1991; Taxman, 2008; Useem & Piehl, 2008). For instance, Corbett (2008) suggests that the field of corrections as a whole must move beyond the notion that individual change is contradictory to accountability through surveillance. The logic of the claims supporting the connection between the two correctional issues rests upon the presumption that the threat of surveillance can increase compliance with programming because it increases accountability for actions. Moreover, services can structure daily activities, provide meaning to daily activities, and act as a new source of informal surveillance that can reduce reliance on formal surveillance. Taxman (2008) argues that the blending of these features can make it possible to lower recidivism rates and most importantly, reduce levels of technical violations.

Others are far more pessimistic in their discussion of the marriage between surveillance and the provision of services. Increased attention to compliance of supervision terms can have the unintended effect of constraining the effectiveness of

treatment or intervention services (Lipton et al., 1975; National Research Council, 2008; Petersilia & Turner, 1991). Rosenfeld (2008) argued that rehabilitation through services possesses distinct policy objectives and is qualitatively different from surveillance and/or control through supervision. It is essential to keep services and supervision separate and observe their individual effects. When services and supervision are intertwined diverse outcomes may be observed.

In one of the most widely cited studies on the impact of supervision policies, Petersilia and Turner (1991; Turner et al., 1992) suggested that intensive correctional supervision efforts absent of treatment can lead to increases in technical violations. The finding was unexpected and suggested that intensive supervision increases levels of surveillance and re-incarceration (rather than decreasing levels of re-incarceration as originally expected). Despite these overall findings, Petersilia and Turner (1991) suggested there may be some degree of differential effects when considering the partnership between enhanced supervision and treatment services. The researchers found that enhanced supervision paired with treatment reduced levels of recidivism. However, this partnership had relatively no effect on ameliorating increased levels of technical violations associated with enhanced supervision.

The supervision orientations of community correctional agents may also affect the transition process. Orientations adopted by agents may determine how surveillance is used. Research suggests that philosophical orientations of service can affect the progress of individuals under correctional supervision (Clear & Latessa, 1993; Glaser, 1969; McCleary, 1978). Paparozzi and Gendreau (2005) found that parole agents who

identified themselves as punishment orientated were more likely to issue technical violations relative to those agents who identified themselves as service orientated.

The relative value of deterrence mechanisms associated with correctional supervision is also controversial and is equally split into opposing viewpoints. Correctional interventions are largely grounded under the philosophies of deterrence and incapacitation (MacKenzie, 2006). The threat of punishment is thought to induce compliance with supervision terms and lead to normalized behavior through formal agents of control. Punishment is most often assumed to be effective when viewed as legitimate and possessing some degree of certainty, swiftness, and commensurability. If these dimensions of punishment are not present, it is likely that the deterrent value of punishment will be lost.

Many of the arguments for or against the value of deterrence are based upon the calculation of risk. Deterrence overtly or inadvertently assumes that individuals will be deterred by the rational calculation of risk where the punishment can outweigh the perceived benefits of criminality. However, the notion of pure rationality is largely mythical. The literature suggests that individuals function under bounded or constrained rationality that is influenced by one's immediate socio-structural situation (Hechter & Kanazawa, 1997). As such, some degree of relativity must be considered when determining the merits of rationality.

Reentry Implications of a Supervision Emphasis

Reentry programs and programming that utilize a supervision emphasis shift the focus away from the individual or the individual's immediate social context. Instead, the focus of the intervention is placed on the role of the criminal justice system in general

and the functionality of correctional agencies specifically. It is assumed that the modification of supervision terms and the intensity of supervision can induce individuals into compliance, whether that compliance involves meeting supervision term orders or meeting the requirements of service provision. It is important to note that the supervision determinations are out of the control of the individual and are driven largely by organizational decision-making.

Reentry programs and programming recognizes the importance of supervision, since supervision and the generalized accountability model is a foundation of corrections. The task for reentry programs and programming is to determine the balance that is needed between agency supervision needs and liabilities versus the provision of services. Reentry programs and programming that relies too heavily on deterrence based punishment orientations are likely to have marginal or unintended consequences that can hinder the process of transition and constrain attempts to adopt pro-social lifestyles. Ideally, supervision policies and intensity in reentry programs and programming should focus on service provision, partnered assistance, and advocacy with an understanding that non-compliance with supervisory terms is a part of the transitional process, not a final event (National Research Council, 2008). The difficulty in meeting this ideal is the organizational need of ensuring public safety for the broader community and maintaining individual accountability.

Transitional Emphasis

The transitional emphasis of reentry programs and programming is the foundation of nearly every available model of reentry. The emphasis is largely gleaned from propositions of strain theory and the consistent finding of elevated risks of recidivism

during the first 6 to 12 months after release from an institution. It is the transition from structured and confined daily life within an institution to unstructured life in the community that involves a period of stressful adjustment that can place individuals at risk for recidivism. The stress of transition becomes salient, which can lead to reversions to past criminal behavior.

The strain theory perspective implicitly centers on the dissonance between social goals and the means to achieve such goals (Agnew, 1992; Bernard, 1984; Cloward, 1959; Cloward & Ohlin, 1960; Cohen, 1955; Kornhauser, 1978; Merton, 1968). This dissonance may be at the societal level, where the structures within society fail to provide the legitimate means to reach conventional goals, or at the individual level, where individualized feelings of stress (or variants of stress such as frustration, anxiety, worry, depression, and anger) due to societal strain can be associated with criminal activity (Cullen, 1988). In attempting to reach a predefined societal goal, individuals can utilize a number of methods based largely upon the available opportunities one possesses as well as those available within their immediate social environment (Cloward & Ohlin, 1960). Some of these methods will be consistent with dominant ideologies and norms, while other methods will challenge the status quo and utilize non-conformist means to achieve socio-cultural goals (Agnew, 1992; Cloward, 1959; Merton, 1968). The factor that can guide an individual towards one method of achieving goals over another is the degree of stress or strain an individual is subjected to in their attempt to reach societal goals.

Merton (1968) suggested that individuals commonly utilize five methods of adaptation that can be used to minimize the amount of stress or strain experienced in attempts to reach goals. Adaptations describe individualized decisions on how to react to

stress and strain (Merton, 1968; Vold et al., 2002). They do not describe typologies of individualized personality. Individuals may also choose to partake in a single adaptation or they may simultaneously utilize a number of adaptation strategies. The five methods of adaptation include conformity, innovation, ritualism, retreatism, and rebellion.

Conformists accept the goals of society and use dominant ideologies and norms to meet the goals of society. Innovators accept the goals of society, but develop their own methods to meet the goals of society. Merton (1968) suggests that most crime that occurs in society is due to innovation, where the end goal justifies the means of attainment. Ritualists accept the fact that the obtainment of societal goals is generally unattainable, but continue to use dominant ideologies and norms as methods to strive for the obtainment of goals. Retreatists chose not to participate in attempts to achieve goals nor do they participate in the conventional ideologies and norms used by conventional members of society. Merton (1968) identifies individuals with severe substance abuse problems as retreatists since their drug use is an adaptation to and an escape from participation in society. Rebellionists reject the conventional goals of society altogether and substitute their own goals and means of attaining those goals. By rejecting any and all conventional goals, individuals who adapt to society by rebellion function as a subculture with their own conventional goals, ideologies, and norms (Cloward & Ohlin, 1960).

When faced with stressful situations or life circumstances there is an increased likelihood of participation in criminal activities (Agnew, 1992; Cloward & Ohlin, 1960; Merton, 1968), especially for those who have been previously processed through the criminal justice system and institutionalized (Irwin, 1970; Mobley, 2005; Travis et al.,

2001). The danger among those who will be transitioning into the community is the reversion to past behavioral short cuts that may have contributed to entry in the criminal justice system. The initial optimism of being transitioned into the community is quickly met with the realities of everyday life (Nelson et al., 1999). Stress, strain, and unmet expectations can come from multiple sources all at one time immediately following release. The necessary adjustment and relative shock of community life upon transition from an institution has been associated with the elevated rates of recidivism that occur within the first year after release (Zamble & Quinsey, 1997).

Gleaning from Maslow's (1943) hierarchy of needs, physiological needs of food and water are necessary and are followed by the safety needs of clothing, shelter, employment, and generalized mental and physical well-being with or without the assistance of social services. On top of the procurement of these needs, is the management of social and interpersonal relationships. Most pressing are the relationships with family members (Braman & Wood, 2003; Irwin, 1970; LaVigne et al., 2004; Naser & Visser, 2006; Nelson et al., 1999; Parke & Clarke-Stewart, 2003; Petersilia, 2003; Travis et al., 2001; Western et al., 2004; Zamble & Quinsey, 1997), peers (Irwin, 1970; Taxman et al., 2002), treatment or service providers (Nelson et al., 1999; Palmer 1994; Palmer, 1995; Petersilia, 2003), correctional supervision agents (Clear & Latessa, 1993; McCleary, 1978; Glaser, 1969; Nelson et al., 1999; Palmer, 1994; Palmer, 1995; Petersilia, 2003), employers (Brooks et al., 2006; Helfgott, 1994; Nelson et al., 1999; Pager, 2007; Travis et al., 2001; Visser & Farrell, 2005), roommates or landlords (Brooks et al., 2006; Travis et al., 2001; Visser & Farrell, 2005), community institutions (Brooks et al., 2006; Nelson et al., 1999; Travis et al., 2001; Uggen, 2000; Visser & Farrell,

2005), and members of the community at large (Brooks et al., 2006; Nelson et al., 1999; Travis et al., 2001; Visser & Farrell, 2005).

Reentry Implications of a Transitional Emphasis

Reentry programs and programming have recognized the importance of lessening the compounded stressors an individual faces upon release into the community. There is an attempt to minimize the stigma associated with incarceration and reconnect an individual with their larger social institutional relationships in the community.

Interventions that utilize the transitional emphasis tend to focus on comprehensive pre-release planning and the continual maintenance and adjustment of reentry plans in an effort to minimize the strains of what will be faced during the transition process. Service programs and programming are subcomponents of the transitional emphasis and are overshadowed by efforts to plan for the future and adjust plans in accordance with progression in meeting the pre-determined goals.

The transitional emphasis recognizes that all of the other theoretical emphases do not occur in a vacuum. All of the emphases overlap and interact with one another immediately following release and across prolonged periods of adjustment to community life. There is a presumed variability with how each emphasis will affect individuals. Planning efforts must consider the strengths and weaknesses each individual has across the theoretical emphases of social control, social development, and supervision.

Key to the process of planning is ensuring the continuity of services if and when services are needed. It is expected that planning efforts coupled with service continuity will increase levels of stability by structuring daily activities and also hold individuals accountable to meeting the goals outlined in reentry plans. Reentry programs and

programming have begun to restructure the process of transition by placing more emphasis on planning for release upon admission to an institution, rather than providing preparatory sessions on what to expect during release weeks prior to release.

Risk and need assessment instruments are used to develop individualized plans. These plans are intended to be comprehensive and can cover deficits in housing options, employability background, familial relationships, peer relationships, and the possession of necessary identification documentation (e.g., birth certificates, social security cards, driver's licenses, or state identification cards). Moreover, these plans attempt to identify those who will need intensive treatment services within the institution and, depending on progress within the institution, those who will need similar intensive treatment services in the community upon release.

Individualized planning once again places the focus back on the individual and their immediate social environment. Since each individual has a unique background with deficits and assets to build from, comprehensive planning should aid the transition process. There are some correctional sub-populations – such as those with severe substance abuse histories and dependencies – that have an assortment of deficits that can hinder the transitional process due to the potential for stress induced relapse, which can contribute to recidivism (National Research Council, 2008). One size fits all planning for this population is likely to cause more harm than good. As such, there is an expectation that differential effects on relevant correctional indicators such as recidivism as well as reentry-based indicators such as housing and employment should be expected since reentry plans can vary on a case by case basis.

However, the individuality of planning is often relative. In an effort to standardize across sub-populations and increase efficiency in formalizing reentry plans, many state correctional systems are developing new methods or modifying old methods of actuarial reentry assessment¹⁷. The use of and reliance upon actuarial instrumentation is not without controversy (Feeley & Simon, 1992; Mears et al., 2008; Petersilia, 2003; Simon, 1993). The assessments are designed to minimize the potential for differential effects between individuals who are identified to receive specific forms of intervention. As such, the assessments can be of assistance to offenders who need intervention. At the same time, however, the assessments have the unintended ability to prevent those who may be most in need of intervention from gaining eligibility for participation by design, external circumstances, and conditional overrides by service providers (Feeley & Simon, 1992; Useem & Piehl, 2008).

One of the largest hurdles for reentry programs and programming that attempt to emphasize the process of transition is following through with the implementation of comprehensive transitional services. The current discussions on the provision of transitional services are more ideal than practical. Very few, if any, state correctional systems have established reentry based services despite the wide acceptance of the available reentry models by correctional administrators and policy makers (National

¹⁷ For instance, the Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) has been increasingly used for assessments of reentry needs and risks, although the assessment was not originally designed specifically for reentry determinations. COMPAS has been used to manage risk, offer suggestions for intervention targets and types, and provide assessment and feedback on progress in behavioral change (Brennan & Oliver, 2000). The assessment has been validated (Brennan et al., 2009; Brennan & Oliver, 2000; Fass et al., 2008), but there is some question as to whether the instrument is applicable to racial and ethnic sub-populations (Fass et al., 2008). The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) has been validated with participants in substance abuse treatment (Miller & Tonigan, 1996) and is being extended for use with offenders nearing release in some states. The scale has yet to be validated specifically for reentry purposes. It is likely that these instruments, and similar

Research Council, 2008). Many have suggested that the degree of organizational change – both in terms of structure and prevailing philosophies – required to truly shift focal concerns towards reentry will take a number of years and may not even be feasible (Clear, 2007; Lynch, 2006).

Adding to these limitations are evaluative and empirical concerns. The transitional emphasis of reentry programs and planning attempt to be as comprehensive as possible and include a number of dimensions directly or indirectly related to the process of transition. The comprehensiveness of the transitional emphasis makes it difficult to parcel out and determine specific effects that influence relevant programmatic outcomes and inform future reentry programs and programming. These characteristics have also contributed to the overall lack of empirical evidence on the efficacy of reentry. An emphasis on transition suffers from black box deficits in understanding since the process between the identification of program participants and the production of relevant program outcomes cannot be made with much confidence¹⁸. One can often claim that something happened and speculate to a number of potential explanations.

Theoretical Insights across Emphases

Each theoretical emphasis suggests points of programmatic intervention that are hypothesized to reduce or eliminate criminal behavior – the quantity and quality of social bonds, cognitive amenability and transformation, supervision experience and quality, and

applied instruments, will be used as additional sources of information that can aid in the reentry planning process rather than being stand-alone reentry assessments.

¹⁸ The “black box” issue of program evaluation is especially problematic within the field of criminal justice (see McGarrell et al., 1999; Weisburd, 2000). Many evaluative efforts are made for large-scale interventions involving numerous components and dimensions, which makes it difficult to determine the specific program processes that contributed to program outcomes (Lipsey & Cordray, 2000; McGarrell et al., 1999; Rossi et al., 2004).

the minimization of transitory strain. In turn, a focus on these various intervention points is assumed to ease the process of transition and reentry programs that incorporate these intervention points may produce beneficial reentry effects for participants. The key question that has yet to be answered (and the key assumption that has yet to be tested) is whether programmatic responses can reach and affect the points of intervention suggested by the theoretical emphases.

The positivist assumptions that underlie social control, social development, and transitional theoretical emphases support the use of interventions to produce behavioral change (Byrne & Taxman, 2005). Each of the emphases places a focus on individual amenability and provides direction to areas of program intervention (Harris, 2005). The supervision emphasis also rests largely upon positivist assumptions, but it is not in line with the use of traditional intervention methods (via programs and programming) to modify behaviors. Instead, the focus is placed upon the efficiency and effectiveness of organizational supervision policy and practices.

The social development emphasis also conflicts with positivist assumptions. Maruna (2001) has argued that the social development approach should be viewed as being a critical response to the “what works” perspective whose focus concerns the design and use of programming. In fact, the social development emphasis has been built upon observations that individuals can change and terminate their trajectories of criminal behaviors without interventions or programming.

It may be too simplistic to focus on the merits of one theoretical emphasis over another. Prisoner reentry is complex and is likely to be affected by an assortment of theoretical combinations. Effort must be placed on determining the value of integrating

the theoretical emphases since there is a necessary overlap and interaction between all of the emphases. Currently, the transitional emphasis appears to be the preferred reentry program model structure since the emphasis encompasses all of the other theoretical perspectives. Due to its model preference in the field, the most promising avenue for the development of theoretical knowledge on reentry and the application of such knowledge should begin with the transitional emphasis. The integrative framework inherent to the emphasis suggests that programmatic interventions should minimize levels of stress or strain for participants, expose participants to formal and informal sources of social bonds, and foster participant self-development through cognitive change. All of these points of intervention would be subsumed under the auspices of supervision.

The presumed integration and interaction of theoretical approaches across emphases is made regardless of contradictory focuses and underlying assumptions. Social control and social development approaches are compatible with one another; the development perspective is an elaboration of the control perspective (Bottoms et al., 2004; Burnett & Maruna, 2004; Farrall & Bowling, 1999; Giordano et al., 2002; Maruna, 2001; McNeill, 2006). The supervision emphasis is based upon efforts to control through surveillance and deterrence mechanisms by agents of formal social control. As such, arguments can be made that the supervision emphasis is also congruent with social control and social development emphases with a focus on control mechanisms.

However, a complete picture of how social control mechanisms shape identity formulation and how identity management affects social bonding during the transition process has yet to be established. Additionally, it is still not clear how the strain focus of the transitional emphasis can be integrated into the remaining emphases or if the focus

can be integrated at all. It may be possible that the strain emphasis functions as a mediator or moderator that shapes social control, social development, and supervision emphases and exacerbates or minimizes the difficulties faced upon the transition into the community.

There is promise to the existing theoretical emphases and the potential integration of the emphases. According to Petersilia (2004), reentry should work in theory. There is little doubt that nearly all of the theoretical emphases suggested by Lynch (2006) have some degree of empirical support in affecting criminogenic behavior. What is not clear is whether these theoretical perspectives can be directly applied to reentry programs. There is simply too little empirical evidence to suggest, at this point in time, that any one of the theoretical perspectives associated with reentry would be any more effective than any other effort. This observation is damaging since reentry programs will continue to be developed and implemented without a firm theoretical foundation.

From Theory to Practice: Research on Prisoner Reentry

What is empirically known about the process of reentry is marginal at best. Maruna (2001) argued that reentry is the least understood phenomenon in corrections, adding that the “enormous difficulties faced by ex-convicts after release have been consistently and extensively documented for the past 100 years, [but] the mechanisms for ex-offender reintegration have not improved greatly in that time” (p. 70). In some regards, this should be expected. It is difficult to discuss the average transition when there is such a wide degree of heterogeneity to the reentry experience (National Research Council, 2008). However, with millions of taxpayer funds being invested into efforts to assist in the transition into the community, the continued progression of uninformed

programs may not be the best use of available funds and can produce more harm than good.

The most direct avenues for the development of theory and research on reentry have been qualitative in nature. For instance, Nelson, Deess, and Allen (1999) followed a small group of released prisoners in an effort to observe first month post-incarceration experiences and identify some of the dimensions that can affect the process of transition. The researchers concluded that the most important determinate of reentry success was family and community support. Nearly all of the released prisoners chose to reside with their families and were perceived to be welcomed to stay there. Simple bivariate analyses suggested that those who resided at shelters were far more likely to abscond during their first month on parole. Employment was difficult to obtain, but many found employment opportunities through family, friends, or the reconnection with old employers. By far the most important challenge faced during the first month was the obtainment of identification and insurance (needed for substance abuse treatment). One of the more interesting findings was the relative shock the parolees faced during their first few days out. The released prisoners expected their parole officers to assist them in finding employment or with employment referrals, however were disappointed to find out that parole officers did not provide such services.

The Urban Institute has also provided a great deal of information regarding reentry. Research conducted by the Urban Institute generally falls into three frameworks. First are reentry focus groups. Brooks et al. (2006) arranged a focus group of residents from communities with high concentrations of returning prisoners to assess their perceptions of reentry. Residents acknowledged that returning prisoners had a number of

social deficits that require supportive families and competent parole officers. The residents also suggested that prisoners were ill prepared for reintegration into the community. A number of services were available in the community, but the process of providing information to begin participation in services was not provided to the prisoners. Some services, such as job training and placement, are not offered. The residents also seemed to realize that their community was undergoing substantial change independent of the movement of prisoners into the community. Economic downturn, the loss of community values and responsibility, drugs, and violence were identified as some of the most recent changes to the local community. Elected officials were perceived as being unconcerned with prisoner reentry. In all, this type of information contributes to a social-psychological understanding of reentry by placing the focus on the reactions of the broader social environment to transitional issues.

Second and third lines of research conducted by the Urban Institute were city and state profiles of returning prisoner populations (LaVigne et al., 2003; Solomon et al., 2004b). The research generally discussed demographic and criminal history information for the entire population of returning prisoners and the concentrations of areas to which they return. Census data generally accompanied the information to highlight the structural disadvantage that exists in the areas to which prisoners return (LaVigne et al., 2003; Solomon et al., 2004b). The city profiles also included additional information that is often not found in the state profiles. Visser and Farrell (2005) surveyed returning prisoners, residents from communities with high concentrations of returning prisoners, and reentry administrators and practitioners to develop insights on the reentry process in one major city. All of the respondents emphasized the important role of the local

community in their discussion of reentry. Returning prisoners suggested that some neighborhoods had more opportunities (e.g., housing, employment, social services) than others. Overall, the returning prisoners were content in their neighborhood, but were having a difficult time finding employment. Additionally, their neighborhood of residence after prison was often not the same neighborhood prior to prison admission. Residents and reentry stakeholders noted that the local neighborhood provides important social control functions. Families were again seen as being the key to a successful transition. Additionally, there was a continued emphasis on the fact that communities are unprepared for the population of returning prisoners and lack essential transitional services.

Knowledge on reentry dimensions serves an important purpose by identifying the challenges to reentry that can affect the process of transition. Unfortunately, the focus on identifying dimensions has yet to be translated into practical application. It is still not clear how the miscellaneous reentry dimensions affect reentry programs or programming and how the interactions between the two can affect the overall transition experience. Equally important, it is still not clear how specific reentry dimensions affect other relevant reentry dimensions to shape transitional experiences. Many of these issues have not been resolved (or even attempted). The available evidence that could inform these issues – largely from reentry program or programming evaluation – is virtually non-existent.

There is some evidence to suggest that research is beginning to move toward considerations of the interrelationships between reentry dimensions and programming. The Urban Institute has partnered with the Research Triangle Institute (RTI) International

to conduct a multi-site evaluation of the Serious and Violent Offender Reentry Initiative (SVORI). SVORI established a pool of federal funds (approximately \$110 to \$150 million) to be dispersed to state and local correctional agencies to assist with the development and/or expansion of reentry programs in the early 2000s (Lattimore et al., 2004; Lattimore et al., 2005). Each state received at least one award disbursement, with awards ranging in value from \$500,000 to \$2 million across three years (Lattimore et al., 2004). States and localities were largely left to their own accord in how the funding should be used, but there were some requirements associated with the receipt of funding. All of the grantees were required to form partnerships between criminal justice and community agencies, establish continuity of services within the institution that extends to the local community, and specify service deficits the initiative may ameliorate (Lattimore et al., 2004). Additionally, grantees were encouraged to focus upon their most serious populations under the age of 35 and were able to use discretion to select those most at risk (Lattimore et al., 2005; Lattimore & Visser, 2009).

Early process evaluation findings impart the heterogeneity of participants and programming involved in SVORI and reentry in general. A majority of the established programs did not include exclusionary criterion for participation by offense type or service need and most serviced less than 100 participants (Lattimore et al., 2004; Lattimore et al., 2005). Additional substantive problems with eliciting participants were the establishment of a variety of voluntary reentry programs and operational deficits related to the accuracy of release information and dates (Lattimore et al., 2005). Nearly all of the established programs included multiple components including, but not limited to, assessment, plan development, housing assistance, employment or educational

training assistance, substance abuse treatment, mental health counseling, medical or dental services, and faith-based services (Lattimore et al., 2004). Most of the established programs also utilized some form of case management and service coordination to enhance continuity of care (Lattimore et al., 2005). The established programs generally included similar components, but the components themselves varied from program to program (Lattimore et al., 2005).

In terms of process evaluation results on service delivery, Winterfield and colleagues (2006) suggested that few SVORI participants received a full dose of services within their reentry program. Moreover, comparison groups of individuals were just as likely to receive similar services through institutional and community supervisory services as SVORI participants. However, the preliminary findings on service delivery suggested that SVORI participants were more likely to receive more types of services in an overall package of services than a comparable group of individuals. On average, SVORI participants received substantially more coordination services and employment, education, and skill development services. These differences persisted when the analyses were constrained to comparisons during institutional and community-based service deliverables. Considering the findings regarding dosage, there appeared to be differential effects between SVORI and non-SVORI participants that may be largely due to increased exposure to specific types of services.

Unfortunately, at this time, the outcome evaluation of SVORI has yet to be completed (Lattimore & Visser, 2009). Lattimore and Visser (2009) have provided preliminary results that suggested positive, but small, differences in employment outcomes for SVORI participants across 3, 9, and 15 month follow-up intervals.

Participants were slightly more likely to support themselves with a job that was permanent, and included formalized pay periods with benefits. It is noteworthy that the most dramatic positive differences in employment considerations for participants were for the obtainment of a job with benefits across all follow-up periods and the supporting of oneself with a job 15 months post-release. By implication, these preliminary findings suggest important employment differences that have the potential to lead to gains in health and social capital over time.

What is still lacking from the outcome evaluation of SVORI is information on program processes. Specifically, there is still a need to determine how program processes influence and are influenced by dimensions of reentry, such as the gain or loss of housing and/or employment. Once these determinations are made, there is still a need to determine how the interrelationship of program processes and reentry dimensions contribute to program outcomes. Simple exposure to a number of services may produce beneficial outcomes for participants relative to non-participants, but this narrowed viewpoint fails to provide insights about specific services that may be more efficacious than others in easing the transition process and reducing levels of recidivism, which can be used to inform future reentry programs or programming. Unfortunately, nearly all of the available research on reentry programs and programming suffers from similar deficits in acknowledging program processes.

Wilson and Davis (2006) discussed a randomized evaluation of a reentry program in New York. The program followed the structure of many posited reentry models and has received the title of being the only empirically assessed contemporary prisoner reentry program to date according to the National Research Council (2008). The

comprehensive program included a phased transition process that began upon entry to an institution and continued through release and post-release supervision. Initial assessments were made, programming on responsibility, reconnection with family and friends, and life skills training were offered, and attempts to establish connections with family, friends, employers, community organizations, and parole staff were conducted eight weeks prior to release. Programming was largely cognitive behavioral, emphasizing the modification of thinking and behavior, and was multimodal. Additional components of the program provided job training and placement for interviews, made efforts to keep individuals away from shelters, provided relapse prevention programming provided for those with substance abuse problems, and offered family counseling when necessary. Life skills training included lessons on practical considerations such as public transportation, budgeting, banking, and time management.

Accredited clinicians provided most of the programming services. A community coordinator was utilized to network individuals with community service providers. A case manager was also assigned to each individual. The case manager had the responsibility to schedule release plans for individuals to follow, documented progress and adjusted plans as needed. All of the information gained from program staff was shared with an individual's supervision agent.

One year post-release outcomes indicated that program participants had more referrals and service contacts than comparison groups. However, program participants were more likely to be arrested and more likely to be arrested for more serious crimes relative to comparison groups. There were some indications of individual and program effects. Younger individuals with lengthier criminal histories convicted of drug or

property instant offenses had increased probabilities of re-arrest. Certain case managers who provided programming services were also associated with increased risk of failure.

In explanation of the unexpected findings, the researchers suggested difficulties in the haphazard and subsequent random assignment process, issues of program design, and problems in program implementation as factors leading to negative outcomes for program participants. Marlowe's (2006) assessment of the findings suggested that the program relied on cognitive-behavioral, family reunification, and employment service programming that was found to be ineffective or lacked evidence of effectiveness across a number of independent studies and meta-analyses. In turn, the transitory "kitchen sink" approach most likely interacted with a population of offenders who have already been exposed to a number of superficial programs, which then produced outcomes more negative than those to be expected with no programming. Rhine et al's (2006) assessment of the findings placed emphasis on the failure to implement the program model and the inability to maintain program integrity.

Nearly all of the critiques of the work and findings of Wilson and Davis (2006) emphasized the realization that there is little theoretical or practical knowledge available from which reentry programs or programming can build upon. The current state of knowledge appears to be more of selective choosing from prior correctional discourses that may or may not be consistent with the prevailing definitions of reentry or the reentry process (including but not limited to such discourses as rehabilitative ideal/amendable to intervention, nothing works, intensive supervision, what works, and reintegrative/desistance). Even with the marginal and largely negative outcomes, there are lessons to be learned concerning program processes that can be used to inform future

programs and programming (Rhine et al., 2006). Of critical importance is the identification of key obstacles that may have contributed to negative program outcomes. While yet to be examined in the literature, it is likely that salient sub-dimensions of reentry such as housing, employment, and substance abuse treatment can directly and indirectly affect programming, which also shapes program outcomes.

It is also worthwhile to note that it is equally important to develop and utilize stringent research designs and evaluation methods for research on reentry programs or programming. Reliable and valid outcomes are needed in the current era of reentry research that is still in its infancy (Useem & Piehl, 2008). Very few correctional programs or programming have been subjected to formal evaluation (Lattimore & Visher, 2009; Petersilia, 2003; Petersilia, 2004; Wilson & Davis, 2006). Even fewer of those programs or programming that have been subjected to formal evaluation have been designed using quasi-experimental or experimental designs (Lattimore & Visher, 2009; Petersilia, 2003; Petersilia, 2004; Wilson & Davis, 2006). This is an unfortunate situation that continues to add confusion to the design and implementation of reentry efforts as well as the interpretation of program processes and outcomes.

Even though knowledge on reentry programs and programming is still in its infancy, there are valuable implications that can be made to inform future reentry programs and research. First, the reentry experience is heterogeneous. An average pathway of transition does not exist across individuals or within offender types and one should expect differential effects when considering the reentry process. Second, there may be beneficial program effects with regard to specific reentry dimensions despite observations of null or negative overall program outcomes on recidivism. The limited

evaluations of reentry programs seem to suggest that participants make favorable gains in the reentry dimensions of housing, employment, and treatment exposure or participation relative to individuals experiencing traditional transitional services (Lattimore et al., 2004; Lattimore et al., 2005; Lattimore & Visser, 2009; National Research Council, 2008; Wilson & Davis, 2006; Winterfield et al., 2006). There is a need to determine why positive gains in reentry dimensions somehow lead to marginal program outcomes. Specifically, there is a need to explore how specific reentry dimensions can interact, shape program process, and contribute to overall program outcomes. In order to further this research agenda, it is necessary to explore some of the most salient dimensions of reentry – housing, employment, and treatment (specifically substance abuse treatment).

The Salient Sub-Dimensions of Reentry: Housing and Employment

Two of the most important dimensions found in the literature and one of the most pressing needs immediately following release into the community are those of housing and employment (Brooks et al., 2006; Helfgott, 1997; Lattimore et al., 2004; Mallik-Kane & Visser, 2008; National Research Council, 2008; Petersilia, 2003; Rosenfeld, 2008; Taxman et al., 2002; Visser & Farrell, 2005; Visser & Travis, 2003). Housing and employment are generalized needs, often applicable to all offender types. Both of these reentry dimensions can provide structure to and enhance stability of everyday life, while the inability to obtain either of the dimensions places one at risk for continued criminal behavior (Andrews & Bonta, 2003; Petersilia, 2003; Visser & Travis, 2003). Moreover, both of these dimensions necessitate a reciprocal and interactive relationship with one another. The obtainment of housing can stabilize and direct employment options, while the obtainment of a job can stabilize and direct housing options. Once these two

dimensions are in place, the obtainment and development of additional reentry dimensions (e.g., personal documentation, medical coverage, food stamps and other assorted benefits, enrollment and admission to treatment programs, participation in community based services) can occur.

Considerations of housing and employment introduce a degree of humanism into correctional policy and practice. As Rosenfeld (2008) acknowledged, housing and employment issues surrounding reentry programs and policies should not be considered enhancements of public safety or control efforts. Rather, these issues should be considered because individuals experiencing the transition from prison to the community lack housing and employment. Efforts to enhance housing and employment options or opportunities should be made to produce gains in social capital (Clear, 2007; McGarrell et al., 2005). These gains can be re-invested into the local community and improve the overall worth of a geographic area and society as a whole.

The Sub-Dimension of Housing

The obtainment of suitable housing is a key concern that can assist those transitioning into the community from staying out of prison (Brooks et al., 2006; Helfgott, 1997; Metraux & Culhane, 2004; Petersilia, 2003; Visser & Farrell, 2005; Travis et al., 2001; Visser & Travis, 2003). The relevance of housing is particularly acute since it is the very first issue faced prior to and immediately following entry into the community. In general, conditions of community-based correctional supervision require pre-determination assessment and approval of residence placement prior to release into the community. The approval of placement is a relatively simplistic process, with most placements being accepted as long as generalized conditions are met (e.g.,

homeowner or tenant approves of residence, residence is drug free, weapons are not easily accessible, individuals with felony convictions do not reside within the residence, etc.). The leniency that surrounds placement approvals is largely due to the notion that an identified placement is preferred over placements to homeless shelters or the streets.

All of those returning to local communities have been detached, for some period of time, from their local neighborhoods, which makes it that much more difficult to establish connections in the housing market (Roman, 2004). Many of those transitioning into the community lack the monetary and social resources necessary to compete in the housing market and obtain immediate housing (Metraux & Culhane, 2004; Roman, 2004; Wilson & Davis, 2006). The stigma of having a criminal record exacerbates housing difficulties (Pager, 2003). There are a number of laws that prevent individuals with felony records from residing in public housing or assisted/subsidized housing units as well as with family members or peers with criminal records (Helfgott, 1997; Lattimore et al., 2004; National Research Council, 2008; Pager, 2003; Roman & Travis, 2004; Solomon et al., 2004a).

Transitional housing services and programs are not widely available (Latessa, 2004; Roman, 2004; Roman & Travis, 2004). Many of those transitioning to the community expect such services and become frustrated when they are not available or when the knowledge of such services is not provided by correctional supervisory staff (Nelson et al., 1999; Roman & Travis, 2004). If available, the housing services and programs are not always safe and are commonly located in crime ridden areas devoid of social capital (Metraux & Culhane, 2004; Wilson & Davis, 2006). Even if relatively affordable housing can be obtained, there is evidence to suggest that the established

residence will likely be located in areas similarly situated with high levels of crime and marginalized social structures (Brooks et al., 2006; Clear et al., 2005; Visser & Farrell, 2005).

There is a relatively common “not in my backyard” attitude held by community residents towards the potential or actual residence of offenders in their neighborhoods (Visser & Farrell, 2005). It is likely that returning offenders will be relatively concentrated in a specific area and will return to neighborhoods that are structurally similar to areas resided in prior to incarceration (Clear et al., 2005; Visser & Farrell, 2005). In combination, these issues systematically push and keep offenders in low-rent and socially disorganized neighborhoods on the periphery (National Research Council, 2008). These areas commonly suffer from prominent and entrenched drug markets, which increase risks for recidivism or re-incarceration (Visser & Farrell, 2005). The low capacity for social control, collective efficacy, and resource potential in these areas drastically limits the availability of services and marginalizes opportunities for upward mobility and potential gains in social capital (Wilson, 1996; Wilson, 1990).

The limited housing options generally lead to a reliance on family members or peers to assist with living accommodations. Very few individuals live by themselves (Jacobs & Western, 2007). Most live with relatives, parents, spouses, or partners (Jacobs & Western, 2007; LaVigne & Kachnowski, 2003; Nelson et al., 1999; Roman & Travis, 2004). These members are often the first to provide assistance and serve as a reliable source of support for initial monetary and housing needs (Brooks et al., 2006; Nelson et al., 1999; Roman & Travis, 2004). There is a wide degree of variability in the stability of housing with family members. For some, familial housing will be long term and enhance

stability while under correctional supervision, while for others familial housing will be short term due to past and current stressful family circumstances or relational strains (Mallik-Kane & Visser, 2008; Roman & Travis, 2004; Solomon et al., 2001a). The same thought holds true for attempts at procuring housing with peers. At the ends of the continuum are options for housing stability or instability, which can affect future criminal behavior as familial and peer networks and bonds flourish or breakdown (Mallik-Kane & Visser, 2008; National Research Council, 2008; Roman & Travis, 2004; Solomon et al., 2004b).

Social supports may be available to some, but at the extreme are instances where an individual needs to be placed in a homeless shelter or the street. These options are not always conducive to the establishment of a crime free lifestyle, but are often used when release placements cannot be specified (Metraux & Culhane, 2004; Roman & Travis, 2004; Visser & Farrell, 2005). The exact proportion of individuals released to local communities and residing in homeless shelters or the streets is not known. Langan and Levin (2002) suggest that approximately 12% of soon to be released prisoners reported being homeless prior to incarceration and Roman and Travis (2004) have suggested that approximately 10% of releasees will be homeless (and an equal proportion will enter an institution after being homeless for a period of time). Using samples of homeless individuals, Schlay and Rossi (1992) suggest that the proportion of homeless individuals who have served prison time is somewhere between 4% to 49%. More recent evidence suggests that the proportion is near 23% (Metraux & Culhane, 2006).

The risk for homeless shelter use or life on the street is most apparent immediately following release (even with efforts to gain approved placements) and

quickly erodes over the first few months post-release (Metraux & Culhane, 2004). There is evidence to suggest that placements at shelters or on the streets lead to an increased risk of recidivism. Metraux and Culhane (2004) tracked a cohort of nearly 50,000 individuals released from prison and found that approximately 11% of the releasees resided in a homeless shelter at some point in time within two years post-release. Of those who were admitted to a homeless shelter, approximately 33% were returned to prison within two years post-release.

With or without social supports, offenders transitioning into the community are likely to face unstable housing opportunities, which lead to multiple housing movements and a reliance on temporary accommodations (Metraux & Culhane, 2006; Mallik-Kane & Visser, 2008; Visser & Farrell, 2005). The average number of residential moves made by ex-offenders has yet to be defined in general or among sub-populations (e.g., by offender type, by geographic area, etc.), but there seems to be a consensus that the frequency of moves made by ex-offenders is substantially higher than individuals without criminal histories (Visser & Farrell, 2005). The effect of continued mobility for ex-offenders is not clear. Frequent residential movement can disrupt the broader social community by reducing the social capital capacity and increasing the levels of social disorganization in an area (Bursik & Grasmick, 1993; Clear, 2007; Shaw & McKay, 1969). At the individual level, it is reasonable to assume that the frequency of movements made can negatively affect participation in treatment or community services and increase the risk for recidivism. Unfortunately, there is a dearth of available empirical information to support such a claim. Additional research is needed to determine the extent to which residential stability affects the process of reentry.

Housing considerations and placements have been and continue to be a constant focus of the pre-release process. As such, the issue of housing is one of the few forerunner concerns that existed prior to the developing reentry movement. Reentry programs and programming commonly consider housing options, but it is not clear if the considerations are anything beyond the traditional focus on approving residential placements during the pre-release process. Some have suggested that the amount and quality of pre-release planning made is more in line with the latter thought (Metraux & Culhane, 2006; Roman, 2004).

Despite being relatively ingrained into correctional policy and practice, there is little knowledge of how housing issues can shape reentry experiences. Much of the available information on housing is ad hoc and consists of descriptive information on location of residence, type of residence, and information on the other residents an individual resides with. It is likely that the dearth of information on the issue of housing is simply overlooked due to the fact that housing should be a need that is met with or without correctional intervention. Moreover, there are a number of practical limitations that constrain research concerning housing issues. It is difficult (if not impossible) to systematically evaluate the differential effects of housing options through a rigorous research design due to issues of assignment to specific housing conditions (see Metraux & Culhane, 2004). Even if such a research proposal could be established, it would be far too costly to conduct. It is also likely to be difficult to gain information on housing issues since such research generally involves family members or peers who are external to the criminal justice system and who often do not want to be included in any efforts related to

or emphasizing issues directly or indirectly related to the system (see Solomon et al., 2004a).

Latessa (2004) suggested that there is a lack of transitional housing and effective programs or programming that include transitional housing components available to manage ex-offenders returning to the community with a plethora of overlapping needs. One of the few areas in which research has been conducted on issues of housing has been on halfway houses¹⁹. Research on halfway houses has indicated that the scope of halfway house programming is very narrow and therefore only available to a handful of individuals (Roman, 2004). There is some evidence to suggest that halfway house placement of specific offender types can lead to reductions in recidivism (Lowenkamp & Latessa, 2002; Lowenkamp & Latessa, 2005). However, it is unclear if the step-wise progression from an institution, to a temporary halfway house stay, to an approved residential placement contributes to the reduction in recidivism or if it is the combination of individual effects, halfway house programming effects, and the progression to residential placement that contributes to the reduction. Most of the available research on halfway houses relies on poor evaluative designs leading to questionable validity of findings (Roman & Travis, 2004). The “black box” surrounding halfway house processes has not been adequately addressed in the available research and it is not clear if the positive findings could translate to reentry programs.

¹⁹ Halfway houses have been categorized with community based residential centers and conceptualized as partial physical custody centers by Lipton et al. (1975). This type of intervention generally includes substance abuse treatment services, life skills training, and referrals to community based services. As such, partial physical custody centers attempt to intervene across specific needs (often contingent upon eligibility and admission criteria). These centers characteristically represent an additional period of confinement, even when the location and function of the center is not associated with correctional authorities. Participants must abide by center rules in addition to community supervision rules or risk the possibility of returning to an institution.

Even with the provision of housing services under a reentry program framework, it is probable that reductions in levels of recidivism will not come to fruition (McGarrell et al., 2005). It is more likely that gains in housing will lead to gains in social capital, which may foster reductions in levels of criminality and desistance (McGarrell et al., 2005). With the growth of reentry programs and programming, it is likely that housing services and placement will continue to be of vital importance for beginning the process of reentry. Additional research is needed to explore how the gain or loss of housing affects recidivism, how the gain or loss of housing affects participation in reentry programs or programming, and how the gain or loss of employment affects program participation, which in turn affects recidivism outcomes. A determination of the impact of housing concerns is lacking, but is necessary to inform future efforts to develop and implement reentry programs and programming.

The Sub-Dimension of Employment

The obtainment of employment has traditionally been identified as a key component of community-based correctional supervision since the implementation of parole and probation as a correctional policy (Listwan et al., 2006; National Research Council, 2008; Simon, 1993). Generally, a condition of supervision is to seek and obtain employment (National Research Council, 2008). Failure to do so can produce violations of supervision term charges that can lead to graduated sanctions or re-incarceration. Among annual populations of re-incarcerated parolees, approximately 20% were returned due to failures to obtain employment or other miscellaneous orders associated with employment conditions (Hughes et al., 2001).

The overarching assumption that underlies the focus on employment and its linkage to correctional supervision terms is the inherent degree of daily structure that is created through employer supervision (Listwan et al., 2006; Simon, 1993). The interrelationship between employer, employee, and other employees serves as a mechanism of social control and the exposure to conventional others can enhance a sense of being a productive member of society (Berg & Huebner, 2009; National Research Council, 2008; Sampson & Laub, 1993; Uggen, 2000). In essence, employment has the potential to create a tie and necessitate investment into conventional society. The difficulty with this assumption is the fact that offenders experiencing the transition into local communities are likely to reside in areas with few employment opportunities and where other residents without criminal records are struggling to obtain employment (Clear, 2007).

A majority of former prisoners were working in some capacity prior to incarceration (Beck et al., 1993; Western & Beckett, 1999). Recent evidence has suggested that while most were working at some point prior to incarceration, few had been working 6 months prior to incarceration (Lattimore & Visser, 2009). Once institutionalized, nearly all correctional facilities offer work programs or employability programming, but it is unclear how institutional opportunities translate to real world employment opportunities (Stephan, 2008; Stephan, 1997). Institutional programs and programming can simulate real world experiences by enhancing work habits, gaining experience in interactions with supervisors and co-workers, and balancing budgets (Stephan, 2008; Stephan, 1997). This is a start, but the experiences are often not sufficient enough to be competitive in the labor market. Moreover, these experiences are

often not viable enough to be listed on a resume as a potential candidate for an employment position (Stephan, 2008; Stephan, 1997).

Most ex-offenders are unemployed immediately following release, but gain some type of employment well after release (Jacobs & Western, 2007; Mallik-Kane & Visher, 2008; Nelson et al., 1999; Steurer et al., 2002). The unemployment rate for ex-prisoners is estimated to be between 25% and 40% (Petersilia, 2003). One of the most apparent problems that can lead to behavioral regressions back to criminal activity surround difficulties with low educational levels, few prior work experiences, and few skills (Andrews & Bonta, 1994; Brooks et al., 2006; Lattimore & Visher, 2009; Petersilia, 2003; Solomon et al., 2004a). Even if working, only a few were able to obtain a sustainable or livable wage²⁰ (Harlow, 2003). The stigma of a felony record exacerbates problems by making it difficult to obtain and maintain livable wage employment (Holzer et al., 2002).

Criminal history record information is often used by employers, higher education institutions, and occupational licensure boards to reject applicants (Helgott, 1997; Pager, 2003; Solomon et al., 2004a). Service industry or manual labor employment is attainable for many with criminal history records, but it is difficult to transition from these positions to open labor market positions with a generalized reluctance on the part of employers to hire individuals with criminal records (Pager, 2003). Moreover, conditions of community based correctional supervision can be a hindrance to maintaining employment once gained after release (Solomon et al., 2004a). In all, these issues are likely to produce

²⁰ Mallik-Kane and Visher (2008) have reported that among their sample of recently released prisoners, men averaged a median monthly salary of \$950 and women averaged a median monthly salary of \$700. The differences between these gendered sub-samples were not statistically significant.

numerous short-lived employment opportunities instead of long-term careers (Solomon et al., 2004a; Uggen, 2000).

There is a growing consensus that employment is one of the more important turning points for ex-offenders (Huebner, 2005; National Research Council, 2008; Sampson & Laub, 1993). Recent research has suggested that the turning point effectiveness of employment interacts with age, with employment having more of an effect on reducing the likelihood for future criminality among those over the age of 26 (Uggen, 2000). At the same time, there is mixed evidence on the effects of imprisonment on subsequent employment opportunities. Much of the evidence suggests a negative effect on future employability, employment options, length of time employed, and overall wages (Holzer, 1996; Huebner, 2005; Pager, 2003; Urban Institute, 2008; Western, 2002; Western & Pettit, 2005; Western et al., 2001). There has been some suggestion that there is an initial negative effect that gradually erodes with the passage of time (Jacobs & Western, 2007; Western & Beckett, 1999), and there is a potential for differential effects by race with the erosion effect lingering longer for black individuals relative to white individuals (Western & Pettit, 2005).

Others have suggested that imprisonment has no effect on subsequent employment (Kling, 2006; Useem & Piehl, 2008). Instead, those who have been incarcerated were likely to have had poor prospects for employment and were unable to attain sustainable wages prior to institutionalization and will continue to do so upon release. Useem and Piehl (2008) suggest that high levels of unemployment is more of a product of “who they are and their immediate social environment, rather than a product of their incarceration experience” (p. 157).

Employment opportunities are contingent upon the willingness of employers to hire ex-offenders. Employers have a great deal of anxiety about the liabilities of hiring an ex-offender and most are unwilling to do so (Pager, 2003; Solomon et al., 2004a). In one of the more intriguing studies on employment and ex-offenders, Pager (2003) matched groups of white and black males by appearance and work history and randomly assigned individuals to an embellished criminal record condition in an effort to determine which individuals would receive employment. The findings suggested differential and interactive effects for race and criminal history records. Black males were less likely to receive an employment offer than whites and those within the criminal record condition were less likely than those without a record of criminal history to receive an employment offer. Those most discriminated against for employment opportunities were black males with criminal history records.

There is practical value in programming focused on employability training, placement, and skill building since such programming is relatively easy to develop and implement (National Research Council, 2008). Relatively speaking, employability programs and programming utilize fewer and less complex factors than the content needed for personal change, peer group, and familial relationship programming (National Research Council, 2008). Yet, there are still few employability programs or programming tied to reentry programs (Bloom, 2006). Instead, there is anecdotal evidence to suggest that local service providers rely upon established referral based networks (Justice Research Associates, 2005). These networks are often developed by local service providers and require a referred individual to be motivated and competent

enough to follow through with many legwork duties (e.g., meeting referral times, development of resume, interview skills, transportation to and from interviews, etc.).

The one bright spot for employability programs and programming is that there is some evidence to suggest that such efforts are promising and can benefit participants (National Research Council, 2008; Visser et al., 2005). Unfortunately, much of the evidence should be considered with caution since the observables generated from research are typically based upon poor evaluative research designs (National Research Council, 2008). Bloom et al. (2007) evaluated a transitional employment program that provided immediate full-time employment for one to two months, employment assistance and readiness courses once a week, as well as transportation and supermarket vouchers. The provided employment opportunities were primarily grounds keeping and other forms of manual labor for minimum wages. The findings suggested that immediate full-time employment upon transition into the community was associated with reduced re-arrest rates relative to a comparison group that only received employment search assistance. The researchers suggested that the immediacy of employment appeared to be the key to reduce re-arrest rates. Further analyses suggested that those who entered the transitional employment program months after release did not have comparable reductions in re-arrest relative to the comparison group.

Jacobs and Western (2007) evaluated a transitional program that combined substance abuse treatment, housing, and employment services. The goal of the program was to assess and place participants into programming within 48 hours of release into the community. Substance abuse treatment involved bi-monthly drug screens in addition to individual and group counseling for three to six months depending on progress made.

Transitional housing and employment services included residence in small shared **a**partments with full-time minimum wage manual labor jobs for approximately nine **m**onths. Employment search assistance, service referrals, life skills classes, 12 step **P**rogramming, and vocational programming were available, but were not a requirement of **P**articipation. Overall, the researchers found that participants were significantly less **L**ikely to recidivate relative to a comparison group matched on criminal history and **d**emographic indicators. Participants were three times more likely to be employed and **w**ere also likely to have lower self-reported drug and alcohol use relative to the **c**omparison group.

The evaluations conducted by Bloom et al. (2007) and Jacobs and Western (2007) suggest that transitional employment services can reduce recidivism and potentially increase employability as long as the employment services are bundled with a variety of other services and the services begin immediately after release into the community. The question of adequate “dosage” of employment services is not answered, but there is some suggestion that the mere exposure to employment services can lead to the obtainment of future employment and increased gains in social capital (Lattimore & Visser, 2009; McGarrell et al., 2005). There is also some evidence to suggest that employment can serve as an important stabilizer for other efforts to increase social capital.

Unemployment is likely to affect and lead to reductions in program participation (Jacobs & Western, 2007). Rossman and Rossman (2003) suggest that full-time employment can increase the number of interactions made with treatment providers and increase participation in treatment programs, which can lead to reductions in levels of criminal behavior. These effects are especially apparent with substance abuse treatment

programs. Employment services within comprehensive drug treatment programs appear to lead to increases in full time employment and less drug use, even though there may not be substantive reductions in recidivism (Rossman & Rossman, 2003).

The effect of employment on future recidivism is not clear. At best, employment training and placement assistance will be associated with very small reductions in recidivism (Aos et al., 2006; Horney et al., 1995; Listwan et al., 2006; MacKenzie, 2006). Unemployment is often associated with recidivism at various post-release follow-up intervals (Berg & Huebner, 2009; Finn, 1998; LaVigne et al., 2004). However, the risk of recidivism associated with employment can be affected by the presence or absence of quality social bonds with immediate relatives (Berg & Huebner, 2009). The Urban Institute (2008) suggests that ex-offender employment decreases recidivism and higher wages are negatively associated with the probability of recidivism. Work-release employment programs that mimic the release transition into the community and promote stable employment fail to produce consistent beneficial effects for program participants relative to comparison groups who do not participate in work-release programming (MacKenzie, 2006). Additional research has suggested that employment placement and income supplements were unable to reduce rates of recidivism or unemployment (Berk et al., 1980; Piliavin & Gartner, 1981).

The stability of employment can also affect subsequent criminal behavior, with some longitudinal research indicating that the more stable the employment, the less likely one will participate in criminal activities (Sampson & Laub, 1990; Sampson & Laub, 1993). Additional evidence suggests that among youthful populations, higher rates of crime are observed during phases of unemployment relative to phases of employment

(Farrington et al., 1986). Horney et al. (1995) found that the likelihood of desisting from criminal behavior is greater after employment is gained relative to when employment is either lost or not obtained. Similarly, the likelihood of committing a criminal offense is twice as likely after employment is lost or not obtained relative to when employment is gained. Many of the findings with regard to longitudinal efforts must be viewed with caution. The studies commonly involve a number of problems surrounding issues of small sample sizes and self-selection (Horney et al., 1995).

A number of unintended consequences have been associated with employability programs and programming or employment in general. Berk et al. (1980) suggested that an employment program that was based off of income supports (via monthly stipends) was shown to reduce rates of property crime, but at the same time, created less incentive to find full-time employment. This suggests a need to explore the content of employability components in reentry programs and programming to determine how to gain and maintain employment, reduce crime, and ease the transition into the community. Horney et al. (1995) used a longitudinal sample of ex-offenders and found that employment had a weak association with future criminality. One of the most interesting secondary findings suggested that employment increased the likelihood of committing a property crime. The researchers suggested that this effect may be a remnant of routine activity or opportunity theoretical perspectives, with gains in employment providing new chances to commit crimes.

Overall, the findings surrounding employment are not well understood and lack consistency. Very few employment programs or programming have been subjected to rigorous evaluation. Far fewer have been included as components of reentry programs or

programming and been subject to evaluation. Despite the marginal gains for participants of employability programs and programming, there is still a common call that some form of employment is better than no form of employment in reducing recidivism (Uggen, 2000). It is likely that employability programs and programming will continue to expand and become integrated into reentry programs and programming. Additional research is needed to explore how the gain or loss of employment affects recidivism, how the gain or loss of employment affects participation in reentry programs or programming, and how the gain or loss of employment affects program participation, which in turn affects recidivism outcomes.

The Salient Sub-Dimension of Reentry: Substance Abuse Treatment

Existing reentry program model frameworks are designed to be as generalizable as possible across an assortment of correctional sub-populations. It is assumed that the processes of intake assessment and continued re-assessment will lead to the development of individualized reentry plans that will be revised with progression in meeting plan goals. As such, there is a necessary balance between generalizable reentry program frameworks and individualized reentry program delivery. One must consider the complex mix of interrelated reentry dimensions that can affect transitions into the community within specific offender types to determine the balance between generalizability and individualization.

One of the most prevalent correctional sub-populations with its own unique reintegrative needs is those with severe substance abuse or dependency histories (Mallik-Kane & Visser, 2008). The arrest and conviction of individuals for drug-involved crimes has been one of the most dominant factors associated with the growth of state

correctional populations (Blumstein & Beck, 1999; Carver, 2004; Sevigny & Caulkins, 2004; Tonry, 1995; Useem & Piehl, 2008). Crime control philosophies and practices associated with enhanced deterrence and incapacitative efforts (i.e., the “war on drugs”) were utilized in effort to curb drug use and sales, which has contributed to a lag of steadily increasing non-violent prison admissions for drug possession, manufacturing, and trafficking offenses (Useem & Piehl, 2008). Over half of state prisoners have used illegal substances a month prior to their instant offense leading to incarceration and a third were under the influence during the commission of their offense (Mumola & Karberg, 2006). A majority of institutionalized persons report a history of substance use, abuse, or dependence (Lattimore & Visser, 2009; Mumola, 1999; Mumola & Karberg, 2006).

Many of those in need of substance abuse and dependency treatment leave prison with unresolved substance abuse issues (Mallik-Kane & Visser, 2008; National Research Council, 2008). Few have received any form of substance abuse treatment or have been exposed to treatment (Karburg & James, 2005; Lattimore & Visser, 2009; Mallik-Kane & Visser, 2008; Winterfield & Castro, 2005). One-third of state prisoners report past participation in drug or alcohol abuse programming, but only 12% to 28% reported participation while in prison (Mumola, 1999). Increasing budget constraints will likely reduce the availability of correctional-based treatment programs for years to come (Travis et al., 2001). Those with substance abuse and dependency histories also suffer from high rates of physical and mental illnesses, which requires comprehensive substance abuse, physical and mental illness intervention (Compton et al., 2003; Mallik-Kane & Visser, 2008). Add these deficits to the stigma and consequences of prison culture, the

lengthy isolation from the outside world, and the difficulty in meeting immediate humanistic needs in the community and one can see how complex the reentry process is for drug involved offenders.

Not surprisingly, those with severe substance abuse and dependency histories are at higher risk of recidivism and tend to recidivate relatively soon after release relative to other offender populations (Byrne, 2008; Byrne & Taxman, 2005; Carver, 2004; Mallik-Kane & Visser, 2008; National Research Council, 2008; Urban Institute, 2008). Drug use has been identified as the most powerful predictors of future involvement in crime (Horney et al., 1995). The causal mechanism producing the differential recidivism rates among those with substance abuse and dependency histories is not well understood.

Wilson and Davis (2006) suggest that ex-offenders with substance abuse problems are primarily stigmatized for having a criminal record and secondarily stigmatized due to drug consumption patterns, which further distances these types of offenders from pro-social others in the community. There may also be systemic influences, with conditions of community based correctional supervision affecting the transition into the community (Solomon et al., 2004a). In general, those with such histories generally have drug treatment referrals or placements and drug testing ordered as conditions of community supervision (National Research Council, 2008). Positive drug tests, failure to show for a drug test, and the failure to make treatment referrals or attend treatment can lead to technical violations of supervision terms, which increase the risk for recidivism. Among annual re-incarcerated parolee populations, approximately 16% were returned for violations related to drug testing (Hughes et al., 2001).

The combination of unresolved substance abuse problems and physical and/or mental health issues often interact and contribute to difficulties in obtaining residential placements and employment (Mallik-Kane & Visser, 2008; National Research Council, 2008). Individuals with substance abuse and dependency histories are less likely than other correctional sub-populations to have secured housing prior to release (Mallik-Kane & Visser, 2008). Additionally, the degree of housing instability is accentuated for those with substance abuse and dependency issues (Mallik-Kane & Visser, 2008). Drug use is associated with homelessness among recently released individuals (Mallik-Kane & Visser, 2008; Nelson et al., 1999). Periods of abstinence or decreased use have been associated with increases in the obtainment of employment (Hser et al., 2006). At the same time, periods of use can exacerbate existing physical or mental health conditions that condition the ability to work on a day-to-day basis (Mallik-Kane & Visser, 2008). Relative to other correctional sub-populations, individuals with substance abuse or dependency histories are more likely to earn wages through non-traditional means, often associated with criminal activity (Mallik-Kane & Visser, 2008). Additional research has suggested that relapsed use does not prevent the obtainment of employment, but does reduce the likelihood of following through with treatment services that may prevent relapse (Nelson et al., 1999).

Those with severe substance abuse and dependency histories represent a difficult population – one that is often viewed as being far less compliant than other types of offenders and more reliant on their local community to meet immediate needs (Mallik-Kane & Visser, 2008; Taxman, 2008; Visser & Farrell, 2005). Community based substance abuse treatment is often perceived to be a viable and more effective alternative

to institutional based intervention (Aos et al., 2006; Chanhatisilpa et al., 2000). The interventions are substantially less expensive than institution-based treatments and can generate substantial cost savings for state correctional systems (Carver, 2004). Supervision paired with treatment in the community is approximately one-third the cost of incarceration (Urban Institute, 2008). Additionally, community based substance abuse treatment programs are available in most jurisdictions although there are common problems with treatment accessibility among those lacking private or public transportation as well as those who reside in economically distressed areas (Visher & Farrell, 2005).

The problem with community based substance abuse treatment programs is that despite their general acceptance and perceived utility, their effectiveness is not well established and relatively little is known with regard to their effectiveness when compartmentalized within broader reentry programs or programming (Chanhatisilpa et al., 2000; Cullen & Gendreau, 2000; Dowden et al., 2003; Lipton et al., 1975; MacKenzie, 2006). The literature on community based substance abuse treatment is expansive and there are a wide variety of programs that have been designed and used to serve offender populations with generalized or specific abuses and dependencies. By implication, the heterogeneity of service delivery, participant population serviced, treatment modality utilized, and overall findings makes it difficult to assess the overall efficacy of substance abuse treatment programming.

Confounding problems further are the research designs utilized to develop empirical findings. Many studies of community-based substance abuse treatment programs are poorly designed, leading to inflated and inaccurate results. Very few are

experimental or quasi-experimental, while the majority are descriptive or bivariate (Onifade et al., 2008). Often findings are truncated with a focus on specific subsets of participants or services provided in a broader treatment intervention (Palmer, 1983; Palmer, 1994; Palmer, 1995). Successful program completions are usually the focus, to the exclusion of the remaining pool of program participants who did not complete the program for various reasons (e.g., drop-outs, unsuccessful discharges, program no longer operational, etc.) (Palmer, 1983; Palmer, 1994; Palmer, 1995). One of the largest problems is the lack of information on programming intensity and integrity. Measures of program processes are rarely reported or captured at all, which leads to difficulties in determining the effectiveness of programs and interpreting relevant program outcomes (Onifade et al., 2008).

With these caveats in mind, there are some promising indications that substance abuse treatment and testing can reduce use and criminal behaviors that are assumed to ease the process of transition back into the community (Andrews & Bonta, 2003; Anglin & Hser, 1992; Aos et al., 1999; Aos et al., 2006; Brown et al., 2001; Butzin et al., 2002; Carver, 2004; Chanhathasilpa et al., 2000; Hiller et al., 1999; Horney et al., 1995; Inciardi et al., 2004; MacKenzie, 2006; Mallik-Kane & Visser, 2008; Martin et al., 1999; National Research Council, 2008; Wexler, 1995). The effect sizes among these programs are relatively small or marginal, with single digit reductions in recidivism for participants relative to non-participants and wide discrepancies in overall program findings (Andrews et al., 1990; Aos et al., 2006). It is not clear if treatment intervention directly or indirectly affects the transition back into the community. Many evaluative undertakings

are unable to capture and control for treatment processes that contribute to and affect the observed outcomes (Onifade et al., 2008).

There is a need to explore the differential reentry effects experienced by correctional sub-populations with substance abuse histories and dependencies. It is necessary to determine how specific dimensions of reentry interact and affect one another to shape the process of transition. Research seeking to understand the process of reentry is lacking. It would be useful to explore how participation in substance abuse treatment is affected by the loss or gain of housing and employment. It would be equally useful to determine how the relationships between treatment and the reentry concerns of housing and employment interact and contribute to overall program outcomes such as recidivism.

Questioning the Associations between Treatment and Reentry

Reentry programs and programming form an overarching framework of which substance abuse treatment and testing is one of many salient components. Existing reentry program models assume that each and every component included within a reentry model will ease the process of transition into the community and lessen the risk for recidivism. It is not clear if this assumption is accurate. Available research has yet to “un-package” and analyze a reentry model to explore the dynamics of specific sub-components to determine their effects and interactions on other sub-components, and how these dynamics will in turn affect program outcomes. Many reentry programs have become operational and will continue to expand without knowledge of how a comprehensive set of services will affect participants. There is a danger that reentry programs will continue to proceed blindly and simply utilize “kitchen sink” approaches,

which often lead to marginal, negative, or unintended program outcomes that do not benefit participants (Marlowe, 2006).

The association between substance abuse treatment and the reentry dimensions of housing and employment is not clear. In terms of reducing recidivism, the effect sizes for substance abuse treatment are small, but positive, suggesting that participants benefit from such programs (Aos et al., 2006; MacKenzie, 2006). The effect sizes for housing programs and services and employment programs and services are not well established and tend to be marginal at best (Andrews et al., 1990; Aos et al., 2006; MacKenzie, 2006). When combined in an overall program framework, it is not clear if these effect sizes build off of the positive gains of substance abuse treatment to produce additional gains, cancel one another out, or produce a multiplier effect contributing to marginal or negative program outcomes. What is clear, however, is the acknowledgement that the base rates of change produced by correctional programming will be rather small, often producing single digit reductions in relevant program outcomes (Aos et al., 2006).

There is an established body of literature on substance abuse treatment, but there is little knowledge on how the loss or gain of housing and employment affects treatment participation and compliance with substance abuse treatment. There is some evidence to suggest that stable participation in treatment is associated with stable housing and employment (National Research Council, 2008). At the same time, there is evidence to suggest that unstable participation in treatment is associated with stable housing and employment (National Research Council, 2008; Nelson et al., 1999). It is likely that unstable housing and/or employment will negatively affect participation in treatment, but this may not always be the case.

At a fundamental level, it is still not clear how the philosophical orientations of services offered in substance abuse treatment, housing, and employment programs mesh. In some respects, there is a marriage between the services. Each of the services attempts to provide structure and stability to daily life, while also holding an individual accountable for their actions and conventional responsibilities. The services also seek to increase pro-social functioning by means of increasing the social capital of individuals. Moreover, the services seem to be speaking the same language with an emphasis on ameliorating deficits and are moving in the same direction. Substance abuse treatment is undergoing a transformation and movement towards a broader focus on recovery (Checinski & Ghodse, 2004; Maruna et al., 2004a). Relapse events are becoming more and more tolerated as part of the process of recovery and encompassed into comprehensive substance abuse programming (Checinski & Ghodse, 2004). Recovery is therefore considered to be an overarching framework of which treatment is a sub-component. A parallel process is occurring with reentry, where recidivism is being viewed as an isolated event in the broader focus on reintegration into the community. There is a growing recognition that reversions to past behavior will occur and these reversions should form a foundation from which one can learn.

In other respects, there are conflicting and contradictory issues inherent to the inclusion of substance abuse treatment, housing, and employment services within a single comprehensive reentry program. For as much emphasis that is put into the development of social capital for participants, there is an equal amount of punishment-based accountability that underlies substance abuse treatment and can affect progress in obtaining and maintaining housing and/or employment (Byrne & Taxman, 2005).

Substance abuse treatment requires a variable degree of mobility to and from treatment and testing centers²¹. Since treatment and drug testing is often included as a condition of community-based supervision, there is a need for offenders to obtain relatively stable and nearby housing that will maintain compliance with treatment orders. Failure to maintain compliance with treatment can lead to graduated sanctions or violations of supervision terms, which can indirectly or directly affect housing tenure. Given the increased mobility and frequency of short-term residences (Clear, 2007; Metraux & Culhane, 2006; Visser & Farrell, 2005), it is not clear if offenders can meet the demands of treatment and sustain housing. Treatment, in this instance, may have the unintended effect of producing more residential instability rather than less.

Similar feasibility questions hold true when considering employment. Substance abuse treatment requires a proportion of time that can affect employment. Some employers may be able to work around an individual's treatment and drug testing schedule, while others will not be as accommodating (Pager, 2003; Pager, 2007). The need to continuously take off work to meet treatment and testing schedules can lead to the loss of employment, especially for individuals who are working low-wage, manual or service orientated jobs (Pager, 2003; Pager, 2007). Consider the case of substance abuse treatment programs with randomized testing. Individuals are often required to access a randomized list hours before a test must be conducted. If an individual is randomly

²¹ If residential substance abuse treatment is required, there are also concerns of coerced mobility (Clear, 2007). If residential treatment is required upon release, an individual will transition out of an institution directly to a residential center. Upon successful completion or termination of treatment services, the individual will move to an approved residence. The movement equates to one additional residential move relative to offenders under traditional community-based supervision. If residential treatment is required any time during the supervision term, an individual will transition out of their residence, to a residential facility, and to an approved residence. The movement equates to two additional residential moves relative to traditional offenders.

selected on a given day and needs to work, a choice between remaining compliant with supervision orders and testing or maintaining employment by going to work must be made. Repercussions of either choice are likely, with graduated sanctions or violations of supervision terms for a missed test, the loss of employment for a missed day of work, or a combination of the two.

These unintended effects can also occur in the opposite direction. The loss of suitable housing may make it difficult to meet treatment obligations, which can lead to violations of supervision terms and create further instabilities in obtaining and maintaining housing. The loss of employment also can lead to violations of supervision terms due to non-compliance with treatment orders and can lead to further problems in gaining employment. It is likely that these unintended consequences are further exacerbated when there is a loss of housing and employment and the prevailing need to meet the requirements of substance abuse treatment.

Summation and Direction of Research

There is a growing recognition and demand for the development and implementation of reentry programs and programming. Correctional administrators, practitioners, program designers, and researchers are seeking to capitalize on the newfound focus on rehabilitation, with treatment services beginning to take precedence over crime control efforts (Byrne, 2004; Byrne, 2008; Byrne & Taxman, 2005). Comprehensive program models are being drafted and attempts have been made to implement entire program models as well as piecemeal sub-components of program models.

Many of the available reentry program models are structurally similar and also contain comparable content. Over time, one model of reentry will become paradigmatic and serve as the foundation for all other models. Currently, however, Useem and Piehl (2008) considered the reentry movement to be nothing more than trial and error. Continued experimentation will help to identify effective programs or program components, but this initial phase does come at a cost. Every trial run results in an expenditure of taxpayer funds. Without proven promise or sustained effectiveness it is likely that these funds may become less and less available and truncate the reentry movement.

Unfortunately, the rush of state correctional systems to integrate reentry structures and practices is proceeding with a theoretical understanding that reentry programming should work, but without much empirical knowledge concerning how and why these programs should work. The available reentry program models appear to be comprehensive for the sake of being comprehensive (Marlowe, 2006). Available evidence on reentry dimensions is still largely compartmentalized and not well integrated. The reentry dimensions of housing, employment, and substance abuse treatment often include their own body of research, which narrows the focus to one aspect of reentry to the exclusion of all others. Unfortunately, this narrowed focus does not reflect reentry programs or programming in practice as each of these dimensions overlaps and interacts with one another (see Palmer 1994; Palmer, 1995). Research has yet to adequately address this issue and it is still not clear how reentry dimensions interact with one another and contribute to the observed outcomes of reentry programs.

The current study seeks to deconstruct and explore how the process of transition into the community is influenced by interrelationships between three specific sub-components of reentry – housing, employment, and substance abuse treatment – among a sample of offenders with severe substance abuse and dependency histories. The focus is placed upon how these three sub-components of reentry influence program processes that can indirectly and directly shape program outcomes. It is expected that differential outcomes in program processes, relapse, and recidivism will be observed due to the necessary balance that is needed in meeting the challenges of everyday life, remaining compliant with treatment services, and attempting to reduce the risk of relapse and recidivism.

CHAPTER III: DATA AND METHODS

Data for this study were obtained from a larger project that assessed the impact of an intensive reentry-based substance abuse treatment program in a medium-sized, industrialized, Midwestern city. The program was designed in an effort to meet dual objectives of responding to individualized need and building or enhancing protective factors that may counter-balance risks associated with relapse and recidivism. Protective factors include restoring and maintaining bonds with family members, life skills training to cope with immediate stressors, housing referral and placement, employment training and placement, health care processing and obtainment, and additional needs as identified by individualized assessment. In an effort to accomplish these objectives, the program was designed to provide a comprehensive, integrated, and intensive reentry-based substance abuse treatment program combined with frequent random drug testing across the first 12 months post-release.

The program sought to reach a target population of high-risk male offenders with significant substance abuse or dependency histories as identified through screening inventory and case file reviews²². The research evaluation strategy utilized an experimental design with the random assignment of eligible offenders to the program participant group (treatment) and traditional community supervision group (control). The control group was directly released according to traditional pre-release plans and community based correctional supervision. This group may have participated in some form of substance abuse treatment in the community and were subject to drug testing and

²² Determination of significant substance abuse or dependency histories through assessment was determined by Substance Abuse Subtle Screening Inventory (SASSI), which has an established level of predictive validity (Lazowski & Boye, 1998). Offenders with high probabilities of substance dependence (3) or severe dependence (4) formed the eligible pool of participants.

violations for non-compliance with testing procedures, but they do not participate in the services provided to the participant group. These services included transitional housing, service provider pre-release in-reach and subsequent program services, or receive intensive case management oversight for the first 12 months post-release (for additional information on the larger project see Appendix A).

The final sample consisted of 511 offenders, with 263 of the offenders being randomly assigned to the participant group and the remaining 248 assigned to the control group. The random assignment procedures were carefully followed and participant and control groups had similar background characteristics in terms of demographics and criminal and substance abuse histories. The comparable criminal and substance abuse histories of those assigned to one of the two groups also indicated that the assignment process reached its target population of high-risk offenders in need of intensive services. The average offender assigned to either group was likely to have at least one prior juvenile probation term, two or three prior jail sentences, one or two prior prison sentences, and an assessment score indicating the need for intensive out-patient substance abuse treatment services.

The two year post-release follow-up of these 511 offenders served as the foundation of the research²³. Data were gleaned from the official management information systems of the local Department of Corrections and State Police. These data sources contained a plethora of narrative and quantitative information on individuals over time. It is important to recognize that official data may have some degree of upward (i.e.,

²³ Informed by the work of Beck and Shipley (1989), a trend in correctional research is the use of 3 year post-release follow-up periods to evaluate the impact of correctional programming on outcome indicators of relapse and recidivism. The current study utilized a 2 year post-release follow-up in an effort to focus on

inflated, embellished) or downward (i.e., non-reported, overlooked) bias (Chambliss & Nagasawa, 1969; Gove et al., 1985; Hindelang et al., 1981; McCleary, 1977, McCleary, 1978). Equally important is the fact that official data is found to be highly correlated with victimization and self-report data (Gove et al., 1985; Hindelang et al., 1981). Given this latter finding, there is merit to utilize official data sources²⁴.

Research Questions

The current research explored the interrelationships between reentry dimensions. Most salient to this research are the dimensions of housing, employment, and substance abuse treatment. These three dimensions are commonly included in reentry programming frameworks, but are seldom subject to empirical analyses to determine their influence on one another or for the broader process of transition into the community. The overarching research framework examined the effects and interactions of these dimensions to identify how these dimensions indirectly or directly affect program outcome indicators of relapse and recidivism. It was expected that these reentry dimensions would influence and be influenced by one another and these associations shape program outcomes.

The overarching research framework led to the formulation of a series of research questions. Three research questions form the foundation for a series of analyses that were used to examine the extent to which specific reentry dimensions affected and were affected by other reentry dimensions. The three research questions (RQ) included:

the immediate transitional experience of balancing a 2 year post-release correctional supervision term, reentry dimensions of housing, employment, and treatment, and the risk of relapse and recidivism.

²⁴ The research focus on housing, employment, and treatment dimensions can also increase confidence in the use of official sources of data. Tracking of these dimensions is central to the function of correctional supervisory agents. Housing prospects, employment prospects, and treatment enrollment must be reported and verified by an agent. Once verified, the reported residence, employer, and treatment provider becomes

RQ1: Instability in housing and/or employment will negatively affect treatment dosage and processes.

As detailed in Chapter 2, research suggested that offenders will generally have less stable housing (Metraux & Culhane, 2006; Mallik-Kane & Visser, 2008; Visser & Farrell, 2005) and less stable employment (Solomon et al., 2004a; Uggen, 2000) than the general population, but there are variable levels of stability among offenders. Since the procurement of housing and/or employment can provide structure and stability to daily life, it was anticipated that instability in one or both of these dimensions affected the stability of substance abuse treatment (see Hser et al., 2006; Jacobs & Western, 2007; Mallik-Kane & Visser, 2008; National Research Council, 2008; Nelson et al., 1999).

RQ2: Instability in housing and/or employment will positively affect outcomes of relapse and recidivism.

This research question was extrapolated from the first research question and seeks to further elaborate the effects of housing and employment on the process of transition. It is probable that instabilities in housing and/or employment damage the structure and stability of daily life to such an extent as to place an individual at risk for relapse and recidivism (see Jacobs & Western, 2007; Mallik-Kane & Visser, 2008; Metraux & Culhane, 2006; National Research Council, 2008; Petersilia, 2003; Sampson & Laub, 1993; Travis et al., 2001; Visser & Farrell, 2005). Instability in housing and/or employment was predicted to increase levels of relapse and recidivism. In addition to direct effects, it was also anticipated that instability in housing and employment would

the foundation for subsequent collateral contacts. Any and all changes are required to be reported in a timely fashion.

produce an interactive effect that contributed to levels of relapse and recidivism that were more pronounced than the levels observed for the individual direct effects.

RQ3: Instability in housing and/or employment will positively affect outcomes of relapse and recidivism and this relationship will be mediated (or indirectly affected by) treatment dosage and processes.

The final research question represents a culmination of the previous two research questions. The observed increase in levels of relapse and recidivism that are expected from instabilities in housing and/or employment (from research question 2) may be contingent upon the effects of housing and/or employment instability on treatment dosage and processes (from research question 1). There is an expected covariation between treatment dosage, processes, and outcomes that is influenced directly or indirectly by housing stability. It is likely that the loss of structure and stability associated with the procurement of housing and/or employment will reduce the rehabilitative value commonly associated with treatment to affect relapse and recidivism outcomes (see Jacobs & Western, 2007; Mallik-Kane & Visher, 2008; National Research Council, 2008; Petersilia, 2003; Travis et al., 2001; Visher & Farrell, 2005).

The research question suggests that levels of housing stability will affect treatment dosage and processes, which will contribute to observed relapse and recidivism outcomes. Similarly, levels of employment stability will affect treatment dosage and processes, which will also affect relapse and recidivism outcomes. Overall it is expected that instability in housing or employment will reduce levels of treatment dosage and increase non-compliance with treatment, which will contribute to higher levels of relapse and recidivism.

Once again an interactive effect is anticipated. High levels of housing instability and employment instability are expected to reduce levels of treatment dosage received and increase levels of non-compliance with treatment. In turn, the low levels of treatment dosage received and high levels of treatment non-compliance will lead to higher levels of relapse and recidivism.

Dependent Variables

A number of dependent variables will be used for this study. All measures have been gleaned from official management information systems of the local Department of Corrections and State Police. The unit of analysis is the individual and all variables will be measured at the individual level across an individual's community correctional supervision term.

Treatment dosage represents the number of months an individual has participated in substance abuse treatment programming. The tenure of participation in substance abuse treatment is a common measure of treatment dosage in substance abuse treatment literature (for reviews see Anglin & Hser, 1990; Simpson et al., 1995; Zhang et al., 2003). This measure was constructed through the examination of case notes maintained by an individual's community correctional supervision agent. All case note entries are date specific and provide a variable level of detail concerning treatment activities. These narrative records were reviewed for contextualized content concerning the initial enrollment in treatment, progress in treatment, and termination of treatment across an individual's community supervision term²⁵. The qualitative case note reviews served as

²⁵ It is important to note that since the measurement of treatment dosage was taken across an individual's supervision term, the dosage received may correspond to one or multiple substance abuse treatment programs.

the foundation to produce quantitative measures that are included in the study (see Tashokkori & Teddlie, 1998).

Measures of treatment processes can be used to provide a complete picture of treatment participation by identifying underlying activities that contribute to treatment dosage levels and overall treatment outcomes (Simpson et al., 1995). Unfortunately, treatment processes are commonly overlooked in the literature (Onifade et al., 2008). Two measures are used as indicators of treatment processes. Both measures represent non-compliance with substance abuse treatment. *Treatment program rule violations* represent the number of program violations incurred by individuals. The number of violations is provided as a summary measure from the management information system of the local Department of Corrections, but is based upon extrapolation algorithms of community supervision agent case notes. *Abscond* is a dichotomous measure of whether an individual absconded from community correctional supervision during their supervision term. The measure represents the issuance of an abscond warrant by the supervision agent for non-compliance with supervision reporting terms²⁶.

The remaining dependent variables are commonly associated with outcome indicators used to assess the effectiveness of correctional programming and practice. *Relapse* represents the proportion of positive drug tests relative to the total number of drug tests administered. This measure was constructed through the use of summary measures of the total number of positive drug tests observed and the total number of drug tests submitted from the local correctional management information system.

²⁶ This measure should not be confused with absence without leave (AWOL) or absconds from treatment. While these may be associated with the issuance of an official abscond warrant for failure to comply with supervision reporting terms, the two types of non-compliance may be entirely separate.

Relapse can be measured in an assortment of ways and a common measurement approach is lacking in the literature (Wells et al., 1988). The measurement approach used for this study is based upon a cumulative, longitudinal ratio that is standardized by the dominator of the total number of tests administered. The standardization of measurement allows one to differentiate between low levels of relapse (i.e., no positive drug tests or very few positive tests relative to the number of tests administered) and high levels of relapse (i.e., frequent positive drug tests relative to the total number of tests administered)²⁷.

Recidivism is measured in two ways from two different data sources. The commonality between the measures of recidivism is the focus on the recidivism event (as opposed to the timing of the event). *Re-arrest* is a dichotomous measure that identifies whether individuals were arrested, but not necessarily convicted, for a felony offense. Arrest information is obtained through the management information system of the local State Police. *Re-incarceration* is a dichotomous measure that identifies whether individuals had their community correctional status terminated and were returned to prison. Returns to prison can occur in two ways. Technical violations of supervision occur from a sustained violation of community correctional supervision leading to the revocation of community status and re-incarceration on an existing charge. A new commitment occurs if the individual is convicted of a new sentence of incarceration while under community correctional supervision for an existing sentence. Both of these

²⁷ One of the dangers with utilizing a ratio of positive drug tests to total number of drug tests is the fact that denominators at the extremes may produce similar ratios. For instance a 1:1 positive drug test to total drug test ratio would be considered to be the same as a 35:35 ratio. While the latter ratio may be a more severe indicator of relapse difficulties than the former, the current study conceptualizes both ratios as being comparable since they will require similar community correctional supervision responses (sanctioned or non-sanctioned) and may be shaped by relative degrees of housing and/or employment stability.

measures of re-incarceration are obtained through the management information system of the local Department of Corrections.

This study utilizes multiple measures of recidivism in order to increase confidence in the validity of measurement. Each official data source of recidivism has limitations. State police arrest data is contingent upon the reporting of committed crimes (Maltz, 1984). Correctional data is often shaped by organizational pressures and bounded by partnered and hierarchical decision-making (Maltz, 1984; McCleary, 1977; McCleary, 1978). Maltz (1984) suggests that arrest data is a better indicator of individual conduct, even if the arrest information does not include conviction. However, it is advisable to supplement arrest measures with additional sources such as correctional records (Maltz, 1984).

Independent Variables

Two independent variables will be used for this study. Both of the measures have been gleaned from official management information systems of the local Department of Corrections and are measured at the individual level of analysis across one's community correctional supervision term. *Housing stability* represents the number of housing movements made by individuals in the sample. Housing stability, movement, or mobility are common terms in criminological literature, but the measurement options underlying these terms are not entirely clear. The choice to utilize the number of housing moves is informed by research that suggests that offenders are likely to move often due to reliance on temporary accommodations (Metraux & Culhane, 2006; Mallik-Kane & Visser, 2008; Visser & Farrell, 2005).

The housing stability measure was constructed through the examination of community correctional supervision agent case notes (similar to the construction of the measure of treatment dosage). The case notes were reviewed and analyzed for contextualized content regarding address changes. Specific addresses were not provided, but were rather spoken of in generalities (e.g., “moving to new apartment”) or relative to new living arrangements (e.g., “requests approval to move in with girlfriend”). Any housing changes must be conditionally approved and subsequently verified for final approval by an individual’s supervision agent per supervision term orders.

Efforts were made to capture any and all housing movements. A broad approach captures traditional residential movement, movement to and from inpatient residential treatment providers, and movement to and from graduated sanction facilities (e.g., technical violation centers). Conceptualizing housing movement in this fashion reflects the totality of movement experienced by offenders – movement that is shaped by human agency as well as correctional coercion (Clear, 2007). The only exclusions to the measurement and aggregation of housing moves were for housing movements to/from jails and to/from hospitals since these types of movement generally keep individuals away from their place of residence for a short amount of time (i.e., less than a month). Once again, these qualitative reviews led to the production of quantitative measures that are included in the study.

It is important to note that the measure of housing stability may actually be thought of as being a measure of housing instability. This is due to the fact the number of housing moves is the basis for the measure. A high number of housing moves

corresponds to unstable housing, while a low number of housing moves reflects stable housing.

Employment stability represents the number of months an individual has been working. The choice to utilize the number of working months is informed by research that suggests that tenure in the labor market can provide daily sources of stability and structure (Listwan et al., 2006; National Research Council, 2008; Simon, 1993). The construction of the measure was once again developed from community correctional agent case notes (similar to the measures of treatment dosage and housing stability).

Agent case notes were examined for content concerning employment applications, interviews, procurement, progress, and termination across an individual's supervision term²⁸. Detail on the employer's name, contact information, and type of employment were available in some instances. Most often the description of employment would simply pertain to work status (e.g., "currently working," "working full-time") or the type of employment (e.g., "janitorial services," "construction," "restaurant") with additional narrative detail. All case note entries are data specific, which allows for the extrapolation of the length of employment for every employment opportunity. Agents are required to check the employment statuses of offenders on their caseload per supervision term orders. Periodic verifications of employment status with the individual's employer are made once employment is procured and the employer serves as an important collateral contact for the agent.

²⁸ Similar to the construction of the measure of treatment dosage, employment stability was measured across an individual's supervision term. This suggests that the number of months an individual was employed may pertain to one or multiple employment experiences.

The case note reviews produced a quantitative measure that is included in the study. Efforts were made to only capture those employment experiences that would provide reasonably consistent and legitimate income. Key to this measurement conceptualization is the thought of obtaining social capital that may contribute to upward mobility (Wilson, 1990; Wilson, 1996). This did not necessitate full-time employment or payroll based employment. However, this conceptualization did exclude sporadic handyman jobs and chore based work for relatives that tended to represent one-time employment opportunities with wages that could only provide support for a few days.

Control Variables

A number of variables will be used to control for individual demographics, criminal and substance abuse history, and correctional supervision activity across the supervision term. All of the measures are gleaned from the management information system of the local Department of Corrections. Control measures for individual demographics include age, race, educational background, and marital status. *Age* is represented in years. *White* is a dichotomous measure of race (1=white; 0=non-white). Educational background consists of two separate dummy variables that use less than high school diploma without a general equivalency degree (GED) as the reference category. *GED Education* is a dichotomous indicator of those who received a GED degree (1=GED; 0=reference category). *High school graduate or more* is a dichotomous indicator of those who received a high school diploma and who may have continued their education with college or professional degree coursework (1=High school graduate or more; 0=reference category). Multiple measures of educational background were used since it is expected that higher levels of education may be associated with higher levels of

social capital (Coleman, 1988). Marital status consists of two separate dummy variables that use the status of single as the reference category. *Divorced or widowed* is a dichotomous indicator of status (1=divorced/widowed; 0=single). *Married* is also used as a dichotomized indicator (1=married; 0=single). Multiple measures of marital status are used since they may produce differential social capital effects (Coleman, 1988) and effects on criminal behavior (Huebner, 2005; Laub & Sampson, 1993; Sampson & Laub, 1993).

Control measures for criminal and substance abuse history include institutional history, current offense type, and participation in correctional substance abuse treatment services. *Juvenile commitment* is a dichotomous measure of whether an individual has a juvenile commitment history (1=at least one juvenile commitment; 0=no juvenile commitments). *Prior prison term* is a dichotomous indicator of whether an individual has a history of prison sentences (1=at least one prior prison term; 0=no prior prison term). Multiple offense types are used in an attempt to differentiate effects that may pertain to conviction offense categorizations (Rosenfeld, 2008). Drug offense serves as the reference category. *Person* is a dichotomized indicator of conviction for a crimes against person (1=person offense; 0=drug offense). *Property* is an indicator of conviction for a property offense (1=property offense; 0=drug offense). *Public safety* indicates a conviction for a public safety offense (1=public safety; 0=drug offense). *Prior correctional substance abuse treatment* is a measure of the number of exposures to and participation in corrections based substance abuse treatment prior to release. These past correctional services include institutional and community based treatments.

Finally, control measures for activity across the supervision term include supervision intensity, program completion, randomized group assignment, hospitalization, mental health enrollments, and the pursuit of higher or professional education. *Supervision intensity* measures the number of in-person contacts made by an individual's community correctional supervision agent. A higher level of in-person contacts is conceptualized to refer to high levels of supervision intensity. *Graduate of treatment* is a dichotomized measure of whether an individual successfully completed a substance abuse treatment program (1=graduate of at least one treatment program; 0=did not complete treatment program). *Treatment group* is a dichotomized indicator of random assignment to the treatment group condition (1=treatment group; 0=control group). Individuals in the treatment group participated in intensive, reentry-based substance abuse treatment services while control group members received traditional supervision services. Measures of supervision intensity, graduate of treatment, and treatment group were constructed from summary measures within the official data source.

Hospitalization is a dichotomized indicator of hospital admission (1=admitted at least once; 0=never admitted). *Mental health treatment* is a dichotomized indicator of participation in mental health treatment services (1=received mental health services at least once; 0=did not receive mental health services). This measure represents services above and beyond substance abuse treatment and is not conceptualized as being synonymous with substance abuse treatment services. *Higher education* is an indicator of the enrollment and pursuit of college or professional degree coursework (1=pursued higher education; 0=did not pursue higher education). Measures of hospitalization,

mental health treatment, and higher education were constructed upon review and analysis of community correctional supervision agent case notes in within the official data source.

Analysis Methods and Modeling Strategy

The first stage of the analysis will provide generalized descriptive information on all of the variables included in this research. The second stage of analysis seeks to explore the 3 research questions presented earlier in this chapter. Multivariate linear and logistic regression models will serve as the foundation for the analyses. Linear regression is a robust statistical technique that is used for continuous dependent variables and rests upon assumptions of normally distributed variables and residuals, constant and independent residual error structures across independent variables, and non-collinearity among independent variables (Allen, 1997; Berry & Feldman, 1985; Berk, 2004; Fox, 1991). Logistic regression is a second robust statistical technique that is used for dichotomous dependent variables (Agresti, 2002; Allen, 1997; Long, 1997; Pampel, 2000). Logistic regression eases the assumptions held by linear regression models and also utilizes a method of coefficient estimation (i.e., maximum likelihood) that is different from linear regression (i.e., ordinary least squares) (Agresti, 2002; Allen, 1997; Long, 1997; Pampel, 2000). Elaborations or modifications to regression models will be made according to the results of the foundational linear or logistic models and appendicized as necessary.

Multivariate modeling is used to assess the impact of the independent variables of housing and employment stability on each of the dependent variables and answer the first two research questions. Regression analyses will be conducted step-wise. This approach is used to observe the relative strength of the independent variables and note changes in

direction or magnitude that occur with the inclusion of additional variables into the regression equation. The step-wise approach is not used in a traditional fashion with forward or backward elimination techniques to develop “best” fitting models (Agresti, 2002; Berk, 2004).

Four step-wise iterations will be examined. First, initial analyses will be unconditional and ascertain the bivariate relationship between an independent variable and a dependent variable. Second, multivariate analyses of both of the independent variables without the control variables will be conducted. Third, a model consisting of only the control variables will be produced. Finally, conditional models will be analyzed that contain the independent variables and control variables.

Full conditional models will also make use of an interaction term. This term will be used to determine if conditional models may be impacted by the combination of high levels of housing and employment instability. The dichotomized interaction term will be constructed from the observed median sample distributions of housing stability and employment stability and entered into regression equations (Hardy, 1993; Jaccard, 2001; Jaccard et al., 1990).

The final research question requires the conditional modeling of the independent, control, treatment dosage and treatment processes variables to ascertain their direct effects on the overall dependent variables of relapse and recidivism. An interaction term will be censored and presented for these full conditional models to assess the joint influence of housing and employment instability. In addition to direct effects, the final research question requires the examination of indirect effects (or mediation). The method used for the determination of indirect effects is based upon Baron and Kenny (1986).

The Baron and Kenny (1986) method requires a series of three steps. First, a given independent variable must be associated with the outcome variable of interest (established in research question 2). Second, the same independent variable must be associated with a suspected mediator variable (established in research question 1)²⁹. Finally, the suspected mediator variable must be associated with the outcome variable of interest after controlling for the effects of the given independent variable (established in research question 3). All of these associations must be non-zero or statistically significant. If the three steps are observed, then partial indirect effects are likely. If the final step results in a non-significant direct effect between the given independent variable and outcome variable of interest, the results would suggest that the suspected mediator variable completely mediates the relationship between the two variables.

²⁹ The first two steps in the Baron and Kenny method are exchanged with one another in order to follow the research questions proposed in the study.

CHAPTER IV: RESULTS

Descriptive and Bivariate Statistics

Table 1 provides the descriptive and bivariate statistics for the control variables conditioned by randomized group assignment. The average individual included in the sample is a 35 year old, single, non-white male. Approximately 50% of the sample has received a generalized equivalency degree (GED), 35% have not graduated from high school or obtained a GED, and 15% have completed a high school degree and/or continued forward in their education with college or professional coursework.

Twenty percent of the sample has had at least one prior juvenile commitment, while 50% of the sample had served at least one prior prison sentence. In terms of the current offense type, 32% of the sample was convicted on a person offense, 28% on a property offense, 24% on a drug offense, and the remaining 16% on a public safety offense. The sample averaged one prior enrollment in substance abuse treatment services provided (and subsidized by) the Department of Corrections.

In terms of supervision activity across the supervision term, the sample averaged 45 in-person contacts with their supervision agent³⁰. The intensity of supervision varied widely by individual as indicated by the standard deviation coefficient. Thirty-seven percent of the sample completed and graduated from a substance abuse treatment program during their supervision term. Twenty-three percent were hospitalized at least one time during their parole term and 13% were enrolled in mental health treatment.

³⁰ It becomes readily apparent that any discussion of supervision intensity will refer to relative intensity. The sample averaged 45 in-person contacts across a 24 month follow-up period equates to two contacts per month. This rate of contact is consistent with national averages (Petersilia, 1999).

Seventeen percent enrolled in higher education, which includes college or professional degree coursework.

Table 1: Control Variable Distributions (n=511).

	Mean (SD)
<i>Demographics</i>	
Age*	35 (9.00)
White	33% (.47)
GED Education	50% (.50)
HS Grad or More*	15% (.36)
Less than HS (no GED)	35% (.48)
Divorced/Widowed	16% (.37)
Married*	9% (.29)
Single ^a	75% (.43)
<i>Criminal and Substance Abuse History</i>	
At Least 1 Juv Commitment	20% (.40)
At Least 1 Prior Prison Term	50% (.50)
Term for Person Offense	32% (.47)
Term for Property Offense	28% (.45)
Term for Public Safety Offense	16% (.37)
Term for Drug Offense ^a *	24% (.43)
Num of Prior DOC SATX	1 (1.51)
<i>Supervision Activity Across Supervision Term</i>	
Supervision Intensity	45 (25.32)
Grad of Any SATX**	37% (.48)
Hospitalized	23% (.43)
Mental Health Referral/Enroll	13% (.34)
Enrolled in Higher/Pro Edu**	17% (.38)

*p<.05, **p<.01; NOTE: Standard deviations presented in parentheses.

a. Variable serves as the reference category for dummy variable series.

Table 2 presents the overall and group based descriptive statistics for the independent variables. On average, individuals in the sample moved residences approximately three times and were employed for approximately seven months during their parole term. The standard deviation for these two measures is proportionately quite large and suggests that individuals in the sample had a variable degree of residential movement and employment experiences.

The overall distribution of the independent variables allows for the construction of an interaction term that represents high levels of housing and employment stability.

Using the conditional distributions of the current sample, the dichotomized interaction term identifies median splits of the housing stability measure (i.e., individuals with four or more residential moves) and employment stability measure (i.e., individuals who were unemployed for more than half of their supervision term). Overall, 29% of the sample met the criteria of being above the sample median of high residential movement and were employed for less than half of their supervision term

In terms of substance abuse treatment processes, members of the sample received a dose of approximately eight months of treatment. There is a substantial degree of variability with regard to the number of treatment months between individuals. Members of the sample appeared to be rather compliant with treatment participation, averaging one treatment program violation across their supervision term. Compliance with treatment did not translate to compliance with supervision terms. Forty-four percent of the sample absconded from supervision at least once during their supervision term.

Table 2: Independent Variable Distributions (n=511).

	Mean (SD)
<i>Housing Stability</i>	
Total Moves ***	3 (2.35)
<i>Employment Stability</i>	
Num of Months Working	7 (6.81)
<i>Interaction Term</i>	
Res*Emp Instability ***	29% (.45)
<i>Substance Abuse Treatment Dosage</i>	
Estimated Months in TX***	8 (5.79)
<i>Substance Abuse Treatment Processes</i>	
Num of TX Prog Violations***	1 (1.22)
Absconded**	44% (.50)

*p<.05, **p<.01, ***p<.001; NOTE: Standard deviation presented in parentheses.

Table 3 provides descriptive information for the dependent variables. The average proportion of positive drug tests for the entire sample is .23. This suggests that approximately 23% of the drug tests administered resulted in a positive screen. Twenty-

eight percent of the sample were re-arrested and 33% were re-incarcerated during their supervision term.

Table 3: Dependent Variable Distributions (n=511).

	Mean (SD)
Proportion Positive Tests*	.23 (.26)
Re-Arrested	28% (.45)
Re-Incarcerated	33% (.47)

*p<.05, **p<.01, ***p<.001; NOTE: Standard deviation presented in parentheses.

Research Question 1: Unconditional, Partial Conditional, and Conditional Multivariate Analyses of Treatment Dosage and Processes

The goal of the first phase of analysis was to examine the relationships between housing and employment stability and substance abuse treatment process indicators of treatment dosage, treatment violations, and absconding. Linear and logistic regressions were utilized to assess the relationships. Models were presented stepwise, beginning with unconditional bivariate models and ending with fully conditional models that include the independent variables of housing and employment stability, all of the control variables, and an interaction term of housing and employment instability.

Table 4 provides the unconditional and partial conditional linear regression models. Housing and employment stability were significantly and positively related to the amount of substance abuse treatment dosage received in unconditional bivariate models. This effect were also present for the partial conditional multivariate model that controls for the effect of housing stability and employment stability. The standardized coefficients suggest that housing stability was a moderate predictor of treatment dose, while employment stability is a weaker predictor. This strength of prediction was also reflected in the explained variance. Housing stability explained approximately 18% of

the variation of months in substance abuse treatment, while employment stability only explains 5% of the variance.

Table 4: Partial Linear Regressions of Substance Abuse Treatment Dosage on Independent and Control Variables (n=511).

	b (SE) StdB	b (SE) StdB	b (SE) StdB	b (SE) StdB
Age				.02 (.03) .03
White ^e				-.42 (.41) -.03
GED ^a				-.15 (.41) -.01
HS Grad Plus ^a				.28 (.57) .02
Divorce/Widow ^b				.86 (.55) .05
Married ^b				-.19 (.66) -.01
Prior J Commit ^c				-.40 (.47) -.03
Prior Prison ^c				.23 (.42) .02
Person Crime ^c				.08 (.51) .01
Property Crime ^c				-.37 (.52) -.03
PSafety Crime ^c				-.54 (.59) -.03
Past TX Services				-.05 (.12) -.01
Sup Intensity				.08 (.01) .35***
Grad of TX ^e				4.47 (.41) .37***
Tx Group ^d				3.94 (.38) .34***
Hospitalized ^e				1.20 (.44) .09**
MH Treatment ^e				-.06 (.57) -.00
H Edu ^e				.81 (.50) .05
House Stability	1.05 (.10) .43***		1.07 (.09) .44***	
Emp Stability		.19 (.04) .22***	.20 (.03) .24***	
R-Square	.18	.05	.24	.52
Model F	113.87***	26.19***	79.73***	29.35***
df	1	1	2	18

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance.

Unexpectedly, as the number of housing movements increased the amount of substance abuse treatment dose also increased. The logic of the research question assumed that housing instability would reduce the levels of treatment dosage received, but this does not appear to be the case among the partial models that do not include control variables. Employment stability appeared to be consistent with the logic of the research question. The more stable the employment in terms of the number of months worked, the greater the dose of substance abuse treatment.

A number of the control variables related to supervision activity across the supervision term were also significantly related to substance abuse treatment dosage. As the intensity of supervision increased, the dosage of substance abuse treatment also increased. Graduates of substance abuse treatment programs, members of the treatment group, and those that were hospitalized at least once during their supervision term received higher dosage levels of treatment than those who did not graduate from a treatment program, were members of the control group, or were not hospitalized. These variables appear to be moderate predictors of treatment dose, with the exception of hospitalization which is a very weak predictor. It is important to note that the control variables appear to explain approximately 52% of the variance of substance abuse treatment dose irrespective of the main independent variables of housing and employment stability.

Table 5 provides the full conditional linear regression models. In general, most of the unconditional and partial conditional effects remained the same in the full conditional models. Housing and employment stability continue to be positively associated with substance abuse treatment dose after controlling for control variables, one another, and an

interaction term³¹. Similarly, supervision intensity, substance abuse treatment graduates, and members of the treatment group are positively associated with treatment dose.

Housing stability continued to be a stronger predictor of substance abuse treatment dose relative to employment stability. However, both of these predictors were weaker than the control predictors of supervision intensity, substance abuse treatment program graduates, and assignment to the treatment group. It is also important to note that the explained variance increased very little with the inclusion of housing and employment stability measures. The model that only included control variables explained 52% of the variance and the model that includes all of the variables explains an additional 4% of the variance. This suggested that housing and employment stability may not be contributing much to the prediction of treatment dose.

³¹ The results for the primary independent variables of housing and employment stability in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix B for further information.

Table 5: Full Linear Regressions of Substance Abuse Treatment Dosage on Independent and Control Variables (n=511).

	b (SE) StdB	b (SE) StdB	b (SE) StdB	b (SE) StdB
Age	.01 (.02) .02	.02 (.02) .04	.02 (.02) .03	.02 (.02) .03
White ^e	-.58 (.39) -.05	-.75 (.42) -.06	-.98 (.40) -.08*	-.98 (.40) -.08*
GED ^a	-.10 (.39) -.01	-.23 (.40) -.02	-.19 (.39) -.02	-.19 (.39) -.02
HS Grad Plus ^a	.09 (.55) .01	.19 (.56) .01	-.03 (.54) -.00	-.03 (.54) -.00
Divorce/Widow ^b	.91 (.53) .06	.76 (.55) .05	.80 (.53) .05	.79 (.53) .05
Married ^b	-.13 (.64) -.01	-.26 (.65) -.01	-.21 (.63) -.01	-.21 (.63) -.01
Prior J Commit ^c	-.48 (.45) -.03	-.36 (.47) -.02	-.45 (.45) -.03	-.45 (.45) -.03
Prior Prison ^e	.12 (.41) .01	.07 (.42) .01	-.08 (.40) -.01	-.07 (.41) -.01
Person Crime ^c	-.02 (.49) -.00	-.02 (.50) -.00	-.14 (.48) -.01	-.14 (.48) -.01
Property Crime ^c	-.42 (.50) -.03	-.27 (.51) -.02	-.31 (.49) -.02	-.31 (.50) -.02
PSafety Crime ^c	-.45 (.57) -.03	-.62 (.59) -.04	-.54 (.57) -.03	-.54 (.57) -.03
Past TX Services	-.14 (.12) -.04	-.02 (.12) -.01	-.11 (.12) -.03	-.11 (.12) -.03
Sup Intensity	.07 (.01) .30***	.08 (.01) .34***	.07 (.01) .29***	.06 (.01) .29***
Grad of TX ^e	4.21 (.40) .35***	4.11 (.42) .34***	3.76 (.41) .31***	3.76 (.41) .31***
Tx Group ^d	3.45 (.38) .30***	3.99 (.38) .34***	3.48 (.37) .30***	3.48 (.37) .30***
Hospitalized ^e	.79 (.43) .06	1.20 (.43) .09**	.76 (.42) .06	.76 (.42) .06
MH Treatment ^e	-.17 (.55) -.01	.15 (.57) .01	.08 (.55) .01	.08 (.55) .01
H Edu ^e	.95 (.48) .06*	.65 (.50) .04	.76 (.48) .05	.76 (.48) .05
House Stability	.49 (.08) .20***		.52 (.08) .21***	.50 (.11) .20***
Emp Stability		.09 (.03) .11***	.11 (.03) .13***	.11 (.03) .13***
House*Emp ^f				.12 (.60) .01
R-Square	.55	.53	.56	.56
Model F	31.39***	28.76***	31.35***	29.80***
df	19	19	20	21

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

There are some exceptions to the findings from previous unconditional models³².

The measure of participation in higher education via college or professional degree coursework becomes significant once housing stability is controlled. Those who are participating in higher education during their supervision term receive a higher dosage of substance abuse treatment than those who are not seeking higher education. This effect becomes insignificant once employment stability is controlled but does not appear to change in direction or strength. Race was significant in the full models that control for housing stability and employment stability with or without the interaction term of housing and employment instability. On average, whites received a lower dose of substance abuse treatment than non-whites.

The interaction term of housing instability and employment instability did not provide any additional explanatory power to the variables of housing and employment stability. Individuals who have experienced substantial housing moves and who lacked stable employment did not experience an increase or a decrease in substance abuse treatment relative to those with relatively more stable housing and employment. The significance of the variables of housing stability and employment stability with the inclusion of the interaction term indicates that each of these variables has a direct effect on treatment dosage.

Table 6 provides the unconditional and partial conditional linear regression models of the number of substance abuse treatment program violations on independent

³² Once housing stability is controlled for, the measure of hospitalization becomes insignificant. The direction and strength of the predictor does not change, but does appear to interact and become subsumed by housing stability. This finding differs from previous unconditional models, but was not replicated in full conditional negative binomial regression models with robust standard errors (see Appendix B for further information). The negative binomial regression models suggested that individuals who had been

and control variables. Housing and employment stability were statistically significant, but their effects are in two different directions. Housing stability was a moderate predictor of substance abuse treatment program violations as indicated by the standardized coefficient of .46 and the ability to explain approximately 21% of the variance in the number of treatment violations. Employment stability was a relatively weak predictor and only explains approximately 4% of the variance in treatment violations. In combination, housing and employment stability appeared to provide slightly more explanatory power (explaining 25% of the variance in treatment program violations) than the control variables (explaining 22% of the variance in treatment program violations).

Housing stability was positively associated with the number of substance abuse treatment violations. Individuals who have experienced more housing movements are also likely to have experienced more treatment program violations. Employment stability was negatively associated with the number of treatment violations. Individuals who have more stable employment are likely to have fewer treatment violations. Both of these effects are in the direction expected by the logic of the research question.

hospitalized during their supervision term were 1.15 times more likely to have higher proportions of positive drug tests than those who had not been admitted to a hospital.

Table 6: Partial Linear Regressions of Treatment Program Violations on Independent and Control Variables (n=511).

	b (SE) StdB	b (SE) StdB	b (SE) StdB	b (SE) StdB
Age				.01 (.01) .06
White ^e				.23 (.11) .09*
GED ^a				-.15 (.11) -.06
HS Grad Plus ^a				-.13 (.15) -.04
Divorce/Widow ^b				-.02 (.15) -.01
Married ^b				-.07 (.18) -.02
Prior J Commit ^e				.19 (.13) .06
Prior Prison ^e				-.11 (.11) -.05
Person Crime ^c				.30 (.13) .11*
Property Crime ^c				.37 (.14) .14**
PSafety Crime ^c				.09 (.16) .03
Past TX Services				.16 (.03) .20***
Sup Intensity				.01 (.002) .15***
Grad of TX ^e				-.53 (.11) -.21***
Tx Group ^d				.73 (.10) .30***
Hospitalized ^e				.18 (.12) .07
MH Treatment ^e				-.22 (.15) -.08
H Edu ^e				-.29 (.13) -.07
House Stability	.24 (.20) .46***		.24 (.02) .46***	
Emp Stability		-.04 (.01) -.21***	-.03 (.01) -.19***	
R-Square	.21	.04	.25	.22
Model F	139.67***	23.02***	85.54***	7.82***
df	1	1	2	18

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance.

A number of control variables continue to influence the relationships with treatment processes in general and more specifically the number of treatment program violations. Race, current conviction offense type, past exposure to previous correctional

substance abuse treatment, and supervision activity all appear to influence treatment program violations. Whites who were convicted of a person or property crime and were exposed to a number of prior correctional substance abuse treatments had higher numbers of treatment program violations, on average, than non-whites, those convicted of a drug crime, or those with few or no past exposures to correctional substance treatment. Relative to supervision activity across the supervision term, as the intensity of supervision increases, the number of observed treatment program violations increases. Individuals assigned to the treatment group were likely to have more treatment program violations than members of the control group. Finally, those who successfully completed a substance abuse treatment program often had fewer treatment program violations than those who did not complete a treatment program.

Table 7 provides the full conditional linear regression models of the number of substance abuse treatment program violations on independent and control variables. Housing stability continued to be significantly related to the number of substance abuse treatment violations in the conditional models. The standardized coefficients suggested that housing stability has the strongest effect on the prediction of treatment program violations across all of the conditional models, with more housing movement leading to more violations. Employment stability was negatively related to the number of substance abuse treatment violations in each of the full conditional models³³.

³³ The results for the primary independent variables of housing and employment stability in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix B for further information.

Table 7: Full Linear Regressions of Treatment Program Violations on Independent and Control Variables

	Std B (SE)	Std B (SE)	Std B (SE)	Std B (SE)
Age	.01 (.01) .03	.01 (.01) .05	.00 (.01) .03	.00 (.01) .03
White ^e	.16 (.10) .06	.35 (.11) .13**	.25 (.10) .10*	.24 (.10) .10**
GED ^a	-.12 (.10) -.05	-.12 (.11) -.05	-.10 (.10) -.04	-.11 (.09) -.03
HS Grad Plus ^a	-.22 (.14) -.06	-.10 (.15) -.03	-.19 (.13) -.06	-.20 (.14) -.05
Divorce/Widow ^b	.00 (.13) .00	.01 (.14) .00	.03 (.13) .01	-.01 (.13) -.01
Married ^b	-.04 (.16) -.01	-.04 (.17) -.01	-.02 (.16) -.01	.01 (.16) .01
Prior J Commit ^e	.15 (.11) .05	.18 (.12) .06	.15 (.11) .05	.16 (.11) .05
Prior Prison ^e	-.16 (.10) -.07	-.05 (.11) -.02	-.12 (.10) -.05	-.10 (.10) -.04
Person Crime ^c	.25 (.12) .10*	.33 (.13) .12*	.28 (.12) .11*	.26 (.12) .10
Property Crime ^c	.34 (.12) .13**	.34 (.14) .12*	.32 (.12) .12**	.32 (.12) .11
PSafety Crime ^c	.13 (.14) .04	.12 (.16) .04	.16 (.14) .05	.18 (.14) .06
Past TX Services	.12 (.03) .15***	.15 (.03) .19***	.11 (.03) .14***	.10 (.03) .13***
Sup Intensity	.00 (.002) .04	.01 (.002) .16***	.00 (.002) .05	.00 (.002) .03
Grad of TX ^e	-.66 (.10) -.26***	-.41 (.11) -.16***	-.56 (.10) -.22***	-.57 (.10) -.23***
Tx Group ^d	.50 (.09) .21***	.72 (.10) .29***	.50 (.09) .20***	.51 (.09) .21***
Hospitalized ^e	-.01 (.11) -.00	.19 (.11) .07	.00 (.10) .00	-.02 (.10) -.01
MH Treatment ^e	-.34 (.14) -.09**	-.37 (.15) -.10*	-.40 (.14) -.11**	-.38 (.13) -.11**
H Edu ^e	-.15 (.12) -.05	-.16 (.13) -.05	-.11 (.12) -.03	-.12 (.11) -.03
House Stability	.23 (.21) .44***		.22 (.02) .43***	.14 (.03) .26***
Emp Stability		-.03 (.01) -.18***	-.02 (.01) -.13***	-.01 (.01) -.06
House*Emp ^f				.63 (.14) .25***
R-Square	.37	.25	.39	.43
Model F	15.53***	8.50***	15.61***	17.81***
df	19	19	20	21

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

The significance of the interaction term suggested that individuals with 4 or more residential moves who have been employed for less than half of their parole term have more treatment program violations on average than all other individuals in the sample³⁴. The finding also suggested that the direct, positive effect of housing movement on treatment program violations was conditioned by employment stability. The insignificance of the coefficient for employment stability suggested that the partial effect of employment stability was not conditioned by housing stability in the full linear regression model. However, the replication of the full linear regression model with a negative binomial regression model with robust standard errors estimated a significant employment stability coefficient after controlling for the interaction term (see Appendix B for further information). This suggested that the negative relationship between employment stability and treatment program violations was conditioned by housing stability.

The full conditional models explained between 39% and 43% of the variance in the number of substance abuse program violations, which was a 17% to 21% increase in explained variance from the conditional model that only included the control variables and a 14% to 18% increase from the conditional model that only included the variables of housing and employment stability. In addition to the strong effects for housing stability, a number of control variables had consistent effects across all of the conditional models³⁵. Past enrollment in correctional substance abuse treatment and assignment to

³⁴ The result for the interaction term in the full conditional model was confirmed through negative binomial regression with robust standard errors. See Appendix B for further information.

³⁵ Control variable measures of current conviction offense type remained consistent across the full conditional models when models were estimated using negative binomial regression with robust standard

the treatment group continued to be positively associated with treatment program violations. Individuals who graduated from substance abuse treatment during their supervision term had less treatment program violations on average than those who failed to complete treatment. These effects were also conditioned by the interactive effect of housing and employment instability.

The full conditional models also modified some of the previous finding from the partial conditional models. Race continued to be positively related to treatment program violations with whites having more violations on average than non-whites, but was unrelated to the model which only controls for housing stability. The measure of housing stability may have subsumed the effect of race, but it is also likely that the effect of employment stability is associated with or conditioned by race (see Pager, 2007). Supervision intensity was found to be insignificant for most of the conditional models except for the model which controls for employment stability. It appears that the effect of supervision intensity was associated with and truncated by the measure of housing stability. The standardized coefficient for supervision intensity was .15 in the conditional model that only includes the control variables and .16 in the conditional model that includes the control variables and employment stability. Conditional models that included the control variables and housing stability, control variables with housing and employment stability, and control variables with housing stability, employment stability, and the interaction term produced standardized coefficients of .04, .05, and .02 respectively.

errors (see Appendix B). Individuals convicted of crimes against persons or property crimes had more treatment program violations, on average, relative to individuals convicted of drug offenses.

One unanticipated finding was also observed with the full conditional models. Enrollment in mental health treatment during the supervision term was negatively associated to the number of substance abuse treatment program violations once housing and employment stability were controlled. That is, those with mental health issues had fewer treatment program violations than those without mental health issues. This effect was also observed for the full conditional model that included an interaction term. It is possible that the identification of mental health needs can lead to provider flexibility in determinations of treatment program violations and/or compliance. It is equally probable that this same type of provider flexibility is given to those convicted of drug offenses, while those convicted of persons or property crimes are given less flexibility.

For the final treatment process consideration, Table 8 provides the unconditional and partial conditional logistic regression models of supervision absconding on independent and control variables. The partial models suggested that the relative explanatory power of the models is quite low, with pseudo variance explained coefficients near 10% to 20%. The decreasing log-likelihood ratio statistic suggested that the additional variables included to the models are providing better model fit than simplistic models with few variables. Overall, the partial conditional model that only includes control variables had more explanatory power and better model fit than models which include housing and/or employment stability.

Table 8: Partial Logistic Regressions of Supervision Absconding on Independent and Control Variables

	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB
Age				-.02 (.01) .98
White ^e				-.10 (.22) .91
GED ^a				.06 (.22) 1.06
HS Grad Plus ^a				-.08 (.31) .92
Divorce/Widow ^b				.09 (.30) 1.10
Married ^b				-.24 (.37) .78
Prior J Commit ^e				.51 (.25) 1.66*
Prior Prison ^e				.43 (.23) 1.54
Person Crime ^c				.28 (.27) 1.33
Property Crime ^c				.64 (.28) 1.90*
PSafety Crime ^c				.08 (.32) 1.09
Past TX Services				.25 (.07) 1.28***
Sup Intensity				.00 (.004) 1.00
Grad of TX ^e				-1.15 (.23) .32***
Tx Group ^d				.77 (.21) 2.17***
Hospitalized ^e				.25 (.23) 1.29
MH Treatment ^e				.13 (.30) 1.14
H Edu ^e				-.65 (.28) .52*
House Stability	.25 (.04) 1.28***		.26 (.04) 1.30***	
Emp Stability		-.08 (.02) .92***	-.09 (.01) .91***	
Cox and Snell R2	.07	.07	.14	.17
Nagelkerke R2	.10	.09	.19	.22
-2LL	661.72	663.72	624.12	608.80
Model Chi2	39.37***	37.38***	76.98***	92.30***
df	1	1	2	18

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance.

Housing stability and employment stability were found to be statistically significant in opposing, but expected, directions as specified in the research question. In

terms of housing stability, more housing movement is associated with a greater likelihood of absconding. With each additional housing movement the odds of absconding increase by a factor of just over 1. Employment stability was negatively related to absconding. Individuals who have stable employment were less likely to abscond.

Control variables of criminal and substance abuse histories as well as supervision activity across the supervision term were also associated with absconding. Individuals who had previously been adjudicated and committed to a juvenile facility at least one time were just less than two times more likely to have absconded than individuals who were not committed as a juvenile. Individuals who were convicted of a property crime as their instant offense were nearly two times more likely to abscond relative to those who were convicted on drug offenses. Past enrollment in correctional substance abuse treatment services was also positively associated with absconding. The odds of absconding increase 1.28 times for every exposure to correctional substance abuse treatment services.

Relative to supervision activity, individuals assigned to the treatment group were just over 2 times more likely than members of the control group to abscond. Individuals who successfully completed a substance abuse treatment program during their supervision term were less likely to abscond relative to those who were unable to complete a treatment program. This negative effect on absconding was also observed for enrollment in higher education. Individuals who pursued college coursework or professional degrees were less likely to abscond than those who did not pursue advanced education.

Table 9 presents the full conditional logistic regression models of absconding on independent and control variables. Housing and employment stability were significantly related to absconding in the expected direction, with increased housing movement increasing the likelihood of absconding and increased employment stability decreasing the likelihood of absconding³⁶. The full conditional models provided additional explanatory power compared to the previous unconditional and partial conditional models as indicated by the conservative Cox and Snell pseudo explained variance. However, the proportion of explained variance hovered around 20% to 26%. The log-likelihood ratio statistic for the full conditional models continued to be lower than the unconditional and partial conditional models, but the rate of reduction was not very large (and in fact increases for the partial conditional model that only controls for employment stability). Nevertheless, the addition of housing and employment stability variables contributed to a better fitting model.

The effects of control variables for prior substance abuse treatment history, and current treatment activity continued to be significantly related to absconding across all of the full conditional models³⁷. Prior treatment history was positively associated with absconding. Individuals who had experienced more exposure to correctional substance abuse treatment were more likely to abscond. It is important to note that this effect persisted even after controlling for prior prison admissions. This suggested that increased

³⁶ The results for the primary independent variables of housing and employment stability in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix B for further information.

³⁷ Individuals convicted of a property crime appeared to be nearly two times more likely to abscond than those convicted for a drug offense in the full conditional logistic regression models. The significance of the effect was not observed in full conditional models that utilized negative binomial regression with robust standard errors (see Appendix B for further information).

exposure to correctional substance abuse treatment influenced absconding regardless of whether an individual has no history or a lengthy history of prison sentences. The group effect of assignment to the treatment condition and participation in the treatment program was observed. Members of the treatment group were two times as likely to abscond relative to individuals in the control group that experience traditional supervision services. Successful completion of a substance abuse treatment program continued to be negatively associated with absconding. This suggested that treatment may serve as a protective factor and decrease the likelihood of absconding for those who complete treatment.

Variables in the partial conditional control model were influenced by the inclusion of housing and/or employment stability variables in terms of significance, but did not change in direction or relative magnitude. Full conditional models that controlled for the effect of housing stability reduce and effectively negated the effect of past juvenile commitments. This suggested that a juvenile criminal history may partially influence employment stability, but does not influence housing stability or contribute to the effects of employment stability once housing stability is controlled. Enrollment in college coursework or professional degrees continued to have a negative effect on absconding, but this effect becomes insignificant once housing stability and employment stability were controlled.

Table 9: Full Logistic Regressions of Supervision Absconding on Independent and Control Variables (n=511).

	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB
Age	-.02 (.01) .98	-.02 (.01) .98	-.03 (.02) .97	-.03 (.02) .97
White ^c	-.26 (.23) .77	.16 (.23) 1.18	-.02 (.25) .98	-.02 (.25) .98
GED ^a	.11 (.23) 1.12	.11 (.22) 1.12	.16 (.24) 1.17	.16 (.24) 1.17
HS Grad Plus ^a	-.18 (.32) .83	-.03 (.31) .97	-.15 (.33) .86	-.15 (.33) .86
Divorce/Widow ^b	.15 (.31) 1.16	.17 (.31) 1.19	.23 (.32) 1.26	.22 (.33) 1.25
Married ^b	-.20 (.38) .82	-.22 (.37) .80	-.19 (.39) .83	-.18 (.39) .83
Prior J Commit ^c	.49 (.26) 1.64	.51 (.26) 1.67*	.50 (.27) 1.66	.51 (.27) 1.66
Prior Prison ^c	.39 (.24) 1.48	.59 (.24) 1.81**	.56 (.25) 1.76*	.56 (.25) 1.76*
Person Crime ^c	.24 (.29) 1.28	.36 (.28) 1.44	.33 (.29) 1.39	.32 (.29) 1.38
Property Crime ^c	.67 (.29) 1.96*	.57 (.28) 1.77*	.63 (.30) 1.88*	.63 (.30) 1.88*
PSafety Crime ^c	.14 (.34) 1.15	.14 (.33) 1.15	.20 (.36) 1.23	.21 (.35) 1.23
Past TX Services	.20 (.08) 1.22**	.23 (.07) 1.26**	.19 (.08) 1.21**	.19 (.08) 1.21*
Sup Intensity	-.01 (.01) .99*	.00 (.004) 1.00	-.01 (.01) .99	-.01 (.01) .99
Grad of TX ^c	-1.46 (.25) .23***	-.92 (.23) .40***	-1.23 (.26) .29***	-1.24 (.26) .29***
Tx Group ^d	.49 (.22) 1.64*	.75 (.21) 2.11***	.48 (.22) 1.61*	.48 (.23) 1.61*
Hospitalized ^c	-.05 (.25) .95	.27 (.24) 1.31	-.03 (.25) .97	-.04 (.25) .96
MH Treatment ^c	.10 (.32) 1.10	-.05 (.31) .96	-.08 (.33) .92	-.08 (.33) .93
H Edu ^e	-.59 (.29) .56*	-.57 (.28) .57*	-.50 (.30) .61	-.51 (.30) .60
House Stability	.34 (.06) 1.41***		.33 (.05) 1.40***	.32 (.07) 1.38***
Emp Stability		-.07 (.02) .93***	-.07 (.02) .97***	-.07 (.02) .93***
House*Emp ^f				.11 (.36) 1.12
Cox and Snell R2	.24	.20	.26	.26
Nagelkerke R2	.32	.26	.35	.35
-2LL	562.08	589.54	546.39	546.30
Model Chi2	139.02***	111.56***	154.70***	154.80***
df	19	19	20	21

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves (median split of sample) and who were employed for less than half of their supervision term.

The inclusion of housing and/or employment stability variables modified the significance of the coefficient of some of the control variables that were previously insignificant in the partial conditional control model³⁸. Prior prison sentences were positively associated with absconding in conditional models that controlled for employment stability. Individuals who have served one or more prior prison terms were nearly two times as likely as those serving their first prison term to abscond. Supervision intensity was negatively associated with absconding in the conditional model that controlled for the effect of housing stability. This effect is very small since the odds ratio approximates one, but did suggest that intensive supervision may reduce the likelihood of absconding.

The interaction term of housing and employment instability did not influence the likelihood of absconding. Additionally the interaction term did not influence the direct effects of housing stability or employment stability on the likelihood of absconding. These findings suggested that while housing stability and employment stability have significant direct effects on absconding, the combination of their effect does not substantially increase or decrease the likelihood of absconding.

Summation of Results for Research Question 1: Treatment Dosage and Processes

The goal of this first phase of analysis was to examine the relationships between housing and employment stability on substance abuse treatment process indicators of treatment dosage, treatment violations, and absconding. Overall, housing stability and employment stability influenced all of the treatment process indicators to some degree.

³⁸ Age was statistically significant in full conditional negative binomial regression models with robust standard errors (see Appendix B for further information). In these models, older individuals were less likely to abscond.

As the number of housing movements increase, the level of treatment dosage, the number of treatment program violations, and the likelihood of absconding all increased. As the stability of employment increased, the number of months in substance abuse treatment increased and the number of treatment program violations and the likelihood of absconding decreased. The joint effect of housing and employment instability is only observed for the prediction of treatment program violations and suggested that the direct effect of housing stability is conditioned by the effect of employment stability. This joint effect was not observed for employment stability in linear regression models, but was observed in negative binomial regression models with robust standard errors (see Appendix B). While the measures of housing and employment stability influenced treatment processes, the model fit indices and explained variance statistics suggested that housing and employment stability may have more of an effect on the treatment process models of non-compliance (i.e., treatment violations and absconding) rather than models of treatment dosage.

A number of the control variables also provided insights into how treatment dosage and processes may be influenced. Not surprisingly, control variables associated with treatment progress or supervision activity were important predictors of all of the treatment processes. Individuals who successfully completed a substance abuse treatment program received a larger dose of treatment, had less treatment program violations, and were less likely to abscond relative to those who did not complete a treatment program. There were consistent group effects across the conditional models. Individuals assigned to the treatment group and participated in the intensive, reentry-based substance abuse treatment program spent received a larger dose of treatment, but

also had more treatment program violations and an increased likelihood of abscond relative to the control group who received traditional supervision services.

Some of the control variables were only associated with treatment dosage, while others were only associated with treatment non-compliance. Supervision intensity was consistently related to treatment dosage, with increased intensity of supervision leading to a larger dose of substance abuse treatment. The effect of supervision intensity was not as consistent with models assessing substance abuse treatment violation or absconding. In the treatment violation models, supervision intensity appeared to be partially influenced by the inclusion of employment stability, but not housing stability. In the absconding models, supervision intensity was influenced by controls for housing stability, but not for controls of employment stability.

Conviction offense type and prior correctional substance abuse treatment service history were consistently related to treatment non-compliance and unrelated to treatment dosage. Property offenders were more likely than drug offenders to have a higher number of substance abuse treatment program violations. Individuals who have experienced a higher number of past correctional substance abuse services were also more likely to have a higher number of current substance abuse treatment violations and were more likely to abscond. In the models of treatment program violations, those who were convicted of crimes against persons had more violations, on average, than drug offenders.

A number of the control variables were also influenced by the stepwise addition or censoring of housing and employment stability variables across and within treatment process models. Whites spent less time in treatment than nonwhites after housing and

employment stability were controlled, but had more treatment violations than nonwhites after employment stability was controlled with or without subsequent controls for housing stability. Enrollment in college or professional degree coursework was positively associated with treatment dosage in the model that controlled for housing stability and was negatively associated with absconding in models that only controlled for housing or employment stability.

The remainder of the additive or censored effects pertained to specific treatment process models. Individuals who were hospitalized at some point across their supervision term received a larger dosage of substance abuse treatment. Individuals who participated in mental health treatment had less substance abuse treatment program violations than those who did not participate in mental health treatment once housing or employment stability variables were included in the models. Individuals with a juvenile commitment history were more likely to abscond, but only after employment stability was controlled. Those with prior prison admissions were also more likely to abscond, but only after employment stability was controlled with or without the inclusion of the measure of housing stability.

Research Question 2: Unconditional, Partial Conditional, and Conditional Multivariate Analyses of Relapse and Recidivism Outcome Measures

The goal of the second phase of analysis was to examine the relationships between housing and employment stability and the outcome indicators of relapse, re-arrest, and re-incarceration. Linear and logistic regressions were utilized to assess the relationships. Models are presented stepwise, beginning with unconditional bivariate models and ending with full conditional models that include the independent variables of

housing and employment, all of the control variables, and a check of the interaction term of housing and employment instability.

Table 10 provides the unconditional and partial conditional linear regression models of relapse on independent and control variables. Housing and employment stability were significantly related to relapse in the unconditional bivariate models as well as the partial conditional multivariate model. Both of the effects were in the direction expected by the logic of the second research question. As the number of housing movements increased, the proportion of positive drug tests also increased. As employment stability increased, the proportion of positive drug tests decreased.

The standardized coefficients suggested that housing stability and employment stability were relatively similar, but weak predictors of relapse. The conditional multivariate model that includes both measures of stability explained only 8% of the variance in the proportion of positive drug tests. At the low end, the unconditional bivariate model of employment stability only explained 3% of the variability in relapse.

The conditional multivariate model of control variables also explained approximately 8% of the variance of relapse. Similar to the estimated coefficients for housing and employment stability, the estimated coefficients for the control variables were weak. A number of the control variables were significantly related to relapse. Whites had less positive tests on average relative to nonwhites. The remaining relationships were associated with supervision activity across the supervision term.

Table 10: Partial Linear Regressions of Substance Abuse Relapse on Independent and Control Variables (n=511).

	b (SE) StdB	b (SE) StdB	b (SE) StdB	b (SE) StdB
Age				-.00 (.002) .06
White ^e				-.07 (.03) -.12**
GED ^a				-.01 (.03) -.02
HS Grad Plus ^a				-.04 (.04) -.06
Divorce/Widowed ^b				.00 (.03) .00
Married ^b				-.02 (.04) -.03
Prior J Commit ^e				.00 (.03) .00
Prior Prison ^e				.05 (.03) .10
Person Crime ^c				-.03 (.03) -.06
Property Crime ^c				-.03 (.03) -.04
PSafety Crime ^c				-.05 (.04) -.07
Past TX Services				-.00 (.01) -.00
Sup Intensity				.00 (.00) .07
Grad of TX ^e				-.06 (.03) -.11*
Tx Group ^d				.05 (.02) .10*
Hospitalized ^c				.07 (.03) .12**
MH Treatment ^e				-.06 (.04) -.03
H Edu ^e				-.02 (.03) -.09*
House Stability	.02 (.01) .21***		.02 (.01) .20***	
Emp Stability		-.01 (.002) -.18***	-.01 (.002) -.17***	
R-Square	.05	.03	.08	.08
Model F	23.88***	17.32***	20.61***	2.48***
df	1	1	2	18

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance.

Individuals who completed a substance abuse treatment program during their supervision term had lower proportions of positive drug tests, on average, than those who did not complete a treatment. Individuals assigned to the treatment group and

participated in intensive, reentry-based substance abuse treatment services had higher proportions of positive drug tests than those who were assigned to the control group and experienced traditional supervision services. Those who were hospitalized at least one time during their supervision term had a higher proportion of positive drug tests, on average, than those who were never admitted to the hospital. Finally, individuals who were enrolled in college or professional degree coursework had lower proportions of positive drug tests than those who did not seek to further their education.

Table 11 presents the full conditional linear regression models of relapse. In general, the effects observed in the unconditional and partial models remain the same in the full conditional models. Housing stability continued to be positively associated with relapse after control variables, employment stability, and an interaction term of housing and employment instability were controlled³⁹. As housing movement increased the proportion of positive drug tests also increased. Employment stability continues to be negatively associated with relapse. While these direct effects continued to be observed, there does not appear to be an interactive effect of housing and employment instability that moderates levels of relapse.

According to the standardized coefficients, the measures of housing and employment stability were the strongest predictors of relapse. When each measure was included in the full conditional models, housing stability was slightly stronger of a predictor than employment stability. The strength of the models must be cautioned,

³⁹ The results for the primary independent variables of housing and employment stability in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix C for further information.

however, since the full conditional models only explained 10% to 13% of the variability in relapse levels.

Table 11: Full Linear Regressions of Substance Abuse Relapse on Independent and Control Variables (n=511).

	Std B (SE)	Std B (SE)	Std B (SE)	Std B (SE)
Age	-.00 (.002) -.07	-.00 (.002) -.06	-.00 (.002) -.07	-.00 (.002) -.08
White ^e	-.07 (.03) -.13**	-.05 (.03) -.08	-.06 (.03) -.10*	-.06 (.03) -.10*
GED ^a	-.01 (.03) -.02	-.01 (.02) -.01	-.00 (.03) -.01	-.01 (.03) -.01
HS Grad Plus ^a	-.05 (.04) -.07	-.04 (.04) -.05	-.04 (.04) -.06	-.05 (.04) -.06
Divorce/Widowed ^b	.00 (.03) .01	.01 (.03) .01	.01 (.03) .01	.01 (.03) .01
Married ^b	-.02 (.04) -.02	-.02 (.04) -.02	-.02 (.04) -.02	-.01 (.04) -.02
Prior J Commit ^c	-.00 (.03) -.01	-.00 (.03) -.00	-.01 (.03) -.01	-.01 (.03) -.01
Prior Prison ^e	.04 (.03) .09	.06 (.03) .11*	.05 (.03) .10*	.05 (.03) .10*
Person Crime ^c	-.04 (.03) -.07	-.03 (.03) -.05	-.03 (.03) -.06	-.03 (.03) -.06
Property Crime ^c	-.03 (.03) -.05	-.03 (.03) -.05	-.03 (.03) -.06	-.03 (.03) -.06
PSafety Crime ^c	-.05 (.04) -.07	-.05 (.04) -.07	-.04 (.04) -.06	-.04 (.04) -.06
Past TX Services	-.00 (.01) -.03	-.00 (.01) -.01	-.01 (.01) -.03	-.01 (.01) -.04*
Sup Intensity	.00 (.001) .02	.00 (.000) .08	.00 (.001) .04	.00 (.001) .03
Grad of TX ^e	-.07 (.03) -.13**	-.03 (.03) -.07	-.05 (.03) -.09	-.05 (.03) -.09*
Tx Group ^d	.03 (.02) .06	.05 (.02) .10*	.03 (.02) .06	.03 (.02) .06
Hospitalized ^e	.06 (.03) .09*	.07 (.03) .13**	.06 (.03) .10*	.06 (.03) .09*
MH Treatment ^e	-.03 (.04) -.04	-.04 (.03) -.05	-.04 (.04) -.05	-.05 (.04) -.05
H Edu ^e	-.05 (.03) -.08	-.05 (.03) -.08	-.05 (.03) -.07	-.04 (.03) -.07
House Stability	.02 (.01) .21***		.02 (.01) .19***	.01 (.01) .14*
Emp Stability		-.01 (.002) -.14**	-.01 (.002) -.13**	-.01 (.002) -.10*
House*Emp ^f				.05 (.04) .08
R-Square	.12	.10	.13	.13
Model F	3.39***	2.87***	3.61***	3.52***
df	19	19	20	21

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

The control variable of hospitalization had the only consistent effect across the full conditional models. Similar to the partial model that only included control variables, individuals who have been hospitalized at least one time had a higher proportion of positive drug tests than those who were never admitted to a hospital. The remaining control variable effects observed in the previous partial model are influenced by the stepwise inclusion or censoring of the independent variables of housing and employment stability.

Whites continued to have lower proportions of positive drug tests relative to nonwhites, but this relationship is not observed in the full conditional model that only controlled for employment stability. This suggested that the differential effect of race may be negated and subsumed by the effect of employment stability and further masked once the partial effect of housing stability is included to the model. The effects of activity during the supervision term diminished after controlling for housing and employment stability⁴⁰. Members of the treatment group continued to have higher proportions of positive drug tests, but this effect was only observed in the model that only controlled for employment stability. Once housing stability is controlled for the effect becomes non-significant. Finally, whether an individual was enrolled in college or professional degree coursework became obsolete once housing or employment stability is controlled.

⁴⁰ Graduates of substance abuse treatment programs had significantly lower proportions of positive tests on average than non-graduates, but this effect appeared to be influenced by employment stability in full conditional linear regression models. The negative effect of the successful completion of a substance abuse treatment program on relapse did not appear to interact or be conditioned by employment stability in full conditional negative binomial regression models with robust standard errors (see Appendix C for further information). In these models, program graduates were observed to have lower levels of positive drug test proportions than those who did not successfully complete a treatment program net all other variables.

Individuals who had previously incurred a prison sentence had higher proportions of positive drug tests than those on their first prison term for full conditional models that included employment stability. The control variable of past prison sentences was associated with relapse in the full conditional models, but was not observed in the partial conditional model that only included control variables⁴¹. This suggested that employment stability may interact and enhance the effects of criminal history record information.

Table 12 provides the unconditional and partial conditional logistic regression models of re-arrest on independent and control variables. It is immediately apparent that housing stability had no effect on re-arrest. Employment stability was significant and negatively related to re-arrest in the unconditional model as well as the partial conditional model that controlled for housing stability. This suggests that as employment stability increased, the likelihood of re-arrest decreased. While significant, employment stability appeared to have a weak effect as indicated by the odds ratio approximating 1.00 and the conservative pseudo variance explained statistic of 1%.

The partial conditional model that only includes the control variables suggests that the control variables were more closely related to re-arrest relative to the independent variables of housing and employment stability. The power of the conditional control model was largely relative. Only 12% of the variability in re-arrest can be explained by the control variables. At the outset it appears that the partial logistic regression models

⁴¹ Additionally, the number of prior exposures to correctional substance abuse treatment services was observed to be negatively related to relapse after controlling for the direct and interactive effects of housing and employment stability in linear regression models. The effect of the number of past exposures to correctional substance abuse treatment on relapse was not observed in full conditional negative binomial regression models with robust standard errors. See Appendix C for further information.

provide a cautious representation of the relationships between the independent and control variables on re-arrest as well as the complexity of modeling re-arrest events.

Table 12: Partial Logistic Regressions of Re-Arrest on Independent and Control Variables (n=511).

	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB
Age				-.03 (.02) .97*
White ^e				-.06 (.23) .94
GED ^a				.49 (.25) 1.64*
HS Grad Plus ^a				.79 (.32) 2.21**
Divorce/Widowed ^b				.31 (.31) 1.36
Married ^b				.09 (.38) 1.10
Prior J Commit ^c				-.14 (.27) .87
Prior Prison ^c				.39 (.24) 1.47
Person Crime ^c				-.01 (.29) .99
Property Crime ^c				.26 (.29) 1.30
PSafety Crime ^c				.34 (.36) .71
Past TX Services				-.07 (.07) .94
Sup Intensity				-.02 (.01) .98***
Grad of TX ^c				-.56 (.25) .57*
Tx Group ^d				.31 (.22) 1.37
Hospitalized ^c				.07 (.27) 1.07
MH Treatment ^e				-.29 (.36) .75
H Edu ^e				-.31 (.30) .73
House Stability	-.02 (.04) .98		-.02 (.04) .98	
Emp Stability		-.04 (.02) .96**	-.04 (.02) .96**	
Cox and Snell R2	.001	.01	.01	.12
Nagelkerke R2	.001	.02	.02	.17
-2LL	609.33	603.15	602.83	546.49
Model Chi2	.26	6.44**	6.76*	63.10***
df	1	1	2	18

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance.

Control variables related to the likelihood of re-arrest included demographic variables and variables associated with supervision activities across the supervision term. Individual age was negatively related to the likelihood of re-arrest, with older individuals being less likely to be re-arrested. The effect of individual age was significant, but relatively weak with an odds ratio approaching one. The strongest effects for the control variables in the conditional control model were for educational status. The effects were in an unexpected direction with stronger educational backgrounds leading to higher probabilities of re-arrest. Individuals who completed a GED were just under two times more likely to be re-arrested than those who did not complete high school or obtain a GED. Those who have received a high school diploma (not GED based) and who may have continued their education through college or professional degree coursework were just over two times more likely to be re-arrested than those who did not complete high school or obtain a GED.

Relative to supervision activities across supervision terms, the intensity of supervision an individual received was negatively associated with re-arrest. Individuals who were intensely supervised were less likely to be re-arrested. This effect is significant, but relatively weak with an odds ratio of .98. The successful completion of a substance abuse treatment program was also associated with re-arrest. Program graduates were less likely to be re-arrested relative to those who did not complete a treatment program.

Table 13 provides the full conditional logistic regression models of re-arrest. In large part, the full conditional models closely resemble the previous unconditional and partial conditional models. Approximately 12% of the variability in the likelihood of re-

arrest can be explained by the full conditional models. The effects of the control variables of age, educational status, and supervision intensity are consistent across the full conditional models in terms of direction and strength. Once again, older offenders, those who have not completed high school or GED equivalency, and those who were subjected to relatively intense supervision were less likely to be re-arrested after controlling for all of the independent and control variables.

The most notable difference between the full conditional and unconditional or partial conditional models is the effect of employment stability⁴². After controlling for all of the control variables, the effect of employment stability was parceled out and no longer associated with re-arrest⁴³. The relative effect of employment stability maintains direction and magnitude, but was no longer significant.

⁴² The other notable change between partial logistic regression models and the full conditional logistic regression models was for graduates of substance abuse treatment program. Those who successfully completed a treatment program were less likely to be re-arrested than those who do not complete a treatment program, but this effect was not observed for the conditional model that only controls for employment stability. The insignificance of the effect remains despite similarity in magnitude and direction of the partial effect. Caution is needed with interpreting the effect of graduates of substance abuse treatment programs on re-arrest. The significance of the effect was only observed in full conditional logistic regression models. The significance of the coefficient was not replicated in full conditional negative binomial regression models with robust standard errors (see Appendix C).

⁴³ The results for the primary independent variables of housing and employment stability in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix C for further information.

Table 13: Full Logistic Regressions of Re-Arrest on Independent and Control Variables (n=511).

	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB
Age	-.03 (.02) .97*	-.03 (.02) .97*	-.03 (.02) .97*	-.03 (.02) .97*
White ^e	-.08 (.23) .92	.02 (.24) 1.02	-.01 (.24) .99	-.01 (.24) .99
GED ^a	.50 (.25) 1.66*	.51 (.25) 1.66*	.52 (.25) 1.68*	.52 (.25) 1.68*
HS Grad Plus ^a	.77 (.32) 2.17*	.81 (.32) 2.26**	.79 (.32) 2.20**	.79 (.32) 2.20**
Divorce/Widowed ^b	.32 (.31) 1.38	.33 (.31) 1.39	.34 (.31) 1.41	.34 (.31) 1.40
Married ^b	.10 (.38) 1.11	.10 (.38) 1.11	.11 (.38) 1.12	.11 (.38) 1.12
Prior Juv Commit ^c	-.15 (.27) .86	-.14 (.28) .87	-.15 (.28) .86	-.15 (.28) .86
Prior Prison Admit ^c	.37 (.25) 1.45	.43 (.25) 1.54	.41 (.25) 1.51	.41 (.25) 1.51
Person Crime ^c	-.02 (.29) .98	.01 (.29) 1.01	-.00 (.30) 1.00	-.00 (.30) 1.00
Property Crime ^c	.25 (.29) 1.29	.24 (.29) 1.28	.24 (.29) 1.27	.24 (.29) 1.27
PSafety Crime ^c	-.32 (.36) .73	-.32 (.36) .73	-.30 (.36) .74	-.30 (.36) .74
Past TX Services	-.08 (.07) .92	-.07 (.07) .93	-.09 (.07) .92	-.09 (.07) .92
Sup Intensity	-.02 (.01) .98***	-.02 (.01) .98***	-.02 (.01) .98***	-.02 (.01) .98***
Grad of TX ^e	-.61 (.25) .54*	-.45 (.26) .64	-.51 (.26) .60*	-.51 (.26) .60*
Tx Group ^d	.23 (.23) 1.26	.30 (.22) 1.35	.23 (.23) 1.26	.23 (.23) 1.26
Hospitalized ^e	-.01 (.27) .99	.06 (.27) 1.06	-.01 (.27) .99	-.01 (.27) .99
MH Treatment ^e	-.31 (.36) .74	-.34 (.36) .71	-.35 (.36) .71	-.35 (.36) .71
H Edu ^e	-.29 (.31) .75	-.28 (.31) .76	-.26 (.31) .77	-.26 (.31) .77
House Stability	.09 (.05) 1.09		.08 (.05) 1.09	.08 (.07) 1.08
Emp Stability		-.02 (.02) .98	-.02 (.02) .98	-.02 (.02) .98
House*Emp ^f				.03 (.37) 1.03
Cox and Snell R2	.12	.12	.12	.12
Nagelkerke R2	.17	.17	.18	.18
-2LL	543.53	544.71	542.19	542.19
Model Chi2	66.06***	64.88***	67.40***	67.40***
df	19	19	20	21

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

Table 14 presents the unconditional and partial conditional logistic regression models of re-incarceration on independent and control variables. Housing and employment stability were significantly and negatively related to re-incarceration across

the models. As housing movement increased (or becomes relatively more unstable), the likelihood of re-incarceration decreased. This effect is unexpected. The second research question presumed that unstable housing would increase the likelihood of deleterious outcome effects such as re-incarceration. The effect of employment stability is consistent with the logic of the second research question. As employment stability increases, the likelihood of re-incarceration also decreases.

Overall, the measure of employment stability appeared to be a stronger predictor of re-incarceration than the measure of housing stability. Employment stability explained 11% of the variability of the likelihood of re-incarceration, while housing stability only explained 4% of the variability of re-incarceration likelihood. Employment stability also provides a larger reduction to the log-likelihood ratio, which corresponded to an improved model fit. The partial effects of the independent variables were largely overshadowed by the effects of the control variables. As indicated by the pseudo explained variance statistics and log-likelihood ratio statistic, the control variables provide a better model from which to assess relationships with re-incarceration.

A number of the control variables were associated with re-incarceration. Past educational status was one of the strongest predictors of re-incarceration. Individuals who obtained a GED were just over two times more likely to be re-incarcerated relative to those who did not obtain a high school degree or a GED. Those who obtained a high school degree through traditional means and who may have enrolled in college or professional degree coursework were just over three times more likely to be re-incarcerated compared to those who did not obtain a high school degree or GED.

Table 14: Partial Logistic Regressions of Re-Incarceration on Independent and Control Variables (n=511).

	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB
Age				-.03 (.02) .97
White ^c				-.41 (.27) .67
GED ^a				.82 (.28) 2.28**
HS Grad Plus ^a				1.12 (.36) 3.06**
Divorce/Widowed ^b				.21 (.35) 1.23
Married ^b				.19 (.43) 1.21
Prior J Commit ^c				.58 (.31) 1.78
Prior Prison ^c				.22 (.27) 1.24
Person Crime ^c				.57 (.33) 1.76
Property Crime ^c				.18 (.34) 1.20
PSafety Crime ^c				-.07 (.39) .93
Past TX Services				-.01 (.08) .99
Sup Intensity				-.05 (.01) .95***
Grad of TX ^e				-1.91 (.31) .15***
Tx Group ^d				.60 (.25) 1.81*
Hospitalized ^c				-.37 (.31) .69
MH Treatment ^c				.58 (.39) 1.79
H Edu ^c				-.37 (.33) .69
House Stability	-.20 (.05) .82***		-.22 (.05) .81***	
Emp Stability		-.13 (.02) .88***	-.13 (.02) .88***	
Cox and Snell R2	.04	.11	.15	.33
Nagelkerke R2	.06	.16	.21	.46
-2LL	629.49	588.37	566.17	446.56
Model Chi2	20.57***	61.69**	83.89***	203.50***
df	1	1	2	18

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance.

The remaining control variables associated with re-incarceration consisted of measures of supervision activity across the supervision term. On average, those who were subject to more intense supervision were less likely to be re-incarcerated. Similarly,

individuals who successfully completed a substance abuse treatment program were less likely to be re-incarcerated relative to those who did not complete a treatment program. Finally, treatment group assignment was positively related to re-incarceration. Those who were assigned to the treatment condition and participated in intensive, reentry-based substance abuse treatment were nearly two times as likely to be re-incarcerated relative to the control group who received traditional supervision services.

Table 15 provides the full conditional logistic regression models of re-incarceration. The full conditional models provide little additional explanatory power from the partial conditional model that included all the control variables. The pseudo variance explained statistic only increased by 4% in the full conditional model that includes all independent and control variables. The perpetual reduction in the log-likelihood ratio statistic suggests that the inclusion of additional variables provided a stronger model for the assessment of re-incarceration relationships.

Housing stability is no longer significantly related to re-incarceration after the control variables are entered into the conditional models. Employment stability, on the other hand, continued to be negatively related to re-incarceration after the control variables were entered into the model and the interaction term is controlled. The effect of employment stability was also a direct effect and was not conditioned by the interaction of elevated levels of housing and employment instability⁴⁴.

⁴⁴ The results for the primary independent variables of housing and employment stability in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix C for further information.

Table 15: Full Logistic Regressions of Re-Incarceration on Independent and Control Variables (n=511).

	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB	b (SE) ExpB
Age	-.03 (.02) .97	-.03 (.02) .97*	-.03 (.02) .97*	-.03 (.02) .97*
White ^e	-.39 (.27) .68	-.04 (.29) .96	.02 (.29) 1.02	.02 (.29) 1.03
GED ^a	.81 (.28) 2.25**	.90 (.29) 2.46**	.89 (.29) 2.43**	.88 (.29) 2.41**
HS Grad Plus ^a	1.14 (.36) 3.13**	1.23 (.38) 3.42***	1.29 (.38) 3.65***	1.28 (.39) 3.58**
Divorce/Widowed ^b	.19 (.35) 1.21	.30 (.37) 1.35	.28 (.37) 1.32	.30 (.37) 1.35
Married ^b	.18 (.43) 1.19	.30 (.45) 1.35	.30 (.45) 1.35	.26 (.45) 1.30
Prior Juv Commit ^c	.60 (.32) 1.83	.63 (.32) 1.88*	.68 (.33) 1.98*	.67 (.33) 1.95*
Prior Prison Admit ^c	.22 (.27) 1.25	.46 (.29) 1.58	.49 (.29) 1.63	.47 (.29) 1.61
Person Crime ^c	.58 (.33) 1.79	.68 (.34) 1.98*	.72 (.34) 2.05*	.75 (.35) 2.13*
Property Crime ^c	.20 (.34) 1.22	.10 (.35) 1.11	.12 (.35) 1.13	.14 (.35) 1.15
PSafety Crime ^c	-.09 (.39) .92	.03 (.41) 1.03	.01 (.41) 1.01	-.01 (.41) .99
Past TX Services	.00 (.08) 1.00	-.04 (.08) .96	-.02 (.08) .98	-.01 (.08) .99
Sup Intensity	-.04 (.01) .96***	-.04 (.01) .96***	-.04 (.01) .96***	-.04 (.01) .96***
Grad of TX ^e	-1.88 (.31) .15***	-1.48 (.32) .23***	-1.40 (.32) .25***	-1.39 (.32) .25***
Tx Group ^d	.67 (.26) 1.95**	.53 (.26) 1.69*	.62 (.27) 1.87*	.61 (.27) 1.84*
Hospitalized ^e	-.32 (.32) .73	-.42 (.32) .66	-.33 (.33) .72	-.32 (.33) .72
MH Treatment ^e	.59 (.39) 1.80	.37 (.40) 1.45	.38 (.40) 1.47	.36 (.40) 1.43
H Edu ^e	-.40 (.33) .67	-.22 (.35) .80	-.25 (.35) .78	-.24 (.36) .78
House Stability	-.08 (.06) .93		-.12 (.07) .89	-.03 (.09) .97
Emp Stability		-.11 (.02) .89***	-.12 (.02) .89***	-.13 (.03) .88***
House*Emp ^f				-.58 (.44) .56
Cox and Snell R2	.33	.37	.37	.37
Nagelkerke R2	.46	.51	.51	.52
-2LL	444.99	417.95	414.37	412.62
Model Chi2	205.07***	232.11***	235.69***	237.43***
df	19	19	20	21

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

All of the control variables associated with re-incarceration in the partial conditional model that only included control variables continued to be related to re-incarceration after controls for housing and employment stability with or without the interaction term. All of the effects continued to be in the same direction and relatively the same magnitude. Educational status affects re-incarceration, with those with more of an educational background being more likely to be re-incarcerated than those with less of an educational background. Negative associations with re-incarceration continued to be observed for those who have received relatively intense supervision and who successfully completed a substance abuse treatment program during their supervision term. Once again, those who were assigned to the treatment group and who received intensive reentry-based substance abuse treatment programming were more likely to be re-incarcerated relative to individuals who experienced traditional supervision services.

A number of control variables were associated with re-incarceration after the inclusion of the measure of employment stability and persisted once the partial effect of housing stability was controlled⁴⁵. Older individuals were less likely to be re-incarcerated. Those who were convicted of a crime against persons were approximately two times more likely to be re-incarcerated relative to those who were convicted on drug charges. In all, the partial effects of age and conviction offense type seem to be conditioned and enhanced by the partial effect of employment stability.

⁴⁵ Individuals who had previously been committed to a juvenile institution were nearly two times more likely to be re-incarcerated relative to those who never experienced a juvenile commitment in the full conditional logistic regression analyses. This finding was not observed in replicated models that used negative binomial regression with robust standard errors (see Appendix C). Instead, the negative binomial model suggests that individuals who have previously been incarcerated were 1.27 times more likely to be incarcerated during their current supervision term relative to those who just completed their first institutional sentence. This effect was only apparent after controlling for the interaction of housing and employment instability.

Summation of Results for Research Question 2: Relapse and Recidivism Outcome Measures

The goal of the second phase of analysis was to examine the relationships between housing and employment stability and the outcome indicators of relapse, re-arrest events, and re-incarceration instances. Housing and employment stability had mixed effects on the outcome indicators. Housing stability was only related to relapse and suggested that as housing movement increased, the ratio of positive drug tests also increased. As the stability of employment increased, the ratio of positive drug tests and the likelihood of re-incarceration decreased. Employment stability was unrelated to re-arrest after all of the control variables were entered into the full conditional models. The joint effect of housing and employment instability was not observed for any of the full conditional models.

Given these mixed effects, it is not surprising to observe that the model fit indices and explained variance statistics suggest that housing and employment stability may have more of an effect on the outcome models of relapse rather than models of re-arrest and re-incarceration. For models assessing relationships with relapse, housing and employment stability appear to contribute to similar levels of explained variance as the control variables. This contribution needs to be prefaced. The estimated partial coefficients in relapse models were all relatively small. Only 10% of the variability in relapse can be explained by a conditional model that includes housing and employment stability, all of the control variables, and an interaction term.

In terms of the recidivism measures, only 10% of the variability in the likelihood of re-arrest can be explained in a full conditional model, with much of the explanatory

power being generated from the control variables. Similarly, much of the modest explained variance (approximately 30% to 40%) associated with the likelihood of re-incarceration is due, in large part, to the control variables with partial influence from the negative effect of employment stability.

The control variables shaped some of the outcome variables, but these effects were not consistently found across all three outcome variable indicators. Instead, a few consistent results were observed across the indicators of recidivism (i.e., re-arrest or re-incarceration) and the remaining results were observed within specific outcome variable indicators. Educational background status was positively associated with re-arrest and re-incarceration, with those possessing a GED or traditional high school diploma (with or without enrollment in college or professional degree coursework) being more likely to recidivate relative to those lacking a GED or high school diploma. Supervision intensity was negatively associated with recidivism. Individuals who were exposed to relatively higher levels of supervision intensity were less likely to be re-arrested or re-incarcerated.

Within the outcome indicator of relapse, direct effects for race and activities during the supervision term were observed. On average, whites had lower proportions of positive drug tests than non-whites. Individuals who were admitted to the hospital were observed to have higher proportions of positive drug tests relative to those who were never admitted to the hospital during their supervision term.

Direct effects on recidivism measures were contingent upon the type of recidivism measure. The direct effect of age was only observed for the re-arrest outcome indicator and suggested that older offenders were less likely to be re-arrested during their supervision term. The negative effects of age on re-incarceration likelihood were

observed, but only after controls for employment stability were introduced into the regression models. The control variable effects on re-incarceration were based upon substance abuse treatment activity across the supervision term. Individuals who successfully completed a treatment program were less likely to be re-incarcerated relative to those who did not complete treatment⁴⁶. A group effect on re-incarceration was observed. Those who were assigned to the treatment group and participated in intensive, reentry-based substance abuse treatment services were more likely to be re-incarcerated than those under traditional supervision services.

Control variables were also indirectly influenced by the stepwise addition or censoring of housing and employment stability variables within outcome indicator models. Regarding relapse, those with prior prison admissions had higher proportions of positive drug tests than those on their first prison term in models that included a measure of employment stability. The positive effect of treatment group assignment and associated intensive treatment programming was negated once housing stability was controlled. Finally, the negative relationship between enrollment in college or professional degree coursework and positive drug test proportions was controlled once housing or employment stability measures are included into the conditional models.

The censoring or additive effect of independent and control variables was also observed in models assessing re-incarceration likelihood. Age and offense type were associated with re-incarceration once a measure of employment stability was entered into a conditional model. Older individuals were less likely to be re-incarcerated after employment stability was controlled. Individuals who were serving a supervision term

⁴⁶ Graduates were also observed to have lower levels of relapse in full conditional negative binomial

for a crime against persons were more likely to be re-incarcerated after controls for employment stability.

Research Question 3: Conditional Multivariate Analyses of Relapse and Recidivism Outcome Measures Controlling for Treatment Dosage and Processes

The goal of the final phase of analysis was to examine the relationship between housing and employment stability on the outcome measures of relapse, re-arrest incidents, and re-incarceration events after controlling for substance abuse treatment indicators of treatment dosage and processes. Multivariate modeling in this manner will assist in the determination of the relative contributions of housing and employment stability after subjecting the measures to the conditional effects of treatment processes. Linear and logistic regressions will be used to assess the relationships. Models are presented stepwise. An initial full conditional model that includes measures of housing and employment stability, treatment process indicators, and all the control variables is followed by a secondary model that adds an interaction term that represents elevated housing and employment instability.

Table 16 presents the full conditional linear regression models of relapse on independent, treatment processes, and control variables. Overall the model explains 18% of the variability in the levels of relapse. The standardized coefficients suggest that the strongest effects consist of treatment process measures of dosage and programmatic violations. Of the two independent variables, only employment stability was significantly related to the proportion of positive tests after controlling for treatment

regression models with robust standard errors (see Appendix C for further information).

processes⁴⁷. Once again, the estimated coefficients in the relapse models are observed to be relatively weak, which was consistent with previous models that did not control for treatment dosage or processes. The insignificance of the interaction term suggests that the direct effect of employment stability was not conditioned by the effects of housing stability.

Two of the three treatment process variables were related to relapse after controlling for the effect of housing and employment stability⁴⁸. As the dose of substance abuse treatment increased, the proportion of positive drug tests increased. The number of treatment program violations was also positively related to relapse and suggests that as the number of violations increased, the proportion of positive drug tests also increased. These direct effects also provide additional insights to determinations of the direct and indirect effects of housing and employment stability.

The direct effect of housing stability was unrelated to positive drug test proportions after treatment process measures are controlled. Models that did not control for the effect of treatment process measures suggested that the direct effect of housing stability was positively associated with proportions of positive drug tests. Moreover, previous models suggested that housing stability was positively associated with each of the individual indicators of treatment processes.

⁴⁷ The results for the primary independent variables of housing and employment stability in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix D for further information.

⁴⁸ The results for the treatment process variables in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix D for further information.

Table 16: Full Linear Regressions of Substance Abuse Relapse on Independent, Treatment Processes, and Control Variables (n=511).

	b (SE) Std B	b (SE) Std B
Age	-.00 (.001) -.08	-.00 (.001) -.08
White ^e	-.05 (.03) -.10*	-.05 (.03) -.10*
GED ^a	.00 (.02) .00	.00 (.02) .00
HS Grad Plus ^a	-.04 (.03) -.05	-.04 (.03) -.05
Divorce/Widowed ^b	-.00 (.03) -.00	-.00 (.03) -.00
Married ^b	-.01 (.04) -.01	-.01 (.04) -.01
Prior J Commit ^c	-.01 (.03) -.01	-.01 (.03) -.01
Prior Prison ^c	.06 (.02) .11*	.06 (.02) .11*
Person Crime ^c	-.04 (.03) -.08	-.04 (.03) -.08
Property Crime ^c	-.05 (.03) -.08	-.04 (.03) -.08
PSafety Crime ^c	-.04 (.04) -.06	-.04 (.04) -.06
Past TX Services	-.01 (.01) -.06	-.01 (.01) -.06
Sup Intensity	-.00 (.001) -.05	-.00 (.001) -.05
Grad of TX ^e	-.06 (.03) -.12*	-.07 (.03) -.12*
Tx Group ^d	-.03 (.03) -.07	-.03 (.03) -.06
Hospitalized ^e	.05 (.03) .08	.05 (.03) .08
MH Treatment ^e	-.02 (.03) -.03	-.02 (.03) -.03
H Edu ^e	-.05 (.03) -.07	-.05 (.03) -.07
House Stability	.00 (.01) .04	.00 (.01) .02
Emp Stability	-.01 (.002) -.12**	-.01 (.002) -.12*
House*Emp ^f		.01 (.04) .03
Dose of SATX	.01 (.003) .26***	.01 (.003) .26***
SATX Program Violations	.04 (.01) .20***	.04 (.01) .20***
Abscond ^e	.02 (.03) .04	.02 (.03) .04
R-Square	.18	.18
Model F	4.74***	4.54***
df	23	24

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

In all, these findings suggest that the positive effects of housing stability on the proportion of positive drug tests are completely mediated by the effects of treatment

process variables of treatment dosage and treatment program violations⁴⁹. As the number of housing movements increased, the amount of substance abuse treatment dosage also increased, which contributes to relapse with an increase in the proportionality of positive drug tests. Additionally, as the number of housing movements increased, the number of treatment program violations also increased. In turn, the number of program violations influenced relapse with more violations leading to higher drug test proportions.

The direct effect of employment stability was negatively associated with relapse after controlling for treatment process variables. The effect was observed for both models and suggested that the direct effect was not conditioned by the interactive effects of housing and employment instability. As the stability of employment increased, the proportionality of positive drug tests to total drug tests decreased. The direct negative effect of employment stability on relapse was also observed in past conditional models that did not control for treatment dosage or processes.

In previous models, employment stability was positively associated with substance abuse treatment dosage levels and negatively associated with the number of treatment program violations and the likelihood of absconding. Given the significance of the relationships between employment stability and the indicators of treatment processes and the relapse outcome measure, it appears that employment stability indirectly affected relapse through treatment dosage and treatment program violations. Higher levels of employment stability were associated with higher treatment dosage levels. In turn, higher dosage levels were associated with relapse and higher proportions of positive drug tests.

⁴⁹ Methods used for the determination of mediation or indirect effects were based upon Baron and Kenny (1986).

Stable employment led to fewer number of treatment program violations, which was associated with relapse and lower proportions of positive drug tests.

Control variables continue to influence observed relationships with relapse after controlling for treatment processes. On average, whites had lower proportions of positive drug tests relative to non-whites. Individuals who have previously served a prison sentence had a higher proportion of positive tests compared to those who are under supervision for their first prison sentence. The completion of a substance abuse treatment program during the supervision term continued to affect relapse outcomes. Individuals who have successfully completed treatment had lower proportions of positive drug tests than those who did not complete a treatment program. The remainder of the control variables that influenced relapse in past models – history of prison admission, past obtainment of correctional substance abuse treatment services, treatment or control group assignment, and the pursuit of higher education during the supervision term – were no longer related to relapse after controlling for treatment processes⁵⁰.

Table 17 provides the conditional logistic regression models of re-arrest on independent, treatment processes, and control variables. The model explained 18% of the variability in the likelihood of re-arrest. As suggested by the minute reduction in log-likelihood ratios, there does not appear to be much of a nominal difference between the two models. Once again, the strongest direct effects appeared to be driven by treatment dosage and process variables.

⁵⁰ Hospital admission during the current supervision term was observed to be unrelated to relapse in the full conditional linear regression models controlling for the partial effects of treatment processes. This lack of association was not observed in replicated models that utilized negative binomial regression with robust standard errors (see Appendix D). Instead, individuals who were hospitalized during their supervision term were observed to have a rate of relapse that was 1.21 times higher than those who were not admitted to a hospital.

Only housing stability appeared to be related to the likelihood of re-arrest after controlling for treatment dosage and process variables⁵¹. However, the effect of housing stability was reduced to insignificance once the joint contribution of housing and employment instability was controlled in the full logistic regression models. When negative binomial regression models with robust standard errors were used the effect of housing stability on re-arrest likelihood was observed with or without controls for the interaction between housing and employment stability (see Appendix D). The interaction term did not have a direct association with the likelihood of re-arrest in logistic or negative binomial models, but did appear to influence housing stability in logistic models.

All of the treatment process variables were directly related to re-arrest likelihood after controls for the partial effects of housing and employment stability as well as the joint contribution of the two measures of stability⁵². Substance abuse treatment dose was negatively related to re-arrest. On average, individuals who received a larger dose of treatment were less likely to be re-arrested. Unexpectedly, the number of treatment program violations was negatively related to re-arrest. Individuals with more treatment program violations were less likely to be re-arrested. Finally, individuals who absconded at least one time during their supervision term were over two times more likely to be re-arrested than those who remained active throughout their supervision term.

⁵¹ The results for the primary independent variables of housing and employment stability in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix D for further information.

⁵² The results for the treatment process variables in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix D for further information.

Table 17: Full Logistic Regressions of Re-Arrest on Independent, Treatment Processes, and Control Variables (n=511).

	b (SE) ExpB	b (SE) ExpB
Age	-.03 (.02) .97	-.03 (.02) .97
White ^e	-.03 (.26) .97	-.02 (.26) .98
GED ^a	.47 (.26) 1.60	.47 (.26) 1.60
HS Grad Plus ^a	.78 (.33) 2.19*	.78 (.33) 2.19*
Divorce/Widowed ^b	.42 (.32) 1.52	.41 (.32) 1.50
Married ^b	.13 (.40) 1.14	.14 (.40) 1.15
Prior J Commit ^e	-.21 (.28) .81	-.20 (.29) .82
Prior Prison ^e	.33 (.26) 1.39	.33 (.26) 1.40
Person Crime ^c	.04 (.31) 1.04	.04 (.31) 1.04
Property Crime ^c	.25 (.31) 1.28	.25 (.31) 1.29
PSafety Crime ^c	-.37 (.37) .69	-.35 (.37) .70
Past TX Services	-.07 (.08) .94	-.07 (.08) .93
Sup Intensity	-.02 (.01) .98**	-.02 (.01) .98**
Grad of TX ^e	-.18 (.31) .84	-.20 (.31) .82
Tx Group ^d	.66 (.27) 1.93*	.68 (.27) 1.97**
Hospitalized ^e	.01 (.29) 1.01	.01 (.29) 1.01
MH Treatment ^e	-.54 (.38) .58	-.53 (.38) .59
H Edu ^e	-.21 (.32) .81	-.21 (.32) .81
House Stability	.17 (.07) 1.19**	.25 (.08) 1.16
Emp Stability	-.01 (.02) .99	-.01 (.02) .99
House*Emp ^f		.25 (.39) 1.29
Dose of SATX	-.09 (.03) .92**	-.09 (.03) .92**
SATX Program Violations	-.47 (.13) .63***	-.48 (.13) .62***
Abscond ^e	.88 (.26) 2.41***	.88 (.26) 2.40***
Cox and Snell R2	.18	.18
Nagelkerke R2	.26	.26
-2LL	508.68	508.26
Model Chi2	100.91***	101.33***
df	23	24

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

The direct effect of housing stability was positively associated with the likelihood of re-arrest after controlling for the effects of treatment process variables. It appeared that as the number of housing movements increased, the likelihood of re-arrest also

increased. However, caution is needed with interpreting the effects of housing stability. Once the interaction term was introduced, the effect of housing stability maintains a similar direction and magnitude of effect but was no longer significantly related to re-arrest.

Previous models used to assess the relationship between housing stability and re-arrest did not control for the partial effects of treatment processes. These models indicated that housing stability was not directly related to re-arrest likelihood. Once treatment processes were controlled, however, the direct effect of housing stability on re-arrest was observed. These findings suggest that the direct effect of housing stability is enhanced by the inclusion of the partial effects of treatment process variables. However, there was no evidence to suggest that the relationship between housing stability and re-arrest likelihood was mediated or indirectly affected by the treatment process variables.

Employment stability was unrelated to re-arrest likelihood after controlling for treatment processes. Previous models that did not control for the effects of treatment processes also suggested that employment stability did not have a direct effect on re-arrest. Employment stability was found to be positively associated with substance abuse treatment dosage and negatively associated with the number of treatment violations, and the likelihood of absconding in previous models. The current and previous models suggest that employment stability only provided direct effects on treatment processes and did not indirectly affect re-arrest likelihood through treatment processes.

After controlling for the partial effects of the independent and treatment processes variables, a number of control variables were related to re-arrest likelihood. The effects of two control variables were consistent with previous models that assessed the

relationships between housing stability, employment stability, and re-arrest. Educational background status was positively associated with re-arrest. Individuals who received a traditional high school diploma and who may have pursued advanced degrees were just over two times more likely to be re-arrested relative to those who did not obtain a high school diploma or GED. The differential effects between those who obtained a GED and those who did not obtain a diploma or GED were not observed once treatment processes were controlled. Supervision intensity continued to be a relevant factor in re-arrest likelihood. Individuals who received relatively intense supervision were less likely to be re-arrested, while those who received low levels of supervision were more likely to be re-arrested.

A few notable control variable differences are observed between previous models that assessed the relationships between housing stability, employment stability, and re-arrest and the current models of re-arrest likelihood that control for the effects of housing stability, employment stability, and treatment process measures. Age and whether an individual had successfully completed a substance abuse treatment program were no longer associated with re-arrest once the partial effects of treatment processes were considered. Group assignment was observed to differentiate the likelihood of re-arrest once treatment processes were controlled. This effect was not observed in previous models. Net housing stability, employment stability, and treatment process considerations, this group effect suggests that individuals assigned to the treatment condition and who received intensive, reentry-based substance abuse treatment were nearly two times as likely to be re-arrested relative to those who received traditional supervision services.

Table 18 presents the conditional logistic regression models of re-incarceration on independent, treatment processes, and control variables. Overall the models explained 41% of the variability in the likelihood of re-incarceration. The log-likelihood ratio levels appear to be similar, which suggests that one model did not provide a better fit over the other. The standardized coefficients suggest that strong effects were observed for treatment processes (specifically absconding) and the control variables that represent educational background and activities across the supervision term.

Employment stability appeared to be the only primary independent variable related to the likelihood of re-incarceration after controls for the treatment process variables⁵³. Housing stability was related to re-incarceration likelihood in the full conditional logistic regression model that did not control for the interaction of housing and employment instability. Once the interaction was controlled, the association between housing stability and re-incarceration was reduced to insignificance. Models using negative binomial regression with robust standard errors did not replicate the findings for housing stability (see Appendix D). These models suggest that housing stability was not related to re-incarceration.

⁵³ The results for the primary independent variable of employment stability in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix D for further information.

Table 18: Full Logistic Regressions of Re-Incarceration on Independent, Treatment Processes, and Control Variables (n=511).

	b (SE) ExpB	b (SE) ExpB
Age	-.03 (.02) .97	-.03 (.02) .97
White ^e	-.02 (.31) .98	-.02 (.31) .98
GED ^a	.94 (.31) 2.56**	.94 (.31) 2.55**
HS Grad Plus ^a	1.41 (.41) 4.09***	1.40 (.41) 4.06***
Divorce/Widowed ^b	.28 (.39) 1.33	.31 (.39) 1.36
Married ^b	.50 (.48) 1.65	.46 (.48) 1.58
Prior J Commit ^e	.55 (.34) 1.74	.53 (.34) 1.70
Prior Prison ^e	.36 (.31) 1.43	.35 (.31) 1.41
Person Crime ^c	.62 (.37) 1.86	.64 (.37) 1.90
Property Crime ^c	-.12 (.37) .89	-.11 (.37) .89
PSafety Crime ^c	-.15 (.44) .86	-.17 (.44) .84
Past TX Services	-.06 (.09) .94	-.05 (.09) .95
Sup Intensity	-.04 (.01) .96***	-.04 (.01) .96***
Grad of TX ^e	-.83 (.37) .44*	-.78 (.38) .45*
Tx Group ^d	.83 (.32) 2.30**	.80 (.32) 2.22**
Hospitalized ^e	-.42 (.34) .66	-.41 (.35) .66
MH Treatment ^e	.36 (.41) 1.43	.35 (.41) 1.42
H Edu ^e	-.07 (.37) .93	-.06 (.37) .94
House Stability	-.17 (.08) .84*	-.08 (.10) .92
Emp Stability	-.10 (.03) .90***	-.12 (.03) .89***
House*Emp ^f		-.63 (.47) .53
Dose of SATX	-.08 (.04) .92*	-.08 (.04) .92*
SATX Program Violations	-.09 (.13) .91	-.06 (.14) .94
Abscond ^e	1.47 (.31) 4.36***	1.48 (.31) 4.41***
Cox and Snell R2	.41	.41
Nagelkerke R2	.57	.57
-2LL	381.05	379.26
Model Chi2	269.00***	270.79***
df	23	24

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with standard errors in parentheses and followed by a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

The treatment process variables of treatment dosage and absconding were directly related to re-incarceration after controlling for the partial effects of housing and

employment stability⁵⁴. Substance abuse treatment dose was negatively related to re-arrest and suggests that higher dosages of treatment received are associated with reduced likelihood of re-incarceration. Absconding was positively related to the likelihood of re-incarceration. Individuals who absconded at least one time were approximately four times more likely to be re-incarcerated relative to those who remained active throughout their supervision term.

Previous models used to assess the direct effect of housing stability on re-incarceration did not control for the partial effects of treatment processes. These models indicated that housing stability was not directly related to re-incarceration likelihood. While the partial effects of treatment processes may influence the effect of housing stability on re-incarceration in logistic regression models, this effect was not verified with negative binomial models. Given the totality of these observations, there was no evidence to suggest that the relationship between housing stability and re-incarceration was mediated by treatment processes.

The direct effect of employment stability was negatively associated with the likelihood of re-incarceration after controlling for treatment processes. The effect was observed after the partial effect of the interaction between housing and employment instability was controlled. As the stability of employment increased, the likelihood of re-incarceration is decreased. The negative association between employment stability and re-incarceration was also observed in previous models that did not control for treatment processes.

⁵⁴ The results for the treatment process variables in the full conditional models were confirmed through negative binomial regression with robust standard errors. See Appendix D for further information.

Employment stability was found to be positively associated with treatment dosage levels and negatively associated with the likelihood for absconding in previous models. That is, individuals with relatively stable employment received higher dosages of treatment and were less likely to abscond. In all, the significance of the relationships between housing stability, treatment dosage, absconding likelihood, and the overarching outcome measure of re-incarceration likelihood indicate that employment stability indirectly affected the likelihood of re-incarceration through treatment dosage levels and absconding likelihood. Higher levels of employment stability were associated with higher levels of treatment dose, which reduces the likelihood for re-incarceration. Additionally, higher levels of employment stability were associated with a reduced likelihood in absconding. In turn, those who do not abscond were also less likely to be re-incarcerated.

A number of control variables were related to re-incarceration after controlling for the partial effects of the independent and treatment process variables. All of the effects were consistent with previous models that assessed the relationships between housing stability, employment stability, and re-incarceration. Educational background status was positively associated with re-incarceration likelihood. Individuals who completed a GED were just over 2.5 times more likely to be re-incarcerated compared to those who did not obtain a high school diploma or GED. Those who obtained a high school diploma and who may have enrolled in college or professional degree coursework were 4 times more likely to be re-incarcerated relative to those who did not obtain a high school diploma or GED.

Activities during the supervision term were again found to influence re-incarceration likelihood once treatment processes were controlled. Individuals who were exposed to relatively intense supervision were less likely to be re-incarcerated. Those who successfully completed a substance abuse treatment program during their supervision term were also less likely to be re-incarcerated relative to those who were unable to complete any substance abuse treatment services. Once again a direct group effect was observed. Individuals who were assigned to the treatment group and subsequently participated in intensive, reentry-based substance abuse treatment were just over two times more likely to be re-incarcerated relative to those who experienced traditional supervision services.

Once treatment processes were controlled, the control variable for prior juvenile commitment was no longer associated with the likelihood for re-incarceration⁵⁵. Individuals with past juvenile commitments were no more or less likely to be re-incarcerated after controlling for treatment processes. It appears that this control variable partially interacts and become subsumed into the direct effects of the treatment process variables.

Summation of Results for Research Question 3: Relapse and Recidivism Outcome Measures Controlling for Treatment Dosage and Processes

⁵⁵ Two additional variables did not appear to be related to re-incarceration after controlling for the partial effects of treatment processes in full conditional logistic regression models. Age and those convicted for crimes against persons were significant in previous logistic regression models. Replication of the full conditional models controlling for the effects of treatment processes with negative binomial regression and robust standard errors suggests that the variables of age and conviction offense type were associated with re-incarceration likelihood (see Appendix D for further information). Older individuals were less likely to be re-incarcerated, while those convicted of crimes against persons were 1.25 times more likely to be re-incarcerated relative to drug offenders. Another indicator of criminal history – prior prison sentence – was significantly related to re-incarceration likelihood in a negative binomial model that controlled for the interactive effect of housing and employment instability. Those who had previously served a prison term were 1.14 times more likely to be re-incarcerated relative to those who are serving their first prison term.

The goal of the final phase of analysis was to examine the relationships between housing and employment stability on the outcome measures of relapse, re-arrest incidents, and re-incarceration events after controlling for substance abuse treatment process indicators of treatment dosage, treatment program violations, and absconding. All of the models appeared to benefit from the inclusion of treatment process measures relative to previous models that did not control for the measures. The model fit indices remained proportionately similar for relapse models, while the models of re-arrest and re-incarceration experienced substantial reductions in log-likelihood ratios.

The variance explained statistics suggest that the inclusion of treatment process measures provided higher percentages of explained variability within each outcome measure (in upwards of 5% to 6% depending on outcome measure). Relapse and re-arrest outcome models had relatively similar levels of explained variance. Re-incarceration outcome models provided just over double the amount of explained variance as the relapse or re-arrest outcome models.

Overall, housing and employment stability had mixed effects on the outcome indicators. Housing stability was observed to be related to re-arrest, with relatively higher levels of housing movement being associated with a higher likelihood of re-arrest. As employment stability increased, relapse and likelihood of re-incarceration decreased. The direct effect of employment stability on the outcome indicators remained after controlling for the joint contributions of housing and employment instability. The interaction of housing and employment stability was not directly related to any of the outcome indicators.

Treatment process measures were observed to have relatively stronger associations with the outcome variables compared to the independent variables of housing and employment stability. Treatment dosage had consistent direct effects across the outcome indicators after controlling for housing stability, employment stability, and control variables. Relatively high dosages of substance abuse treatment were associated with higher relapse proportions of positive drug tests and reduced likelihood of re-arrest or re-incarceration.

The remaining indicators of treatment processes had mixed effects. The number of substance abuse treatment program violations were positively associated with relapse proportions of positive drug tests and negatively associated with the likelihood of re-arrest. Individuals who absconded at least one time during their supervision term were two times more likely to be re-arrested and just over four times more likely to be re-incarcerated relative to those who remained active on their supervision term. It is worthy to note that despite the mixed effects across outcome indicators all three measures of treatment processes were significantly related to re-arrest likelihood.

The control variables influenced some of the outcome variables, but these effects were not consistently found across all three outcome measures. Race and prior criminal history of prison admission differentiated the effects of relapse. The successful completion of a substance abuse treatment program was negatively associated with positive drug test proportions and lowered likelihood of re-incarceration, but was not associated with re-arrest likelihood. Educational background status and activities across the supervision term were associated with recidivism likelihood, but not with relapse. Individuals who obtained a high school diploma and who may have pursued higher

education were more likely to be re-arrested or re-incarcerated relative to those without a high school diploma or GED. Additionally, individuals who obtained a GED were more likely to be re-arrested relative to those who did not obtain a high school diploma or GED. The intensity of supervision received across the supervision term was negatively associated with re-arrest or re-incarceration, with more intense supervision reducing the likelihood of recidivism. Finally, a group effect differentiated the likelihood of recidivism. Individuals assigned to the treatment group received intensive reentry-based substance abuse treatment, but were more likely to be re-arrested or re-incarcerated relative to those who experienced traditional supervision services.

The final series of analyses also provide insights into whether the direct effects of housing and employment stability on the outcome measures may be indirectly mediated by the effects of the treatment process measures. Table 19 provides a summary table of results for the supplemental Sobel's test (1986) of indirect effects. The Sobel test takes the product of the coefficient assessing the relationship between the independent variable and the suspected mediator variable and the coefficient assessing the relationship between the suspected mediator variable and the outcome variable controlling for the effects of the independent variable. The coefficients and their respective standard errors are corrected for binary mediators or outcomes (MacKinnon & Dwyer, 1993). This adjustment requires that each coefficient to be multiplied by the standard deviation of the independent variable and divided by the standard deviation of the outcome variable in order to achieve measurement standardization across estimated linear or logistic coefficients. Once corrected, the coefficients are used to test the null hypothesis that the indirect effect of the independent variable to the outcome variable through the suspected

mediator variable is zero. Significant findings lend support to the observation of a mediator or indirect effect⁵⁶.

Table 19: Summary of Adjusted Sobel's Tests of Indirect Effects (n=511).

	Sobel Test Statistic
Housing Stability → Dose → Relapse	2.97***
Housing Stability → Violations → Relapse	3.76***
Housing Stability → Abscond → Relapse	NS
Housing Stability → Dose → Re-Arrest	NS
Housing Stability → Violations → Re-Arrest	NS
Housing Stability → Abscond → Re-Arrest	NS
Housing Stability → Dose → Re-Incarceration	NS
Housing Stability → Violations → Re-Incarceration	NS
Housing Stability → Abscond → Re-Incarceration	NS
Employment Stability → Dose → Relapse	2.47***
Employment Stability → Violations → Relapse	-1.79***
Employment Stability → Abscond → Relapse	NS
Employment Stability → Dose → Re-Arrest	NS
Employment Stability → Violations → Re-Arrest	NS
Employment Stability → Abscond → Re-Arrest	NS
Employment Stability → Dose → Re-Incarceration	-1.75*
Employment Stability → Violations → Re-Incarceration	NS
Employment Stability → Abscond → Re-Incarceration	-2.82**

*p<.05, **p<.01, ***p<.001; NOTE: Sobel Tests have been adjusted for binary mediators or outcomes (MacKinnon & Dwyer, 1993). NS refers to non-significant indirect effect path as specified by the Baron and Kenny (1986) method for determining indirect effects.

The results suggested that indirect effects were present for two of the three outcome variables. Re-arrest likelihood was the only outcome variable that did not appear to be indirectly affected by treatment dosage and processes. Based on information from previous models, housing and employment stability did not have direct effects on re-arrest likelihood when treatment process measures are left uncontrolled. Since an initial direct effect between housing stability, employment stability, and re-arrest was not observed, the indirect effects of treatment processes are not present. Instead, housing and

⁵⁶ Table 19 provides supplemental Sobel's test statistics after the presence of a mediator or indirect effect has been made with the Baron and Kenny (1986) method. Appendix E provides alternative Sobel test statistics for each indirect path effect irrespective of an established direct effect.

employment stability directly affected treatment processes and the treatment processes directly affected re-arrest likelihood.

Substance abuse treatment dose and the number of treatment program violations appeared to completely mediate the relationship of housing stability and the proportion of positive drug tests. Complete mediation is observed since the initial direct effect of housing stability on relapse became insignificant once the treatment process variables were entered into the conditional model (see Baron & Kenny, 1986; Kline, 2005). Individuals with a relatively high number of housing movements appeared to receive higher dosages of substance abuse treatment and these higher dosages were related to higher proportions of positive drug tests. Moreover, the high number of housing movements tended to lead to a higher number of treatment program violations, which also corresponded to a higher proportion of positive drug tests. At the opposite end of the continuum, these findings suggested that those with relative stable housing received smaller dosages of treatment, which contributed to proportionately fewer positive drug tests.

The relationship between employment stability and relapse also appeared to be indirectly affected by substance abuse treatment dose. The indirect effect appeared to be a partial mediator since the direct effect of employment stability on the outcome variable modifies the magnitude of the coefficient but the coefficient remained significant after controls for treatment processes. Individuals with relatively stable employment appeared to receive a higher dosage of treatment across their supervision term, which contributed to higher proportions of positive drug tests. By implication, unstable employment

appeared to be associated with lower dosages of treatment and low proportionality of positive drug tests.

The number of substance abuse treatment program violations also appeared to partially mediate the relationship between employment stability and relapse. Stable employment appeared to reduce the number of treatment program violations. This reduction in violations was associated with lowered proportion of positive drug tests.

Substance abuse treatment dose and absconding also appeared to mediate the relationship between employment stability and re-incarceration. Individuals with relatively stable employment tended to receive a higher dose of substance abuse treatment and these levels of treatment dose were associated with a reduced likelihood of re-incarceration. The inverse of the effect suggested that unstable employment negatively affected the levels of dosage received and increased the likelihood for re-incarceration. Stable employment also reduced the likelihood of absconding from supervision, which reduced the likelihood for re-incarceration.

In all, these results suggested that substance abuse treatment dose may be an important mediator of housing and employment stability on relapse and an important mediator of employment stability on re-incarceration likelihood. Treatment non-compliance also appeared to be an important mediator. The number of treatment program violations mediated the relationship between housing stability and relapse and employment stability and relapse. Absconding mediated the relationship between employment stability and re-incarceration likelihood.

CHAPTER V: DISCUSSION AND CONCLUSION

State correctional systems are working to develop prisoner reentry infrastructures that may ease the process of transition into the community and improve relevant program outcomes. An assortment of reentry-based programs have been implemented and will continue to be refined and expanded with the passage of time. The programs often utilize a number of different service delivery structures, strategies, and content to affect the transition process. As such, there is a large degree of reentry programming variability across and within state correctional systems. Unfortunately, very few reentry programs have been subject to formal evaluation. The theoretical promise of reentry programming has yet to be reliability translated into practice. By implication, the knowledge base used to inform the development and implementation of reentry-based programming is currently lacking and needs further development.

The primary purpose of the current study was to explore how specific reentry dimensions interact and affect the transition into the community. The research attempted to inform future programs by un-packaging the black box that surrounds reentry-based programming and assessed the relative contributions of reentry and treatment components. Central to the study were the interrelationships between the reentry sub-components of housing, employment, and substance abuse treatment. It was expected that these three sub-components influence treatment processes that may directly or indirectly affect program outcomes of relapse and recidivism. More specifically, the overarching research questions suggested that housing and employment stability would contribute to beneficial treatment processes, reduced levels of relapse, and reduced likelihood of recidivism. Additionally, housing and employment stability would also

indirectly lead to reduced levels of relapse and recidivism likelihood through associations with treatment processes that are beneficial to treatment participants.

Overall, the results suggest that the stability of housing and employment can directly influence treatment processes and relevant correctional outcome indicators. Housing stability was associated with substance abuse treatment dosage, treatment program violations, likelihood of absconding, and levels of relapse. Individuals who had relatively stable housing generally received a low dose of treatment, had few treatment program violations, were less likely to abscond, and had low proportions of positive drug tests. Employment stability was found to be associated with treatment dosage, program violations, likelihood of absconding, relapse, and re-incarceration. Individuals who had relatively stable employment generally received a high dose of treatment, had few treatment program violations, were less likely to abscond, had low proportions of positive drug tests, and were less likely to be re-incarcerated.

After controlling for the partial effects of treatment processes, the direct effect of housing stability on levels of relapse was not replicated. Housing stability was found to be associated with re-arrest likelihood. Individuals with relatively stable housing were less likely to be re-arrested. The findings for the direct effects of employment stability were replicated after controlling for the partial effects of treatment processes. Individuals with relatively stable employment had low proportions of positive tests and were less likely to be re-incarcerated. Once again, employment stability was observed to be unrelated to re-arrest likelihood.

While these direct effects were apparent, it is important to note that the effects of housing and employment were relatively weak. Control variables used throughout the

models generally provided a substantial amount of explained variance across specified treatment process or programmatic outcomes. Exceptions were observed in models that assessed treatment program violations and relapse without controls for treatment processes. In terms of the former, housing and employment stability measures provided slightly more explanatory power than the control variables. Within these models, housing stability was found to be the strongest predictor of treatment program violations. In terms of the latter, housing and employment stability provided comparable explanatory power to the control variables. Within these models, housing stability was found to be the strongest predictor of relapse and is subsequently followed by the measure of employment stability.

Treatment processes were also observed to have direct effects on outcomes after controlling for the partial effects of the independent variables. Those who received a higher dosage of substance abuse treatment had relatively higher proportion of positive drug tests, but were less likely to be re-arrested or re-incarcerated. Treatment program violations were associated with relapse and re-arrest. Higher levels of treatment program violations led to higher proportions of positive drug tests, but reduced the likelihood of re-arrest. Absconding was also observed to be related to re-arrest and re-incarceration. Those who absconded were over 2 times more likely to be re-arrested and over 4 times more likely to be re-incarcerated relative to those who did not abscond (i.e., remained active) throughout their supervision term.

These findings suggest that participation in treatment may serve as a protective factor from recidivism, but not relapse. Treatment program violations may be indicative of non-compliance with treatment, but this does not appear to translate to recidivism risk.

It may be the case that program sanctions are enough to maintain or modify behavior within the treatment program and prevent non-compliant behavior from escalating to the point of affecting one's supervision status. For instance, absconding appears to influence treatment processes, but also influences one's supervision status. In turn, these dual effects contribute to higher risks for recidivism. Additional research is necessary to question these interpretations, but there does appear to be some evidence to suggest that the treatment non-compliance measures may produce differential outcome effects.

In addition to the assessment of direct effects, the final set of conditional models controlled for the partial effects of treatment processes on outcome indicators and provided some indication of indirect or mediation effects. Six indirect or mediation effects were observed across models estimating direct effects on treatment processes, direct effects on outcome indicators, and direct effects on outcome indicators controlling for treatment processes. Two of the six indirect effects were associated with housing stability. The positive association between housing stability and relapse appeared to be completely mediated by treatment dosage and treatment program violations. As the number of housing movements increased, the levels of treatment dosage increased, which contributed to higher proportions of positive drug tests. Increased housing movement also increased the number of treatment program violations, which also increased the proportion of positive drug tests. Alternatively, relatively stable housing lowered the levels of treatment dosage received and also reduced the levels of treatment program violations incurred, which also decreased positive drug test proportions.

The remaining indirect effects were associated with employment stability and were only partial indirect effects. Once again indirect effects on relapse were observed.

Stable employment contributed to higher levels of treatment dosage, which led to higher proportions of positive drug tests. Stable employment also led to fewer treatment program violations and lower proportionality of positive drug tests. The alternative interpretation suggests that unstable employment was associated with low treatment dosages, which led to low positive drug test proportions, but increased treatment program violations, which leads to elevated positive drug test proportions.

Treatment processes also indirectly shape the relationship between employment stability and re-incarceration. Stable employment increased the dosage of treatment received, which reduced the likelihood of re-incarceration. Stable employment also decreased the likelihood of absconding, which reduced the likelihood of re-incarceration. On the other hand, unstable employment reduced the treatment dosage received and increased the likelihood of absconding; both of which increased the likelihood of re-incarceration.

There were a few notable surprises from the primary independent variables of interest. First was the lack of consistent association with recidivism indicators. The research question presupposed that housing and employment stability would affect re-arrest and re-incarceration with stability in both measures being associated with a reduced likelihood of recidivism. A direct effect of housing stability on re-arrest and re-incarceration likelihood was not observed in the initial conditional models that did not control for the effects of treatment processes. However, once treatment processes were controlled in the final models, housing stability was found to influence the likelihood of re-arrest.

A review of the previous findings provides some possible explanations.

Treatment processes appear to be relevant, and highly significant, variables that were censored from previous models. The inclusion of treatment process variables modifies the effects of housing stability. It appears that housing stability interacts with the treatment processes, which modifies the estimated coefficient and inflates the statistical significance of housing in re-arrest outcome models (i.e., estimated coefficient changes direction and magnitude, but maintains similar standard error).

Employment stability was observed to have a direct effect on re-arrest in unconditional and partial conditional models, but this effect was negated after the inclusion of control variables. This finding was observed for models that censored and included controls for the partial effects of treatment process measures. Employment stability was consistently found to affect re-incarceration likelihood across all of the models used for analyses. As such, it appears that employment stability may be a more reliable and valid indicator of recidivism when the measure of recidivism is conceptualized through correctional based definitions.

Second was the direction of the effect for housing stability on substance abuse treatment dosage. The research question assumed that housing stability would be associated with higher dosages of treatment, while housing instability would be associated with a low dose of received treatment. The findings do not support this assumption. Instead, the opposite is observed to be true; housing stability was found to be associated with low dosages of treatment, while housing instability appeared to correspond to higher dosages of treatment.

Two mechanisms may be at play that contributes to this effect. On one hand, individuals with stable housing were found to have few treatment program violations and were less likely to abscond. These individuals are likely to be compliant and making gains in other pro-social areas. By making such gains, the perceived need for treatment may become secondary to maintaining social and economic capital⁵⁷. On the other hand, individuals with unstable housing were found to have an elevated number of treatment program violations and were more likely to abscond. These violations may affect treatment progress by extending time in treatment through continuation of current services or discharge and referral to subsequent treatment services that may more adequately address needs. Either option is likely to inflate the level of treatment dosage received. Additionally, housing instability may be perceived as being at risk for drug use according to their supervisory agent and be referred to additional substance abuse treatment services, which elevates the levels of treatment dosage received⁵⁸. Treatment services, in this regard, can effectively become a source of stability when the stability of housing is lost or challenged.

⁵⁷ A simple bivariate test confirms this assumption. Using median splits of the distribution of housing movement into high (i.e., 4 or more housing moves) or low (i.e., 3 or fewer housing moves) designations, it appears that individuals with few housing moves were significantly more likely to have been employed for over half of their supervision term (40%) than those who have many housing moves (27%). There were no differences between the two groups with regard to marital status, educational background, or the pursuit of higher education. Interestingly, while remaining compliant with substance abuse treatment services, those with few housing moves were significantly less likely to successfully complete a treatment program (30%) than those with many housing moves (47%). This relationship contributes to the finding of low treatment dose among those with stable housing. Dosage was measured by estimated months in treatment and the successful completion of a program generally required numerous months in treatment. The relationship also adds support to the notion that the fulfillment of monetary needs trump treatment needs.

⁵⁸ A simple bivariate test confirms this assumption. Using median splits of the distribution of housing movement into high (i.e., 4 or more housing moves) or low (i.e., 3 or fewer housing moves) designations, it appears that individuals with many housing moves received more intense supervision (by an average of approximately 14 additional in-person contacts) than those with few housing moves. Moreover, those with

Finally, a dichotomous interaction term was used across models that controlled for the joint contribution of housing and employment instability. Using the overall distributions of the sample, the term referred to those individuals who had many housing moves and who were employed for less than half of their supervision term as specified by conditional median distributions. Instability was purposely selected as the focus since the reentry movement focus on pre-release and post-release planning attempts to ease the transition process and, by default, attempts to increase stability in dimensions of reentry.

Surprisingly, the interaction term did not appear to be associated with treatment process or outcome indicator models used in the analyses. The only exception is for the model that assessed the treatment process indicator of substance abuse treatment program violations. Within the model, the observed effects suggest that the effect of additional housing movements leading to a high average of treatment program violations is conditioned by employment stability. Individuals with 4 or more housing moves who have been employed for less than half of their supervision term tend to have more treatment program violations, on average, relative to the remainder of the sample.

Part of the dearth of findings regarding the interactive effects of housing and employment stability may be due to the solitary consideration of elevated housing and employment instability. Additional combinations of the interaction between housing and employment stability were constructed and explored to provide additional context of the complexities that surround considerations of housing and employment (see Appendix F). The results confirm the interactive effect of the primary independent variables on the treatment process indicator of treatment program violations and suggest that stable

many housing moves are also more likely to have completed treatment than those with few housing moves, which also increases observed treatment dosage levels.

housing may reduce program violations regardless of stable or unstable employment.

The results also indicate that the solitary consideration of housing and employment instability masked other important housing and employment combinations that affect re-incarceration likelihood. Stable or unstable housing appear to interact with stable employment and increase the likelihood of re-incarceration.

A number of the control variables utilized throughout the analyses provided valuable insights into the potential for differential effects and how such effects influence treatment processes and/or relevant correctional outcomes. The previous chapter provided individualized discussion of all of the effects for specific control variables. There are a few important issues and trends that have been observed with regard to the control variables and their influence on treatment processes and program outcomes.

First is the issue of self selection. One of the most consistent results observed across the analyses are the beneficial outcomes that result from the successful completion of a substance abuse treatment program during the supervision term. Individuals who completed a treatment program received a higher dosage of treatment, incurred less treatment program violations, were less likely to abscond, and were less likely to be re-incarcerated relative to those who did not complete any sort of substance abuse treatment program. It also appears that individuals who completed substance abuse treatment programs may have reduced levels of relapse in replicated negative binomial models.

Self selection is a common problem for correctional evaluators and evaluations in general (Campbell & Stanley, 1966). A certain proportion of subjects will separate themselves from the sample population regardless of evaluative design and will directly benefit from treatment services. This is not detrimental to future program development

since a profile of successful participants can be developed. The problem is the difficulty of identifying successful participants prior to admission to a program and the initiation of services.

Assessment techniques continue to be developed and implemented that will assist in this process. For instance, motivational interviewing is becoming an increasingly popular supplement to static and dynamic risk assessments (Checinski & Ghodse, 2004; Longshore et al., 2004; Miller & Tonigan, 1996; Taxman, 2008). The technique is used to gauge perceptions of the potential of future self change and self development of clients. In line with theories of cognitive change, this approach attempts to provide the tools to foster cognitive transformation by ensuring that an individual is motivated and ready for change. The difficulty is that within this very same theoretical perspective is the notion that cognitive change cannot occur until an individual is ready to make the transformation, which may render services to induce motivation and subsequent treatment services as futile.

Second, there is the question of the dynamics surrounding supervision intensity. There appears to be two different trends associated with intensity that are associated with two different sources of supervision. The traditional focus of supervision intensity generally refers to supervision from an individual's supervision agent. The available literature has been critical of the effects of intensive supervision with intensity being associated with increased likelihood of re-incarceration due to inflated technical violations (Petersilia & Turner, 1991; Turner et al., 1992). However, there is some evidence to suggest that the pairing of intensive supervision with treatment services can reduce the effect of supervision on re-incarceration and benefit treatment participants

(National Research Council, 2008; Petersilia & Turner, 1991; Taxman, 2008; Useem & Piehl, 2008). The second avenue of supervision that is often overlooked in the literature is derived from participation in community-based treatment services. Treatment service providers can also act as agents of supervision and influence program processes and outcomes.

To some extent, the current findings appear to support the notion that intensive supervision paired with treatment services can induce treatment compliance and benefit individuals enrolled in treatment services. Individuals exposed to relatively intense supervision received a greater dose of treatment and were less likely to recidivate. This finding needs to be prefaced by the type of treatment services received. Individuals who participated in the intensive, reentry-based substance abuse treatment also received a greater dose of treatment. However, these individuals had more treatment program violations, were more likely to abscond, and were also more likely to be re-incarcerated relative to those who participated in traditional treatment services net all of the control variables (which includes supervision intensity). When treatment processes were controlled in the final models, individuals who participated in the intensive treatment were also more likely to be re-arrested relative to those exposed to traditional treatment services.

There appears to be a differential supervision effect that may be due to participation in the intensive, reentry-based substance abuse treatment program⁵⁹.

Individuals within the program were assigned to a number of program staff within two

⁵⁹ In a simple bivariate test there was no statistical difference between the correctional supervision intensity levels of the group assigned to the treatment condition (mean of 44 and standard deviation of 25.06) and the control condition (mean of 46 and standard deviation of 46.55).

different community service providers who were in continual contact with an individual's supervision agent thorough informal and formal communication channels. It is likely that the continual oversight created a "fishbowl effect," where the knowledge of an individual's behavior is monitored more closely by a greater number of people with enforcement or regulatory authority relative to those individuals who were only subjected to traditional community-based services. Non-compliant behavior is observed immediately, by a large number of people, and this may partially explain the finding of elevated levels of treatment program violations and absconding among the participants of the intensive reentry-based treatment program.

Future research needs to explore the supervision effects of community-based treatment services, how they are related to the supervision effects of correctional supervision, and how they shape program processes and relevant program outcomes. One of the most promising avenues for research would be the elaboration of McCleary's (1975; 1977; 1978) latent power dynamics that exist within correctional field offices. This elaboration could explore how the demands of community service providers influence perceptions of individuals managed under a supervision agent's caseload. It is possible that service provider pressure on agents to intervene for non-compliant participants. In order to be perceived as "doing something," maintain a generalized reputation, and regain some degree of autonomy, agents may be more prone to utilize severe sanctions (e.g., technical returns to prison) over graduated sanctions in the community.

Third is the potential for effects specific to those who have been previously processed through the correctional treatment system. Veterans of the system appear to be

more likely to be non-compliant with substance abuse treatment services independent of the effects of age. The findings suggested that individuals who had a longer history of participation in correctional substance abuse treatment had more treatment program violations and were more likely to abscond. Individuals who have served a prior prison sentence were more likely to abscond and had a higher proportion of positive drug tests after controlling for the effects of treatment processes. In negative binomial models, those who have served a previous prison sentence had a higher proportion of positive drug tests across conditional models and were also more likely to be re-incarcerated after controlling for the interaction of housing and employment instability.

It is possible that the continual exposure to similar forms of correctional substance abuse treatment services (i.e., content and structure) leads to frustration and non-compliance during the current transition into the community (Marlowe, 2006). It may also be possible that program non-compliance occurs due to knowledge of how to “play the game.” These individuals may know how to push the rule boundaries and are aware that the punishments for non-compliance with substance abuse treatment services are likely to result in graduated sanctions instead of returns to prison⁶⁰. There may also be some degree of flexibility on the part of service providers. Program violations may be relayed to supervision agents, but the individual may be allowed to continue participation in treatment.

The potential flexibility afforded to veterans of correctional treatment by service providers and/or their supervisory agent only appears to apply to within treatment

⁶⁰ There were no bivariate relationships between past levels of participation in substance abuse treatment and recidivism indicators of re-arrest and re-incarceration. Similarly, there were no bivariate relationships between past prison admission and the recidivism indicators.

program behavior. Once again, absconding affords little to no flexibility. Past participation in correctional substance abuse treatment is not associated with recidivism indicators, but absconding was significantly increased the likelihood of re-arrest and/or re-incarceration.

Finally there are a few concerns regarding individual effects that may affect treatment processes, which may contribute to program outcomes. Controlling for all other partial effects, individuals with higher background educational statuses were more likely than those lacking a GED or high school diploma to be re-arrested or re-incarcerated. These higher educational statuses include those who possess a GED as well as those who possess a high school diploma and who may have received college or professional degree coursework.

This finding was unexpected. One potential explanation relates to the content of services offered to the sample. Through assessment and criminal history information, members of the sample were determined to represent a high risk population in need of outpatient or inpatient substance abuse treatment services. It is likely that the provided services were provided in a utilitarian fashion with the content of intervention being designed for those lacking any sort of educational background. As such, the needs of those who have some form of educational background may have been overlooked. The applicability of services may have contributed to the increased likelihood of recidivism. Future research may benefit into further exploration into the needs of individuals who possess a traditional education foundation and whether these needs are met during the transition process.

Another interesting finding concerned differential relapse. The findings suggest that individuals who have been hospitalized at least one time have significantly higher proportions of positive drug tests than those who were never admitted. The difficulty with interpreting this finding is the fact that two different scenarios may have taken place. On one hand, a hospital admission may be due to an existing medical problem or incurred injury that leads to admission. Existing medical conditions may or may not be related to a history of illegal drug use. In this case, prescribed medication likely follows release from the hospital. On the other hand, a hospital admission may be the result of self-medication. In this case, prescribed medication may or may not be provided. Either scenario appears to affect substance abuse testing and contributes to elevated levels of positive drug tests.

It is important to attempt to separate these effects in order to provide an appropriate programmatic response. Program flexibility is also needed to ensure that relapse and positive drug test results are not artificially inflated by prescribed medication. Moreover, drug testing schedules and responses must be flexible enough to ensure that sanctions are not enforced for positive drug tests associated with medication.

Study Limitations

A number of limitations to the study need to be addressed. Most of the limitations pertain to measurement issues. Nearly all of the measures utilized for this study were available or constructed from local Department of Corrections or State Police management information systems. These official sources of data often contain a mixture of offender behavior in addition to administrative or operational behavior of organizational representatives (McCleary, 1977; 1978). For instance, McCleary (1977)

has argued that the records maintained by parole agents are more instrumental to the management of agent image to supervisory staff than reflective of interactions with offenders on an agent's caseload. As such, it is important to recognize that some degree of bias is inherent to the data sources and measurement used in this study.

The problems associated with official data sources are particularly damaging for the main independent variables used in the analyses. Ideally, measures of residences, employers, and participation in substance abuse treatment would be readily available for extract and could be assessed for reliability. Unfortunately, this was not the case. The measures of housing stability, employment stability, and substance abuse treatment dosage were constructed from reviews of narrative agent case notes. The control variable measures of hospitalization, mental health treatment referral or enrollment, and enrollment in higher education were also constructed in a similar fashion.

The case notes provide free form text notations, contain an assortment of summary codes that can be queried within and across records, and are date specific. The quality of content entered into the narrative information is highly variable with some entries including rich detail and others providing nothing more than a few code words. The information in the case notes also is contingent upon the process of information exchange and translation. Correctional supervision agents rely upon their interactions with offenders to obtain direct or indirect information about their experiences while under supervision. Once this information is received, the message must be correctly documented and properly entered into the management information system. At any point in this exchange process information may be lost, may not be translated into the management information system, or mis-information may be provided. With these issues

in mind, the measures of housing stability, employment stability, substance abuse treatment dosage, hospitalization, mental health treatment referral or enrollment, and enrollment in higher education may serve as crude proxy measures since their true value may have been slightly under or over-reported.

The remaining measures used in the study are readily available and easily extracted from management information systems. These measures are commonly utilized by the research and evaluation divisions of the home organizations to conduct in-house research and audits of information quality. This does not mean that the remaining measures are without controversy. For instance, official measures of recidivism have been subject to debate due to many of the same biases that have been previously mentioned (Maltz, 1984; McCleary, 1977; McCleary, 1978). Re-arrest and re-incarceration measures were used in an effort to minimize potential bias through multiple indicators of recidivism.

The analytical strategy utilized for the current study provided some valuable insight into the process of reentry. However, the statistical methods may not provide a complete description of the reentry process. Regression models included static measures of individual background and also included a number of measures that represented dynamic factors that may have influenced the transition process across an individual's supervision term. The dynamic factors were simplified and subjected to cross-sectional analysis techniques to explore the magnitude and direction of partial effects that can

influence the reentry experience. Subsequent research may benefit from longitudinal models that assess how the partial effects of dynamic variables change over time⁶¹.

The models used in the study may not have adequately explained variation in the outcome variables. The model fit statistics are low to moderate across models. At the low end, the models account for 12% of the variability in re-arrest likelihood. At the high end, models account for 56% of the variability in substance abuse treatment dosage. The main independent variables of housing and employment stability appear to provide the strongest effects in relatively weak models. The proportion of variance explained by the contributions of only the two independent variables is 8% in relapse outcome models, which increases to 13% with inclusion of all of the control variables. Relative to the outcomes for substance abuse treatment program violations, the two independent variables account for 25% of the variability in violations, which increases to 43% with inclusion of all of the control variables⁶².

⁶¹ It would be particularly useful for future research (and future replications of the current study) to utilize survival analyses. It is likely that the measures of housing, employment, and treatment were conditioned by time. The potential for confounding with time introduces bias into the measures and subsequent findings.

⁶² Multicollinearity diagnostics were conducted. Correlation matrices and variance inflation factors (VIF) were produced for the primary independent variables of housing stability and employment stability, the treatment process variables, and control variables. Out of 484 possible correlation combinations between the primary independent variables and control variables, 156 (32%) significant relationships were observed ranging in absolute value from $r = .09$ to $r = .52$. The average VIF statistic is 1.43 and ranges in value from 1.10 to 2.37. The VIF statistics suggested that the standard error may have been artificially inflated by the variables in the model, but the level of inflation is not extreme enough (i.e., VIF approximating 4.0) to disregard the regression models (Fox, 1991). Overall, the correlation coefficients and VIF suggested that multicollinearity may have influenced the multivariate models and partially biased the estimated standard errors. Negative binomial regression models with robust standard errors were used to replicate the results of the linear and logistic regression models and increase the precision of the estimated coefficients (see Appendices B, C, and D).

A related concern with the multivariate models used in this study is the level of power used to estimate coefficients and determine statistical significance. Power calculations are contingent upon samples and the statistical technique to be utilized (Cohen, 1988). Ad-hoc checks of the power of a full conditional linear regression model with 45 covariates, an anticipated medium effect size (.15), alpha level of .05, and desired

Future analyses may benefit from more advanced statistical methods. The method for determining indirect or mediation effects in the current research utilized the Baron and Kenny (1986) approach that relies upon the initial establishment of direct effects to infer indirect effects. A number of direct and indirect effects were observed in the current study, which establishes a framework that future research can examine. There is a need to further explore the variance-covariance relationships between the treatment processes and outcome variables. Methods such as structural equation modeling could be used to determine the interrelationships between the treatment process variables and how these associations are influenced by housing and employment stability⁶³. This analytical strategy would allow one to explore how the independent variables affect substance abuse treatment dosage, which may then affect treatment program violations, and contribute to overall levels of absconding. Once established, the interrelationships between the outcome variables of relapse, re-arrest, and re-incarceration should be examined and conditioned by housing stability, employment stability, and the treatment processes variables⁶⁴. This strategy would allow one to observe how the independent and treatment

statistical power of .80 requires a minimum sample size of 226 without consideration of measurement error in the covariates. In order to identify small effect sizes (.02) with the same specifications, a minimum sample of 1,475 is required. Elaborations of linear regression with generalized linear models generally require larger sample sizes (Long, 1997). Assessments of interactive effects also require larger sample sizes (Jaccard, 2001; Jaccard et al., 1990). In all, the consideration of power suggests that the multivariate models used in the analyses were underpowered and may only be able to identify medium or large effect sizes.

⁶³ The correlations between substance abuse treatment dosage, treatment program violations, and absconding were all statistically significant and range in absolute value of .11 to .35, which suggests that covariance structures between the variables should be explored.

⁶⁴ The correlation between re-arrest and re-incarceration was statistically significant and moderate (.41). Surprisingly the correlations between the proportion of positive drug tests and the measures of recidivism were not statistically significant. An alternative measure of relapse was the raw number of positive tests. When this measure was substituted for the measure of relapse used in the study the correlations between

process variables influence relapse, which shapes recidivism outcomes as well as how re-arrest likelihood contributes to re-incarceration likelihood.

In order to further explore the process of reentry, future research may also benefit from dynamic life history event analyses through hierarchical growth curve modeling (see Horney et al., 1995). This analytical strategy requires time specified data that is restructured into a time series format to form an event calendar to explore within-individual change over time. For instance, the 2 year post-release follow-up data used in this study could be restructured into 104 weeks. Measures of housing stability, employment stability, treatment processes, and relapse and recidivism outcomes could then be re-examined and re-structured to their dichotomous weekly occurrence. Growth curves of treatment processes could then be examined to determine how gains or losses in housing and employment affect substance abuse treatment dosage and compliance levels before and after a gain or a loss. Similar interpretations could be made for growth curves of relapse and recidivism outcomes.

Finally, the results are also limited in their generalizability. The sample consists of a high risk population of individuals with severe substance abuse and dependency histories who were released to a conditional correctional supervision term in a medium sized Midwestern city. The services these individuals were exposed to or participated in were also relatively geographically limited to agencies within the city or the surrounding region. As such, the sample should not be considered representative of all individuals under correctional supervision in the community or those individuals with substance abuse or dependency histories.

relapse, re-arrest, and re-incarceration were all statistically significant and range in absolute value of .16 to .30.

Research Implications

A number of implications can be generated from the current study. Attempts to offer theoretical implications border on the post hoc criticisms that plague the development of theoretical knowledge on prisoner reentry (see Chapter 2). A direct test of any one theory or combination of theories was not attempted with this study. The results suggest that there is good reason for the lack of theoretical knowledge on the process of transition from the institution into the community – the reentry process is complex. Lynch's (2006) identification of theoretical reentry emphases of social control, social development, methods of supervision, and the immediate transitional experience from prison to community can all be extrapolated to influence the process of reentry to some extent based upon the current study. While a direct test of one theoretical perspective may provide the best insights to future theory development, the interrelationships between the theories would make it extremely difficult to conceptualize an approach that is not confounded by the remaining perspectives. It may be more beneficial to begin to focus on broader theoretical themes that can lead to theory integration.

Future theoretical developments on prisoner reentry must take into account broader themes of stability and structure. Each of the theoretical perspectives suggested by Lynch (2006) directly or indirectly speaks to the importance of these themes. Theories on the immediate transitional experience provide a useful starting point with the suggestion that the initial challenges faced upon release must be managed so as to reduce stress or strain that may lead to reversions to past criminogenic behavior. Elaborations of the theory and its potential integration with the remaining theoretical perspectives needs

to further explore how the stability of reentry dimensions provides daily, weekly, or monthly structure for life in the community.

Housing and employment stability appear to provide some degree of stabilization to treatment processes by affecting dosage and non-compliance levels. Stable treatment may then serve an important function of social control and an avenue for self-development. That is to say that treatment may only have inherent theoretical value if it is relatively stable and its stability is contingent upon the stability of broader socioeconomic circumstances. It may be the case that instability across these reentry dimensions damages the potential for obtaining daily, weekly, or monthly structure in the community, which may lead to recidivism. Additional research is needed to test these theoretical claims.

The findings also have direct theoretical implications for the growing body of literature on “what works” in corrections. “What works” has evolved to become a theory of programmatic intervention design that is based upon inductive inferences from reviews of empirical studies. The perspective generally begins with a specific treatment program and considers how program structure and content affect relevant outcome indicators. Since programs are the focus, the perspective overlooks the fact that treatment processes may be affected by broader social circumstances related to housing and employment stability. This suggests that the body of literature on what works may be omitting relevant variables that contribute to the relationship between programming and program outcomes. Moreover, this omission confirms the fact that “what works” literature may not be directly applicable to the study of prisoner reentry.

Some methodological implications can also be developed from the current research that is applicable to evaluation research. Evaluations of reentry processes must make sure that a focus is placed upon the effects of reentry dimensions and develop the ability to reliably capture measures of relevant reentry dimensions. The focus of the current research was placed upon the dimensions of housing, employment, and treatment following release from an institution. A focus on these 3 dimensions is somewhat limited. Additional focus should be placed on a mixture of pre-prison, within-prison, release, and post-release reintegration experiences that vary according to individual, social group, community, and state policy dynamics (Visser & Travis, 2003).

The current research also confirms the need to move beyond the simplistic presentation of recidivism outcomes in an evaluation research design and for reentry research in general. It is not enough to simply suggest that sample populations are making gains in procuring housing, employment, or treatment and then present overall outcomes pertaining to relapse and/or recidivism irrespective of the reentry dimensions. The current results indicate that the reentry dimension of housing and employment stability directly affect treatment processes and relapse outcomes. Moreover, employment stability directly affects re-incarceration outcomes. A research design focus specifically on relapse or recidivism outcomes would overlook these associations. The same oversight would occur if the associations between treatment dosage and compliance levels are taken into account with relapse and recidivism outcome analyses.

Evaluations of reentry programming may also benefit from an attempt to separate the effects of supervision that are influenced by correctional supervision policy from those that are influenced by participation in treatment programming. Correctional

supervision intensity paired with treatment can serve as a protective factor that may reduce the potential for supervision intensity to inflate levels of re-incarceration (National Research Council, 2008; Petersilia & Turner, 1991; Taxman, 2008; Useem & Piehl, 2008). However, this research suggests that it may be the type of treatment that is associated with recidivism risk. Supervision paired with traditional, community-based substance abuse treatment services appears to have a lower degree of overall supervision intensity relative to supervision paired with intensive, community-based substance abuse treatment that involves multiple program providers and personnel. Intensive treatment may contribute to intensive community supervision, which appears to significantly increase the risk of recidivism.

Policy implications from the current study confirm that reentry dimensions are important to the study of release and reintegration into the community. Housing, employment, and treatment appear to be interrelated and can directly influence overall correctional outcomes. These outcomes can also be shaped by treatment processes, which are themselves conditioned by housing and employment stability.

Importantly, the reentry dimensions of housing, employment, and treatment are influential to the process of transition into the community regardless of whether an individual has received reentry-based correctional services. Evidence of differential effects between those who received intensive, reentry-based substance abuse treatment and those who received traditional correctional services were observed, but these effects did not appear to constrain the direct effects of housing stability, employment stability, or treatment dosage and processes. This suggests that existing policies must attempt to do better to plan, manage, and provide adequate services for those who are able to

participate in reentry-based services. Additionally, new policies must be formulated (based on the lessons learned from existing policies) to provide some level of reentry-based services to those who experience traditional correctional services.

Treatment is an important reentry dimension and is an issue that has been subjected to a litany of correctional research. Referral and participation in treatment may not be the most adequate response to the challenges of community transition, especially if the intensity of treatment provides levels of supervision that meet or exceed the levels of supervision provided by community correctional agents. However, treatment may serve an instrumental purpose above and beyond its rehabilitative value by enhancing social capital and self-development. The current results suggest that substance abuse treatment appears to be most effective in reducing levels of recidivism when dosage levels are high. By implication, treatment appears to be most effective in reducing recidivism when it stabilizes housing movement (i.e., those with unstable housing receive higher dosages of treatment) and reinforces the existing stability of employment (i.e., those with stable employment receive higher dosages of treatment).

Efforts to enhance the efficacy of substance abuse treatment must also recognize the challenges to increasing dosage levels and attempting to stabilize housing movement. Higher levels of dosage were found to be associated with higher levels of relapse. Unstable housing was found to be associated with higher levels of treatment program violations and an increased likelihood of absconding. This suggests that treatment service administrators and staff as well as community correctional supervision agents must recognize that relapse and non-compliance with treatment programming is a part of the broader transition and adjustment process. Flexibility is needed in providing sanction

responses to relapse and program violations. These violations may be indicative of behavior associated with criminality, but they may also be indicative of amenability to treatment or broader socio-economic difficulties associated with housing or employment.

The formulation of policy for prisoner reentry is a daunting task. It is very simple to say that reentry dimensions must be considered and efforts to plan for the initial obtainment housing, employment, and treatment must be made and associated with contingency plans of how to maintain housing, employment, and treatment. The existing reentry program model structures being designed and implemented across the country have called for similar planning efforts. The difficulty in considering these dimensions and including them into reentry strategies is the fact that housing and employment statuses can change at any time for any reason. Sometimes these changes are driven by individual agency or choice, while other times the changes are made for an individual without their control. In essence, housing and employment stability may be available for some individuals but the stability of housing and employment for others may be a matter of chance. This makes prospects for planning – a central dimension of the reentry movement – difficult.

Even if plans are solidified to some extent, the quality and reach of services that can be provided complicates matters. Housing assistance and programming may be available in some communities, but there is a dearth of research available to determine what type of assistance or programming is better than others in terms of obtaining and maintaining housing. A base rate of expected effect sizes for housing programs has yet to be established, but there is promising research available on halfway houses and transitional housing (Bloom et al., 2007; Jacobs and Western, 2007; Lowenkamp &

Latessa, 2002; Lowenkamp & Latessa, 2005). Employment assistance and programming has some empirical merit, but offers very small effect sizes (Aos et al., 2006; MacKenzie, 2006). Developed reentry program models all make mention of housing and employment considerations, but few specify the services that will be offered. It is likely that the services are referral based and include minimal provisions such as application and paperwork processing and information on available opportunities (see Justice Research Associates, 2005). Unfortunately these services may not be adequate. Research is needed in these areas to inform future reentry programs. Researchers may benefit from exploring funding options associated with partnerships with local housing development and/or employment development agencies to assess services that could contribute to reentry program model development.

In a purely humanisitic sense, housing and employment should be provided for individuals being released into the community simply due to the fact that upon release, many individuals lack housing placements and employment opportunities. Unfortunately this recommendation is not economically or politically feasible. A few promising avenues should be explored.

Housing needs could be met by community corrections in concert with local housing development providers and landlords interested in receiving tax break incentives for assisting with housing placements for offenders. Determinations of housing placement can be made during at pre-release and a dialogue between the landlord, homeowner, or roommate and the individual to be placed can be established to form rules, responsibilities, and expectations. Such a process would assist with an initial housing placement, but does not guarantee that the placement will be maintained

throughout the supervision term. Aftercare placement options for the loss of housing should be considered during the initial placement process. New options for housing movement should be discussed after progression is made in attaining some degree of social capital (e.g., obtaining a job, completing treatment), which may contribute to self-development and reinforce one's current trajectory of adjustment into the community. The key is to minimize, not exacerbate, housing movement.

A parallel process could take place for employment. Employers may receive tax break incentives for placing offenders with employment opportunities. Knowledge of employers who hire ex-offenders is often shared upon release among the informal network of other offenders who are experiencing the same transition process. Individuals are also likely to be referred to local employment development agencies that provide contact information for employers seeking to hire ex-offenders. Instead of relying upon informal networks or referrals, it may be a better policy for employers to provide orientations regarding available positions with their agency during pre-release. This would open a dialogue between the employer and employee on expectations, begin the administrative paperwork process, and effectively cut out the "middle man" process of waiting until release and relying upon referrals. The key is to maximize the amount of time working.

It is also important to consider the marriage between housing and employment. Research should also continue to explore transitional housing programs that include immediate employment placement and the continuation or initiation of treatment services in an effort to inform policy. The work of Bloom and colleagues (2007) and Jacobs and Western (2007) suggests that such services can promote gains in social capital and

produce reductions in relapse and recidivism. It is likely that the beneficial effects associated with participation in such services is influenced by the structure and stability that is associated with minimized housing movement and maximized employment tenure as suggested by the current research.

Further elaborations of transitional housing programs are needed. These programs appear to be reserved for those individuals with treatment needs who lack the social capital or social networks that can assist with housing and/or employment leads. It is not clear if individuals who have met their housing needs and/or employment needs upon release would benefit from such services or if the services would produce unintended consequences. The current research suggests that those with more social capital (as indicated by educational background status), may place themselves at greater risk for recidivism when programming is not applicable or when needs are unmet.

Additional concerns are related to service delivery. Transitional housing and halfway house programs for offenders are directly or indirectly implemented under the auspices of the local Department of Corrections. By being associated with the correctional system, transitional housing may be perceived as being a form of extended punishment (see Justice Research Associates, 2005). Continued replication of transitional housing programs should utilize a mixture of facilities that are not associated with the correctional system to determine if the location of service delivery enhances program effects.

Conclusion

Overall the results indicate that reentry dimensions are influential to the process of transition into the community. The reentry dimensions of housing, employment, and

treatment are interrelated and affect outcomes related to relapse and recidivism.

Moreover, housing and employment appeared to shape the treatment processes of dosage and violations and these processes, in turn, affect relapse and re-incarceration. While the reentry dimensions may have direct effects on correctional outcomes, the direct effects of housing and employment on relapse and re-incarceration are indirectly affected by the treatment processes of treatment dose and violations.

The reentry movement is still in its infancy and state correctional systems continue to develop, implement, and refine reentry programs. Research and evaluation on reentry is still few and far between despite the growth of interest in the topic. It is concerning that contemporary reentry programs continue to be implemented with little to no empirical foundation. Proceeding without informed decisions may lead to null or negative (i.e., those that harm participants) correctional outcomes that affect the expansion of reentry programs and the funding available to implement such programs.

Moreover, public opinion may impede any progress the reentry movement hopes to make. According to Petersilia (2003), state funding has shifted away from higher education – specifically higher education – and social services to fund prisons and correctional programs. The question that policy makers, criminal justice administrators, and academics will have to answer is to what extent society should assist those individuals who are considered to be “the lowest of the low” due to their criminal background. In the name of public safety, should offenders receive as much services and treatment as deemed necessary in hopes of inducing a behavioral change or should the use of incapacitation be furthered in order to keep offenders out of communities and society at large. Responses to such questions by the public and the criminal justice

system will determine the extent to which the prisoner reentry movement flourishes or flounders.

APPENDIX A

CONTEXTUAL INFORMATION ON BROADER PROGRAM EVALUATION

High-risk male offenders soon to be released into local jurisdictional limits, placed under 24 month community correctional supervision, and who had significant substance abuse or dependency histories served as the target population for the program evaluation. All offenders scheduled to be released into the local jurisdiction were screened for program eligibility. Eligibility for placement in the program was determined through the pre-parole process and individuals to be placed in the program were notified of placement approximately one month and one week prior to release on average. In addition to the mentioned pre-requisites, offenders were assessed for eligibility according to offense and risk classifications. Ineligible participants included those with high assaultive risk classifications, sex offense histories, arson histories, life sentences, pending felony charges or immigration detainer, physical or mental conditions that may prohibit participation, paroles from other states under interstate compacts, and those assigned to minimum community correctional supervision status.

The program structure included graduated transitions between two programmatic phases. The first phase took place during the first 30 to 45 days post-release and required residence in a secure transitional facility. Efforts in this phase were focused on the establishment of housing placements, the obtainment of employment, enrollment in employability and life skills training, and the initiation of substance abuse treatment services. Contact with family members was also attempted during this phase in order to assess the need for family therapy and initiate family therapy sessions as necessary. Participants were assigned to a primary case worker, primary treatment therapist, and

case coordinator upon intake who respectively assessed participant need (i.e., educational, employment, housing, personal identification, mental/physical health, health care, transportation, and clothing), assessed substance abuse or dependency histories and developed treatment and relapse prevention plans, and developed local referral networks in the community in addition to serving as an intermediary when problems arise.

Program staffs worked collaboratively to identify goals and objectives for participants and monitor participant progress on a weekly basis (at minimum). Moreover, a mid-treatment review was held after 2 weeks in the program with these program staff, the participant, and the participant's community correctional supervisory agent to determine if initial goals and objectives are being met and whether to extend the first phase or allow transition into the second phase of the program.

Substance abuse treatment during the first phase consisted of up to 10 hours of direct treatment services, which included 1 individual counseling session, 3 group/didactic sessions, 1 family group therapy session, and 3 Alcoholics Anonymous or Narcotics Anonymous sessions per week. Participants were subjected to drug tests at least 2 times per week in addition to any returns to the transitional housing facility upon approved day pass leaves for housing or employment prospects and other assorted community-based responsibilities or referrals. Non-compliance with treatment participation and positive drug tests resulted in programmatic sanctions. These sanctions may include building restrictions (loss of day passes), delays in progression to the second phase of the program, re-starts of the entire program, program terminations, and violation of community supervision status proceedings that may potentially lead to re-incarceration.

The participant transitioned to the second phase of the program after making sufficient gains in the obtainment of housing placements and employment or employment prospects in addition to remaining compliant with substance abuse treatment and testing, as determined by the participant's primary case worker, primary therapist, case coordinator, and community supervisory agent. The second phase allows the participant to move to an approved home residence, continue substance abuse treatment services, and continue family therapy sessions as needed. The primary therapist and case coordinator continued to monitor and assist in meeting program goals and objectives as well as immediate needs. Bi-monthly and monthly meetings were held among program staff to review progress, assess goals and objectives, and determine need for modification to goals and objectives. Monthly meeting were held with these program staff, the participant, and the participant's community supervisory agent to provide feedback on progress or discuss issues of non-compliance.

Substance abuse treatment during the second phase consisted of up to 9.5 hours of direct treatment services. These services consisted of 3 group/didactic sessions, 1 family group session, and 3 Alcoholics Anonymous or Narcotics Anonymous sessions per week and 2 individual counseling sessions per month. Drug testing in the second phase was conducted randomly through the use of a toll-free call-in phone number. Participants in the second phase were required to call the phone number each business day to check the listing of testing numbers for that day. If the participant's Department of Corrections' number ends in one of the two digits listed on that day, the participant must report to the transitional housing facility for testing. Positive drug tests result in immediate 3 day sanctions to be served at the transitional housing facility. Continued non-compliance

with treatment or testing may lead to additional 3 day sanctions, placement back in the first phase of the program, program re-starts, program terminations, and violation of community supervision status proceedings that may potentially lead to re-incarceration.

An experimental design with the random assignment was used to determine the impact of the program on relapse and recidivism. Eligible offenders were randomly assigned by Department of Corrections identification number. Those with odd ending identification numbers were assigned to the participant group, while those with even ending identification numbers were assigned to the control group.

Insights from Process Evaluation Findings

Overall, the reentry-based substance abuse treatment program was found to be implemented consistent with the program model. The intensity of the substance abuse treatment services offered met or exceeded the original program model plan for nearly all components of the program. Substantial participation variability in treatment services within and across service components of the program were observed.

There were a few exceptions with regard to implemented program intensity. Family therapy sessions were attended far less often than originally planned. Much of the problems with these sessions were due to the skepticism of family members in participating in treatment services within the transitional housing facility. Efforts to move the treatment services to local community centers induced more participation, but the intensity of participation remained low throughout program years of operation.

Employment program services were also different than originally planned. At the outset, the program was designed to provide placement services. In operation, these placement services were more akin to referral services. Participants attending local

employability services and incurred the responsibility of conducting much of the “legwork” required for obtaining employment on their own.

There were a few issues that accompanied the suitable implementation of the program. First, the screening process may have missed a number of eligible participants during the first 6 months of program operation. This may have biased the eligibility pool that may have been assigned to participant or control groups, but any bias would have been marginal⁶⁵. There were difficulties in reaching the target sample number (500 eligible offenders) that may have been influenced by missing eligibility screens. The anticipated annual number of eligible offenders provided by the local community correctional field office far exceeded the actual number that could have been assigned to the participant or control conditions. Due to this discrepancy, the random assignment period was extended one year longer than anticipated.

Second, there was a noticeable degree of hostility from participants who entered the program during the first year of operation. The problem was largely due to the fact that participants were expecting to be released directly into the community, but were instead placed into a secure transitional housing facility for the first phase of the program. The levels of hostility were apparent despite the pre-release in-reach portion of the program in which service providers informed future participants of their placement.

Even with these issues in mind, the process findings provided some valuable insights. For participants, the findings indicate that the referral and admission process

⁶⁵ The issue of eligibility screening led to conscientious debates among program stakeholders. Supplemental data requests on paroles to the local county and reviews of community correctional field office files suggested that the main issue was not systematically related to missing eligible participants. Instead, the issue was the failure to complete eligibility forms. Offenders released to the local county and missing eligibility screens were likely to have been excluded due to minimum community correctional supervision status or substance abuse screening assessments not indicating the need for treatment.

were completed in a timely manner. Pre-parole eligibility determinations were made approximately 5 weeks prior to release. Pre-parole in-reach contact by service providers were conducted shortly after the eligibility determinations were made. Participants entered the program within 2 days on average after release from the institution. The findings also suggest that participants were meeting program expectations. The completion rate for the first phase of the program was high (upwards of 90%). Participants also seemed to be exposed to employment opportunities in the local community and successful in gaining employment since a majority of participants were employed at least once.

Insights from Outcome Evaluation Findings

Outcome evaluation findings examined the efficacy of meeting the programmatic objectives of reducing the risk for relapse and recidivism (i.e., re-arrest and re-incarceration) for participants. The overall findings suggested null to marginal program impact. In terms of relapse findings, participants were drug tested at a significantly higher rate than the control group, had more positive drug tests on average, and incurred their first positive test approximately one month and one week faster than the control group. However, these apparent differences between the two groups were minimized after controlling for the frequency of drug testing. Both groups had similar rates of positive drug tests and a similar proportion of group members with at least one positive drug test. Concerning recidivism, there were no differences between the proportion and timing of re-arrest or re-incarceration among the two groups.

Among participants, preliminary explorations found some indication of differential outcome effects. Compliant participants with few programmatic violations

and those with longer program lengths of stay had lower frequencies of positive drug tests and less likelihood for recidivism. These findings suggest that program processes, which are beyond considerations of dosage, can contribute to differential effects and shape outcomes. Preliminary explorations into the associations between program participation and outcomes failed to produce clear findings. This is not to say that differential effects do not exist. Rather, this finding suggests that further analyses are necessary in order to determine the extent to which differential treatment dosages shape program outcomes.

APPENDIX B

VERIFICATION OF MULTIVARIATE REGRESSION ANALYSES OF TREATMENT DOSAGE AND PROCESSES (RESEARCH QUESTION 1)

Negative binomial regression models were used as diagnostic verifications of the results of the linear and logistic regression models used in this study⁶⁶. The technique was used for count dependent variables whose non-normal distribution produces a conditional variance that is larger than its mean (Agresti, 2002; Cameron & Trivedi, 1998; Hilbe, 2007; Long, 1997). As a generalized linear method, negative binomial regression eases the assumptions of linear regression models. The error structure in negative binomial regression does not require normally distributed residuals or constant and independent residual error structures (Cameron & Trivedi, 1998; Hilbe, 2007; Long, 1997). The technique also differs from traditional linear based regression modeling in its underlying distribution and method of coefficient estimation (i.e., pseudo maximum likelihood) (Agresti, 2002; Cameron & Trivedi, 1998; Hilbe, 2007; Long, 1997).

Negative binomial regression models were estimated with robust standard errors. Robust standard errors were used to protect against biased estimates. This bias tends to occur when linear modeling techniques are applied to non-normally distributed data (Cameron & Trivedi, 1996; Hilbe, 2007; Long, 1997) and when estimates are generated from residuals that are influenced by outliers and heteroskedasticity (Hardin & Hilbe, 2001; Long & Ervin, 2000; Wooldridge, 2009). Negative binomial regression corrects for biased estimates of standard errors by easing the assumptions of linear regression (Cameron & Trivedi, 1996; Hilbe, 2007; Long, 1997). The addition of a robust standard

error function to negative binomial regression models produces a more stringent estimation of coefficients and determination of statistical significance. This is due to the fact that robust standard errors provide more precision in estimation relative to non-robust standard error estimates that contain larger standard errors (Hardin & Hilbe, 2001; Long & Ervin, 2000; Wooldridge, 2009).

Tables 20 through 22 provide the replicated treatment dosage and process models with negative binomial regression with robust standard errors⁶⁷. Bolded coefficients and standard errors represent differences between the linear or logistic regression model presented in the text and the negative binomial regression model presented below. The negative binomial model was a replication of the full conditional model that includes the independent variables and control variables with and without controls for an interaction term.

Table 20 presents the full conditional negative binomial model of substance abuse treatment dosage on independent and control variables. Four coefficient estimation differences were observed between the negative binomial models and the linear regression models in the text. The differences were associated with two control variables. Whether or not an individual has been hospitalized during their supervision term is associated with treatment dosage in the negative binomial models. Those who have been hospitalized received a higher dose of treatment relative to those who were never admitted to the hospital during their supervision term. The only other difference

⁶⁶ Caution is needed with the interpretation of these regression models since the models are likely to be underpowered and may only be able to identify medium or large effect sizes.

⁶⁷ Negative binomial regression models with robust standard errors were conducted with the use of Stata 10se software. Stata utilizes a Huber-White adjustment that produces robust standard errors with

between model estimations was between educational background statuses (i.e., high school graduate with or without college or professional degree coursework relative to no high school diploma or GED). Importantly, the direction of the effect changed in the negative binomial regression models, but the coefficient remains insignificant as suggested in the linear models.

corrections for correlated error terms (Hardin & Hilbe, 2001; see also Eicker, 1967; Huber, 1967; White, 1980 for a technical estimation foundation).

Table 20: Verification of Full Regressions of Substance Abuse Treatment Dosage on Independent and Control Variables (n=511).

	b (SE)	IRR	b (SE)	IRR
Age	.00 (.00)	1.00	.00 (.00)	1.00
White ^e	-.17 (.07)*	.84	-.17 (.07)*	.84
GED ^a	-.00 (.07)	.99	-.01 (.06)	.99
HS Grad Plus ^a	.04 (.09)	1.04	.03 (.09)	1.03
Divorce/Widow ^b	.12 (.09)	1.13	.11 (.09)	1.12
Married ^b	-.01 (.09)	.99	-.01 (.09)	.99
Prior J Commit ^e	-.07 (.07)	.93	-.07 (.07)	.93
Prior Prison ^e	-.10 (.06)	.90	-.10 (.06)	.90
Person Crime ^c	-.08 (.07)	.92	-.08 (.07)	.92
Property Crime ^c	-.10 (.08)	.90	-.10 (.08)	.90
PSafety Crime ^c	-.11 (.10)	.89	-.11 (.10)	.90
Past TX Services	-.01 (.02)	.98	-.02 (.02)	.98
Sup Intensity	.01 (.00)***	1.01	.01 (.00)***	1.01
Grad of TX ^e	.50 (.06)***	1.66	.50 (.06)***	1.65
Tx Group ^d	.54 (.06)***	1.73	.55 (.06)***	1.73
Hospitalized ^e	.14 (.06)*	1.16	.14 (.06)*	1.15
MH Treatment ^e	.04 (.09)	1.04	.04 (.09)	1.04
H Edu ^e	.06 (.07)	1.06	.06 (.07)	1.06
House Stability	.07 (.01)***	1.08	.06 (.02)***	1.07
Emp Stability	.02 (.00)***	1.02	.02 (.00)***	1.02
House*Emp ^f			.09 (.08)	1.09
-2LL	1420.49		1420.02	
Model Chi2	395.22***		403.40***	
df	20		21	

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses; IRR refers to incident rate ratio, which is a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

Table 21 presents the full conditional negative binomial model of treatment program violations on independent and control variables. Eight coefficient estimation differences were observed between the negative binomial models and the linear regression models in the text. The eight differences were reflective of one independent variable and five control variables.

Table 21: Verification of Full Regressions of Treatment Program Violations on Independent and Control Variables (n=511).

	b (SE)	IRR	b (SE)	IRR
Age	.00 (.01)	1.00	.00 (.01)	1.00
White ^e	.30 (.13)*	1.34	.29 (.13)*	1.34
GED ^a	-.04 (.13)	.96	-.04 (.13)	.95
HS Grad Plus ^a	-.21 (.19)	.81	-.21 (.18)	.81
Divorce/Widow ^b	.02 (.19)	1.02	.01 (.18)	1.01
Married ^b	-.00 (.21)	1.00	.05 (.21)	1.05
Prior J Commit ^e	.16 (.15)	1.17	.16 (.15)	1.18
Prior Prison ^e	.01 (.13)	1.01	.02 (.13)	1.01
Person Crime ^c	.36 (.17)*	1.43	.34 (.17)*	1.41
Property Crime ^c	.40 (.18)*	1.50	.38 (.17)*	1.46
PSafety Crime ^c	.13 (.22)	1.14	.16 (.22)	1.17
Past TX Services	.08 (.03)**	1.09	.07 (.03)**	1.07
Sup Intensity	.00 (.00)	1.00	.00 (.00)	1.00
Grad of TX ^e	-.84 (.16)***	.43	-.81 (.15)***	.44
Tx Group ^d	.76 (.14)***	2.14	.75 (.14)***	2.11
Hospitalized ^e	.06 (.13)	1.06	.05 (.13)	1.05
MH Treatment ^e	-.57 (.18)**	.56	-.55 (.18)**	.57
H Edu ^e	-.10 (.19)	.91	-.15 (.18)	.86
House Stability	.26 (.03)***	1.29	.18 (.03)***	1.20
Emp Stability	-.06 (.01)***	.94	-.04 (.01)**	.96
House*Emp ^f			.58 (.20)**	1.78
-2LL	483.70		478.98	
Model Chi2	316.21***		359.71***	
df	20		21	

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses; IRR refers to incident rate ratio, which is a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

Relative to the independent variable, the effect of employment stability persisted after controlling for the partial effect of the interaction between housing and employment stability in the negative binomial models. The effects of the control variables for offense conviction type (i.e., person and property offenses relative to drug offenses) followed a similar format and were observed to be significant in the negative binomial model that

controls for the effect of housing and employment instability. The remaining differences were for the control variables of marital status (i.e., divorced/widowed relative to single status), criminal history (i.e., prior prison admissions relative to first prison admission on current supervision term), and hospitalization while under supervision. The direction of the effect of these control variables changes in the negative binomial models, but the coefficients remain insignificant as suggested in the linear models.

Table 22 presents the full conditional negative binomial model of absconding on independent and control variables. Seven coefficient estimation differences were observed between the negative binomial models and the linear regression models in the text. The seven differences were reflective of one independent variable and three control variables.

The only independent variable difference reflects a change in direction between negative binomial and logistic regression models for the interaction term of housing and employment instability. Importantly, the insignificance of the estimated coefficient in both of the models was the same. Of the control variables, the age of the individual was associated with absconding in the negative binomial models. This suggested that older individuals were less likely to abscond. Offense conviction type (i.e., property offenses relative to drug offenses) was not associated with relapse in the negative binomial models, despite its significant association with relapse in logistic regression models. The remaining control variable that differs between negative binomial and logistic regression models represents hospitalization during the supervision term. Importantly, the direction of the effect changes with negative binomial models, but the coefficients remain insignificant consistent with logistic regression estimates.

Table 22: Verification of Full Regressions of Supervision Absconding on Independent and Control Variables (n=511).

	b (SE)	IRR	b (SE)	IRR
Age	-.01 (.01)*	.99	-.01 (.01)*	.99
White ^e	-.02 (.10)	.98	-.02 (.10)	.98
GED ^a	.06 (.10)	1.06	.06 (.10)	1.06
HS Grad Plus ^a	-.06 (.15)	.94	-.06 (.15)	.94
Divorce/Widow ^b	.08 (.13)	1.08	.08 (.14)	1.08
Married ^b	-.08 (.17)	.92	-.08 (.17)	.92
Prior J Commit ^c	.15 (.10)	1.16	.15 (.10)	1.16
Prior Prison ^c	.27 (.10)*	1.31	.27 (.10)*	1.31
Person Crime ^c	.13 (.13)	1.14	.13 (.13)	1.14
Property Crime ^c	.23 (.13)	1.26	.23 (.13)	1.26
PSafety Crime ^c	.05 (.16)	1.05	.05 (.16)	1.05
Past TX Services	.06 (.02)**	1.06	.06 (.02)**	1.06
Sup Intensity	-.00 (.00)	1.00	-.00 (.00)	1.00
Grad of TX ^e	-.60 (.12)***	.55	-.60 (.13)***	.55
Tx Group ^d	.21 (.09)*	1.24	.21 (.09)*	1.24
Hospitalized ^e	.02 (.10)	1.02	.02 (.10)	1.02
MH Treatment ^e	-.01 (.15)	.99	-.01 (.14)	.99
H Edu ^e	-.22 (.16)	.80	-.22 (.16)	.80
House Stability	.13 (.02)***	1.14	.13 (.02)***	1.14
Emp Stability	-.04 (.01)***	.96	-.04 (.01)**	.96
House*Emp ^f			-.04 (.14)	.96
-2LL	371.08		371.06	
Model Chi2	213.98***		213.24***	
df	20		21	

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses; IRR refers to incident rate ratio, which is a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves and who were employed for less than half of their supervision term.

APPENDIX C

VERIFICATION OF MULTIVARIATE REGRESSION ANALYSES OF RELAPSE AND RECIDIVISM OUTCOME MEASURES (RESEARCH QUESTION 2)

Negative binomial regression models were used as diagnostic verifications of the results for linear and logistic regressions used in this study (see Appendix B for additional context). Tables 23 through 25 present the replicated relapse and recidivism models with negative binomial regression with robust standard errors⁶⁸. Bolded coefficients and standard errors represent differences between the linear or logistic regression model presented in the text and the negative binomial regression model provided below. The negative binomial model was a replication of the full conditional model that includes the independent variables and control variables with and without controls for an interaction term.

Table 23 provides the full conditional negative binomial model of relapse on independent and control variables. Three estimated coefficients were observed to differ between the negative binomial models and the linear regression models in the text. The differences were associated with two control variables. The number of past correctional substance abuse treatment services an individual had participated in was not associated with relapse after controls for the interaction of housing and employment instability in negative binomial models. Whether an individual had completed a substance abuse treatment program during their supervision term was associated with relapse with or without a control for housing and employment instability. Graduates of treatment

⁶⁸ Caution is needed with the interpretation of these regression models since the models are likely to be underpowered and may only be able to identify medium or large effect sizes.

programs had a lower proportion of positive drug tests relative to those who were unable to complete a treatment program.

Table 23: Verification of Full Regressions of Substance Abuse Relapse on Independent and Control Variables (n=511).

	b (SE)	IRR	b (SE)	IRR
Age	-.00 (.01)	.99	-.01 (.01)	.99
White ^e	-.26 (.12)*	.77	-.26 (.12)*	.77
GED ^a	-.02 (.10)	.97	-.03 (.10)	.97
HS Grad Plus ^a	-.19 (.16)	.82	-.19 (.16)	.82
Divorce/Widow ^b	.03 (.15)	1.03	.03 (.15)	1.03
Married ^b	-.09 (.18)	.91	-.08 (.18)	.92
Prior J Commit ^c	-.01 (.12)	.99	-.01 (.12)	.99
Prior Prison ^e	.25 (.10)*	1.29	.26 (.11)*	1.29
Person Crime ^c	-.12 (.13)	.88	-.13 (.13)	.88
Property Crime ^c	-.13 (.13)	.88	-.13 (.13)	.88
PSafety Crime ^c	-.17 (.16)	.84	-.17 (.16)	.85
Past TX Services	-.02 (.03)	.98	-.02 (.03)	.98
Sup Intensity	.00 (.00)	1.00	.00 (.00)	1.00
Grad of TX ^e	-.22 (.10)*	.80	-.22 (.10)*	.80
Tx Group ^d	.16 (.10)	1.17	.16 (.10)	1.17
Hospitalized ^e	.22 (.09)*	1.24	.21 (.09)*	1.24
MH Treatment ^e	-.14 (.13)	.87	-.14 (.13)	.87
H Edu ^e	-.21 (.13)	.81	-.21 (.13)	.80
House Stability	.08 (.02)***	1.08	.06 (.02)**	1.06
Emp Stability	-.03 (.01)***	.97	-.02 (.01)**	.98
House*Emp ^f			.15 (.14)	1.16
-2LL	253.68		253.56	
Model Chi2	112.10***		114.85***	
df	20		21	

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses; IRR refers to incident rate ratio, which is a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves (median split of sample) and who were employed for less than half of their supervision term.

Table 24 presents the full conditional negative binomial model of re-arrest on independent and control variables. Five estimated coefficients differed between the

negative binomial models and the logistic regression models in the text. The five differences were reflective of one independent variable and two control variables.

Table 24: Verification of Full Regressions of Re-Arrest on Independent and Control Variables (n=511).

	b (SE)	IRR	b (SE)	IRR
Age	-.02 (.01)*	.98	-.02 (.01)*	.98
White ^e	-.02 (.14)	.98	-.02 (.14)	.98
GED ^a	.35 (.17)*	1.41	.35 (.17)*	1.41
HS Grad Plus ^a	.51 (.20)**	1.66	.51 (.20)**	1.66
Divorce/Widow ^b	.22 (.18)	1.25	.22 (.18)	1.25
Married ^b	.07 (.22)	1.07	.07 (.22)	1.07
Prior J Commit ^e	-.11 (.16)	.89	-.11 (.16)	.89
Prior Prison ^e	.25 (.16)	1.28	.25 (.16)	1.28
Person Crime ^c	-.01 (.18)	.99	-.01 (.18)	.99
Property Crime ^c	.13 (.18)	1.14	.13 (.18)	1.14
PSafety Crime ^c	-.21 (.23)	.81	-.21 (.23)	.81
Past TX Services	-.05 (.04)	.95	-.05 (.04)	.95
Sup Intensity	-.02 (.00)***	.98	-.02 (.00)***	.98
Grad of TX ^e	-.36 (.19)	.70	-.36 (.19)	.70
Tx Group ^d	.14 (.14)	1.15	.14 (.14)	1.15
Hospitalized ^e	.00 (.18)	1.00	.00 (.18)	1.00
MH Treatment ^e	-.23 (.26)	.79	-.23 (.26)	.79
H Edu ^e	-.16 (.22)	.85	-.17 (.22)	.85
House Stability	.06 (.03)	1.06	.06 (.04)	1.06
Emp Stability	-.01 (.01)	.99	-.01 (.01)	.99
House*Emp ^f			-.02 (.23)	1.02
-2LL	304.33		304.32	
Model Chi2	61.95***		62.27***	
df	20		21	

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses; IRR refers to incident rate ratio, which is a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves (median split of sample) and who were employed for less than half of their supervision term.

For the independent variable, the direction of the effect for the interaction term of housing and employment instability changes in the negative binomial model. However, the coefficient remains insignificant, which was consistent with the estimates derived

from the logistic regression model. For the control variables, the negative association between graduates of treatment and re-arrest likelihood in the logistic regression models was not replicated with the negative binomial models. Additionally, the direction of the effect of hospitalization during the supervision term on re-arrest likelihood changed in the negative binomial models, but remained insignificant consistent with the logistic regression model results.

Table 25 provides the full conditional negative binomial model of re-incarceration on independent and control variables. Ten estimated coefficients differed between the negative binomial models and the logistic regression models in the text. The ten differences were all reflective of control variables.

Two of the control variables differed in terms of statistical significance between negative binomial and logistic regression models. Criminal history background of prior prison admission was observed to be associated with re-incarceration likelihood after controlling for the effects of housing and employment instability in negative binomial models. Individuals who had previously served a prison sentence were 1.27 times more likely to be re-incarcerated relative to those who are serving their first prison term. A history of prior juvenile commitment was not observed to be related to re-incarceration likelihood in the negative binomial models.

The remaining differential effects were observed for four control variables. The variables of race (i.e., white relative to non-white), conviction offense type (i.e., property and public safety offenses relative to drug offenses), and past participation in correctional substance abuse treatment switched direction of estimated effect in the negative binomial

models. Importantly, all of these control variables remained insignificant consistent with the logistic regression models.

Table 25: Verification of Full Regressions of Re-Incarceration on Independent and Control Variables (n=511).

	b (SE)	IRR	b (SE)	IRR
Age	-.02 (.01)*	.98	-.02 (.01)*	.98
White ^e	-.02 (.12)	.98	-.03 (.12)	.97
GED ^a	.42 (.14)**	1.53	.42 (.14)**	1.53
HS Grad Plus ^a	.57 (.16)***	1.77	.57 (.16)***	1.76
Divorce/Widow ^b	.20 (.14)	1.22	.21 (.14)	1.24
Married ^b	.16 (.17)	1.17	.16 (.17)	1.17
Prior J Commit ^e	.18 (.12)	1.19	.17 (.12)	1.18
Prior Prison ^e	.23 (.12)	1.26	.24 (.12)*	1.27
Person Crime ^c	.29 (.15)*	1.34	.30 (.15)*	1.35
Property Crime ^c	-.00 (.16)	1.00	-.01 (.16)	1.00
PSafety Crime ^c	-.04 (.19)	.95	-.06 (.19)	.94
Past TX Services	.00 (.03)	1.00	.01 (.03)	1.01
Sup Intensity	-.02 (.00)***	.98	-.02 (.00)***	.98
Grad of TX ^e	-.95 (.24)***	.39	-.95 (.24)***	.39
Tx Group ^d	.26 (.11)*	1.30	.26 (.11)*	1.29
Hospitalized ^e	-.21 (.18)	.81	-.21 (.18)	.81
MH Treatment ^e	.20 (.18)	1.22	.18 (.18)	1.20
H Edu ^e	-.08 (.17)	.92	-.08 (.17)	.93
House Stability	-.04 (.03)	.96	-.00 (.05)	1.00
Emp Stability	-.06 (.01)***	.94	-.06 (.01)***	.94
House*Emp ^f			-.23 (.21)	.80
-2LL	288.31		288.05	
Model Chi2	265.09***		265.70***	
df	20		21	

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses; IRR refers to incident rate ratio, which is a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves (median split of sample) and who were employed for less than half of their supervision term.

APPENDIX D

VERIFICATION OF MULTIVARIATE ANALYSES OF RELAPSE AND RECIDIVISM OUTCOME MEASURES CONTROLLING FOR TREATMENT DOSAGE AND PROCESSES (RESEARCH QUESTION 3)

Negative binomial regression models were used as diagnostic verifications of the results for linear and logistic regressions used in this study (see Appendix B for additional context). Tables 26 through 28 provide the replicated relapse and recidivism models with negative binomial regression with robust standard errors⁶⁹. Bolded coefficients and standard errors represent differences between the linear or logistic regression model presented in the text and the negative binomial regression model presented below. The negative binomial model was a replication of the full conditional model that includes the independent variables, treatment process variables, and control variables with and without an estimated coefficient for an interaction term.

Table 26 provides the full conditional negative binomial model of relapse on independent, treatment processes, and control variables. Two estimated coefficients differed between the negative binomial models and the linear regression models. These two differences pertained to one control variable. Whether one was hospitalized during their supervision term influenced relapse in negative binomial models. Individuals who were admitted to the hospital at least one time had a higher proportion of positive tests relative to those who were never admitted to the hospital. This association was not observed in the logistic regression models.

⁶⁹ Caution is needed with the interpretation of these regression models since the models are likely to be underpowered and may only be able to identify medium or large effect sizes.

Table 26: Verification of Full Regressions of Substance Abuse Relapse on Independent, Treatment Processes, and Control Variables (n=511).

	b (SE)	IRR	b (SE)	IRR
Age	-.01 (.01)	.99	-.01 (.01)	.99
White ^e	-.27 (.12)*	.77	-.26 (.12)*	.77
GED ^a	-.00 (.10)	1.00	-.00 (.10)	1.00
HS Grad Plus ^a	-.13 (.16)	.87	-.13 (.16)	.87
Divorce/Widow ^b	-.03 (.15)	.96	-.04 (.15)	.96
Married ^b	-.10 (.18)	.91	-.09 (.18)	.91
Prior J Commit ^c	-.01 (.12)	.97	-.02 (.12)	.98
Prior Prison ^c	.28 (.10)**	1.32	.28 (.10)**	1.32
Person Crime ^c	-.19 (.13)	.83	-.19 (.13)	.83
Property Crime ^c	-.18 (.13)	.83	-.18 (.13)	.83
PSafety Crime ^c	-.17 (.16)	.84	-.17 (.16)	.84
Past TX Services	-.04 (.03)	.96	-.04 (.03)	.96
Sup Intensity	-.00 (.00)	1.00	-.00 (.00)	1.00
Grad of TX ^e	-.26 (.11)*	.77	-.27 (.11)*	.77
Tx Group ^d	-.09 (.11)	.91	-.09 (.11)	.91
Hospitalized ^e	.19 (.09)*	1.21	.19 (.09)*	1.21
MH Treatment ^e	-.09 (.13)	.92	-.09 (.13)	.92
H Edu ^e	-.24 (.13)	.78	-.24 (.13)	.78
House Stability	.01 (.02)	1.01	.01 (.02)	1.00
Emp Stability	-.03 (.01)***	.97	-.03 (.01)***	.97
House*Emp ^f			.03 (.14)	1.03
Months in SATX	.05 (.01)***	1.05	.05 (.01)***	1.05
SATX Violations	.15 (.04)***	1.16	.15 (.04)***	1.16
Abscond ^e	.12 (.12)	1.13	.12 (.12)	1.13
-2LL	249.77		249.77	
Model Chi2	137.19***		137.78***	
df	23		24	

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses; IRR refers to incident rate ratio, which is a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves (median split of sample) and who were employed for less than half of their supervision term.

Table 27: Verification of Full Regressions of Re-Arrest on Independent, Treatment Processes, and Control Variables (n=511).

	b (SE)	IRR	b (SE)	IRR
Age	-.02 (.01)	.98	-.02 (.01)	.98
White ^e	-.03 (.14)	.96	-.03 (.14)	.97
GED ^a	.31 (.17)	1.36	.31 (.17)	1.36
HS Grad Plus ^a	.47 (.20)*	1.61	.47 (.20)*	1.61
Divorce/Widow ^b	.27 (.17)	1.31	.27 (.17)	1.31
Married ^b	.07 (.23)	1.08	.08 (.23)	1.08
Prior J Commit ^e	-.13 (.16)	.88	-.13 (.16)	.88
Prior Prison ^e	.17 (.16)	1.19	.17 (.16)	1.19
Person Crime ^c	.01 (.18)	1.01	.01 (.18)	1.01
Property Crime ^c	.13 (.18)	1.13	.13 (.18)	1.14
PSafety Crime ^c	-.24 (.22)	.78	-.24 (.22)	.79
Past TX Services	-.03 (.05)	.96	-.04 (.05)	.96
Sup Intensity	-.01 (.00)**	.99	-.01 (.00)**	.99
Grad of TX ^e	-.15 (.20)	.86	-.16 (.20)	.85
Tx Group ^d	.42 (.16)**	1.53	.43 (.16)**	1.53
Hospitalized ^e	.03 (.18)	1.03	.03 (.18)	1.03
MH Treatment ^e	-.31 (.25)	.73	-.31 (.25)	.74
H Edu ^e	-.12 (.21)	.89	-.12 (.21)	.88
House Stability	.11 (.04)**	1.12	.10 (.05)*	1.10
Emp Stability	-.01 (.01)	.99	-.00 (.01)	1.00
House*Emp ^f			.11 (.23)	1.11
Months in SATX	-.06 (.02)**	.94	-.06 (.02)**	.94
SATX Violations	-.28 (.09)***	.75	-.29 (.09)***	.75
Abscond ^e	.50 (.17)**	1.65	.50 (.17)**	1.65
-2LL	293.93		293.86	
Model Chi2	109.77***		109.96***	
df	23		24	

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses; IRR refers to incident rate ratio, which is a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves (median split of sample) and who were employed for less than half of their supervision term.

Table 27 presents the conditional negative binomial model of re-arrest on independent, treatment processes, and control variables. One estimated coefficient differs between the negative binomial model and the logistic regression models in the

text. The difference was observed for one independent variable. Housing stability was observed to remain significantly associated with re-arrest likelihood after controlling for the partial effect of housing and employment instability. High housing movement increased the risk of re-arrest, with each additional housing movement increasing the risk for re-arrest by 1.10.

Table 28 provides the conditional negative binomial models of re-incarceration on independent, treatment processes, and control variables. Eight estimated coefficients differ between negative binomial models and linear regression models in the text. The eight differences were reflective of one independent variable and four control variables.

Relative to the independent variables, housing stability was not associated with re-incarceration likelihood in the negative binomial models. A statistically significant relationship was observed in the logistic regression models that did not control for the partial effect of housing and employment instability. Three control variables were found to be significantly related to re-incarceration likelihood in the negative binomial models. Older individuals were less likely to be re-incarcerated and those convicted for a crime against persons were 1.25 times more likely to be re-incarcerated relative to those convicted on drug offenses. Additionally, those who had previously served a prior prison term were 1.14 times more likely to be re-incarcerated relative to those serving their first prison sentence. The relationship between criminal history (i.e., prior prison admissions) and re-incarceration likelihood was only apparent in negative binomial models that controlled for the interactive effect of housing and employment instability.

The remaining control variable of participation in higher education during the supervision term switched direction when estimated with negative binomial models. The

variable was not related to re-incarceration likelihood. The insignificance of the coefficient is consistent with the estimates derived from logistic regression models.

Table 28: Verification of Full Regressions of Re-Incarceration on Independent, Treatment Processes, and Control Variables (n=511).

	b (SE)	IRR	b (SE)	IRR
Age	-.02 (.01)*	.98	-.02 (.01)*	.98
White ^e	-.02 (.12)	.98	-.03 (.12)	.97
GED ^a	.40 (.13)**	1.50	.40 (.13)**	1.50
HS Grad Plus ^a	.57 (.16)***	1.78	.57 (.16)***	1.78
Divorce/Widow ^b	.22 (.14)	1.24	.23 (.14)	1.25
Married ^b	.23 (.18)	1.26	.22 (.18)	1.25
Prior J Commit ^c	.15 (.12)	1.16	.14 (.12)	1.15
Prior Prison ^c	.12 (.12)	1.13	.13 (.12)*	1.14
Person Crime ^c	.22 (.15)*	1.25	.23 (.15)*	1.25
Property Crime ^c	-.09 (.16)	.91	-.09 (.16)	.92
PSafety Crime ^c	-.11 (.18)	.90	-.12 (.18)	.88
Past TX Services	-.01 (.03)	.99	-.01 (.03)	.99
Sup Intensity	-.01 (.00)***	.98	-.01 (.00)***	.98
Grad of TX ^e	-.65 (.25)**	.52	-.64 (.25)**	.52
Tx Group ^d	.38 (.13)**	1.46	.36 (.13)**	1.44
Hospitalized ^e	-.22 (.17)	.80	-.22 (.17)	.80
MH Treatment ^e	.25 (.17)	1.28	.24 (.17)	1.27
H Edu ^e	.03 (.17)	1.03	.03 (.17)	1.02
House Stability	-.04 (.03)	.96	-.01 (.05)	.99
Emp Stability	-.05 (.01)***	.95	-.05 (.01)***	.95
House*Emp ^f			-.20 (.21)	.82
Months in SATX	-.04 (.02)*	.96	-.04 (.02)*	.96
SATX Violations	-.03 (.06)	.96	-.03 (.06)	.97
Abscond ^e	.56 (.12)***	1.75	.56 (.12)***	1.75
-2LL	281.10		280.89	
Model Chi2	319.92***		320.88***	
df	23		24	

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses; IRR refers to incident rate ratio, which is a standardized coefficient.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Interaction variable refers to individuals who experienced 4 or more housing moves (median split of sample) and who were employed for less than half of their supervision term.

APPENDIX E

SOBEL TEST (1986) OF INDIRECT EFFECTS WITHOUT THE INITIAL PRESENCE OF A NON-ZERO DIRECT EFFECT BETWEEN INDEPENDENT AND OUTCOME VARIABLE FROM BARON AND KENNY (1986)

The method for determining the presence of indirect effects in this study was based upon Baron and Kenny (1986). The method followed a three step process that was largely shaped by the initial step. This initial step requires that a significant (non-zero) association must be observed between a given independent variable and an outcome variable of interest. Without the establishment of this initial effect, Baron and Kenny (1986) suggested that a suspected mediator variable will not be able to affect the relationship between two variables.

Many have been critical of the initial step of the Baron and Kenny method and have suggested that the Sobel test (1986) should serve as the initial test for the presence of an indirect effect instead of being used as a supplement to Baron and Kenny (Greenwald & Draine, 1998; MacKinnon et al., 2000; Shrout & Bolger, 2002). The rationale for this argument is based on the notion that indirect effects may be overlooked by placing too much emphasis on the initial presence of a statistically significant direct effect of an independent variable on a dependent variable. By implication, this argument suggests that indirect effects can be observed without the presence of a direct effect.

Table 29 provides a summary table of alternative results for the Sobel test (1986) of indirect effects. These alternative results were based upon the use of the test at the outset and irrespective of the establishment of a direct effect between an independent variable and a dependent variable. The estimated coefficients and their respective

standard errors were corrected for comparability between continuous or binary mediators and outcomes (MacKinnon & Dwyer, 1993).

Table 29: Summary of Adjusted Sobel's Test of Indirect Effects without Baron and Kenny (1986) Clause (n=511).

	Sobel Test Statistic
Housing Stability → Dose → Relapse	2.97***
Housing Stability → Violations → Relapse	3.76***
Housing Stability → Abscond → Relapse	.66***
Housing Stability → Dose → Re-Arrest	-2.72
Housing Stability → Violations → Re-Arrest	-3.43*
Housing Stability → Abscond → Re-Arrest	2.90***
Housing Stability → Dose → Re-Incarceration	-1.91
Housing Stability → Violations → Re-Incarceration	-.69*
Housing Stability → Abscond → Re-Incarceration	3.64***
Employment Stability → Dose → Relapse	2.47***
Employment Stability → Violations → Relapse	-1.79***
Employment Stability → Abscond → Relapse	-.65***
Employment Stability → Dose → Re-Arrest	-2.32*
Employment Stability → Violations → Re-Arrest	1.75**
Employment Stability → Abscond → Re-Arrest	-2.43**
Employment Stability → Dose → Re-Incarceration	-1.75*
Employment Stability → Violations → Re-Incarceration	.65**
Employment Stability → Abscond → Re-Incarceration	-2.82**

*p<.05, **p<.01, ***p<.001; NOTE: Sobel Tests have been adjusted for binary mediators or outcomes (MacKinnon & Dwyer, 1993).

The alternative results suggest that treatment processes indirectly affected nearly all of the relationships between housing stability, employment stability, and correctional outcome indicators of relapse and recidivism. The only exceptions were observed for housing stability and recidivism. The level of substance abuse treatment dose received did not appear to influence the relationship between housing stability and re-arrest likelihood or the association between housing stability and re-incarceration likelihood.

The alternative results provide a liberal interpretation of indirect effects and confirmed the overall results of numerous interrelationships between the reentry dimensions of housing, employment, and treatment that can shape correctional outcome indicators of relapse and recidivism. These alternative results differ from the

conservative estimate of six direct and indirect effects in the text. Given the exploratory nature of this study and the ongoing debate over the need to establish an initial direct effect between variables that may be mediated, it was more appropriate to cautiously interpret the presence of indirect effects. This cautious, and conservative, interpretation of indirect effects was presented in the text.

APPENDIX F

ALTERNATIVE MODELING OF INTERACTION TERMS FOR HOUSING STABILITY AND EMPLOYMENT STABILITY

Tables 30 through 32 present alternative modeling of interaction terms for housing stability and employment stability⁷⁰. Negative binomial regression was used to replicate full conditional models with interaction terms. The negative binomial models were estimated with robust standard errors (see Appendix B for a brief background on the negative binomial technique and robust standard errors).

The dichotomized interaction term used in the text referred to conditional median distributions of housing instability (i.e., 4 or more housing moves) and employment instability (i.e., employed for less than half of their supervision term). Three additional dummy variable interaction terms were constructed based upon the remaining combinations of conditional median distributions (Hardy, 1993). The first interaction term (USH*SE) represented those who experienced housing instability (i.e., 4 or more housing moves) and employment stability (i.e., employed for more than half of their supervision term). The second interaction term (SH*USE) represented those who had stable housing (i.e., 3 or fewer housing moves), but also experienced employment instability (i.e., employed for less than half of their supervision term). The final interaction term (SH*SE) represented those who had stable housing and stable employment (i.e., experienced 3 or fewer housing moves and were employed for more than half of their supervision term). In modeling these 3 alternative interaction terms, the

⁷⁰ Caution is needed with the interpretation of these regression models since the models are likely to be underpowered and may only be able to identify medium or large effect sizes.

combination of housing instability and employment instability used in the text serves as the reference category.

Table 30 presents the full conditional negative binomial models of treatment processes on independent, control, and interaction variables. Overall, the initial findings presented in the text were replicated. The joint contributions of housing stability and employment stability were not related to substance abuse treatment dose or absconding. However, the interaction between the primary independent variables was associated with treatment program violations.

The findings confirm that housing and employment instabilities led to higher treatment program violations relative to those individuals who have relatively stable housing with or without stable employment. This suggested that housing stability may be the driving factor that influences treatment program violations, with stable housing leading to fewer violations. Those who have unstable housing, but stable employment have similar levels of program violations compared to those with unstable housing and unstable employment.

Table 30: Summary of Full Regressions of Treatment Processes on Independent and Control Variables with Alternative Interaction Terms (n=511).

	Treatment Dose b (SE) IRR	Treatment Violations b (SE) IRR	Absconding b (SE) IRR
Age	.00 (.00) 1.00	.00 (.01) 1.00	-.01 (.01) .99*
White ^e	-.17 (.07) .84**	.29 (.13) 1.34*	-.02 (.10) .98
GED ^a	-.01 (.06) .99	-.05 (.12) .95	.05 (.10) 1.05
HS Grad Plus ^a	.03 (.09) 1.03	-.21 (.18) .81	-.07 (.15) .93
Divorce/Widow ^b	.12 (.09) 1.13	.01 (.17) 1.01	.08 (.14) 1.08
Married ^b	-.01 (.09) .99	.06 (.21) 1.06	-.08 (.17) .92
Prior J Commit ^e	-.07 (.07) .93	.15 (.14) 1.16	.15 (.10) 1.17
Prior Prison ^e	-.10 (.06) .90	.01 (.12) 1.01	.27 (.11) 1.31*
Person Crime ^c	-.09 (.07) .91	.31 (.17) 1.36	.12 (.13) 1.12
Property Crime ^c	-.10 (.08) .90	.35 (.17) 1.42*	.22 (.13) 1.25
PSafety Crime ^c	-.11 (.10) .90	.15 (.21) 1.16	.05 (.16) 1.06
Past TX Services	-.02 (.02) .98	.07 (.03) 1.08**	.06 (.02) 1.06**
Sup Intensity	-.01 (.00) 1.01***	.00 (.00) 1.00	-.00 (.00) 1.00
Grad of TX ^e	.51 (.06) 1.66***	-.78 (.15) .45***	-.59 (.12) .55***
Tx Group ^d	.55 (.06) 1.73***	.73 (.14) 2.08***	.21 (.09) 1.23*
Hospitalized ^e	.14 (.06) 1.15*	.06 (.12) 1.06	.03 (.10) 1.04
MH Treatment ^e	.05 (.09) 1.05	-.53 (.18) .59**	-.00 (.15) 1.00
H Edu ^e	.05 (.07) 1.05	-.17 (.18) .84	-.23 (.16) .79
House Stability	.06 (.02) 1.06**	.15 (.03) 1.16***	.11 (.03) 1.12***
Emp Stability	.02 (.01) 1.02**	-.03 (.02) .97	-.04 (.01) .96**
USH*SE ^f	-.09 (.12) .91	-.41 (.29) .66	.18 (.22) 1.20
SH*USE ^f	-.11 (.10) .89	-.68 (.20) .51***	-.05 (.16) .95
SH*SE ^f	-.18 (.14) .83	-1.16 (.43) .31***	-.14 (.28) .86
-2LL	1419.67	475.93	370.57
Model Chi2	403.57***	376.34***	211.28***
df	23	23	23

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses and followed by a standardized coefficient (IRR); IRR refers to incident rate ratio.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Contrasted against the reference category of individuals who experienced 4 or more housing moves (unstable housing) and who were employed for less than half of their supervision term (unstable employment).

Table 31 provides the full conditional negative binomial models of outcome indicators on independent, control, and interaction variables. Table 32 presents the full conditional negative binomial models of outcome indicators on independent, treatment

processes, control, and interaction variables. Both sets of models provide similar results and suggest that the joint contribution of housing stability and employment stability were not related to relapse or re-arrest likelihood. These models do suggest that the measure of housing and employment stability interaction used in the text may have masked important relationships with re-incarceration likelihood.

Tables 31 and 32 suggested that the joint contribution of housing stability and employment stability on re-incarceration was most prominent on the extremes. Individuals with relatively stable housing and stable employment were nearly three times more likely than those with unstable housing and unstable employment to be re-incarcerated. Additionally, those with unstable housing and stable employment were just over two times more likely than those with unstable housing and unstable employment to be re-incarcerated. Those with unstable employment, but stable housing had similar levels of re-incarceration risk relative to those with unstable housing and unstable employment. These findings suggested that employment stability may be the driving factor that influenced re-incarceration likelihood. The direct effect of stable employment on re-incarceration likelihood was negative. However, when combined with levels of housing stability, the negative effect of stable employment on re-incarceration likelihood was negated and switches directions⁷¹.

⁷¹ This finding is unexpected given the previous findings of this study regarding the effect of employment stability. It is possible that the change in expected direction was due to a mixture of measurement error in the direct effect of employment stability, measurement error in the interaction terms, the distribution of the measures, and statistical power considerations that may have led to the error of rejecting a null hypothesis when it is true (i.e., type 1 error).

Table 31: Summary of Full Regressions of Outcome Indicators on Independent and Control Variables with Alternative Interaction Terms (n=511).

	Relapse b (SE) IRR	Re-Arrest b (SE) IRR	Re-Incarceration b (SE) IRR
Age	-.01 (.01) .99	-.02 (.01) .98*	-.02 (.01) .98*
White ^e	-.26 (.12) .77*	-.04 (.14) .96	-.06 (.12) .94
GED ^a	-.03 (.10) .97	.32 (.17) 1.38	.37 (.14) 1.45**
HS Grad Plus ^a	-.20 (.16) .82	.48 (.20) 1.62*	.53 (.16) 1.69***
Divorce/Widow ^b	.03 (.15) 1.03	.22 (.18) 1.25	.17 (.15) 1.18
Married ^b	-.08 (.18) .92	.05 (.22) 1.06	.13 (.16) 1.34
Prior J Commit ^e	-.01 (.12) .99	-.10 (.16) .91	.24 (.12) 1.27
Prior Prison ^e	.26 (.10) 1.30**	.23 (.16) 1.26	.17 (.12) 1.18
Person Crime ^c	-.15 (.13) .86	-.02 (.18) .98	.32 (.15) 1.38
Property Crime ^c	-.14 (.13) .87	.13 (.18) 1.14	.02 (.16) 1.02
PSafety Crime ^c	-.17 (.16) .84	-.19 (.23) .82	-.04 (.18) .96
Past TX Services	-.02 (.03) .98	-.05 (.04) .95	.00 (.03) 1.00
Sup Intensity	.00 (.00) 1.00	-.02 (.00) .98***	-.02 (.00) .98***
Grad of TX ^e	-.22 (.10) .80*	-.36 (.19) .69	-.93 (.24) .40***
Tx Group ^d	.16 (.10) 1.17	.14 (.14) 1.15	.22 (.11) 1.25*
Hospitalized ^e	.21 (.09) 1.24*	.02 (.18) 1.02	-.17 (.17) .84
MH Treatment ^e	-.13 (.13) .88	-.22 (.26) .80	.15 (.18) 1.17
H Edu ^e	-.23 (.13) .80	-.18 (.22) .84	-.08 (.18) .92
House Stability	.04 (.03) 1.04	.03 (.05) 1.03	.01 (.05) 1.01
Emp Stability	-.01 (.01) .98	-.02 (.02) .98	-.12 (.02) .89***
USH*SE ^f	-.11 (.23) .89	.27 (.32) 1.31	.80 (.33) 2.22**
SH*USE ^f	-.20 (.16) .81	-.19 (.26) .83	.16 (.24) 1.17
SH*SE ^f	-.41 (.27) .66	-.02 (.36) .98	1.09 (.30) 2.97***
-2LL	253.30	303.81	284.10
Model Chi2	114.63***	66.15***	145.99***
df	23	23	23

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses and followed by a standardized coefficient (IRR); IRR refers to incident rate ratio.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Contrasted against the reference category of individuals who experienced 4 or more housing moves (unstable housing) and who were employed for less than half of their supervision term (unstable employment).

Table 32: Summary of Full Regressions of Outcome Indicators on Independent, Treatment Processes, and Control Variables with Alternative Interaction Terms (n=511).

	Relapse b (SE) IRR	Re-Arrest b (SE) IRR	Re-Incarceration b (SE) IRR
Age	-.01 (.01) .99	-.02 (.01) .98	-.01 (.01) .98*
White ^c	-.27 (.12) .76*	-.05 (.14) .95	-.06 (.12) .94
GED ^a	-.01 (.10) .99	.29 (.17) 1.34	.35 (.13) 1.42**
HS Grad Plus ^a	-.14 (.16) .87	.46 (.20) 1.58*	.54 (.16) 1.71***
Divorce/Widow ^b	-.03 (.15) .97	.27 (.17) 1.31	.19 (.14) 1.21
Married ^b	-.09 (.18) .91	.07 (.23) 1.07	.18 (.17) 1.19
Prior J Commit ^e	-.02 (.12) .98	-.11 (.16) .89	.21 (.12) 1.24
Prior Prison ^e	.28 (.10) 1.32**	.16 (.16) 1.17	.06 (.12) 1.07
Person Crime ^c	-.20 (.13) .82	.00 (.18) 1.00	.26 (.15) 1.29
Property Crime ^c	-.19 (.13) .83	.12 (.18) 1.13	-.05 (.15) .95
PSafety Crime ^c	-.17 (.16) .84	-.22 (.22) .80	-.10 (.17) .90
Past TX Services	-.04 (.03) .96	-.03 (.05) .97	-.01 (.03) .99
Sup Intensity	-.00 (.00) 1.00	-.01 (.00) .99**	-.01 (.00) .99***
Grad of TX ^e	-.26 (.11) .77*	-.17 (.20) .84	-.63 (.25) .53*
Tx Group ^d	-.09 (.11) .91	.42 (.16) 1.52**	.33 (.12) 1.39**
Hospitalized ^e	.19 (.09) 1.21*	.05 (.18) 1.05	-.19 (.17) .82
MH Treatment ^e	-.08 (.13) .92	-.30 (.25) .74	.22 (.17) 1.24
H Edu ^e	-.25 (.13) .78	-.13 (.21) .88	.01 (.17) 1.01
House Stability	-.01 (.03) .99	.07 (.06) 1.07	.00 (.05) 1.00
Emp Stability	-.02 (.01) .97	-.01 (.02) .99	-.11 (.02) .90***
USH*SE ^f	.03 (.22) 1.03	.15 (.32) 1.16	.76 (.31) 2.15*
SH*USE ^f	-.09 (.16) .91	-.26 (.27) .77	.13 (.24) 1.13
SH*SE ^f	-.20 (.26) .91	-.13 (.36) .87	1.00 (.30) 2.71***
Dose of SATX	.05 (.01) 1.05***	-.05 (.02) .95**	-.04 (.02) .96*
SATX P Violations	.12 (.04) 1.16***	-.28 (.09) .75**	-.03 (.06) .97
Abscond ^e	.12 (.12) 1.13	.50 (.17) 1.65**	.56 (.12) 1.75**
-2LL	249.61	293.45	277.26
Model Chi2	142.67***	111.13***	348.19***
df	26	26	26

*p<.05, **p<.01, ***p<.001; NOTE: Unstandardized coefficients are presented with robust standard errors in parentheses and followed by a standardized coefficient (IRR); IRR refers to incident rate ratio.

a. Contrasted against reference category of less than a high school diploma (and no GED attainment), b. Contrasted against reference category of single relationship status, c. Contrasted against reference category of drug crime conviction, d. Contrasted against the reference category of the control group, e. Contrasted against the reference category of the non-instance, f. Contrasted against the reference category of individuals who experienced 4 or more housing moves (unstable housing) and who were employed for less than half of their supervision term (unstable employment).

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