The Impact of Incarceration on Young Offenders

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The Impact of Incarceration on Young Offenders

DISSERTATION

submitted in partial satisfaction of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

in Criminology, Law and Society

by

Kristy Nana Matsuda

Dissertation Committee:
Professor Cheryl Lee Maxson, Chair
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2009

The dissertation of Kristy Nana Matsuda
is approved and is acceptable in quality and form for
publication on microfilm and in digital formats:

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University of California, Irvine

2009

DEDICATION

To

my family, friends, and Mike

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Work that requires a process this long can only be completed with a strong support system. To my family and friends…Thank You! The completion of this work is a testament to parents, grandparents, and a brother who have valued knowledge above all else. Thank you for your unwavering support (even though you think it is more dangerous than marine biology).

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Jenness, V., Maxson, C.L., Sumner, J.M., Matsuda, K.N. (R&R). Accomplishing the difficult, but not impossible: Collecting self-report data on sexual assault victimization in correctional facilities.

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Matusda, K.N. (forthcoming). Juvenile justice and gangs. In Paul Quirk and William Cunion (eds.) *Governing America: Major Policies and Decisions of Federal, State, and Local Government.*

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Research Reports

Matsuda, K.N. (2003). *Program Evaluation Plan for Health Program for Marshallese Women.* A report for Families-Costa Mesa.

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Jenness, V., Maxson, C.L., Matsuda, K.N., and Sumner, J.M. [Matsuda presenting] (2007). Violence in California Correctional Facilities: An Empirical Examination of Sexual Assault. Association for Criminal Justice Research (California). Long Beach, California.

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- The Warden's Meeting, California Department of Corrections and Rehabilitation. Folsom, California.
- The Secretary and the Secretary's Executive Staff, California Department of Corrections and Rehabilitation. Sacramento, California.
- Stop Prisoner Rape. Los Angeles, California.

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University Audiences

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American Society of Criminology
Pacific Sociological Association
Western Society of Criminology

ABSTRACT OF THE DISSERTATION

The Impact of Incarceration on Young Offenders

By

Kristy Nana Matsuda

Doctor of Philosophy in Criminology, Law and Society

University of California, Irvine, 2009

Professor Cheryl L. Maxson, Chair

This study examines the impact of incarceration on the likelihood of recommitment of young offenders (admitted age 14 to 21) in California. Using official data from the California Department of Corrections and Rehabilitation, this study follows 9,892 offenders from their sentencing court, through every facility they experienced during their incarceration, and five years post-release. This research proposes The Deprivation of Development Theory. This new framework integrates importation and deprivation theories within an adolescent development context. The research is designed to answer three questions: 1) How does court determination of "juvenile" or "adult" as compared to the correctional handling of young offenders as "juveniles" or "adults" impact recidivism?, 2) What importation and deprivation factors predict the recommitment of young offenders?, and 3) Are there age-graded differences that explain variation in future behavior?. This study finds that

conviction by the criminal court only informs the likelihood of recommitment only when considered in conjunction with correctional housing. I divide the young offending sample into three groups: juvenile court commitments housed in juvenile facilities, criminal court commitments housed in juvenile facilities, and criminal court commitments in adult prisons. These data show that criminal court commitments housed in juvenile facilities have the lowest rate of recommitment as compared to the other two groups. Measures of importation and deprivation theories were included to test what factors significantly predict recidivism. This study finds that importation factors are stronger predictors of recidivism for each group in the sample. I also find that offenders serving time in adult prisons have substantially different experiences than offenders in juvenile facilities. This study offers evidence that the unique experience in prison may influence the normal development of young offenders and hinder normal desistance from crime. Results shows that offenders housed in juvenile facilities, regardless of the court of commitment, show a decrease in recidivism as they mature. However, offenders housed in adult prisons show no decrease in offending by age. This study strongly questions the current trend in public policy to assume serious and/or older offenders cannot benefit from the rehabilitative model of the juvenile justice system.

Introduction

Christopher Pittman is a 19-year old serving a 30 year sentence in South Carolina for the double homicide he committed when he was 12. In 2008 the Supreme Court announced they would not rule whether Pittman should have been tried as an adult, whether the sentence was excessive, and whether mitigating factors should have been considered. The (lack of) decision has led legal scholars to speculate that the Court intends to afford the states the opportunity to deal with a growing number of youth sentenced to long prison terms (Mears, 2008). This case brings attention to recent crime control laws that have resulted in more young offenders spending a significant portion of their lives behind bars.

In 2006, 16% of the national adult prison population was composed of young offenders between the ages of 18 and 24. In total, more than 219,600 young offenders were incarcerated in either a state adult or Federal prison (Sabol, Couture, & Harrison, 2007). In addition, there were over 37,000 young offenders serving time in state juvenile correctional facilities (Snyder & Sickmund, 2006).[1] Most of these young offenders will return to their communities with much of their lives left to live. Little is known, however, what lasting effects long-term incarceration will have on their future behavior. Though Christopher Pittman may be an extreme example, his situation offers

[1] This number includes young offenders in all state-run juvenile correctional facilities in the United States. Each state varies the ages that are eligible for housing in a juvenile facility. Ages range from 12 to 21.

an opportunity to consider what he will be like at 42-years old, after spending his most formative years incarcerated.

DEVELOPMENT TO ADULTHOOD

Decades of social science research has concluded that participation in delinquent behavior is a common occurrence during adolescence (e.g., Gottfredson & Hirschi, 1990). Most young delinquents also cease offending as they mature and conform to socially acceptable means and goals. This phenomenon has been referred to as "aging-out" of crime (e.g., Sampson & Laub, 1993). If desistance from crime is normal, the question becomes, when should we expect offenders to age-out of crime? The answer to this question has numerous policy implications. If offending is a "normal" part of growing up and not indicative of inherent criminality, than society may be willing to treat young offenders more leniently. Offenders that exceed the point in which we understand offending to be "normal" would be the target of greater social and correctional concern.

The social expectation of how long it takes to transition to adulthood has changed in the United States. Previously, youth were considered socially "adult" at the end of their required education (i.e., high school). Pursuing a collegiate education was rare. Marriage, starting a family, and work commonly occurred at the end of adolescence (i.e., at about 18-years old). In recent history, however, youth are expected to take longer to transition to adulthood (e.g., Settersten, Furstenburg, & Rumbaut,

2005). Social, emotional, and financial independence often do not occur until the mid-twenties (Arnett, 2000). Given this understanding of the time to adulthood, we could also expect today's youth to take longer to "age-out" of crime. The law, however, has generally not accepted the social age of adulthood in the understanding of maturation and crime.

THE ROLE OF DEVELOPMENT IN LAW

The legal understanding of age and development has been contentious at best, and extremely volatile at its worst. During the late nineteenth century, the discourse about child development emphasized the need to nurture and train impressionable minds and malleable youth. Changes during this period include requirements for education and restrictions on physical punishment and child labor. Related, the first justice system designed specifically to act "in the best interest of the child" (Feld, 1999) was created in the United States in 1899. Youth were easily impressionable so incarcerating them with "hardened" adult criminals was thought to do more harm than good (Tannenhaus, 2004). Their impressionability also suggested they were more likely to be reformed than adults. The new belief in child "development" (in cognitive, emotional, behavioral, physical, and social aspects) led to the implementation of safeguards for youth. Modern examples of these checks include legal ages for driving, drinking, and other potentially hazardous behaviors. In terms of crime and punishment, young offenders were dealt with in a separate system and on a more discretionary basis than adults.

Despite the continued belief in development, the understanding of what constitutes maturation, especially in terms of law and order, has fluctuated over time resulting in numerous inconsistencies. For example, juveniles are not currently allowed to make important decisions regarding their own medical treatment without a guardian, but they are allowed to waive their Miranda rights (without a guardian) while in the custody of police as long as they acted "knowingly and intelligently." The Supreme Court, in reference to confessions, rejected developmental differences between adults and juveniles as a reason to require different legal rules (Feld, 2000). In contrast, when the Supreme Court ruled on the application of capital punishment to juveniles, they wrote:

> Less culpability should attach to a crime committed by a juvenile than a comparable crime committed by an adult. The basis of this conclusion is too obvious to require extensive explanation. Inexperience, less intelligence and less education makes a teenager less able to evaluate the consequences of his or her conduct while at the same time he or she is more apt to be motivated by mere emotion or peer pressure than is an adult. The reasons that juveniles are not trusted with the privileges and responsibilities of an adult also explain why their irresponsible conduct is not as morally reprehensible as that of an adult.
>
> Justice Stevens, *Thompson v. Oklahoma* (1998: 835)

Most recently in 2005, the Supreme Court in *Roper v. Simmons* ruled that juveniles (i.e., committed their crimes before 18 years old) could not be held to the adult standard of capital punishment. According to the Court, juveniles lack maturity and responsibility which leads to "understandable" bad decisions and behavior. The

Court stated that "In recognition of the comparative immaturity and irresponsibility of juveniles, almost every state prohibits those under 18 years of age from voting, serving on juries, or marrying without parental consent" (pg. 6). In this decision the Court wrote that those under 18 "could not with reliability be classified among the worst offenders" (pg. 2). The ruling adopted the logic of *Thompson v. Oklahoma* (1998) (i.e., the "obvious differences" between juveniles and adults), but expanded its application to older juveniles.

These same beliefs about developmental differences have not been adopted when arguing for legal change designed to increase juvenile accountability for crime. Since the 1980's, the United States has implemented countless policies that treat youth 'like adults' in regards to sanctions for offending. As exemplified in the language of California Proposition 21 (2000), that decreased the age a youth could be tried as an adult, "Juvenile court resources are spent disproportionately, on violent offenders with little chance to be rehabilitated…greater accountability must be focused on less serious offenders, such as burglars, car thieves, and first time non-violent felons who have the potential for rehabilitation" (pg. 2).[2] The authors and backers of the initiative (which in this case was 62.1% of the California voters) are supporting the notion that violent behavior is indicative of a person who can no longer benefit from the "rehabilitative"

[2] Some scholars argue the rationale for sending more youth to the adult system is that the nature of the crime requires longer periods of incarceration than the juvenile jurisdiction allows (rather than lack of amenability to rehabilitation) (Gillespie, unknown). Prop 21 implies that these policies result because some offenders are no longer worth the resources of the juvenile system. Therefore, while the perceived need for lengthy incarceration is a potential rationale for these types of policies, it does not seem to be the only reason, or even arguably the major reason for the substantive changes.

juvenile system. This initiative lowered the age prosecutors could send juveniles to the criminal court (i.e., direct file) from 16 to 14 for a violent crime.

The law has been unable to consistently distinguish when normal adolescent development should be taken into consideration and is "obvious" and when the discrete categories of "juvenile" and "adult" are determined by age and/or offense. The result has been the belief in inherent irresponsibility and immaturity of young offenders under some conditions, and the assumption of fully responsible and mature offenders under others.

In 1985, Alfred Regnery, the administrator of the Office of Juvenile Justice and Delinquency Prevention under President Ronald Reagan, stated that juvenile offenders "are criminals who happen to be young, not children who happen to commit crimes" (Regnery, 1985: 65). This telling statement appears to reflect the growing sentiment of a significant portion of the populous. Violent youth crime rose significantly during the 1980's and early 1990's (Zimring, 2000) and during a time when the support for rehabilitation was on the decline. Legislation, voting behavior, and opinion polls all show public support for treating young offenders as adults (Myers, 2005; Schwartz, Guo, & Kerbs, 1993).[3] All states have made it easier to transfer juveniles to adult court and the age at which this has become acceptable has decreased (Bishop & Frazier, 2000).

[3] Myers (2005) writes that while there has been obvious public support for increasing sanctions against youth criminals, legislatures may have passed laws that exceeded public acceptance.

As a result of these opinions and policies, punitive responses to crime increased during this period. This country saw an unprecedented increase in the number of incarcerated offenders. California, for example, added 19 new prisons to their 12 previously existing institutions between 1984 and the 1997. In 1980 the state had almost 25,000 incarcerated inmates (not including parole supervision) (California Department of Corrections, 1980). In 1996 the prison population has increased to 129,000 inmates (California Department of Corrections, 1996). Around the same time, adult sentencing law changes increased the time criminal court commitments were required to serve. Policies like determinate sentencing, mandatory minimums, and truth-in-sentencing have assured that, all offenders, including these young offenders sentenced by the criminal courts will serve lengthy incarceration periods.

As Bishop and Frazier (2000) note, “In their zeal for retribution, policy makers are willing to ignore the jeopardy into which large numbers of adolescents are placed, or they trust that criminal punishment will ultimately prove beneficial to juvenile offenders and to society. In either event, we must be concerned about the consequences” (pg. 228). In this time of harsher punishments and longer sentences for young offenders, it is important to pay attention to the impact of incarceration. Recall that a majority of these young offenders, like Christopher Pittman, will eventually be released and with much of their lives ahead of them.

THEORIES ABOUT INCARCERATING YOUNG OFFENDERS

Decades of theory and research suggest incarceration has a profound effect on adult behavior. Two theories have been posited that explain how incarceration may impact inmate behavior. First, Goffman's (1961) analysis of total institutions, such as prisons, includes a description of inmates' experiences with the "mortification of self" (i.e., the process whereby the institution strips the identity of its residents). Sykes (1958) specifically focused on a description of the "Pains of Imprisonment" suffered by inmates. These works have led to modern day deprivation theory, which argues that incarceration impacts the short- and long-term behavior of inmates. The empirical body of work testing this theory has produced findings that show the characteristics of the incarceration environment are related to inmate adjustment (e.g., Wright, 1991), rule violations (e.g., Ekland-Olson, Barrick, &Cohen, 1983), prison violence (e.g., Poole & Regoli, 1983), psychological condition (e.g., Gover, MacKenzie, & Armstrong, 2000; Toch, 1977), and recidivism (e.g., Spohn & Holleran, 2002).

Second, criminologists developed a framework in response to deprivation theory that asserts that the culture, beliefs, and characteristics of inmates prior to incarceration determine behavior within prison as it had determined behavior on the streets (Irwin & Cressey, 1968; Irwin, 1970). According to importation theory, it is not the deprivations felt while incarcerated that influence behavior but the qualities adopted pre-incarceration that matter. Inmates bring their pasts with them into prison and the behavior continues. Social scientists have integrated the deprivation and

importation frameworks (e.g., Toch, 1977). Some argue that pre-incarceration needs and qualities can be exacerbated or remedied by the experience of incarceration and subsequently lead to different behavioral outcomes.

Researchers have tested importation and deprivation theory on incarcerated juveniles without modification (Feld, 1981; Windzio, 2006). They often assert that the expected effect of incarceration would be the same for youth as adults. Similarly, there have been no assertions challenging the expected effects of pre-incarceration on a younger offending group. However, there is good reason to believe that the experience of incarceration is different for juveniles than adult. The introduction of a dramatic event like incarceration during a time of extensive development may lead to even greater consequence. Young offenders may lack the capabilities to deal with this kind of trauma and therefore, incarceration may cause dramatic shifts in the likelihood of "normal" development.

This study posits a new framework, the Deprivation of Development Theory, which asserts that importation and deprivation factors will have negative effects on post-release behavior if they interfere with the development to adulthood. This framework does not rely on the legal definition of "adulthood" (i.e., the age at which an individual is subject to the criminal court). As has been argued, the understanding of development and maturation in the law has not been consistent. In this work the social science understanding of development is used to inform what markers of adulthood are important for desistence in crime and at what ages these transitions may occur.

OVERVIEW OF CURRENT STUDY

The current research explores the relationship between the qualities of offender characteristics, the carceral environment, and development on the post-release offending of young inmates serving time in California. It targets offenders believed to be in the process of transitioning to adulthood during their incarceration in state-run juvenile or adult correctional facilities. This retrospective study uses official data from the California Department of Corrections and Rehabilitation (CDCR) to follow 9,892 young offenders (admitted between ages 14-21) through their commitments and five years post release.

Previous studies have been unable to partial out the effects of the sentencing court from the correctional housing jurisdiction. This investigation samples youth during a period in California when young offenders sentenced by the criminal courts could be housed in juvenile facilities. In comparing this group of offenders with juvenile court commitments housed in juvenile facilities and criminal court commitments housed in adult prisons, this study has produced evidence that sentencing court significantly affects the rate of recommitment only when considered in conjunction with the type of correctional housing. A criminal court sentence can lead to lower rates of recidivism if the offenders are allowed to serve their time in juvenile facilities.

Next, I test how importation and deprivation factors operate to predict the likelihood of recommitment for these offenders within five years of release. In this

study, the measures of the "incarceration environment" (i.e., deprivations) reflect the characteristics of all facilities in which an individual served time. This study examines whether importation and deprivation factors function similarly across individuals housed in adult and juvenile facilities and across those sentenced by criminal and juvenile courts. I find more support for the link between importation and recidivism. Deprivation factors were important, but they were not as strongly related as importation measures. The role of importation and deprivation varied substantially in comparing offenders in juvenile facilities versus adult prisons. I find that incarceration in adult prison is indeed a different experience than serving time in juvenile correctional facilities.

Finally, though a true test of the Deprivation of Development Theory could not be conducted, the effect of development on post-release behavior is investigated. The Deprivation of Development Theory posits that pre-incarceration characteristics and carceral experiences influence the transition to adulthood and thereby affect the likelihood of recommitment. If development has no influence on recommitment, we would expect no change in the rate of recommitment across different age groups. If incarceration does not impact development, we would expect no change in the rate of recommitment across age groups housed in different correctional environments. The final section of this study supports the notion that development does have an influence on recommitment (i.e., as offenders age they are less likely to be recommitted).

However, offenders that are incarcerated in prison do not show the same developmental progression (i.e., the propensity to cease offending as they mature).

Chapter 2 presents a description of importation, deprivation, and developmental theories. The integrated framework, the Deprivation of Development Theory, is introduced and empirical support for the theory is explicated. Chapter 3 is a detailed description of the policies and operations of the California Department of Corrections and Rehabilitations (CDCR). This chapter outlines how the conditions in the CDCR during the 1990's allowed for this investigation. Chapter 4 provides a detailed description of the methods used in this study. Chapter 5 presents the data analysis and findings for this study. Lastly, Chapter 6 includes a discussion of the results and contributions of this work, limitations, and policy recommendations.

Chapter 1: Theory and Literature Review

This work proposes the integration of the well established criminological deprivation and importation theories, with the even longer standing psychological framework of adolescent development (and the more recent "emerging adulthood" literature). The purpose is to explicate a framework that can inform how extreme

deprivation during an important developmental period may impact the ability of young offenders to desist from crime.

As stated previously, notions of adolescent development have been problematic in legal and policy realms. Issues related to development have, however, played a prominent role in the theoretical literature explaining crime and criminal trajectories (e.g., Gottfredson & Hirschi, 1990; Moffitt, 1993; Sampson & Laub, 1993). In fact, scholars have observed that delinquent offending during adolescent years is "normal" and not, in and of itself, indicative of a chronic offender (i.e., a juvenile that will continue offending into adulthood) (Moffitt, 1993). The expectancy that most young offenders cease their criminal offending as they develop is also consistently noted. Most young offenders will "age out" of crime and commit to socially acceptable institutions like family, employment, or experience other "turning points" during their transition to adulthood (Sampson & Laub, 1993).

Prior to World War II, the social expectation of transitioning to adulthood for juveniles was about 18-years old. Most youth did not pursue a college education. It was socially 'normal' to finish the required high school education, become financially and socially independent from parents, marry, begin work, and start a family (Setterston, Furstenberg, & Rumbaut, 2005). Markers of adulthood were generally reached at about the same time (i.e., after the required schooling at about 18-years old). The jurisdictional boundary represented by the "legal age of majority" was consistent with these expectations. In other words, the justice systems were divided to consider 18-

years old to be the appropriate age to distinguish an "adult" and a "juvenile" in social and legal ways. Individuals that continued to offend past the age of 18 were considered to be fully responsible for their actions and sent to the criminal justice system. Figure 1 depicts the social and legal markers of development with a general "age-crime" curve.[4] As can be seen from the figure, the pre-World War II justice system was well in line with the social expectations of adulthood, and theoretically captured a smaller percent of young offenders as they were also likely on the downward slope of criminal offending.

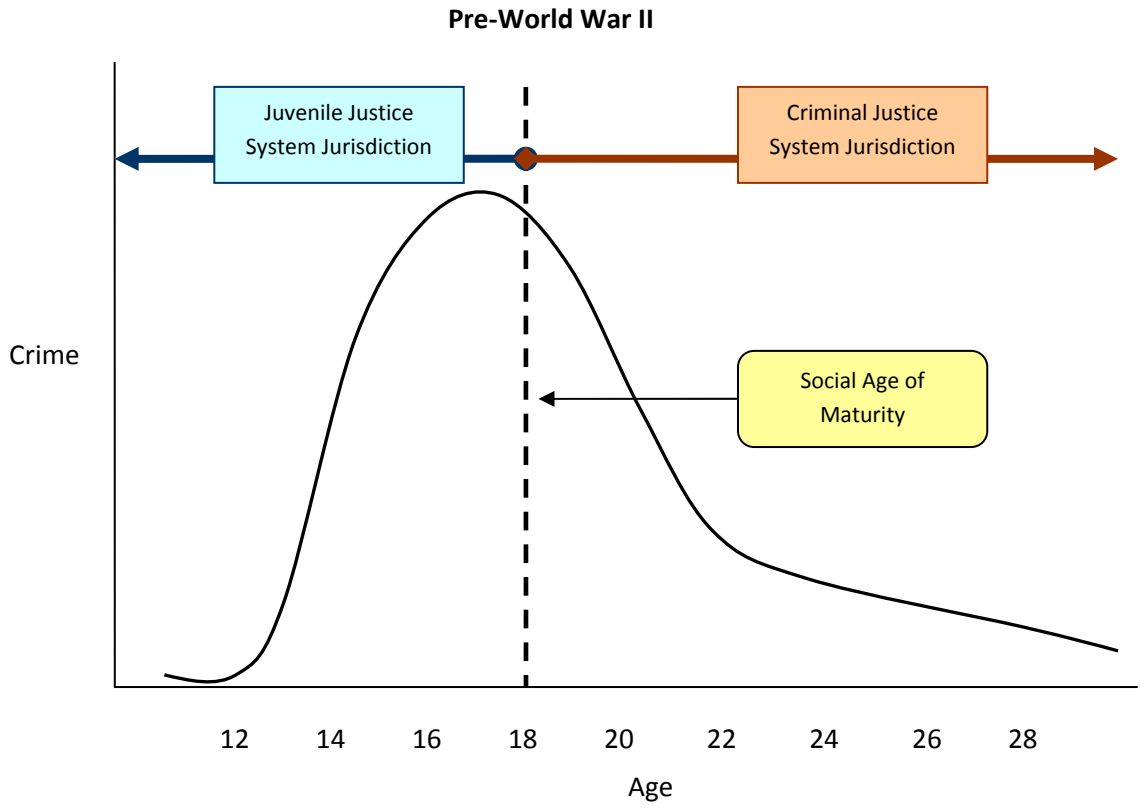

Figure 1. Depiction of legal and social age of maturity in relation to age and crime commission pre-World War II.

[4] The age-crime curve depicted here is a theoretical sketch based on previous studies (see Gottfredson & Hirschi, 1990 for examples of pre-World War II distributions). It was not created from original data.

Post-World War II America has fostered a longer period to the socially accepted age of maturity (or a longer transition to adulthood). This has occurred in part because of labor market changes and a shift in the attitudes regarding women's roles in society and at home (Osgood, Foster, Flanagan, & Ruth, 2005). A high school education is no longer sufficient to guarantee a good wage and single salaries are no longer expected to support a household (Furstenberg, 2000). As a result, more youth attend college; more parents provide financial support to their children during college and in times of transition while youth are seeking permanent employment. In addition to financial support, youth also rely on guardians for social and emotional support for an extended period. In recent history, there has been a significant increase in the 1) time from moving out of one's parents' home to starting one's own family, 2) median age of marriage for women and men, and 3) percent of population choosing to pursue higher education (Arnett, 2000). The extension between adolescence and adulthood has been coined "emerging adulthood" (Arnett, 2000) or, in the more mainstream media, "adultolescence" (Tyre, 2002). This period includes many changes as young people move away from depending on their families for all of their needs to GRADUALLY taking on adult responsibilities (Goldscheider & Goldsheider, 1994). This period lasts until at least twenty-five years old (Arnett, 2000).

Recently, the punishments and attitudes related to crimes committed by young offenders have become increasingly harsh. All states now have some mechanism by which juveniles can be transferred to the criminal court. Twenty-three states have set

no minimum age at which transfer can occur (i.e., youth of any age are eligible). For states that have sent a minimum age requirement, the modal age is 14 years (Griffin, 2008). It has also become more common for court actors to order young offenders to serve time in adult correctional facilities. And, the penalties for both juvenile and adult offenders have also recently increased in this country. Figure 2, alters the placement of the social and legal age of adulthood to mirror the recent action of states, and depicts a graphical representation of the proportion of offenders that could, theoretically, be eligible for inclusion in criminal justice system processing.

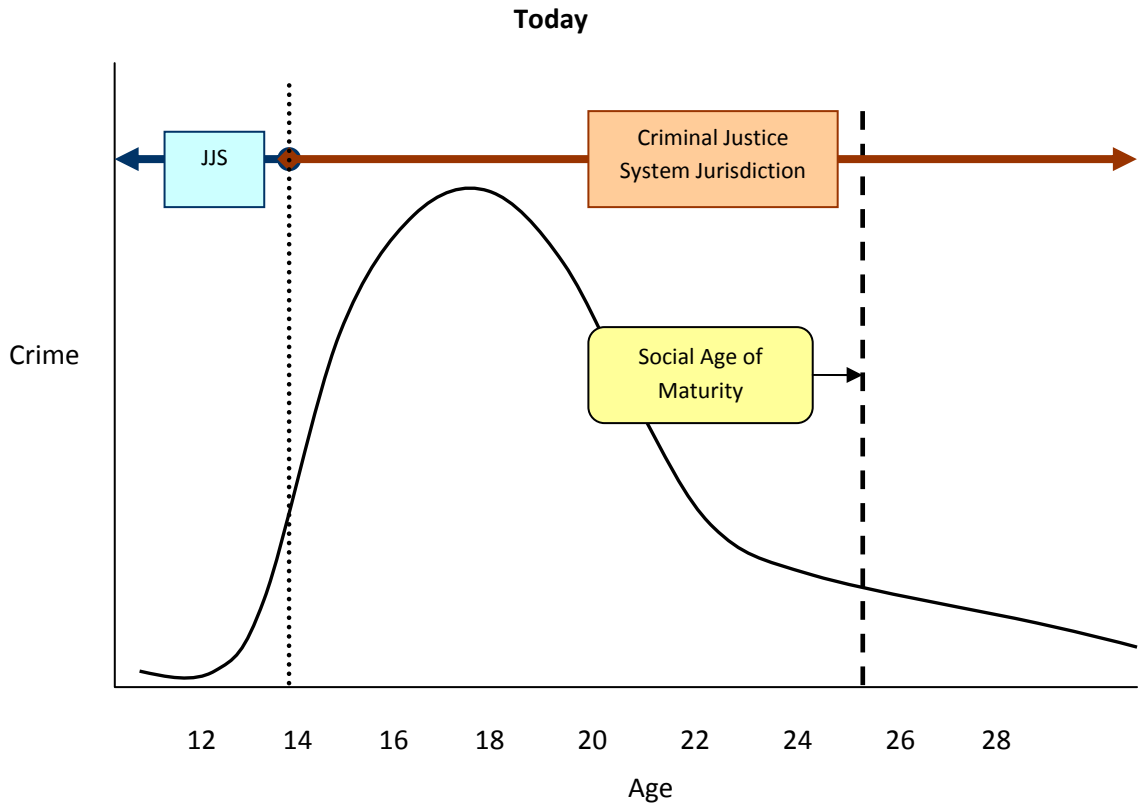

Figure 2. Depiction of legal and social age of maturity in relation to age and crime commission today (i.e., Post-World War II).

According to this description, we would expect an increase in the number of young offenders in the criminal justice system. These offenders would be captured prior to their expectation of "normal" desistance according to prior research on the age-crime curve.[5] The increased time to social maturity in conjunction with longer incarceration sentences means that more young offenders will have to make the transition to adulthood while behind bars. The question then becomes, how would incarceration during this important developmental time period impact the likelihood of reoffending by these young offenders?[6]

THE TRANSITION TO ADULTHOOD

In this study, the "transition to adulthood" references the developmental time period of adolescence through emerging adulthood (or roughly the ages of 14 to the mid- to late-20's) (Furstenberg, 2000). It describes the period during which a young person attains markers indicative of adulthood. Markers can include marriage or the development of an exclusive relationship, having children, financial independence, having a career, or living alone. There is not, however, a standard sequence for these markers. The order in which these events take place can vary by group (e.g., culture, generation, opportunity) (Mollenkopf, Waters, Holdaway, & Kasinitz, 2005).

[5] To complicate matters, it has been argued that the longer period to social age of maturity may also inevitably extend the time to desistance (Newburn, 1997). If this were true, we would expect even more young offenders to be caught up in the criminal justice system.

[6] Though beyond the scope of this particular investigation, one should also be concerned about the potential collateral consequences of incarceration during a period of time in which young people are expected to be building the foundation toward independence (see Uggen & Wakefield, 2005 for discussion of the re-entry issues for young adults reentering the community from the criminal justice system).

The transition to adulthood includes biological and neurological changes. It is the development of psychosocial maturation, however, that is at the root of the behavioral manifestation of the markers of adulthood. Common markers that signal "adult" status generally include 1) *mastery and competence,* in which people develop the ability to participate in social activities of production and culture including achieving educational and vocational markers, 2) *interpersonal relationship and social functioning*, which allow for appropriate interactions with others, intimate relationships, and responsibility for the community in which they are part, and 3) *self-definition and self-governance*, that generally develop in the mid-twenties, in which people have a positive sense of themselves, their worth, their ability to behave responsibility and in the absence of external supervision (Chung, Little, and Steinberg, 2005). This is the period in which one's personal identity (related to love, work, and worldviews) is explored (Arnett, 2000).

PSYCHOSOCIAL MATURATION AND CRIME

There are a number of links between the behavioral markers of psychosocial maturation and criminal behavior. First, the development of these markers usually coincides with normal desistance from crime. Second, failure to reach these milestones may facilitate criminal behavior in various ways. For example, someone who does not feel responsibility toward the community may be more likely to commit vandalism or other types of property crime. An individual who has not learned to foster appropriate intimate relationships may be more inclined to engage in partner violence. The value of

marker acquisition seems obvious, and the environmental influences that affect their development are of paramount concern.

Psychosocial maturation develops between individuals and their social environments (Brofenbrenner, 1979). Social environments typically believed to impact development are the family, peers, school, work, and neighborhood (Chung, Little, & Steinberg, 2005). Researchers have argued that while a normal transition to adulthood can be tumultuous, it may be problematic only when society prompts it (Petersen & Leffert, 1997). As stated before, delinquency is common within the normal course of development. Most delinquent youth are never formally sanctioned. They remain in the community and participate in educational, familial, and community activities. Most of these youth desist from crime and "successfully" transition to adulthood. There are however, some young offenders that do come to the attention of the justice system. The impact of formal processing on the standard developmental process has only recently been examined (see Osgood, Foster, Flanagan & Ruth, 2005).

Chung, Little, and Steinberg (2005) identify incarceration as the sanction that "may have the greatest impact on young offenders' ability to achieve psychosocial maturity" (pg. 79). They suggest the withdrawal from family, school, friends, and community life in addition to added responsibilities of learning how to navigate this new environment can lead to adjustment problems. Given that this period of transition is challenging for young people in general, the experiences of vulnerable youth populations (i.e., homeless, foster care, wards of state) should be of particular interest

(Osgood, Foster, Flanagan, & Ruth, 2005). It is *absolutely essential* to consider the role of something as profound as incarceration on the natural development of a young offender. Whether long-term incarceration improves or seriously hinders the development of youth into well-adjusted, fully functioning members of society has not been determined. The importation and deprivation frameworks can be used to theorize the impact of incarceration on young offenders making this transition. An integration of the three theories may be useful to explain unique hurdles and experiences specific to a young offending group.

THE IMPORTATION AND DEPRIVATION FRAMEWORKS

Theorists have been concerned with the effects of incarceration on inmates for decades. Two of the most popular frameworks have been deprivation theory and importation theory. Deprivation theory has its roots in the works of Sykes (1958) and Goffman (1961). Deprivation theorists believe that "the depersonalizing and stigmatizing effects of legal processing and induction into the prison, coupled with the alienative effect of the coercive power exercised by prison officials in their attempts to maintain social control within the prison" impact inmates (Thomas, 1977: 137). Carceral settings "mortify the self" (Goffman, 1961), or require the individual to adapt to incarceration by changing behavior, thoughts, and self-image. Sykes (1958) highlighted the lack of freedom, goods and services, autonomy, security, and heterosexual relationships as the "pains of imprisonment" that lead to changes in inmate behavior. While deprivation theory has been used frequently to explain behavior of inmates

during incarceration, it has also been used, though less frequently, to explain post-release behavior (e.g., Windzio, 2006).

The importation model highlights the importance of pre-prison socialization on adaptations and reactions to prison life (Irwin & Cressey, 1962; Irwin, 1970). According to this theory, the inmate culture is influenced by the beliefs, attitudes, and behavior that inmates bring into prison from the streets. In other words, inmates create a culture in prison that is reflective of the world they experienced prior to incarceration as opposed to the idea that the prison culture and behavior is dictated by the deprivation associated with imprisonment. The beliefs, attitudes, and cultures are often shaped by characteristics of the inmates. For example, inmates' race, gender, neighborhood, and age are theorized, in many empirical investigations, to inform the cultures inmates import into prisons (e.g., Zamble & Porporino, 1988). These pre-existing characteristics, theoretically, shape the way inmates exists in the world, and thus, dictate their carceral experience. Most quantitative tests of theory have relied on measures of inmate characteristics, as opposed to direct measures of the culture, to study the role of importation (e.g., Benda & Tollett, 1999; Gendreau, et al., 1996; Langan & Levin, 2002; MacDonald, 1999).[7]

Scholars have debated the merits of integrating the two frameworks (Thomas & Peterson, 1977). Versions of an integrated theory highlight the "fit" between the

[7] Generally, any inmate characteristics defined prior to incarceration has been considered "imported" into the facility.

individual (i.e., imported into the facility) and the environment (i.e., deprivation). Hans Toch's (1977, 1992) "transactional approach" is a good example of a theory that stresses the importance of the person-environment interaction. It examines the effects of placing inmates in an environment that is antithetical or supportive to their needs. For example, privacy oriented inmates will feel greater distress if placed in an overcrowded prison as compared to non-privacy oriented inmates. Others have followed a similar line of integration of the two theories (Zamble & Porporino, 1988).

Thus far, theories of deprivation and importation have neglected to address issues that are specific to a population transitioning to adulthood. The literature assumes that incarcerated individuals have established an identity and that maturation is complete.[8]

THE DEPRIVATION OF DEVELOPMENT THEORY

The Deprivation of Development Theory, posed in this research, posits that maturation mediates the relationship between importation and deprivation effects on future behavior. According to this theory, the closer one is to a full transition to adulthood the more likely s/he will become a "productive member of society" and cease offending. Prosocial behavior would not be expected if factors hinder the transition to adulthood. As stated previously, most young offenders desist from crime (Moffitt,

[8] Adult offenders arguably display the characteristics of people who, in many ways, have NOT transitioned to adulthood. Hence, their continued offending may have resulted from disruptions to their developmental transition. This framework has not been examined either.

1993). Even incarcerated offenders desist from crime (Ezell, 2007). However, we would expect that desistence would be delayed (or worse, never occur) in cases where importation and deprivation factors significantly interfere with development. Figure 3 represents the previous and current theoretical conceptions in relation to serious offending.[9]

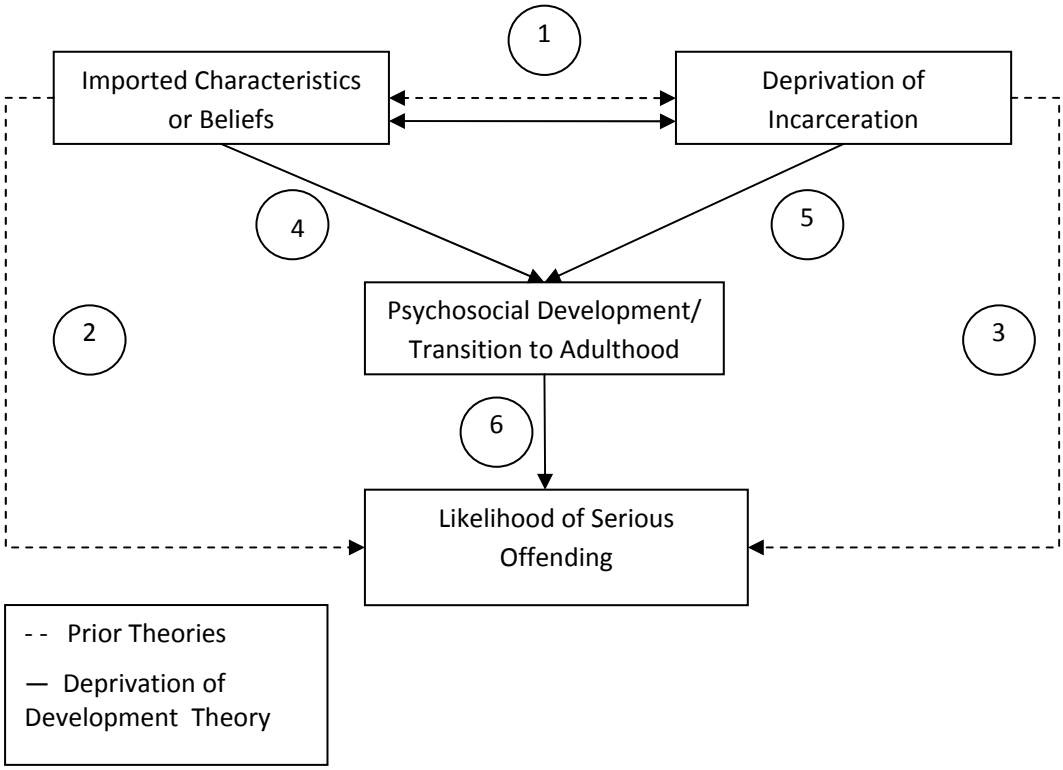

Figure 3. Diagram of previous and current theories of importation and deprivation in relation to serious offending.

[9] Despite the common conception that aspects of incarceration impact individual post-release behavior, few studies (with the exception of program evaluations) actually test this relation. Most studies focus on the impact of incarceration on inmate behavior while incarcerated (Adams, 1992; Vischer & Travis, 2003). This review will include studies that examine importation and deprivation on serious inmate behavior (i.e., not disciplinary infractions and rule violations) and recidivism. It assumes that factors that influence inmate's behavior while incarcerated may also be the factors that influence post-release behavior.

Previous scholarship has established the importance of the interaction between the deprivation and importation frameworks (Path 1). Previous conceptions of importation theory consider the culture, characteristics, or beliefs established prior to incarceration as the predictor of future behavior (Path 2). Prior work has highlighted the impact of the deprivations of incarceration on the likelihood of serious offending (both while incarcerated and, fewer studies, upon release) (Path 3).[10]

The Deprivation of Development theory also acknowledges the importance of the interplay between importation and deprivation (Path 1). Prior research has shown that structural features of the incarceration environment interact with offenders' pre-incarceration characteristics to predict behavior (e.g., Bonta, 1986; Irwin & Cressey, 2004; Spohn & Holleran, 2002; Wright & Goodstein, 1989). This theory differs from previous work in three ways. First, it posits a causal pathway between imported characteristics and development (Path 4). It also stipulates that deprivations of incarceration will impact the transition to adulthood (Path 5). Lastly, it asserts that development to adulthood directly influences the likelihood of future serious offending (Path 6). This theory has not been explicitly tested, but these hypothesized links have

[10] Previous work that predicts inmate misconduct in prison (i.e., disciplinary infractions and other non-violent incidents) will not be included in this review. Disciplinary infractions are often used as an operationalization of "adjustment to prison life" or prisonization. As they are generally facility specific they are less directly implicated in post-release behavior. There are a number of methodological issues and generalization problems associated with this dependent measure (see Goodstein & Wright, 1989). Studies of infractions or rule violations represent a wide range of "problem behaviors." For example, a study of disciplinary reports on juveniles housed in prison found that most of the reports were filed because youth moved around the facility without appropriate permission (Eiskovits & Baizerman, 1983). It is reasonable to conclude that the factors that predict this kind of deviance are more likely to be situational (i.e., context specific) and less likely to be indicative of behavior post-release.

been studied. Literature to support these relationships will be detailed in following sections.

THEORY SUPPORT

The interaction between importation and deprivation theories (Path One)

Previous criminological research and theory has asserted the interactive effect of importation and deprivation variables on individual behavior while incarcerated and upon release (e.g., Bonta, 1986; Irwin & Cressey, 2004; Poole & Regoli, 1983; Wright & Goodstein, 1989). There is support for, as Toch (1977) describes, a "transactional" relation between the person and his/her environment. In other words, the quality of the environment can either be congruent with inmate needs or exacerbate the pains associated with imprisonment. Most quantitative studies do not directly measure inmates' perceptions of their "fit" with the environment. Instead, they take "objective" inmate characteristics and see the interaction with the qualities of imprisonment. For example, Spohn and Holleran (2002) found that imprisonment (as opposed to probation) had no effect on recidivism for inmates convicted of some offenses (i.e., drug offenders) but did lower the recidivism of inmates convicted of other types of crimes.

The Deprivation of Development theory asserts that characteristics of the institutional environment can help counteract effects of imported variables or aggravate them. In addition, pre-existing characteristics can decrease the likelihood of development during punishment OR they can foster resiliency to the deprivations felt by

incarceration. For example, if a person imports a mental health problem into the facility, but the problem is diagnosed and appropriately treated while inside, one should expect positive developmental results. In contrast, if the mental health issues are not addressed while incarcerated this, along with the strain of imprisonment, could lead to more extreme problem behaviors (both during incarceration and upon release). This theory proposes that the experience of incarceration has the opportunity to serve an inmate's needs and improve their disposition, or it can reinforce negative influences and create more hurdles.

The Role of Importation (Paths Two and Four)

Prior importation theories link pre-incarceration characteristics to in-prison behavior and post-prison behavior. This theory asserts that pre-incarceration characteristics influence development and thereby predict future offending. This theory has never been explicitly tested. Therefore, two literatures can inform this theory. The first set of work focuses on the role of pre-incarceration characteristics on future offending behavior. From these studies we can establish a connection between offender qualities and offending behavior. The second set of work focuses on the types of factors that influence the transition to adulthood and maturation (not necessarily examined in an incarcerated population). A review of the second set of work directly informs the theory, while a review of the recidivism literature makes it potentially applicable in corrections setting.

Importation on Offending (Path Two)

A number of pre-incarceration characteristics have been shown to predict future serious offending. Studies on the impact of transfer to adult court have generally concluded the act of being transferred impacts the likelihood of young offenders' recidivism (Bishop, Frazier, Lanza-Kaduce, & Winner, 1996; Fagan, 1996; Podkapacz & Feld, 1996; Redding, 2006; Winner, Lanza-Kaduce, Bishop, & Frazier, 1997). As an importation variable, one should consider how criminal court processing (as compared to juvenile court processing) shapes an offender's understanding of himself and/or the justice system. The interaction between sentencing court and later correctional experience has not been explored. Most transfer studies do not account for differences in any experience with incarceration for transferred versus retained youth. What limited information there is suggests that the likelihood of recidivism increases if any type of incarceration is imposed (Bishop & Frazier, 2000) or if an adult sanction is forced over a juvenile one (Mason & Chang, 2001).

Type of commitment offense has been shown to be related to differential rates of recidivism (Langan & Levin, 2002; Lattimore, Macdonald, Piquero, Linster, & Visher, 2004). Commitment offense may influence the incarceration experience and therefore subsequent offending (Ruback & Innes, 1988). For example, violent offenders may be incarcerated with other violent offenders which may increase their propensity to continue offending upon release.

Studies have shown that more extensive criminal histories are related to increased probability of future offending (Beck, 1987; Macdonald, 1999; Langan & Levin, 2002). In lieu of criminal histories, other studies have shown that early exposure to the justice system significantly predicts the likelihood of offending post-release (Katsiyannis & Archwamety, 1997)

Racial and ethnic differences have also been identified with regard to inmate recidivism. African Americans have been found to have higher rates of recidivism than other racial and ethnic groups (Beck, 1987; Ezell, 2007; Gendreau, et al., 1996; Langan & Levin, 2002; Lattimore, et al., 2004). Harer and Steffensmeier (1996) find that in adult prisons, black inmates have higher rates of violent behavior, a finding that the authors attribute to prior street culture, and therefore taken as an indicator of support for importation theory.

In reference to release cohorts of juveniles in California, previous research has shown that the region of the state influences the likelihood of recommitment. Studies show that commitment in Southern California leads to lower rates of recidivism than the rest of the state (Ezell, 2007; Lattimore, et al., 2004; Visher et al., 1991).

Importation on Development (Path Four)

The purpose of this section is to briefly review the literature related to the effect of individual and cultural factors on the transition to adulthood. Much of the research in this area has not focused on an offending population. Again, the main features of the

transition to adulthood are for young people to gain proficiency in relationships, and establish occupational or educational paths, independence (financial, emotional, decision-making), identity, and self-esteem (Peterson & Leffert, 1995). The question is then, are there factors that influence the advancement of these aspects of development? This discussion will emphasize factors that have been shown to impact the transition to adulthood that can reasonably be linked to offending behavior.

There are social factors, aside from whether or not a youth is ever incarcerated, that influence the likelihood of acquiring markers of adulthood. For example, research has shown there are racial/ethnic differences in educational and occupational attainment for white and minority youth (Fussel & Furstenberg, 2005). Socioeconomic status, parental education, prior attachment to school, and social capital are all factors that can be theoretically linked to the likelihood of educational and occupational success.

There is a paucity of research on the impact of race, gender, religion, sexual orientation, and class on the development of identity in emerging adulthood (Konstam, 2007). Social class, more so than gender or race, has been identified as an important determinate of self identity during this period (Konstam, 2007).

The Role of Deprivation (Paths Three and Five)

This theory suggests that the expectation for "normal" development decreases as the deprivation felt by the environment increases. The influence of the type of

environment on a young population is effectively described by Haney (2003: 27) who was commenting on the use of solitary confinement for youth:

> Regardless of what they have done, they are in an uncertain, unformed state of social identity…Not only are you putting them in a situation where they have nothing to rely on but their own, underdeveloped internal mechanisms, but you are making it impossible for them to develop a healthy functioning adult social identity. You're basically taking someone who's in the process of finding out who they are and twisting their psyche in a way that will make it very, very difficult for them to ever recover.

This theory does not assume that carceral responses necessarily lead to extreme deprivation. All people experience deprivation of some sort, and young people are generally more used to restrictions than adults (e.g., curfews, legal mandates concerning sex, alcohol, tobacco, and lack of money). Therefore, it is the degree of the deprivation that matters. To borrow from the gang literature, there may be a "tipping point" (Klein, 1995) wherein an environment goes from constructive punishment to so stifling that appropriate development is no longer possible. However, if support, direction, and resources are invested in "malleable" young people, there is ample reason to believe normal development and productivity in adulthood will occur (Osgood, et al, 2005).

This theory proposes that carceral environments can provide different levels of deprivation with differential implications for development to adulthood. For instance, a youth in transition that is sentenced to a fire fighting training camp instead of a traditional incarceration setting would have different characteristics in their

"deprivations." The qualities that are developed when learning to work as a team to fight a fire would foster a normal transition. First, they are participating in a socially and culturally acceptable activity. It is vocational training. Teamwork and other skills required to work together can develop normal social interactions with others. It is a vocation inherently centered on improving the community. There is a high probability that self-worth would be improved, and lastly, the training itself requires and intends to teach responsible and appropriate behavior without constant supervision (i.e., during a fire each firefighter must be allowed autonomy). This type of punishment, this theory would suggest, would improve or not obstruct a healthy transition in the same way that incarceration in solitary confinement would.

It is inappropriate to assume prisons automatically qualify as a depriving institution, or that juvenile facilities, simply because they were founded on rehabilitative ideals, are more apt to foster maturation. It is the qualities of the environment that will determine how depriving or constructive the institution will be. The literature on deprivation, like importation, can be used to inform the impact of incarceration on development and recidivism.

Deprivation on Recidivism (Path Three)

Most deprivation research investigates its effect on inmate behavior rather than on maturation. In general, there is significant support for the notion that young offenders in custody-oriented institutions or adult institutions exert more aggression

while incarcerated than their counterparts in treatment-oriented institutions or juvenile institutions (e.g., Ekland-Olson, Barrick, & Cohen, 1983; Feld, 1981). Young offenders in custody-oriented institutions reoffend more often than offenders in the treatment-oriented group (Feld, 1977).

Young offenders incarcerated with adults recidivate more often than their older adult counterparts (Langan & Levin, 2002). In a study that found that the impact of transfer on recidivism is increased if incarceration is imposed, Bishop and Frazier (2000) concluded that youth in adult prisons spent a great deal of time learning techniques of committing crime and how to go undetected from the more seasoned adult prisoners. These interactions were less likely to occur in the youth facilities because wards reported that more staff members were involved in their schedules which made these inmate-on-inmate conversations less likely.

Inmates who maintain connections with family while incarcerated have lower rates of recidivism (Adams, 1993; Petersilia, 2003). It is arguable that these connections are even more important for young offenders that are incarcerated. In fact, a recent study lends strong support to the beneficial effects of visitation on inmate success post-release (Bales & Mears, 2008). For adult inmates, any visitation was shown to reduce recidivism, but initial visits had more lasting effects than later visits. Not only did visitation decrease recidivism rates, it also significantly delayed the onset of recidivism (Bales & Mears, 2008). The effects of visitation have been suggested to interact significantly with ethnicity. Bales & Mears (2008) found the effect was stronger for non-

white inmates. Other studies have concluded Hispanic inmates seem to feel the separation from family and friends more than other groups (Johnson, 1976).

An increased proportion of non-white inmates in jails has been linked to higher rates of jail violence (Tartaro, 2002). A majority of male inmates in California are non-white (Petersilia, 2006). California facilities are also notoriously segregated along racial and ethnic lines (Goodman, 2008; Hunt, Riegel, Morales, & Waldorf, 1993). Inmates socialize and fight with their racial/ethnic group. The composition of races in California correctional facilities is theoretically important. However, it is difficult to hypothesize which racial group has the most power or is most problematic. Affiliation and discourse occur because of the constant competition for power. There is no reason to expect that simply having an increased presence of Black inmates is more likely to lead to violence, or an increased presence of white inmates will necessarily abate problems. A concept that has not previously been investigated is whether an individual will be more or less likely to offend if they are surrounded by more inmates of the same racial/ethnic group. This could be particularly important in a racially divided system.

Longer sentences lead to worse post-outcome behavior (Beck, 1987; Gendreau, Little, & Goggin, 1996; Katsiyanis & Archwamety, 1997). This is related to beliefs that long incarceration periods lead to increased prisonization (e.g., Clemmer, 1940). It is theorized that if offenders spend a lot of time with other offenders they will adopt the inmate code of conduct and have difficulty adjusting to “conventional” life upon release.

Decades of investigation into overcrowding have led to one consistent result. In general, there is no indication that crowding impacts the behavior of adult inmates. However, there is consistent evidence that age moderates the crowding and violence relationship (Bonta & Gendreau, 1990; Franklin, Franklin, Cortney, & Pratt, 2006). Franklin et al.'s (2006) recent meta-analysis concludes that prison crowding is not a significant predictor of violence, regardless of how crowding is operationalized. However, effect sizes are very large for young offender (18-25 years old) populations where crowding leads to higher levels of violent and nonviolent offending.

Stability in prison has been asserted as being important to inmate behavior in prison (Toch, 1992). Inmates need the opportunity to acclimate to their environment, set up a routine, and familiarize themselves with life behind bars. A high degree of institutional turnover (i.e., inmates entering and leaving institutions) can be hypothesized to decrease the stability in prison and increase inmate conduct issues.

Deprivation on Development (Path Five)

The relative deprivation of a juvenile facility or treatment-oriented facility as compared to an adult prison or a custody-oriented facility has been a highly researched area, and has implications for the relationship between deprivation and psychosocial maturation. Most relevant to these purposes is a study by Forst, Fagan, and Vivona (1989) that compares juveniles in prison with juveniles in youth facilities and reports their relative assessments of a variety of experiences. Their measures include numerous

dimensions of psychosocial development though the authors never specifically use the term.[11] The authors find significantly higher ratings on these dimensions from youth in a juvenile facility versus prison, which suggests that juvenile facilities offer more assistance and support related to psychosocial development.

In a qualitative study of youth housed in adult prisons, Bortner and Williams (1997:70) described their sample:

> They retain childlike characteristics: lack of experience in relationships; lack of opportunities to develop decision-making abilities and mature judgment; a sense of humor and playfulness; and a hopefulness… Many reflect an incongruous combination of street sophistication, because of what they have experienced and "seen" so soon in life, and a striking naiveté and guilelessness about other aspects of life.

Other studies found youth in juvenile facilities have more access to programs (educational and therapeutic) than those in adult prisons. These programs were shown to have an impact on their attitudes and behaviors (for review see Woolard, Odgers, Lanza-Kaduce, & Daglis, 2005).

In general, studies offer much insight as to how certain carceral environments facilitate psychosocial development. Poole and Regoli (1983) concluded that inmates housed in more custody-oriented institutions have more incentives for deviant behavior

[11] Questions target whether staff and/or social worker help 1) improve relations with others of like age, 2) provide skills to help when they return to the community, 3) them feel good about themselves, 4) them achieve personal goals, 5) establish a daily routine, 6) youth get oriented to rules and procedures, 7) youth understand consequences of rule-breaking, 8) encourage youth's participation in programs, 8) provide youth with counseling, 9) youth obtain needed services, 10) meet medical and health needs, 11) facilitate programs to understand themselves, set personal goals, and deal with problems, and 12) improve relationship with family.

and are more resistant to change. Other studies have shown that treatment settings (i.e., those that deemphasize staff control) foster autonomy (Moos, 1975), socially approved values and norms (Street, Vinter & Perrow, 1966), mentoring (Kupchik, 2007), and ultimately behavioral changes (Moos, 1975).

In addition to the custody-orientation of the institutions, the length of incarceration must be considered. Haney (2003) argues that the longer people are incarcerated the more significant their personal transformation. The impact is more profound on those entering at an early age because they are less able to make their own choices. For these individuals, institutionalization (i.e., adopting the prison culture as opposed to retaining social norms of free persons) may last longer and occur more quickly. Haney suggests that a mature identity must first be in place in order for inmates to resist the lasting effects of prison. This is to combat significant forces working against the inmate identity. For instance, prison offers distorted ideas of sexuality and intimacy where dominancy/submission is promoted as the basis of an intimate relationship. Prison also allows for diminished self-esteem as it serves as a consistent reminder of social position. Research has shown that individuals experiencing longer incarcerations have a harder time preserving their self-identity and their self-esteem (Flanagan, 1981; MacKenzie & Goodstein, 1985), though this conclusion is not consistently upheld (Bonta & Gendreau, 1990).

Psychosocial Maturation on Serious Offending (Path Six)

This theory posits that the key to desisting from offending is a successful transition to adulthood. This concept is not new. In fact, a number of transitional markers have been cited as predicting cessation of offending. In particular, Sampson and Laub (1993) highlight the role of employment and marriage (i.e., interpersonal relationships) as turning points that result in desistance from crime.[12]

Generally, age at admission is considered an importation variable for reasons explained in a previous section. the Deprivation of Development Theory argues that maturation is central to the cessation of offending. The younger a person is at the time of incarceration, the longer the time to adulthood. This theory would assert recidivism occurs because offenders have not reached maturation, and the incarceration environment did not facilitate development. While no studies have tested this directly, for this theory to be plausible, at the very least we should see a strong relation between age and offending in an incarcerated population.

Research supports this notion. Studies consistently show that youthfulness is a strong and significant predictor of involvement in violent offending in general

[12] Often studies that test the impact of psychosocial maturation on offending focus on factors related to "maturity of judgment" or the psychological dimensions of responsibility, temperance, and perspective (Cauffman & Steinberg, 2000; Cruise, Fernandez, McCoy, Guy, Colwell, & Douglas, 2008). This work is related and more tangentially applicable. Studies find support for the notion that immaturity of judgment predicts antisocial behavior (Cauffman & Steinberg, 2000) and, more recently, a study has shown that it is correlated with self-reported delinquent behavior (Cruise et al., 2008). In particular, boys in correctional systems that were less able to think through decisions were more likely to commit violent offenses (Cruise et al., 2008). Both of these studies restrict their samples to juveniles from 8th grade to 12th grade.

(Gendreau, Little, & Goggin, 1996), while incarcerated (MacKenzie, 1987), and post-release (Ezell, 2007; Katsiyannis & Archwamety, 1997; Langan & Levin, 2002; Myner, Santman, Cappelletty, & Perlmutter, 1998; Zamble & Quinsey, 1997). A recent study finds that rates of prison violence decreased precipitously in relation to age in adult prison (Kuanliang, Sorensen, & Cunningham, 2008). The study compared rates of juveniles younger than 18 at admission, to inmates serving time in the same prison that were 18-20 years old, 21-25 years old, and older at time of entry. The highest rates of violence were committed by the youngest age group (particularly 15 and 16 year olds). Violence decreased in each subsequent cohort even when controlling for other factors. As a note, the cohort of 18-20 year olds and 21-25 year olds, though committing far less violence than their younger counterparts were still involved in significantly more violence than inmates that were admitted later (i.e., 26-30, 31-35, 26-40, or 41+ years) (Kuanliang, et al., 2008).

There is support for links between other transition to adulthood markers and offending. Smith (1984) found that inmates with higher self-esteem are less likely to offend upon release. The inability to foster appropriate intimate relationships has also been shown to be problematic for the post-release outcomes of inmates returning to the community (Haney, 2003). Zamble and Quinsey (1997) found that conflict with heterosexual partners was the second most common problem mentioned by recidivists. The biggest problem reported was substance abuse. Shover (1996) concluded that the creation of bonds with conventional others led to the termination of criminal careers.

Like Sampson and Laub (1993), he concluded that social capital, stable employment, and supportive relationships were paramount.

Another psychosocial factor that has support is the ability to behave without external supervision. The incarceration experience is not intended to foster this quality. Haney (2003) found that too much reliance on the external controls associated with incarceration decreased the ability of inmates to utilize their own internal restraints. This, in turn, led to problem behavior upon release. In contrast, Little and Steinberg (2006), in one of the few studies that directly test psychosocial maturation on offending behavior in juveniles, found that autonomy from peer influence actually led to an increase in drug dealing. Perhaps, there is an important middle-ground in regards to autonomous behavior that is worth consideration.

OVERVIEW OF THEORY

There are a number of factors, not mentioned previously, that are hypothesized to have an impact in this theory. Table 1 offers just some of the potential features of the imported factors and qualities of the incarceration experience that might impact the likelihood of successfully transitioning to adulthood. As can be seen from the table, this theory offers room for a number of previously established criminological theories to explain how and why incarceration may be problematic for this population. The left column introduces the expected developmental transitions that occur for young people during this period. Development of these markers is required for a normal transition

into adulthood (e.g., participation in socially acceptable activities and culture, educational and vocational markers, fostering pro-social intimate relationships).

Table 1. Deprivation of Development theory describing the potential impact of deprivation and importation factors on the transition to adulthood (predicted direction of effect on developmental marker + or -).

Developmental Marker of Transition to Adulthood	**Importation**	**Deprivation**
Participate in socially acceptable activities and culture	- Prior gang membership and/or delinquent peers (- imported beliefs, + removal from delinquent subculture) - Belief that violence is appropriate behavior (-) - Prior offending/prisonization (-)	- Being placed with even more delinquent peers/ Differential Association (-) - Prisonization (-) - Culture/exposure of violence(-) - Fear of victimization (-) - Recreation/sports activity (+)
Educational/ Vocational Markers	- If prior success in education/vocation removal will have (-) impact - Learning disability (-)/ mental health (-) - Low socioeconomic status (-) - Social capital (+)	- If no prior success in education/vocation forced participation (+) impact IF resources are available for quality instruction.
Social Training for "normal" Interactions with Others	- Gang affiliation and/or delinquent peers (-) - Familial interactions (-/+ depending on family dynamics) - Prior history/ current offense/ prior experience in prison or with police (-)	- No training for sociability (no reason to believe it would develop without intervention) - Differential Association (-) - Prisonization (-) - Culture Conflict/inmates v. officers (-) - Positive relationships with staff (+)
Fostering Prosocial Intimate Relationships	- Sexual Orientation (?) - Prior history/ current offense/ prior experience in prison or with police (-) - Prior victimization (-)	- No practice for same-aged, heterosexual relationships (-) - Removal from prosocial relationship (-) - Potential coercive sex (-) - No training for intimate relationships (no reason to believe it would develop without intervention) - Attitudes of officers and inmates (-/+) - Fear/ dangerous consequences of non-heterosexual relationships (-)
Feelings of Responsibility toward Community	- Reintegrative shaming (+) - Restorative justice (+) - Social capital (+)	- Restitution (?) - Work release/ work furlough in community (+) - Loss of liberty (stripped of civil rights) (-)

Developmental Marker of Transition to Adulthood	Importation	Deprivation
Positive Sense of Self-Worth	- Family (+/- depending on family dynamics) - Peers (+/- depending on peer dynamics) - Socioeconomic Status/ Strain Theory (-) - Increased age (+) - Prior history with justice system/ Labeling (-) - Prior history/ Current Offense/ Prior prisonization (-) - Social capital (+)	- Officers' attitudes toward inmates (-/+ depending on dynamics) - Relationship with treatment staff (-/+ depending on dynamics) - Loss of goods and services (-) - Loss of Liberty (-) - Self-mortification/ Identity stripping (-/+ depending on how well they build it back up) - Restrictions on ability to provide support (financial or emotional) for family (-) -Positive achievement in programs (+)
Behave Responsibly without External Supervision	- Clearly not already fostered upon entry - Mental health problems (-) - Increased age (+) - Prior history/ Current Offense/ Prior prisonization (-)	- Constantly supervised, no fostering of this characteristics/ - Loss of liberty (-) - Loss of autonomy (-)

The second column represents characteristics that this theory and other importation theorists would suggest impact an offender's behavior. Each factor is categorized under the developmental markers it impacts and the hypothesized direction of the effect is noted. For example, if an offender is a gang member prior to incarceration, this will have implications for the ability to learn appropriate social interactions with others. However, if the youth is removed from the gang and placed in a situation where s/he can learn appropriate interactions with others (e.g., institutionally supported team sports), s/he may be more likely to develop this marker of maturation. The last column includes aspects of deprivation that are classified by the developmental marker they affect. For example, if psychosocial maturation requires the ability to behave appropriately without external supervision then one would expect the

loss of autonomy and constant supervision provided by the typical carceral setting to inhibit the development of this quality.

Table 1 also offers an opportunity to hypothesize important interactions between importation/deprivation and psychsocial maturation. For example, if a youth enters incarceration with low self-esteem because of educational failure (importation) and is allowed, due to small class sizes and individual attention, to improve markedly in his school work during incarceration, this kind of positive experience might raise the youth's self-esteem and lead to positive results upon release.

There are numerous ways in which importation and deprivation factors may have independent, cumulative, and interactive effects on incarcerated youth. This theory suggests these influences are distinct from incarceration's effects on adults who have (theoretically) already developed these qualities.

CONCLUSION

This study tests a deprivation/ importation theory in a transitioning population to identify factors that impact post-release behavior. It also examines the role of development in the cessation of crime and investigations whether there is evidence that the incarceration environment impacts the likelihood of "aging out." In particular, this study is designed to answer the following questions:

1) How does legal label (of "juvenile" versus "adult") as compared to the handling of young offenders (like "juveniles" or "adults") inform the likelihood of future offending?
2) What importation and deprivation factors predict the recidivism of young offenders?
3) Are there age-graded differences that explain variation in future behavior? Is there any indication that different correctional experiences hinder development?

A complete test of this theory is not attempted here. Instead, I test the role of importation and deprivation on a population of youth all within the expected ages of transition to adulthood.

This study compares the qualities of youth and adult correctional facilities. This research does not assume that adult facilities are more depriving than juvenile facilities. It also does not presume which facilities are most important to consider. Prior studies have limited the empirical focus on the role of one facility on behavior (e.g., Feld, 1981; Windzio, 2006). This study measures the qualities of any state-run facility a youth in the sample served time. There are no restrictions on which facilities during the commitment are the most important.

Pre-incarceration characteristics of the offender, including the court of commitment, will be considered. This will allow for a test of prior claims that incarceration in an adult facility exacerbates the effect of simply being convicted in the criminal justice system. While most studies that attempt to compare across correctional jurisdictions are limited in their ability to disentangle the impact of the court and

imprisonment, this study will address this limitation by including criminal justice commitments that were housed in juvenile facilities.

In addition, this analysis does not limit the sample to juvenile offenders. As has been argued above, the transition to adulthood encompasses a social maturation period older than age 18, or even more limiting, the age of legal adulthood (which is constantly changing). Instead, whether offenders considered legally "adult" are comparable to their "juvenile" counterparts is an empirical question that will be addressed.

In order to obtain a sample that shares the qualities described above, I rely on retrospective data analysis as opposed to primary data collection. As such, direct measures of the level of psychosocial maturation could not be obtained. I cannot directly test the "black box," or the mediating variable that has been so fervently argued to be important. Instead, I test for age-graded nuances (as a proxy for development) in the sample of offenders believed to be transitioning to adulthood, a limitation that will be covered in later chapters.

Chapter 2: Site Description

There are very relevant policy reasons to explore the impact of incarceration on young offenders. There has been little consensus regarding the most appropriate housing for this group. For example, in California over the past twenty years, 1985 to 2005, almost every combination of housing has been attempted:

1) legally "juvenile" and housed in juvenile facilities,
2) legally "adult" and housed in adult prisons,
3) legally "adult" and housed in juvenile facilities,
4) legally "adult" and housed in adult prisons with specially designed programming,
5) legally "adult" and housed first in juvenile facilities and then adult prisons,
6) legally "adult" and housed first in adult facilities and then in juvenile facilities,
7) legally "adult" and housed in juvenile facilities, then in adult facilities, and then back in juvenile facilities, and
8) (occasionally) legally "juvenile" and housed first in juvenile facilities, then in adult facilities, then back in juvenile facilities.[13]

Housing policies swing in a pendulum-like manner similar to many issues related to rehabilitation versus punishment. California policies, like much of the nation, have moved from an emphasis on rehabilitation for most young offenders (whether "juvenile" or not) to the notion that all adult court commitments, regardless of chronological age, should be sent to prison. Recent changes in California have resulted in the closure of a number of state-run youth facilities (Sterngold, 2007). Furthermore, recent laws have allowed more juveniles to be tried as adults and sentenced to prison.

Policies are moving faster than any empirical research regarding the effectiveness or unanticipated outcomes of basic housing decisions. As Petersilia notes, "Surprisingly, California has *no* longitudinal study of who comes into prison, what their experiences are like, and how those experiences impact post-prison behavior" (2006: pg. 2).

[13] The term "legally juvenile" refers to juvenile offenders that were sentenced by the juvenile court regardless of chronological age. The term "legally adult" refers to young offenders that were tried and convicted in the criminal justice system regardless of chronological age. Therefore, a "'legal adult' in a juvenile facility" would be a young offender that is under the auspices of the criminal justice system, but is being treated and handled in the juvenile justice system.

The history of California correctional housing policies allows for a comparison of like-age offenders that were incarcerated in youth and adult facilities that is not entirely dependent on the court of commitment. Sampling offenders released in 1995 and 1996 (prior to significant housing policy changes and the decision to remove a significant number of youth from the state-run juvenile facilities) allows for an extended period of uninterrupted housing policy while still allowing individuals to have served lengthy sentences. It is also a period of time when the two systems had significant overlap in the ages of the young offenders they housed.

CALIFORNIA CORRECTIONS

The California juvenile correctional system was once hailed as the best in the nation (Bolen, 1972; Moos, 1975). In the 1970's large juvenile correctional facilities went out of favor nationally and small, community-based treatment facilities for juveniles became the progressive standard (Senate Select Hearing, 2004). California lawmakers chose to retain the large correctional facilities despite many other states showing great success in abandoning the old model (Miller, 1998). Today, the largest adult correctional system in the nation ALSO incarcerates the largest number of juveniles. California houses over 22% of all juvenile offenders held in publicly operated facilities in the nation and over twice the number of the next closest state, Texas (Sickmund, 2006). This notoriety has come with serious criticisms that the once touted juvenile rehabilitation facilities have no substantive differences from prisons (Senate Select Committee Hearing,2004).

Special Master Donna Brorby (2005) was charged with reporting on the compliance of the California Youth Authority regarding the *Farrell v. Allen* litigation, one of the numerous lawsuits the department has recently settled. She claimed the constant violence in the California Youth Authority (CYA) is due to the overcrowded facilities, high staff-to-ward ratios, lack of programs, and insufficient management. Numerous claims have been made describing the CYA as ostensibly equivalent as the adult prison system, though this claim has not been empirically tested.

Part of the basis for the critique may be because the organization of day-to-day operations of CYA (for youth) and the California Department of Corrections (CDC, for adults) run parallel. They both operate under the auspice of one parent state organization.[14] They each control their own facilities, division of research, and parole systems. They each have their own intake officers and their own reception centers, and they have unique systems of computerized tracking and maintaining records of their inmates/wards.

The state-run organizations receive their commitments at a reception center where they evaluate their inmates/wards and begin files containing personal history, any medical or mental health diagnoses, or other relevant information. The wards/inmates then move to their housing facility. In some cases, the housing facility may be at the same facility as the reception center, but they would be moved out of the

[14] The CYA has recently been renamed the Division of Juvenile Justice and the CDC has been re-titled the Division of Adult Operations. For ease in this research the names of the agencies at the time of study, namely the California Youth Authority (CYA) and the California Department of Corrections (CDC) will be used to refer to these branches.

reception center units to the general population. The inmates can participate in recreation, treatment, or other types of programming if available. Transport to a different facility is an option for those in juvenile and adult facilities. Reasons for transfer to a different facility could be anything from overcrowding, misbehavior, inmate/ward request, or any other administrative need. Both systems have their own parole board and parole units that are responsible for supervision post-release and into the community.

The major differences between the systems are their espousal of rehabilitative ideals and orientation to treatment. The CYA, as is consistent with most youth facilities, was designed to provide rehabilitation and treatment to its wards. CYA facilities generally have a wider selection of treatment programs and accommodate a greater proportion of all wards in programs. Wards under the age of 18 are required to receive education. Each ward receives some sort of programming (i.e., education, vocation, group therapy, individual counseling, sex offender treatment, drug treatment). The CYA includes counselors within living units as opposed to just security staff. While some CYA facilities are designed in a manner similar to adult prisons, many offer more open settings, and the largest CYA facility houses substantially fewer wards than even the smallest CDC prison. There is less formal supervision in the CYA (i.e., less reliance on surveillance systems, gates, fences, and armed towers). This is not to suggest that it has been empirically shown that the CYA offers more rehabilitation to its wards than CDC

offers to its inmates, simply that this is the design and the mission of the system as it is presented and espoused.[15]

HOUSING POLICIES IN CALIFORNIA

In 1982 the California populous passed Proposition 8 or the "Victims' Bill of Rights." Prop 8 was a punitive initiative that instituted truth-in-evidence, provided sentencing enhancements for habitual criminals, put limits on plea bargaining, and stipulated that anyone over the age of 18 that is found guilty of murder, rape, or any other serious felony could not be committed to the CYA (Proposition 8, 1982). One year later, the legislature declared that although someone over the age of 18 could not be "committed" to the CYA for a serious or violent offense, they could be "housed" there. Over the next decade the CYA housed many CDC commitments, many of whom were sentenced to the CYA in their early 20's.

Despite the option to house young offenders in the CYA, it was up to a judge's discretion whether or not to send them there.[16] Internal administrators have suggested some judges were unaware of their option to send commitment papers to the CYA as opposed to the CDC for young offenders. Therefore, during the period of 1982 to 1996 adult commitments (some under 18 if judicially waived) could be housed in either prison or a CYA facility.

[15] Despite the lack of empirical evidence of treatment in California correctional facilities, there is research that shows that an espousal and mission of treatment-related goals is correlated with an increased orientation to treatment as opposed to custody (Street, Vinter, & Perrow,1966), and that those in juvenile facilities feel more support and encouragement from staff in juvenile facilities (Forst, Fagan, and Vivona, 1989; Kupchik, 2007).

[16] The CYA also had the discretion to reject a CDC commitment, or send unmanageable young adults back to the CDC for housing.

The rise in youth crime and the growing popularity of juvenile transfer spurred some correctional systems to begin closely examining the conditions of confinement for young offenders being housed in adult prisons. Some states housed their young offenders in special institutions separate from adults, and others housed them in juvenile correctional facilities. The young offenders in California that were sentenced to a CDC prison during the 1980's and 1990's were housed within the general population of the adult facilities without special programming (LIS Inc., 1995).

During the 1980's through the 1990's the CYA housed wards as young as 14- to 25-years old. Once a juvenile court commitment reaches the age of 25, they are released from custody regardless of how much time they were committed by the court (referred to as "maxing out"). Criminal court commitments could be housed in the CYA until they were 25 and then they were transferred to an adult facility to finish their commitment (had they been given that long a sentence). However, for any individual housed in the CYA, there is always the option of transfer to an adult facility once an offender reaches the age of 18 regardless of the type of commitment. This transfer can be either voluntary (i.e., the youth requests to be sent to a prison) or involuntary (i.e., the facility believes they no longer have resources available for the ward).

While this housing policy was in effect, California, and the rest of the nation, was experiencing an upsurge of youth crime that was reflected in the growth of the number of youth with criminal court commitments being housed in the CYA. During the mid-1990s, the number of young offenders in CYA custody far exceeded the resources

available. The CYA facilities were extremely overcrowded. In an effort to relieve overcrowding in 1996, AB3369 (California Chapter 15) limited the housing options for CDC commits that were being housed in the California Youth Authority. They were directed to be housed in the California Department of Corrections after they turned 18 unless they could complete their sentences by the age of 21 (in which case they could remain in the CYA). This policy change caused a significant decline in the number of adult commitments housed in the CYA. After 1996 the rate of youth housed in juvenile facilities steadily declined from 261.2 to 65.7 youth per 100,000 (Males, Stahlkopf, & Macallair, 2007).

In the year 2000, Californians passed Proposition 21, which lowered the age of youth considered eligible for transfer and shifted much of the discretion regarding transfer decisions to prosecutors as opposed to judges. This change essentially ensured that a greater number of young offenders would be serving time in the CDC.[17]

In response to this change, California implemented a Young Offenders Program, in which programming was provided for transferred offenders separate from adult inmates within a prison. A review of the program by the Office of the Inspector General in 2003 was commenced after the suicide of a 17-year old inmate in the program. This review found that in order to separate young inmates from their adult neighbors, young

[17] Then, in 2004, the director of the California Youth Authority and the director of the California Department of Corrections entered into an informal agreement that would send any young adult offender under the age of 18 back to the CYA for housing. After the youth turned 18 they could be returned to the Department of Corrections to serve out the rest of their sentence (unless they could finish before the age of 21 in which case they could remain in the CYA).

offenders were often confined to cells within their housing unit, with minimal recreation time, without access to sufficient education or some kinds of mental health treatment, and far more restricted in movement than comparable adults in the prison or juveniles in youth facilities (White, 2003). "Logistical and financial burden" was at the root of youthful offenders being moved often and not being housed in accordance with their ethnic, offense, or gang status (White, 2003: pg. 4).

The recommendation of the report was to house any transferred youth in the California Youth Authority until they reached their 18th birthday, in which case they could be sent to prison (Inspector General, 2003). However, later that same year the Prison Law Office filed a lawsuit against the CYA. The lawsuit claimed that nine of the CYA facilities were being operated like prisons and without an emphasis on rehabilitation (*Farrell v. Allen*, 2004; Ferro, 2006). After investigation, the Attorney General released a report in 2004 showing that 21 of 22 minimal standards, as determined by experts in juvenile corrections, were not met by the CYA (Ferro, 2006; Krisberg, 2003). Violations included to the use of cages in school, excessive use of psychotic drugs, lack of available treatment and use of force issues (de Sa, 2004; Warren, 2005a, 2005b). The capability of the CYA to act as a rehabilitative agent had been called into question, and the Governor and state legislature decided to begin systematically removing juveniles from housing in correctional facilities and closing a number of the CYA institutions (Furillo, 2007).

At the same time, the adult prison system came under fire for quality and conditions of the institutions. A reorganization of California prisons occurred in 2004 in response to an Independent Review Panel that declared there were a "multitude of problems" with the current system (Independent Review Panel, 2004). The review highlighted every aspect of the system from ethics to organization, from use of force to health care. The medical care was held in receivership by the California State Supreme Court. It was stated that inmates in California received less treatment inside prison than inmates in other prisons around the nation, and some received no treatment at all (Petersilia, 2006). Inside adult prison walls, California has a high gang presence, noticeable overcrowding, and a high inmate-to-officer ratio (Petersilia, 2006). Not surprisingly, California has been cited as having the highest recidivism rate in the country (Petersilia, 2006).[18]

In short, the "best" correctional housing option for young offenders is not clear, and a comparison of the differential impact of juvenile and adult corrections is imperative. Also needed is a more localized examination of the characteristics of the systems that produce correctional environments which ultimately influence inmate behavior. This study will inform the current debate in California regarding effect of housing on young offenders, but will also speak to an ongoing discourse, namely, what impact do our correctional practices have on young offenders' futures?

[18] The determination that California has the highest recidivism rate in the country changes depending on how recidivism is defined. This definition includes technical violations. However, comparing California's parolees simply on new commitments shows that the recidivism rate appears much like the rest of the country (Petersilia, 2006).

Chapter 3: Methods

Changes in housing policy dictate the feasibility of cross-system comparisons of young offenders in California. Current housing policies would make interviews and measurement of psychosocial maturation possible, but would not allow for comparable study groups. This retrospective study utilizes official data from the California Youth Authority (CYA) and California Department of Corrections (CDC) that allow for comparisons of young offenders in facilities for juveniles with those in adult prisons.

Study Design

Numerous studies have been conducted that explore the role of the carceral environment on adult inmates and juvenile wards. Two types of studies are most common. The first type, often referred to as "transfer" studies, is interested in the impact of sentencing in the criminal court as compared to adjudication in the juvenile court. These studies generally use the person as the unit of analysis and select comparison groups based on the court of commitment. Some transfer studies follow subjects just through the court processing (e.g., Fagan, 1996; Bishop, et al., 1996) and others also account for the nature of the sanction (usually prison versus probation) that follows the court processing (e.g., Bishop, et al., 1998). No study accounts for the court of commitment and also varies the correctional system. This is primarily because juvenile court commitments, if they are to be incarcerated, are generally sentenced to serve time in juvenile facilities, and criminal court commitments are sentenced to adult prisons.

The second type of study is one that selects facilities, then measures the individuals in the environment and follows subjects upon release (e.g., Feld, 1981). A subset of these studies sample residents in both juvenile and adult facilities and makes comparisons across jurisdictions (e.g., Feld, 1981; Forst, Fagan, and Vivona, 1989). The studies are generally descriptive in nature and offer unique insight into inmates' perceived and behavioral differences in their living environments. Other facility based studies measure the conditions of confinement and the subsequent impact on inmate behavior (e.g., Poole & Regoli, 1983). These facility-based samples generally do not capture the movement of individuals through various facilities. They are designed to measure the impact of the immediate carceral environment on immediate behavior (i.e., disorder or violence in the facility) and are less likely used to predict future offending.

The current research is a person-based study of the impact of incarceration experience on behavior as opposed to a facility-based study that selects subjects based on their residence in a facility. This study selects individuals and follows them from their court of commitment, through their correctional experience, and allows for movement across facilities. In other words, it allows for variation within correctional jurisdiction (i.e., from one facility to the next) and across correctional jurisdiction (i.e., adult versus juvenile correctional agencies). This comparison has been used in other empirical studies and has been deemed "reasonable" because both adult prisons and juvenile facilities are considered the "last resort" for those convicted of criminal behavior (Kupchik, 2007).

SAMPLE SELECTION

Characteristics of Sample Pool

One of the obvious critiques of research that compares individuals across jurisdictional systems is selection bias. It would be difficult to conclude that court of conviction and/or correctional jurisdiction are important factors in determining behavior when comparable individuals are not eligible for inclusion in both systems. Sample selection for this study intends to limit the variation across system of jurisdiction and to ensure that individuals included share qualities that could have made them eligible for housing in the CDC and the CYA.

Sixteen to twenty-five at age of release: Cases were eligible for inclusion in this research if the individual was 16 to 25 years of age at the time of their release from incarceration. Sixteen was set as the lower bound for inclusion because it is the youngest age an offender in California could be incarcerated in both a juvenile or adult institution. Twenty-five is the upper bound for inclusion because it is the maximum age an offender could be housed in a juvenile institution, and therefore, the last possible age to make comparisons with those housed in an adult institution.

Released in years 1995 to 1996: Individuals in this study must have been released from incarceration in the years 1995 or 1996. This time frame allows for a significant period of uninterrupted housing policy in the California Youth Authority (1984-1996). Specifically, this period allowed judges to specify that adult commitments to the CDC

under the age of 21 could be housed in the CYA until their 25th birthday. This policy was changed in 1996.

Serve time in state-run facilities in California: Third, only offenders committed by a California court who completed their incarceration in a state-run facility in California were included in the study.[19] Individuals who volunteered to serve their commitment in other states were excluded for three reasons: 1) comparable information on out-of-state facilities was not available, 2) the voluntary nature of the move may be indicative of a particular "type" of individual willing to move out of state, and 3) offender records in other states may not be measured with the same standards as those maintained by California corrections.

Individuals who only served time in jails/ juvenile halls or other local facilities (e.g., probation camps, halfway houses) were not included in this analysis. County-run facilities may have more variation across facilities than with state-run facilities that operate under one governing agency. Comparable information could not be expected from every county and the state system.

[19] The following commitment types were excluded from this study. Civil Narcotic Addict cases were excluded because commitment to prison could either be stipulated by the courts OR voluntary. County Diagnostic cases were excluded because offenders have not yet been sentenced and are only committed for a maximum of 90 days while the CDC completes a study of the individual. Interstate Cooperative cases were excluded because they include individuals that served their sentence in other states and are only serving out their parole in the state of California. Safekeepers are excluded because they are only committed for temporary housing for sheriff or police. Out-of-State Prisoner cases are offenders that are committed by an out-of-state court and allowed to serve time in California. Only one such case arose in the sample and had most variables missing. It was excluded. Offenders committed by a federal court and sentenced to serve time in a California facility were allowed in the sample however, no such cases arose and are therefore not represented here.

Also, individuals who were sentenced to serve time in facilities but who were released on time served without actually being admitted to a facility were not included. All individuals in this sample must have been physically present in a facility for more than 30 days.

Available recidivism data: Because recidivism is the outcome variable of interest only individuals whose post-release records are available and complete could be included. This condition excluded any individual who was discharged from parole due to death during the follow-up period. Individuals who served any portion of their post-release supervision out of California do not have changes in their parole status (i.e., revocations or new commitments) noted in their California records, hence parole records would not indicate a revocation even if one had occurred. These individuals were excluded. Individuals who were released from a youth facility without parole (i.e., maxed out of facility) that subsequently moved out of state cannot be identified, and are included in the sample.

New admissions: Only offenders who are released from a new admission during the years of interest (i.e., 1995 to 1996) are included in this study. This study examines the impact of incarceration on post-release behavior and therefore, characteristics of the time on the street between incarcerations may produce a number of confounding variables that could not be measured. To increase confidence that effects are a result of the experience with incarceration and not qualities of post-release life, only individuals released for the first time during 1995 or 1996 are included.

Male offenders: This research utilizes only male offenders. Female offenders in California have a different incarceration experience than their male counterparts. They serve time in separate correctional facilities. Even a facility deemed to be for both males and females is segregated. In 1998, the CYA had 6 facilities for juvenile males and the CDC ran 29 adult male prisons. In contrast, the CYA had 1 facility for female wards and the CDC had 6 prisons that housed female inmates. Thus, the number of potential cases and the institutional movement is severely limited for female versus male inmates/wards. In addition, research has shown that different factors predict behavioral outcomes in male and female offenders (e.g., Bales & Mears, 2008). Trulson, Marquart, Mullings and Caetie (2005) argue that institutionalized males and females should be considered separately. Therefore, the important predictors of female recidivism should be fit specifically to that population and should be a point of future research.

Age at admission: The need for comparable groups requires that all individuals be eligible for inclusion in all other groups. For example, juveniles incarcerated at the age of 13 are not included in this analysis because there was no correctional policy or California law that allowed them to be housed in an adult prison. Furthermore, individuals that were admitted at age 25 were never permitted in a California Youth Authority facility. The ages of admission that were eligible for housing placement in both systems were individuals admitted between 14 and 21. At this time in California 14-years old was the youngest age at which an individual could be tried and sentenced

by the criminal justice system (via transfer laws).[20] The upper-age bound for criminal justice system commitments housed in the CYA was 23, however, 21 was used as the cutoff point because it is the eldest age in which a juvenile court commitment could be admitted to the CYA.[21]

Records sealed: In 27 cases of juvenile justice system commitments housed in the CYA that match the above criteria, no information was available because the offenders petitioned the court to have their records sealed. These individuals are not included in this analysis.

Spent time in only one correctional jurisdiction: As stated previously, it is possible for young offenders to serve time in both adult and juvenile correctional facilities. Often these offenders would not be eligible for inclusion in this study for other reasons. For example, an offender who has reached the maximum age of the CYA jurisdiction would be transferred from a juvenile facility to an adult facility to serve out the rest of his sentence. This offender would not have been released prior to age 25 and therefore would not be eligible for inclusion in this study regardless. There are, however, offenders that would meet all other inclusion criteria for this study except for the fact they served time in both correctional systems. The most common example, as explained by correctional personnel and verified by the data, is an older offender (i.e., older than

[20] Despite the law, no 14-year old during these years was sentenced through the criminal justice system. The youngest individual sentenced by the criminal justice system was 15 at the age of admission (which could mean he was 14 at the year he was tried). Age at arrest or conviction was not available in this study.
[21] Again, note though the juvenile justice system jurisdiction is generally conceived to be 18 years old at the time of the perpetration of the crime, we are considering the age of admission to the CYA, which could be later than the perpetration or even the adjudication.

18) in a juvenile facility who commits a new crime while incarcerated, is tried as an adult, and then sentenced to serve additional time in an adult facility. When this criminal sentence has been completed, the individual is returned to the juvenile facility to serve out the remaining time on the first commitment. These cases can either be juvenile or criminal court commitments. In these data, 89 offenders were excluded because they had served time in both juvenile and adult facilities during their commitment.

In total, 9,892 young offenders in California met the criteria for inclusion in the sample. Table 2 presents the characteristics of the study sample. Approximately 18% (n=1,806) of the offenders were committed by the juvenile court, and the remaining 81.7% were committed by the criminal court. The CYA took responsibility for 32.3% of the sample after court commitment (n=3,198) and the CDC admitted 67.7% (n=6,694). The average age at admission for the sample was 19.4 years (SD=1.43). The sample is racially and ethnically diverse: 30.2% are African American, 16.1% are White, 46.3% are Latino, 4.5% are Asian/Pacific Islander, and 3.0% are another race or ethnicity. A majority of the sample was committed for a person-based offenses (50.7%, n=5,012). The remaining offenders were committed for property (24.3%), drug related (17.9%), and other offenses (7.1%). The entire state of California was well represented in this study. The largest percentage of offenders came from Los Angeles county (39.1%, n=3,870). The rest of Southern California, not including Los Angeles county, comprised

27.8% of the sample. The "Bay Area" committed 12.8% of the youth, and the rest of 39 counties in Northern California represented 20.4% of the young offenders.[22]

Table 2. Characteristics of the study sample.

	n	%/mean (SD)
Sentencing Court		
Juvenile Court	1806	18.3
Superior Court	8086	81.7
Housing Jurisdiction		
CYA	3198	32.3
CDC	6694	67.7
Age at Admission	9892	19.4 (1.43)
Race/ Ethnicity		
Black	2984	30.2
White	1589	16.1
Latino	4579	46.3
Asian	448	4.5
Other	292	3.0
Commitment Offense		
Person	5012	50.7
Property	2402	24.3
Drug	1775	17.9
Other	703	7.1
Region of CA.		
Bay Area	1262	12.8
Northern California	2014	20.4
Los Angeles	3870	39.1
Southern California	27.8	27.8

[22] The 58 counties in California are classified as follows: Los Angeles County is coded "Los Angeles." "Other Southern California" is composed of 9 counties, San Luis Obispo, Kern, Santa Barbara, Ventura, Orange, San Bernardino, Riverside, San Diego, and Imperial. Nine counties are generally considered the "Bay Area" and are Sonoma, Napa, Marin, Solano, Contra Costa, Alameda, San Francisco, San Mateo, and Santa Clara. Lastly, all of the remaining 39 counties constitute "Other Northern California."

DATA COLLECTION

After University Institutional Review Board Approval and approval from the California Department of Health and Human Services Committee for the Protection of Human Subjects, the California Department of Corrections and Rehabilitation (CDCR) granted approval for and agreed to cooperate with this research. The CDCR operates two distinct Offices of Research, one in the Division of Adult Operation (DAO, formerly the California Department of Corrections, CDC) and the other in the Division of Juvenile Justice (DJJ, formerly the California Youth Authority, CYA). This research utilizes both official data and published reports from both research offices. Great care was taken to ensure the data were as comparable as possible despite originating from two separate sources (specifications of measurement are described in the following sections).

Publicly Available Information

Measures of institutional environment were collected from published reports by the (former) CYA and CDC. Most institutional environment measures for the CDC are retrieved from the series of reports *Characteristics of Populations in California State Prisons by Institutions*. Similarly, most CYA institutional measures are retrieved from the series of reports *A Comparison of the Youth Authority's Institution and Parole Populations.* The CDC measure of overcrowding was obtained from *Monthly Total Population Reports* for June 30th of each year retrieved from the CDCR website. The CYA measure of overcrowding was collected using the *Population Management and Facilities*

Master Plan. Sources were available either online at the CDCR's website, in hard copy form from University or State libraries, or provided in electronic format by the CDCR.[23]

Institutional environment variables were coded from reports that represent the midpoint of each calendar year (June 30th). In the rare instance a publication was unavailable (i.e., a needed date was not available from libraries or the internet and the CDCR could not find a replacement copy) the publication closest in date to the missing copy was used.[24] For the CYA, all variables were measured at the midpoint of each year, with the exception of overcrowding in which the design capacities for the facilities were reported on December 31st of each year. Information was collected for each facility, during each year in which an individual in the study was incarcerated in California. A composite score (detailed later) was then created for each individual that reflects the incarceration environment in which they served time during their commitment. As such, the characteristics of any particular facility are not reported.

Official Data Collection

The CDC compiles and maintains all information regarding the criminal court commitments housed in their facilities in California. Their systems are designed and operated independently of data on youth housed in juvenile facilities in the state. To obtain data for these groups two separate data downloads were required. Data

[23] All reports were considered publicly available, however, sometimes reports were missing from libraries or unavailable online in which case the organization provided archived copies to supplement this research.

[24] For the year 1991, the closest dated report for the CDC was December 31, 1991.

specialists in each division were responsible for downloading official data from numerous databases under the specifications of the researcher. Data specialists were instructed to provide information on all individuals released from institutions ages 16 to 25 between the years 1995 and 1996. The CDC provided both offender information and re-commitment information for each individual. The researcher was responsible for selecting out the sample used in these analyses.

The recidivism data on CYA commitments was more complicated. Individuals released from CYA custody after the age of 18 and are returned for a non-parole violation (i.e., a new crime) will be committed to the adult correctional system. They are, after all, now legally adults. Therefore, releases by the CYA for the given years were checked for recommitment in the juvenile and the adult systems. Given the information was deidentified to protect juveniles, this required extensive work by the Department of Corrections.[25]

VARIABLES

Dependent Variable: Recidivism

For this study, the outcome measure of interest is recommitment to a state-run facility for any reason after release from incarceration. Recidivism data were censored at five years for each release cohort (i.e., 1995 releases were followed until 2000 and 1996 release until 2001). Survival curves are used to address differences in likelihood of

[25] Unfortunately, there is no quality control measure available for the work conducted by the agency in regards to this measure.

recommitment while controlling for numerous covariates. Hazard ratios produced by survival analyses are used to interpret the risk of recommitment given importation, deprivation, and developmental factors.

There are limitations to this measure of recidivism. Recommitment is accompanied with concerns that relying on conviction increases the odds of a Type II error (for people who had in fact committed a crime but are not convicted) as opposed to using arrest which will increase the odds of a Type I error (due to people being arrest without cause and not subsequently convicted) (Maltz, 1984). For these reasons, it has been suggested that arrest is a better measure of recidivism than conviction (Maltz, 1984). However, data availability and the deidentified nature of the juvenile data severely limited the possibility of other recidivism measures.

Independent Variables

As Wooldredge, Griffin, and Pratt (2001) note "the inclusion of objective measures of facility environments in multilevel models may provide more reliable estimates of the relative effects of predictors from each level of analysis because of significant intercorrelations between inmate background variables and perceptions of environment" (pg. 204). As a result, the facility level incarceration environment measures used in this research are not based on individual's perceptions of their environment.

Importation: Pre-incarceration Characteristics

Sentencing Court – This measure represents the court that sentenced (i.e., committed) the individual. It is a dichotomous variable: juvenile court or criminal court. It can be considered the "legal label" of the individual.

Age at Admission – This variable measures the age of the individual at the time of their admission (not the age they were convicted of their crime). More specifically, it measures the age at which they entered the institution. Age at admission has being used as a measure of serious involvement in crime in other importation studies.

Race/Ethnicity – The individual's race or ethnicity was categorized as Black, White, Latino, Asian/Pacific Islander or Other. For dummy coding purposes, Black was selected as the reference group. For most analyses Asian/Pacific Islander was included in the Other category to retain statistical power. Race/ethnicity contributes to the creation of social situation, cultural expectation, and potentially law enforcement orientation toward offenders that can be imported into incarceration.

Commitment Offense – Commitment offense was grouped into four categories: person, property, drug, and other. It is a measure of the most serious offense the individual was convicted of during this commitment term. This is included as a measure of the "seriousness" of the offender prior to incarceration.

Region of California - The state was divided into four components, Los Angeles, (the rest of) Southern California, Bay Area, and (the rest of) Northern California. This measure was included as a proxy for the type of community to which each individual was exposed. Each region in California has qualities that distinguish it from the rest of the state. Los Angeles is considered the urban center of Southern California, but distinct from the Bay Area, the urban center of Northern California.

Deprivation: Incarceration Environment

Composite measures of the incarceration environment are calculated in the following way. The commitment history (i.e., the name of the facility, days spent, and month and year at each institution during the commitment) is compiled. Because the characteristics of the institutions are dynamic and individuals can move from facility to facility, the calculated composite measure of each incarceration environment variable varies for each case in the data. Each incarceration environment variable reflects the value of the environmental measure multiplied by the proportion of time the individual spent in each facility. The measured values were collected for each facility for the years 1989 to 1996 (the years in which the youth were confined during their new admission).[26] The institutional level variables were created in the following manner. Youth A was housed in 3 institutions during his commitment. He spent 365 days in

[26] One individual was incarcerated in two different facilities in 1988. The characteristics of environments in 1988 were not available and the values were replaced with the characteristics of those prisons measured in 1989.

institution A, 348 days in Institution B, and 23 days in Institution C. The characteristics of facility level variables (e.g., overcrowding) were measured for each institution at the mid-point of each calendar year. Youth A was committed to Institution A in 1994. He moved to Institution B in 1995 and to institution C in 1996. Therefore, his overcrowding value would have been calculated as [(365 $days_{FacilityA}$ x $\%overcrowding_{1994, FacilityA)}$ + (348 $days_{FacilityB}$ x $\%overcrowding_{1995, facility\ B)}$ + (23 $days_{facilityC}$ x $\%overcrowding_{1996, FacilityC}$)/Total Days Incarcerated]. A similar calculation is done for each institutional level variable in order to allow for comparability despite different systems of jurisdiction.

This method allows for changes in the characteristics of the facilities over time. The state correctional system can often change the purpose of prisons to suit their changing needs, and these changes will significantly impact the environmental experience. For example, Folsom State Prison was populated by 75% violent offenders in 1989, but by 1996 the percentage had decreased to 39.5%.

Incarceration environment characteristics are measured only for CDC prisons and CYA facilities. Information about time spent in jails (while out to court), re-entry facilities, hospitals, clinics, temporary releases, and conservation camps is not included. Detailed information about these facilities was not available. Moreover, with the exception of conservation camps, most time spent in these types of places was relatively brief. While the characteristics of camps are not included as “institutional level” variables in the composite score sense, camp placement is included as a dummy variable.

Housing Jurisdiction – This measure represents the housing jurisdiction in which the individual was originally sentence to serve time. This is a dichotomous variable with the values for CDC or CYA. Again, no offender served time in both types of facilities.

Months Incarcerated – Length of incarceration reflects time without autonomy, prisonization, and strain placed on relationships with family and friends outside. Time served is not a composite facility level measure. This variable reflects the months an individual had been incarcerated on this commitment. It is measured from the first day in any facility to the day of release.

Institutional Movement – Institutional movement is the count of movements from one facility to another. It is being used as a measure of stability in programming and expectations. It does not include moves between housing units within a facility, moves out to court, temporary releases, stays in hospitals, or moves to re-entry facilities or to non-CDC/CYA facilities that are run by the CDCR (i.e., community correctional facilities or converted jails). A move from a reception center to the general population is considered a within facility move between housing units (and therefore not counted as a "move") unless the individual was transferred to another facility in which case it would be counted as a "move."

Crowding – Crowding is included to represent the likelihood of personal space and taxed resources. It is composite measure of the total percent of inmates housed based on the design capacity of the facility.

Percent Violent Offenders in Facility – The percent of violent offenders in the facility is being used as a measure of management orientation of the facility toward their inmates. Note: It is not the claim that inmates convicted of a violent crime are necessarily more violent, but it is considered a proxy for the amount of staffing or security of a facility. It is also a measure of potential "learning" for offenders (i.e., kinds of offenders that might share their "knowledge").[27]

Percent of Inmates Racially/Ethnically "like you" – Given the racial divide in California correctional facilities, a measure of racial composition of the facility is important. Unfortunately, which racial group is of particular importance is not informed by any literature or theory.[28] This measure was created to capture the impact of group effect on incarcerated individuals. Is there an effect of serving time with a larger proportion of people "like you" as opposed to comprising a group that is not well represented in facilities?

Age of Inmates in Facility - The age of inmates in facility is a composite measure of the median age of inmates in all facilities an individual served time during his

[27] Due to issues of extreme multicollinearity, the proportion of property, drug, and other types of offenders could not be included in the models. The percent of violent offenders was chosen in lieu of measures of other types of offenders because facility orientation to this group of offenders is generally more extreme than to other groups.

[28] Measures of Black, Latino, White, and Other ethnic groups could not all be included in the model due to issues of multicollinearity.

commitment. It represents the "sophistication" of the inmates around whom an individual interacted. This measure is intended to address concerns that young offenders are disadvantaged by being exposed to older, more experienced inmates.

Percent New Admissions – Percent new admissions in a facility is a measure of institutional turnover. Repeated changing of inmates in a facility is included as a measure of consistency and normality. This is a composite measure of the percent of the inmates/ward on a new admission (as opposed to a parole violation). Facilities that experience a significant amount of turnover (i.e., inmates consistently churning in and out of the facility on parole violations) are hypothesized to be less stable environments to gain familiarity and maintain a consistent routine.

Distance from Home – Distance from home is included in this study as a measure of the likelihood of contact with family and friends (and general connection to life outside). Different measures of distance from home were required for adults and juveniles. The last residential address and zip code was not available for individuals sentenced to the CDC, therefore in lieu of the most direct measure, distance from home was calculated in the following way. First, the zip code of the physical location of each prison was collected. Second, the zip code of the

parole unit of first release was collected.[29] In California, an adult inmate is released to a parole unit in the county in which they were committed. Within the county, they can be assigned to a parole unit depending on the closest location (with attention paid to staffing requirements) to the inmate's residence at the time the individual was committed. Third, the drivable distance between the zip code proxy for "home" and every prison the individual was housed in during the commitment were calculated. Mileage was calculated using the internet website MapQuest. Lastly, the average distance was calculated by weighting distance from home by time served in each institution.

One limitation of this measure of distance from home is that in this period in California, offenders were paroled to the county in which they committed their crime (not necessarily to their residence). However, individuals usually commit their crime close to home (e.g., Capone & Woodrow, 1976; Cohen & Felson, 1979). Given this, this measure of distance from home seemed better than alternatives.[30]

[29] The addresses of two parole units (Garden Grove and Santa Barbara) were not available. The zip codes for these units were selected by obtaining all possible zip codes for the city and randomly selecting one of the zip codes. Distances were calculated from the chosen zip code to represent the individuals from that unit (Cases effected: 70 from Garden Grove and 30 from Santa Barbara).

[30] Using county of commitment was a viable option as a proxy for this measure. A random zip code from within the county could have been chosen for each individual and distances could have been calculated. However, due to the extreme variation in size of counties in California this method would have produced more accurate measurements for smaller counties and less accurate measurements for larger counties. For example, San Bernardino County, the largest county in California, covers over a 20,000 square mile area. In comparison, Marin County, one of the smallest counties in the state, is only a little over 500 square miles. A random placement in San Bernardino County would have produced far more error than a random placement of an individual in Marin County.

Calculating distance from home for individuals that were housed in the CYA was different. At the time of study, wards that were released from the CYA could have 1) maxed out of the system (i.e., reached the age of jurisdiction and been released without the parole requirement), or 2) paroled and been supervised by the CYA in the community. Because the CYA is a much smaller than the CDC, they have far fewer parole units in the community and the parole agents are responsible for traveling to the youth as opposed to the youth finding their way to the parole agents. As such, parole unit zip codes for CYA are not as good a proxy for home as adults.

For youth housed in the CYA, the last known city of residence was available for most cases (64.8%). To fill missing cases, the city of residence at commitment was collected. If both cities were available for an individual, the city of last known residence was privileged. Regardless, this procedure still only produced information on 76.8% of cases in the sample. The strategy to provide data for the remainder of cases will follow.

In total, 366 cities in California were represented in the data. It was impractical to estimate distance calculations for 366 cities to every youth correctional facility in the state. As such, the cities were recoded to cluster a number of smaller cities into a "city region." A city region was defined as a center city and the 20 mile radius (in miles, but not driving distance) around that city). For example, Sacramento city region includes the city and all of the other

cities within a 20 mile radius of Sacramento. The 10 cities that produced the largest number of CYA releases in the sample were chosen (which happened to coincide with 10 of the most populated cities in California). Then, other cities were chosen that would most efficiently encapsulate the 366 original cities. When cities fell in overlapping regions shortest distance to the center city was given priority.[31] If generally equidistant, privilege was given to the city region that most included the county for which the city belonged.[32] The 366 original cities were recoded into 59 city regions. The zip code of the center city for each region was used to calculate distances from home to each facility.[33] Then, those distances were assigned to every individual residing in that city region.

The distance from home for the 23.2% (n=908) CYA commitments with missing data was calculated in the following way. The county of commitment for each individual was known. Each county was assigned to the city center that encapsulated the greatest area within that county. In most cases, each county is logically represented by the largest city in that county. For example, Bakersfield

[31] Given this tactic, some cities are represented by city regions that are not in the same county. I privileged recoding by the closest possible distance as opposed to accuracy in representing county lines.
[32] Unincorporated areas of the county were generally included in the largest city region created for that county. For example, the unincorporated area of Los Angeles county was included in the Los Angeles city region (as opposed to the Long Beach city region or the Pomona city region). In rare instance, no city in a county became a city region, despite the fact that the county had youth residing in an unincorporated area of that county. In these cases, the unincorporated area was classified in the city region for which most of the county was included. For example, Oakland is in Alameda county, but the Oakland city region for this study includes most of the cities in Alameda, Contra Costa, and some of Marin County. The unincorporated area of Contra Costa county is included in the Oakland city region.
[33] Zip codes for cities at the center of the city regions were obtained in one of two ways. If the city was also represented in the adult sample (i.e., there was an adult parole unit in that city), the same zip code was used in both the adult and juvenile samples. If the city was not represented in the adult sample, a random zip code was chosen from all possible zip codes present in that city.

is considered the city center for Kern County and is also fittingly the largest city in the county. Anyone with missing data that was committed by Kern County (n=17) would then be assigned the zip code to the city of Bakersfield. Then, as with each other individual, the mileage from each facility to the city center was imputed for each individual.

This variable can be critiqued for a number of reasons. First, it is less than ideal that this variable is measured in such unique ways. The construct is important as a test of deprivation especially for a young offending population, but there will always be a valid question of measurement error. Second, an individual's home might not necessarily reflect the home of his potential visitors. It is assumed that most individuals have some support system (whether family or friends) around their residence that would be candidates for visits. Another critique may implicate the choice to use mileage between locations assuming that visitors would drive from home to the prison (and not fly), or that it is more convenient to visit a prison that is nearer an airport (e.g., Sacramento, Vacaville) as compared to those that are not (e.g., San Luis Obispo, Lassen, Del Norte) and therefore visits would be more frequent regardless of driving miles. Mileage was used for consistency despite these alternative explanations.

Participation in Conservation Camp – The camp variable is a dichotomous measure of whether the individual was ever sentenced to a camp during the commitment. These camps were used in lieu of a secure facility and not as

probation camp or re-entry facility. This is a measure of treatment while incarcerated, but does not represent the length of "treatment" or the time spent in camp. It should be noted that participation in a conservation camp requires permission from the agencies. It is generally reserved for inmates with little risk of escape or violence potential.[34]

Development

Age at Release from Incarceration – As a proxy for development, the age at release from incarceration will be used. This measure is a composite of age at admission and months served (and is therefore, never included in a model with these measures). It represents an individual's point of development after incarceration. Theory would hypothesize that offending behavior will decline with age (i.e., as offenders mature toward adulthood). This study will use this measure to investigate if incarceration impedes this expected effect.

LIMITATIONS OF VARIABLES

In addition to the obvious limitations of using official data, there are a number of other aspects to the available data that are less than ideal. One limitation unique to this study is the availability of measures that are consistent across both housing jurisdictions. This research relies on two jurisdictions that established their data collection protocols independently and rarely share or compare data. As a result, part of

[34] Both the CYA and CDC run conservation camps for their inmates. The camps were not designed to be equivalent. They represent a treatment opportunity. The operation and expectations of the camps are not necessarily comparable.

the finesse involved in this study was to maneuver through both systems to extract data that can be reliably and usefully evaluated. However, the ideal and the actual do not always converge. There are four variables that do not appear in this study that can reasonably be expected to matter. The variables are treatment received, measure of mental health issues, prior record and information related to gang membership (both at the individual level and at the facility level). These variables were not available in both CYA and CDC data for the study period.

Treatment Received - In a study purporting to uncover differences in the impact of incarceration in a juvenile versus an adult correctional facility, the issue of treatment is paramount. The introduction of this study made an explicit point not to assume that juvenile facilities, despite their rhetoric and mission for rehabilitation, were necessarily more effective in their administration of treatment than adult facilities. However, doing retrospective research using official data comes with consequences. The research can only extend to information that was captured and retained by the organization. Data limitations have affected the ability to measure treatment while incarcerated. Because the adult system and the juvenile system vary so widely in their definition and administration of treatment, the original intention was to create a rough, dichotomous variable indicating “received treatment, yes/no.” “Treatment” for the purposes of this study, would indicate any vocational, education, or psychological programming while incarcerated. Information from the CDC indicated that this measure would yield approximately 6% of young offenders incarcerated in an adult prison received some sort

of treatment during their stay. Treatment information from the CYA encountered two issues. First, treatment information for the time of study was not in electronic form but in hard copy files. Second, the hard copy files of the criminal court commitments housed in the CYA were not available. In extensive discussions with the research and administrative personnel at the CYA, it became quite clear that even if all hard copy files had been available, based on the gross definition of "treatment" in this study, all individuals housed in the CYA would likely have been coded "yes." The question for the CYA was not whether an individual received treatment or not (as it is mandated and a group activity rather than an individual choice), but the duration, intensity, and variety of treatments received.

Therefore, the variable treatment received does not exist in this study (with the exception of participation in camp). However, should these findings uncover that being housed in the CYA jurisdiction predicts later behavior one very plausible explanation is the availability and participation in treatment. A future study will compare only individuals housed in adult prison. For this study the variable "treatment received" will be introduced. The results of this comparison should also lend itself to implications of the role of treatment in a correctional setting.

Mental illness – Mental health is often cited as a potential variable impacting the correctional experience of both adults and juveniles. However, in the youth offending population there are concerns with appropriately diagnosing mental illness because the presentation of disorders are believe to be highly tied to this stage of development.

There are questions regarding whether it is possible to make a mental health determination given the "moving target" nature of the population (Grisso, 2004). Conceptually, the inclusion of mental health measurements is tenuous, and practically, there is no consistent measure of mental health across the adult and juvenile jurisdictions. For these reasons, mental health is not included as a measure in this research.

Prior record – A measure of prior record is a common importation variable. It is often used as an indicator of embeddedness in crime. During data collection, a dichotomous variable was collected that indicate whether this admission is the individual's first to CDC/CYA or whether they have previously completed a commitment. It should be noted that for those individuals entering prison a record of their prior CYA commitment was not available. Therefore, any prior admissions would reflect a previous commitment to prison only (less than 10% of respondents had a prior commitment). For those sentenced to the CYA a prior commitment would only include a prior commitment in the CYA. No CYA commitment was found to have a prior commitment.[35] This variable was not included in data analysis to allow for consistent models across groups. As an attempt to measure embeddedness in crime, the measure age at commitment was included. Studies show that individuals that are involved with crime at an earlier age are more likely to reoffend (e.g., Ezell, 2007).

[35] This is not a surprising finding. This research only includes new commitments, and therefore to have a prior commitment in the CYA would require the completion of a previous sentence, successful parole, and then a recommitment to the CYA. Given the age of most of these offenders, it is highly unlikely that this occurred.

Gang Membership – When studying the California correctional system, the issue of gangs cannot be ignored. Gang membership is highly implicated as an important importation variable and deprivation variable. In addition, the presence of gangs in California facilities is undeniable. During this period of study, the collection of gang membership information during intake was not routine and therefore, not available. The CDCR now has an official procedure in both their juvenile and adult facilities for collecting gang affiliation information. Previous studies have shown that gang membership is significantly related to offending while incarcerated and recidivism post-release (MacDonald, 1999; Kuanliang, et al, 2008, Visher, et al., 1991). Future studies should make use of this information to determine the impact of street and prison gang membership in post-release behavior.

ANALYTIC STRATEGY

The following data analysis chapter is divided into three research questions. The best analytic approach to answer each research question was assessed. In general, descriptive statistics are presented first, followed by tests of differences (e.g., t-tests, ANOVAs) and association (e.g., correlations, chi-square). A series of bivariate and multivariate Cox proportional hazard models are estimated to determine the rate of recommitment to a juvenile or adult state correctional facility for the sample. In addition, an analysis of the time to recommitment is included when appropriate.

The ability to find statistical significance increases due to the large sample size. In an attempt to make conservative generalizations, the convention of using $p<.05$ to

denote statistical significance will be interpreted as a sign of "trending" and *p<.01* will be considered "statistically significant."

Models and Tests of Assumptions

The Cox proportional hazard (CPH) model is a semi-parametric technique in survival analysis. It is a ratio of the rate of occurrence of an event to the rate of survival from the event. Unlike a logistic regression, the CPH offers a comparative measure of survival experience over a time period (as opposed to simply the end of a study) (Hosmer, Lemeshow, & May, 2008). In simple terms, a Cox proportional hazard analysis ranks the times of failure, in this case recommitment, and performs a series of analyses predicting probability of failure at each time period. It essentially combines the results of all of the models. It can then be used to plot functions (i.e., hazard, cumulative hazard, or survival) or produce estimates of the rate of recommitment given covariates.

Cox proportional hazard models have been used extensively in the criminological literature to test predictors of recidivism (e.g., Farabee, Hser, Anglin, & Huang, 2004; Huebner, Varano, and Bynum, 2007). The CPH function makes no assumptions regarding the functional form of time to failure. This technique also sufficiently handles censoring of data that is common in recidivism research.[36] "Success" is often defined as the absence of failure in recidivism studies (as opposed to known desistence from crime). In these cases, the lack of the failure event is censored data. Survival analysis is the preferred method of studying recidivism (Maltz, 2001). Both CPH and logistic regression

[36] Subjects in this study were followed from the end of their commitment (i.e., no left censoring) until five years post-release. Some subjects did not recidivate during this period. Their records are right censored.

can offer similar point estimates, however, CPH compares the risk of failure over time. Descriptive, univariate Kaplan-Meier survival curves produce 25% and median survival times and are presented when a measure of time to failure is informative.

On a technical note, CPH assumes there are no tied event failures. In other words, it assumes that no two individuals will be recommitted at any given time point (in this case, the same day). This is generally not the case in practice. Therefore, a method to deal with tied failures must be chosen. The Efron approximation was chosen in this study.[37]

Tests of CPH assumptions and specification were conducted. First, tests of likelihood of omitted variables were run. Each model presented in this research produced results that do not indicate any potential problems. Next, tests of the CPH assumption of proportional hazard were performed. This test assumes that each covariate affects the rate of hazard at the same proportion at each time point. An analysis of Shoenfeld residuals tested the proportionality assumption of each model. A Bonferroni adjustment was applied to account for numerous covariates in each model. Results show that variables adequately conformed to the proportional hazard assumption. In one instance, the analysis for criminal commitments housed in the CDC,

[37] Marginal and partial calculations, while most accurate, were not chosen due to the size of the dataset and the presence of substantial number of ties. These calculations require significantly more time to calculate and can lead to poor results in the presence of numerous ties. The Breslow approximation, which is the default method in numerous statistical programs, works particularly well when the number of failures is small relative the group at risk. This is not true in this study. The Efron method is also an approximation and therefore is less cumbersome to calculate than the partial or marginal calculations. The Efron method handles ties by using probability weights to adjust for risk (Cleves, Gutierrez, Gould, & Marchenko, 2008). Preliminary models were fit using all four techniques to deal with tied data show no significantly different results.

the variable Months Served was misspecified when entered linearly. The variable was squared and any indication of misspecification disappeared. In the same model, local results for property offenders suggest a slight departure from the proportional hazard assumption. In order to retain congruence between models, this variable was not altered.[38] Globally, the tests were significant. A graphical analysis of covariates shows basic conformity to the proportional hazard assumption (i.e., the curves run parallel).

Chapter 4: Data Analysis

Research Question 1: How does the sentencing court's legal determination (i.e., "juvenile" versus "adult") as compared to the correctional handling or housing jurisdiction (with "juveniles" or "adults") predict recidivism?

SENTENCING COURT

Previous transfer and waiver studies suggest that the legal label of adulthood (i.e., being sentenced in the criminal court) significantly increases recidivism. Though this is not a study on transfer (i.e., the sample is comprised of older youth, not simply, juvenile age offenders), an analysis of the impact of the sentencing court can inform this issue. The rate of recommitment to a facility within five years of release for offenders sentenced by the juvenile court was compared with those from the criminal court. In this sample 57.9% of youth sentenced by the juvenile court were recommitted as were 57.5% of criminal court youth. This difference is not statistically significant ($x^2(1)=.11$,

[38] An analysis of the distribution shows that when adjusting for all other variables in the full model the proportional hazard is larger at earlier time periods for non-property offenders than property offenders. For later time periods, the proportional hazard diminishes.

p=n.s.). These results suggest sentencing court alone does not distinguish recidivists from non-recidivists.

The sample was divided into two age groups to more closely approximate a population represented in transfer studies. Table 3 compares the recommitment of offenders that were admitted to incarceration at or before 18 years old with individuals that were admitted at an older age (19-21). It is assumed that most individuals admitted to incarceration at age 18 committed their crime as a "juvenile."[39] This measure is used because age at the commission of the crime or at sentencing was not available. Approximately 32.8% of this sample comprised these younger offenders (admitted 16-18). Within the group of younger offenders, 58.2% of juvenile court offenders recidivated and 58.8% of criminal court offenders were recommitted. This difference was not statistically different ($x^2(1)=.09$,*p*=n.s). Interestingly, there is a greater disparity between the rates of recommitment between older youth that were sentenced by the juvenile court versus the criminal court. Only 49.2% of youth admitted to incarceration at ages 19-21 that were sentenced by the juvenile court were recommitted, in contrast with 57.2% of these older youth that were sentenced by the criminal court. This difference, however, is not significant ($x^2(1)=1.6$,*p*=n.s.).

[39] There is a dearth of research on the time between commission of crime or arrest and incarceration. Few studies have examined court processing time. Studies on juveniles and transferred youth find that more serious offenses (i.e., those that will result in incarceration) have longer cases processing times. Butts (1996) found that the most serious cases in the juvenile court took approximately between three to four months for court processing. Other studies have found that transferred youth will have longer court processing times than juvenile court cases (Myers, 2005).

Table 3. Rates of recommitment by sentencing court for young versus older at admission.

	Admitted at 16-18		Admitted at 19-21	
	Juvenile Court (n=1745)	Criminal Court (n=1496)	Juvenile Court (n=61)	Criminal Court (n=6590)
Not Recommitted	41.8%	41.2%	50.8%	42.8%
Recommitted	58.2%	58.8%	49.2%	57.2%

HOUSING JURISDICTION

These findings suggest that there are other factors, independent of the court determination of "criminal" or "juvenile," that determine future offending. As previously mentioned, a limitation of transfer and waiver studies is the lack of consideration of characteristics of the punishment that follows court determination. It is possible that differences in future offending result, not from the court determination or the transfer process, but from the treatment and sentence that follows. In this sample, all individuals were sentenced to incarceration in a state-run facility. The role of correctional housing jurisdiction on recidivism will be investigated.

In this sample, 60.8% of offenders housed in the CDC (i.e., adult prisons) were recommitted to a correctional facility as opposed to 50.8% of young offenders who served time in the CYA (x^2 (1)=88.38, $p<.01$). While the legal label "juvenile" or "adult" did not significantly distinguish between those recommitted and those who were not, the "treatment" of a young offender as an adult or juvenile did matter. Offenders housed in juvenile facilities (i.e., the CYA) were significantly less likely to recidivate.

Cox Proportional Hazard Models

Two bivariate Cox proportional hazard models were run and replicate the previous findings. In a CPH analysis coefficients are particularly useful when interpreted as "hazard ratios."[40] A hazard ratio in a survival analysis is conceptually equivalent to the odds ratio of a logistic regression analysis. It represents the rate of progression to failure or the risk of recommitment at each time period. Like the odds ratio, a finding of no effect would be equivalent to 1. A hazard ratio greater than 1 indicates an increased rate of recommitment. A hazard ratio less than 1 indicates the covariate has a buffering effect on the likelihood of recidivism.[41] The hazard ratio is not an appropriate indicator of speed to recommitment. Changes in time to recommitment can best be described by a review of the median survival time which will be described in greater detail later.

Plots of the survival curves are useful in comparing rates of recommitment for different groups. They can also be used to describe increases and decreases in the rate of recommitment over time (again, it is not a measure of time to recommitment).

A bivariate Cox proportional hazard model using the predictor sentencing court was estimated. Then, a bivariate CPH using the predictor housing jurisdiction was run. Lastly, both variables were included in a CPH model. Figure 4 presents the survival curves for individuals sentenced in the juvenile court and for individuals sentenced in the criminal court. The curves show little difference in the rate of recommitment. The

[40] In fact, the default in most statistical programs is to provide the hazard ratio as opposed to the coefficients. Coefficients can be requested, but are generally not interpreted unless they are converted to hazard ratios.

[41] This interpretation is useful if the functional form of the covariate is linear (or dummy coded). In the case of a squared covariate, the interpretation is less intuitive. This will be explained in greater detail in a later section.

rate of survival drops consistently and dramatically for about the first two years post-release and then levels off for the remainder of the follow-up time. The results of the CPH analysis show no statistically significant difference in the rate of failure for the two groups over the entire study period. This supports the previous finding of the chi-square test.

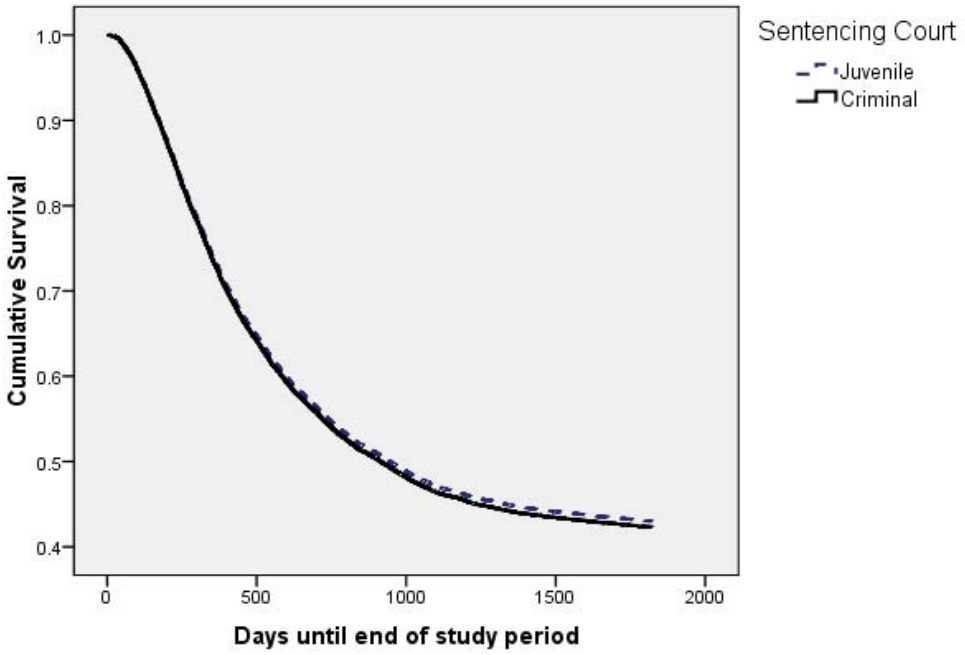

Figure 4. Survival curves for youth sentenced in juvenile and criminal court.

The bivariate CPH estimation comparing youth housed in adult correctional facilities (i.e., CDC) and juvenile correctional facilities (i.e., CYA) show statistically significant differences. Figure 5 presents a comparison of these survival curves. The survival functions show that youth housed in the CYA have lower rates of recommitment over the study period. The rate of survival declines sharply for both

groups but levels off quicker for the CYA group. The rate of survival drops most dramatically for approximately the first 600 days after release from the CYA. The rate of survival decreases more radically for the CDC cohort. An examination of the hazard ratio (not reported) shows that the CYA group fails at .69 times the rate of youth released from the CDC across the entire study period (z=156.39, p<.001).

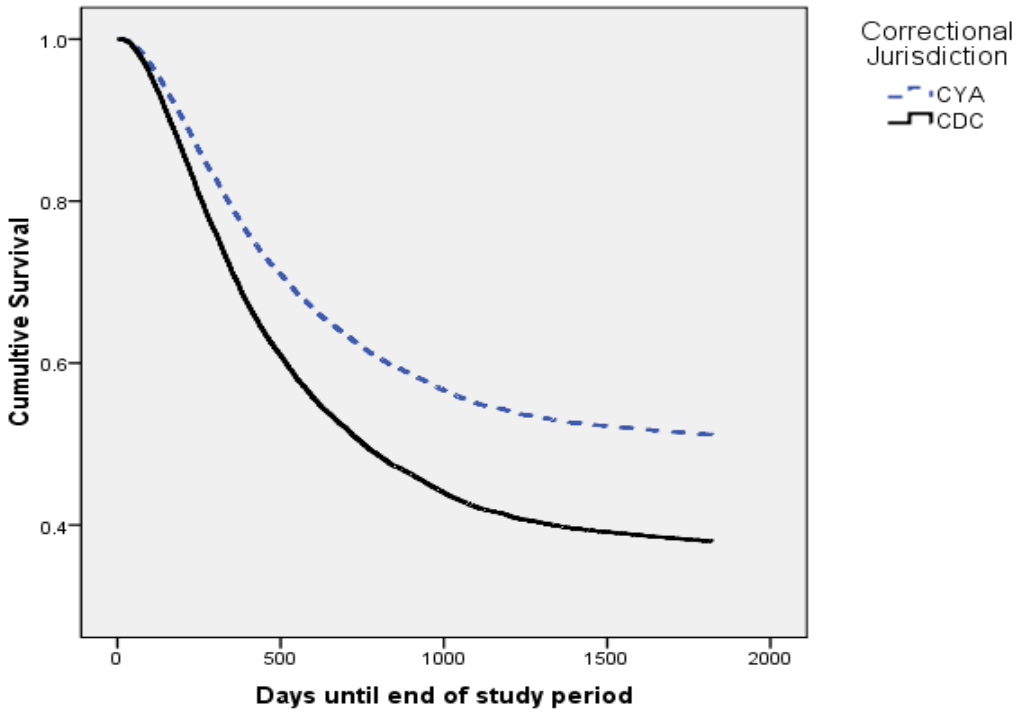

Figure 5. Survival curves for youth housed in CYA and CDC facilties.

When both court of commitment and correctional jurisdiction are included in a multivariate survival analysis, both predictors become significant. The rate of recommitment for youth sentenced by the juvenile court is now significantly different than the rate for youth sentenced by the criminal court despite the fact the previous lack of statistical significance in the bivariate model. Consistent with the previous

model, housing jurisdiction is also significant. Both variables gaining statistical significance together, but not alone, suggests that housing jurisdiction may moderate the effect of sentencing court. The possibility of a court by housing interaction will be explored.

THREE GROUPS: THE INTERACTION OF COURT AND HOUSING

One of the unique aspects of this study is the ability to distinguish between the effects of sentencing court and correctional housing. This is possible because of the presence of three groups of offenders: 1) juvenile court commitments housed in the CYA (further known as "juveniles in CYA"), 2) criminal court commitments housed in the CYA ("criminals in CYA"), and 3) criminal court commitments housed in the CDC ("criminals in CDC"). The previous results suggest testing for the effects of being considered adult in the eyes of the courts but afforded the opportunity to serve in the "rehabilitative" juvenile facilities. A three group comparison of recommitment is presented in Table 4 and shows that criminals in the CYA have the lowest rates of recidivism of the three groups (41.6%). Criminals in CDC (i.e., adult prisons) had the highest rate of recidivism (60.8%). Approximately 58% of juveniles in the CYA were recommitted ($x^2(2)=174.1$, $p<.001$).

Table 4. Rates of recommitment by sentencing court and housing jurisdiction (a three group comparison).

	No Recommitment		Recommitment	
	n	%	n	%
Juvenile in CYA	760	42.1%	1046	57.9%
Criminal in CYA	813	58.4%	579	41.6%
Criminal in CDC	2624	39.2%	4070	60.8%

Survival analysis confirms the substantive differences in the rate of recommitment of the three groups (criminals in CYA was coded as the referent group). Both comparisons were statistically significant. Juvenile court commitments housed in the CYA were 73.4% more likely to be recommitted than criminal court commitments housed in the CYA (z=112.819, df=1, $p<.001$). There is a significant difference in recommitment between criminal court commitments housed in the CDC and those in the CYA (z=237.93, df=1, $p<.001$). Among those sentenced by the criminal court, those housed in the CDC have a 99% increase in the rate of recommitment than their counterparts sentenced to juvenile facilities. Figure 6 maps the survival curves for the three groups.

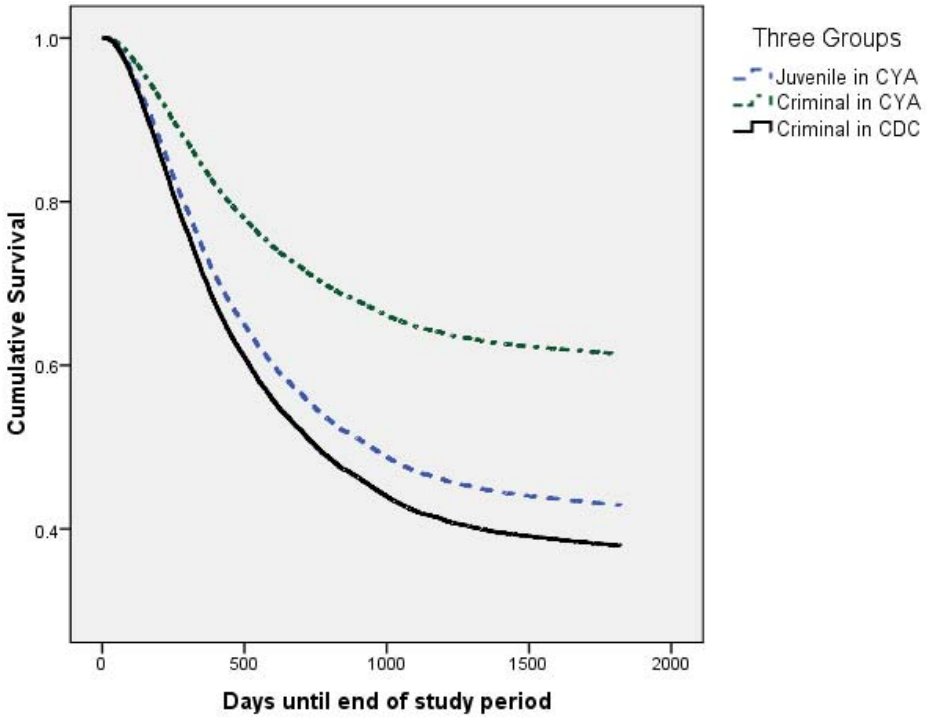

Figure 6. Survival curves for juveniles in CYA, criminals in CYA, and criminals in CDC.

Time to Recidivism

It can be informative to consider the speed at which individuals in the three groups fail. Measures of median survival time are NOT based off the Cox proportional hazard results. They are Kaplan-Meier estimators, and they are not presented when controlling for any other covariates. For each group, two estimates were computed. One estimate, "Median survival time," represents the number of days at which 50% of individuals in a group failed. The second estimate, "25% survival time," represents the days at which 25% of individuals in a group were recommitted. It is less conventional to use a 25% marker (generally, measures of central tendency are used)(Cleves, et al., 2008). However, only 41.6% of criminal court commitments in the CYA were recommitted. Therefore, calculating the days at which 50% of the group would have been recommitted is not possible for most measures.[42] The rate of recommitment for the other two groups was also around 50%. As such, 25% was chosen arbitrarily as a point of comparison across the three groups that represents a significant proportion of recidivists.

Table 5 presents the 25% and median survival times for the three groups. As suggested above, 50% of criminal court commitments in the CYA never fail, so that statistic could not be calculated. A consideration of the 25% survival time is illustrative. It takes over twice as long for the same proportion of criminals in the CYA to be

[42] It is not impossible to calculate the median survival time for categorical covariates in this group (as will be seen later). In rare instance, a group (e.g., Black offenders) within the criminals in CYA group may recidivate at a rate greater than 50% in which case an estimate would be available.

recommitted as it does for juveniles in the CYA. It takes nearly three times as long for criminals in the CYA to return as it does for criminals in the CDC. For both measures, criminal court commitments in adult prisons are recommitted faster than either of the other two groups.

Table 5. The 25% and median survival times for three groups (* could not be calculated).

	n	25% Survival Time (days)	Median Survival Time (days)
Juvenile in CYA	1806	351	1040
Criminal in CYA	1392	874	*
Criminal in CDC	6694	299	702

These results support the utility of considering these three distinct groups. The addition of importation and deprivation covariates may help explain changes in the rate of failure for each group. Table 6 describes the characteristics of the three groups on all covariates of interest. Analysis of variance and chi-square analyses show statistically significant differences in every variable ($p<.01$), except post-hoc comparisons show no significant differences in the means of the measure race "like you" for criminals in the CYA and criminals in CDC.

Table 6. Means (standard deviations) and percentages of three groups by covariates.

	TOTAL (n=9,892)	**Juveniles in CYA (n=1,806)**	**Criminals in CYA (n=1,392)**	**Criminals in CDC (n=6,694)**
IMPORTATION				
Age at Admission	19.4 (1.43)	17.16 (.84)	18.68 (1.05)	19.77 (1.05)
Race/Ethnicity (%)				
Black	30.2	26.4	31.0	31.0
White	16.1	15.9	15.6	16.2
Latino	46.3	48.8	42.6	46.4
Other	7.5	9.0	10.8	6.4

	TOTAL (n=9,892)	**Juveniles in CYA (n=1,806)**	**Criminals in CYA (n=1,392)**	**Criminals in CDC (n=6,694)**
Commitment Offense (%)				
Person	50.7	51.1	80.9	44.3
Property	24.3	31.8	12.5	24.7
Drug	17.9	10.2	4.2	22.9
Other	7.1	6.8	2.4	8.2
Region of California (%)				
Bay Area	12.8	17.2	16.3	10.8
Northern California	20.4	28.1	21.9	18.0
Los Angeles	39.1	32.4	38.5	41.1
Southern California	27.8	22.3	23.3	30.2
	TOTAL (n=9,892)	**Juveniles in CYA (n=1,806)**	**Criminals in CYA (n=1,392)**	**Criminals in CDC (n=6,694)**
DEPRIVATION				
Months Incarcerated	20.91 (15.71)	28.04 (19.44)	22.19 (17.23)	18.71 (13.50)
Institutional Movement	2.70 (1.42)	3.05 (1.48)	2.53 (.99)	2.64 (1.47)
Crowding	172.11 (30.98)	134.22 (13.88)	140.67 (17.76)	188.86 (20.68)
Violent Offenders	47.87 (13.41)	60.36 (7.90)	64.37 (7.20)	41.07 (9.66)
Racial/Ethnic "like you"	32.42 (10.74)	34.26 (13.60)	32.74 (13.37)	31.86 (9.06)
Age of Inmates	26.86 (6.17)	17.79 (.96)	18.51 (1.05)	31.05 (1.23)
New Admissions	68.51 (12.47)	85.37 (7.60)	81.44 (6.38)	61.27 (6.49)
Distance from Home	189.16 (121.29)	147.54 (97.72)	139.28 (116.57)	210.81 (122.02)
Participate in Camp (%)	12.7	8.6	27.9	10.6
DEVELOPMENT				
Age at Release	20.86 (1.70)	19.41 (1.65)	20.48 (1.68)	21.33 (1.46)

Cross group comparisons show that juveniles in CYA are younger than criminals in the CYA who are younger than criminals in CDC at both admission and release. In all groups, Latinos make up the largest proportion, followed by Black, White, and then the group of Other racial/ethnic offenders. Juveniles in the CYA have a smaller proportion of Black offenders and more Latino offenders. Criminal offenders in the CYA have a larger proportion of Other offenders and a lower likelihood of Latino offenders. The criminal

offenders in the CDC have the same proportion of Black offenders as criminals in the CYA. They have a slightly larger proportion of White offenders and less Other offenders than the other two sub-groups. Offenders serving time in the CYA are more likely to be "serious" offenders (i.e., committed for person based offenses). This is particularly true of criminals in the CYA wherein almost 81% of offenders were convicted of person based crimes and not for drug offenses. In each of the three groups the largest proportion of offenders were committed by Los Angeles County. For juveniles in the CYA, the next highest percent were committed by Northern California counties that are not the Bay Area. Criminals in the CYA and CDC were then most often committed by other Southern California county courts.

The three groups differ significantly in regards to measures of institutional deprivation. Criminals in the CDC served less time, in more crowded institutions, with older inmates, and in facilities with fewer new admissions. Juvenile offenders in the CYA, on average, served the most time, in the least crowded institutions, with the youngest inmates, and with the most new admissions. Juveniles in the CYA also had the most average moves. This is particularly noteworthy as the CDC operated 3 times the institutions as the CYA during the study period. Criminals in the CYA served time with a larger proportion of violent offenders. CYA commitments in general were more likely to spend time with violent offenders than those serving time in prison. Criminals in the CYA were also incarcerated furthest from home as compared to the other two groups. They

were also the group with the highest percentage of camp participants. Lastly, each group served time with a similar proportion of offenders racially/ethnically "like them."

The Deprivation of Development theory would expect offenders that are younger at admission and in more "depriving" environments to be more likely to recidivate. It is easy to assume that prisons house more serious offenders and are necessarily more depriving. However, in these samples, the young offenders housed in the CYA are far more likely to be person based offenders, and they are more likely to be housed with violent offenders. Offenders in CYA are also incarcerated for longer periods of time. Therefore, it is not the case that adult prisons are more depriving on every measure.

In this sample, however, offenders housed in prisons are exposed to more of "depriving" characteristics. Offenders in prison are in more crowded institutions, with older offenders, around fewer inmates of racial/ethnic similarity, with more institutional turnover (i.e., less new admissions), and further from home. Individuals in prisons have more theoretically "depriving" characteristics. The racial/ethnic and regional differences of the group are less noteworthy. It will be important to investigate, however, whether the effect of these measures are similar for each of the three groups. The impact of all of these factors on the likelihood of recommitment will be examined in detail in the next section.

Research Question 2: What importation and deprivation factors significantly predict recidivism?

The inclusion of both facility level and individual level characteristics would generally require the use of multi-level models in data analysis to account for clustering of facilities. The data collection for this study utilized composite measures for the facility level variables. Recall this is a person-based study that accounts for time spent in all facilities. It does not capture the qualities of any facility in particular. The composite measures neutralize the effect of clustering within institutions. This method was also utilized in hopes of creating comparable facility level measures across the adult and juvenile housing jurisdictions. Models on the full sample could be estimated if facility level variables were not too highly correlated to housing jurisdiction.

Despite these efforts, bivariate analyses still show very strong point biserial correlations between the housing system and the facility level measures. The distribution of values for many facility level variables is clearly bimodal. One peak exists for those housed in juvenile facilities and the other for those in adult facilities. The strength of correlations between housing jurisdiction (i.e., CDC or CYA) and facility level variables range from .035 (for racially/ethnically "like you") to .982 (for median age of facility). Clearly, these two systems created fundamentally different housing constellations as was alluded to in Table 6. Most of the correlations would be considered moderate to very strong effects.[43] As such, an analysis of the entire sample

[43] Correlations between correctional jurisdiction and facility level variables: 1) percent crowded (.783), 2) median age of facility inmates (.982), 3) percent new admission (-.839), 4) percent racially/ethnically "like you" (.035), and 5) percent violent offenders in facility (-.733). All are significant at $p<.001$.

to determine the effects of facility level covariates above and beyond the effect of sentencing court and housing jurisdiction would be inappropriate. Therefore, the following analysis of the impact of importation and deprivation on the recommitment of young offenders will be conducted separately for each of the three groups. This tactic ensures absolutely no clustering issues (even the potential clustering within correctional jurisdiction) and allows for the analysis of facility level variables within each group of offenders. This strategy will still be able to inform the impact of facility level characteristics on young offender populations, albeit localized to each particular subgroup.

TESTS OF THEORY

Sentencing court has been found to have a significant impact on recommitment when considered in conjunction with housing jurisdiction. In general, criminal court commitments housed in the CYA have significantly lower rates of recidivism than the other two groups. This section of data analysis will examine 1) if pre-incarceration characteristics and deprivation qualities significantly predict recommitment of young offenders and 2) if the profile of significant predictors is similar across the three groups. If the effect of incarceration is the same, regardless of placement in a juvenile or adult correctional facility, at the very least we would expect the profile of the three groups to be very similar. For example, if crowding is a significant predictor of the likelihood of recommitment for each of the three groups (and the effect is in the same direction) one could conclude that 1) crowding is an important determinate of recommitment for

incarcerated youth, and 2) one potential reason that adult prisons yield higher recidivism rates is because they are relatively more crowded than juvenile facilities. Theoretically, there is no reason to believe that importation and deprivation factors should operate differently across the three groups.

Importation: Pre-Incarceration characteristics

Table 7 compares importation and deprivation characteristics of recommitment versus non-recommitment groups. Appropriate tests of comparisons were conducted and significance is indicated.[44] I will first discuss the findings regarding importation characteristics. Deprivation findings will be reported in a subsequent section.

Table 7. Chi-square and t-test analyses of importation and deprivation measures on likelihood of recommitment.

	Juveniles in CYA			**Criminals in CYA**			**Criminals in CDC**		
	Total	**Recommitment**		**Total**	**Recommitment**		**Total**	**Recommitment**	
		No	Yes		No	Yes		No	Yes
N	1806	760	1046	1392	813	579	6694	2624	4070
IMPORTATION									
Age at Admission	17.2 (.8)	17.2 (.9)	17.1 (.8)	18.7 (1.1)	18.7 (1.1)	18.6 (1.0)	19.8 (1.1)	19.9 (1.0)	19.7 (1.1)
		t(1574.4)=.95			t(1255)=1.94			t(5772.4)=6.5**	
Race/ Ethnicity[45]									
Black	26.4	20.5	30.6	31.0	23.5	41.5	31.0	25.8	34.4
White	15.9	15.5	16.2	15.6	16.0	15.0	16.2	14.7	17.2
Latino	48.8	51.7	46.7	42.6	46.0	37.8	46.4	50.3	43.9
Other	9.0	12.2	6.6	10.8	14.5	5.7	6.4	9.3	4.5
		$X^2(3)=35$**			$X^2(3)=65$**			$X^2(3)=116.6$**	

[44] Correlation matrixes for each of the three groups were analyzed. Potential issues of collinearity were addressed and variables were altered appropriately. The presented variables have all been screened for these issues.

[45] To retain strength in cell size, the racial/ethnic group Asian and Pacific Islander was included in the "Other" racial and ethnic group.

	Juveniles in CYA			Criminals in CYA			Criminals in CDC		
	Total	**Recommitment**		**Total**	**Recommitment**		**Total**	**Recommitment**	
		No	Yes		No	Yes		No	Yes
N	1806	760	1046	1392	813	579	6694	2624	4070
Commit. Offense									
Person	51.1	59.6	44.9	80.9	83.6	77.0	44.3	38.9	47.7
Property	31.8	24.7	37.0	12.5	9.2	17.1	24.7	24.8	24.6
Drug	10.2	10.5	10.0	4.2	4.6	3.8	22.9	28.4	19.3
Other	6.8	5.1	8.0	2.4	2.6	2.1	8.2	7.8	8.4
		$X^2(3)=44.9$**			$X^2(3)=19.4$**			$X^2(3)=85.8$**	
Region of California									
Bay Area	17.2	20.0	15.2	16.3	17.6	14.5	10.8	8.6	12.3
North. CA	28.1	24.6	30.6	21.9	19.2	25.7	18.0	15.2	19.8
Los Angeles	32.4	33.3	31.7	38.5	38.5	38.5	41.1	48.4	36.4
South. CA	22.3	22.1	22.5	23.3	24.7	21.2	30.2	27.9	31.6
		$X^2(3)=11.9$*			$X^2(3)=10.3$†			$X^2(3)=102.0$**	
DEPRIVATION									
Mos. Incarc.	28.0 (19.4)	31.6 (22.3)	25.5 (16.6)	22.2 (17.2)	24.72 (18.6)	18.7 (14.4)	18.7 (13.5)	18.4 (12.9)	18.9 (13.9)
		t(1340.17)=6.4**			t(1380.82)=6.9**			t(5902.26)=-1.5	
Inst. Move.	3.1 (1.5)	3.1 (1.5)	3.0 (1.4)	2.5 (1.0)	2.5 (1.0)	2.6 (1.0)	2.6 (1.5)	2.6 (1.4)	2.7 (1.5)
		t(1804)=.9			t(1390)=-1.8			t(6004.02)=-1.9	
Crowding	134.2 (13.9)	134.0 (13.7)	134.4 (14.0)	140.7 (17.8)	140.0 (17.9)	141.6 (17.6)	188.9 (20.7)	188.7 (20.9)	189.0 (20.6)
		t(1804)=-.7			t(1390)=-1.7			t(6692)=-.6	
Violent Offenders	60.4 (7.9)	60.6 (7.6)	60.2 (8.1)	64.4 (7.2)	64.4 (7.2)	64.4 (7.2)	41.1 (9.7)	40.3 (9.3)	41.6 (9.9)
		t(1698.2)=1.3			t(1390)=.9			t(5830.7)=-5.7**	
Racial/ Ethnic "Like You"	34.3 (13.6)	33.8 (14.4)	34.6 (13.0)	32.7 (13.4)	32.2 (14.4)	33.5 (11.8)	31.9 (9.1)	31.4 (10.3)	32.2 (8.2)
		t(1529.5)=-1.2			t(1364.00)=-1.9			t(4716.51)=-3.3*	
Age of Inmates	17.8 (1.0)	17.8 (1.0)	17.8 (.9)	18.5 (1.1)	18.6 (1.1)	18.4 (1.0)	31.1 (1.2)	31.0 (1.2)	31.1 (1.3)
		t(1598.8)=1.0			t(1292.4)=3.5**			t(5839.7)=-1.3	
New Admit	85.4 (7.6)	85.7 (7.3)	85.1 (7.8)	81.4 (6.4)	81.2 (6.5)	81.8 (6.3)	61.3 (6.5)	61.3 (6.8)	61.2 (6.3)
		t(1692.6)=1.6			t(1390)=-1.8			t(6692)=.5	
Distance from Home	147.5 (97.7)	143.0 (92.8)	150.9 (101.0)	139.3 (116.6)	137.5 (119.7)	141.8 (112.1)	210.8 (122.0)	214.8 (123.3)	208.2 (121.2)
		t(1708.6)=-1.7			t(1390)=-.7			t(6679)=2.2†	
Camp	8.6	10.0	7.6	27.9	25.5	31.3	10.6	11.2	10.3
		$X^2(1)=3.4$			$X^2(1)=5.7$†			$X^2(1)=1.5$	

†*p*<.05, **p<.01, ***p<.001*

Juveniles in CYA: Chi-square analyses for juveniles housed in the CYA shows that nearly every importation variable significantly distinguishes between recidivists and non-recidivists. The exception, the comparison of the mean of age at admission yielded no significant difference between groups. Black offenders were proportionally more likely to be recommitted while Latino youth were less likely to be recommitted. Approximately 60% of juveniles committed for person-based offenses did not recidivate compared with 44.9% who did. Property offenders were proportionally more likely to be recommitted. Juvenile offenders in CYA committed by northern Californian courts (not in the bay area) were more likely to be recommitted. Bay area youth were proportionally less likely to return to custody. There were few differences in other geographical regions in the state.

Criminal in CYA: The trends for criminal court commitments in the CYA mirror the results of those found in juveniles in the CYA. There was no difference in the groups on age of admission. The proportion of recommitment for Black offenders is greater in this group. A much larger proportion of criminal court commitments housed in the CYA was committed for person based offenses (80.9%) as opposed to either of the other two groups. Like juveniles in the CYA, individuals convicted for person offenses are less likely to be recommitted (83.6% of non-recommitments were person-based offenders as opposed to 77% of recommitments). Northern California commitments, again, were more likely to recidivate.

Criminal in CDC: There were significant differences in the mean age of admission between the recidivists (19.71 years) and non-recidivists (19.87 years). The same general racial and ethnic trend holds for criminal court commitments housed in adult facilities. Black inmates are more likely to be recommitted, Latino and the other racial groups are less likely to be recommitted, and white offenders are slightly more likely to be recommitted. In contrast with the other two groups, person offenders housed in the CDC are more likely to recidivate. Drug offenders are proportionally less likely to recidivate in this group. Here, there is no difference in recommitment between property offenders. Individuals committed by the county of Los Angeles are proportionally less likely to recidivate.

In summary, importation characteristics appear to be important in understanding recidivism for all three groups of offenders. Age at admission was only important in the group housed in prison. Black offenders are more likely to be recommitted in every group. In contrast, Latino offenders are proportionally less likely to be recommitted in the three samples. Individuals incarcerated for person based offenders are less likely to be recommitted UNLESS they are incarcerated in an adult prison. This is a surprising finding that will be examined in multivariate models. The analysis of geographic region shows that across all three groups the proportion of recidivists increases with sentencing by a Northern Californian courts. Prior research would suggest that commitment by Los Angeles would decrease recidivism, this holds true for every group except criminals in the CYA. Bay area commitments had lower

levels of recidivism unless they were incarcerated in adult prisons. In general, the patterns of effect for the two CYA groups are more similar than the pattern for CDC offenders.

Deprivation: Incarceration environment

Table 7 also includes the measures of conditions of confinement for the three groups.

Juvenile in CYA: Chi-square analyses show that only one facility-level variable distinguished recommitment and non-recommitment groups. Juveniles housed in the CYA that served more time incarcerated were less likely to be recommitted.

Criminal in CYA: Months served also distinguished recidivists in the group of criminal court commitments housed in the CYA. Offenders that served longer sentences were less likely to be recommitted. Offenders who were not returned to custody during the five year follow-up served their time with slightly older inmates.

Surprisingly, recidivists were slightly more likely to have spent time in a conservation camp. The other two groups had proportions in the expected direction, but criminals in the CYA was the only group that was trending and in the unexpected direction.

Criminal in CDC: The profile of significant deprivation variables differs for this group as compared to the others. Months served was not significant for this sub-group in this descriptive analysis. Recommitted offenders spent time with a higher proportion of violent offenders. Recidivists spent their time in facilities with a slightly higher

percentage of inmates that were racially/ ethnically the same as they are. There was a weak but trending relationship between distance from home and recommitment. However, the effect is not in the expected direction. Non-recidivists served time further away from their homes than recidivists.

The lack of significant deprivation findings is noteworthy given the power available in these analyses of association. Deprivation factors seem to have little impact on juveniles incarcerated in the CYA. The likelihood of recommitment is slightly more dependent on deprivation factors for offenders sentenced by the criminal court. Yet even in these groups, only two of the nine variables reached statistical significance (and one variable in each group was trending). Which variables are important, however, differ depending on what correctional system took charge of the offender. Criminals in the CYA had better outcomes when they served less time, with younger inmates, and apparently not in camps. Criminal court commitments housed in adult prisons fare better with fewer violent inmates and less inmates racially "like them." They also benefit from being slightly further away from home. Survival analyses will be able to inform whether these variables affect the rate of failure for groups across time and while controlling for all covariates.

Multivariate Survival Models

For each group the same pattern of CPH models were estimated. First, a model of importation variables was run, assumptions checked, and results reported. Then,

deprivation variables were run, assumptions were checked, and results reported. Last, all variables were included and the same strategy was employed for a full model.

A hazard ratio, standard error, z-score, and significance value is provided for each covariate point estimate. The hazard ratio offers a measure of odds of recommitment for the entire study period. Recall, the Cox proportional hazard assumes a consistent ratio of risk of recommitment across the study period. The hazard ratio is that rate of progression to failure. The z-score for each covariate is a test of significance of the coefficient (it is a ratio of the estimated coefficient and its corresponding standard error). It can be used as a measure of the direction of the effect and it, along with the accompanying p-value offers a statistical measure of the level of significance.

For each model a likelihood ratio chi-square statistic is presented with the accompanying log-likelihood value. The likelihood ratio chi-square is a measure of the overall significance of the model. If $p<.05$, at least one variable in the model is significant. The likelihood ratio chi-square can be used as a measure of significance in nested models. The value of the log likelihood is a measure of goodness-of-fit of a model. The lower the value the better the model fit.[46] Again, where illustrative, a descriptive measure of time to failure is presented which indicates "how fast" one group fails as compared to another.

[46] There is no consensus on a measure of variance explained for CPH models. Measures have been proposed but not validated. The use of a measure of variance explained is so unconventional that most statistical packages have not included them in their programming. No measure of variance explained is included in this analysis.

Juveniles in the CYA: Table 8 reports the results of three CPH models estimated for juvenile court commitments housed in the CYA. Importation measures account for the majority of explanatory power in this group. A comparison of the likelihood ratio chi-square values of the importation model (123.69) and the full model (172.24) [47] show significant, but little improvement in explanatory power with the inclusion of deprivation measures.

Table 8. Importation and deprivation effects on rate of recommitment for juvenile court commitments housed in CYA.

	Importation			Deprivation			Full		
Variable	**Haz**	**SE**	**z**	**Haz**	**SE**	**z**	**Haz**	**SE**	**z**
Age at Admission	0.91	0.03	-2.39†				0.85	0.04	-3.52**
Race/Ethnicity									
Latino	0.66	0.05	-5.53**				0.59	0.07	-4.80**
White	0.70	0.07	-3.58**				0.73	0.09	-2.41†
Other	0.44	0.06	-6.03**				0.52	0.11	-3.19*
Commitment Offense									
Property	1.64	0.12	7.00**				1.35	0.10	3.89**
Drug	1.24	0.14	1.94				1.06	0.12	0.47
Other	1.73	0.21	4.57**				1.36	0.17	2.42†
Region of CA.									
Bay Area	0.78	0.08	-2.45†				0.64	0.08	-3.69**
Northern CA	1.23	0.10	2.46†				1.03	0.11	0.26
Southern CA	1.05	0.09	0.58				0.99	0.09	-0.13
Months Incarcerated				0.99	0.00	-5.82**	0.99	0.00	-5.26**
Institutional Movement				1.04	0.02	1.63	1.02	0.02	0.87
Crowding				1.00	0.00	-0.32	1.00	0.00	-0.59
Violent Offenders				1.00	0.01	-0.66	0.99	0.01	-0.88
Race/ Ethnic "Like You"				1.00	0.00	1.63	1.01	0.01	1.10

[47] The likelihood ratio chi-square of the importation model and the deprivation model cannot be compared directly because the models are not nested. An analysis of the explanatory power of the importation model and the deprivation model can only be conducted in comparison to the full model.

	Importation			Deprivation			Full		
Variable	**Haz**	**SE**	**z**	**Haz**	**SE**	**z**	**Haz**	**SE**	**z**
Age of Inmates				0.98	0.09	-0.27	1.03	0.10	0.38
New Admissions				0.99	0.01	-0.85	0.99	0.01	-0.99
Distance from Home				1.00	0.00	1.93	1.00	0.00	1.43
Participate in Camp				0.75	0.09	-2.32†	0.89	0.11	-0.85
	LR chi2(10)=123.69, p<.001			LRchi2 (9)=71.69, p<.001			LR chi2 (19)=172.24, p<.001		
	Log likelihood= -7394.23, n=1806			Log likelihood= -7420.22, n=1806			Log likelihood= -7369.95, n=1806		

†*p<.05, *p<.01, **p<.001*

Almost all importation variables are significant when considered in a model by themselves. As deprivation factors are included, some importation measures lose significance, but most remain at least trending.

In the full model, for each additional year of age at admission the rate of recommitment decreases 15% in this group over the entire study period (Hazard ratio=.85).[48] In other words, the older the offender the less likely he will return. An analysis of time to recommitment is presented in Table 9. This analysis does not control for other covariates. It is simply a presentation of the days to recommitment for those that do reoffend. Continuous variables were categorized for these comparative purposes. Age at admission was divided into the two categories: 1) offenders admitted between ages 16 and 18, and 2) offenders admitted between ages 19 and 21. An

[48] The strength in using survival analysis as opposed to multivariate logistic regression is the ability to account for the risk of recommitment over time. While it might seem surprising that age at admission was not significant in a t-test but is quite significant in a CPH model, it should be noted that these models 1) control for other covariates and 2) tests whether age at admission changes the odds of recommitment over time as opposed to simply determining whether the event will ever occur.

analysis of time shows that it takes twice as long for the same proportion of older offenders to reoffend as compared to the younger group.

Table 9. The 25% and median survival times for juveniles in the CYA (* could not be calculated).

	n	25% Survival Time (days)	Median Survival Time (days)
Age at Admission			
16 – 18	1745	347	1018
19 – 21	61	653	*
Race/Ethnicity			
Black	476	306	811
Latino	881	301	1162
White	277	382	804
Other	162	548	*
Commitment Offense			
Person	923	484	1705
Property	575	286	643
Drug	185	313	1259
Other	123	267	727
Region in CA.			
Bay Area	311	305	1721
Northern CA	507	542	734
Los Angeles	585	363	1087
Southern CA	403	315	951
Months Incarcerated			
1-12 mos.	365	284	727
12.01-24 mos.	544	330	791
24.01-36 mos.	451	320	1087
36.01+ mos.	446	531	*
Participated in Camp			
No	1651	351	1019
Yes	155	362	1792

As suggested in early analyses, the likelihood of recommitment was significantly lower for every racial/ethnic group compared to Black offenders (Table 8). When controlling for all other variables, the most powerful importation variable was being

Latino. Latinos fail at a rate .59 times of Black offenders. The rate of recommitment over the five years decreased 48% for offenders in the other ethnicity category relative to Black offenders and 27% for White offenders. Before discussing the remaining influences on recommitment, the survival time for the first quartile and median of reoffenders helps to illuminate these patterns. The comparison of survival time by race/ethnicity is presented in Table 9. The speed at which 25% of the Black and Latino offenders are recommitted is similar. It took a little less than one year for 25% of both groups to be recommitted. It took about a year and a half for the same proportion of the other racial/ethnic group to recidivate. It took nearly one extra year, however, for 50% of the Latino group to be recommitted as compared to Black offenders. The time to recommitment for White and Black offenders is comparable.

Returning to the data displayed in Table 8, the likelihood of recommitment is 35% greater for property offenders than for person offenders. And it is 36% greater for individuals convicted of an “other” offense as compared to person based offenders. An analysis of the time to failure (see Table 9) shows that person based offenders are also slower to be recommitted than any other group of offenders.

Regarding region of commitment, there is a 36% decrease in the rate of recidivism for offenders sentenced from the Bay Area as compared to those entering from Los Angeles (hazard ratio=.64 on Table 8). A sentence by northern California courts slightly increased the hazard of recommitment for the importation model, but the effect fell out of the full model. An examination of the hazard functions for the three geographical regions (not shown) suggests that Los Angeles, northern California, and

southern California[49] commitments have nearly identical survival curves. In other words, the Bay Area commitments are significantly different than all groups. A computation of hazard ratios taken from Table 8 for each group supports this notion:[50] Bay Area v. Northern California (.64/1.03=.62), Bay Area v. Southern California (.64/.99=.65), and Bay Area v. Los Angeles (as reported in Table 6=.64). In this case, Los Angeles is less interesting as a reference group (though it was informed by prior research). Instead, the Bay Area is clearly producing recommitment rates lower than every other region in the state. Table 9 shows that the speed of recommitment differs for northern Californian counties than the other areas. It takes longer for the return of northern California commitments initially; as time progresses it takes less time for these recidivists to return as compared to other regions.

Only one deprivation factor was found to be significantly related to the rate of recommitment, and in the full model had the largest accompanying z-score. As an individual in this group served more time, the likelihood of his recommitment decreased. For every one month incarcerated the likelihood of recommitment decreases 1%.[51] A review of Table 9 informs the speed of recommitment. Months incarcerated

[49] The direction of the effect of Southern California commitments changes from importation model to full model. This is likely due to the total lack of difference between Los Angeles commitments and Southern California commitments.

[50] In the full model, regions in California are compared to Los Angeles county (the reference group). Los Angeles was chosen because prior studies had shown significant differences in the rates between Los Angeles and the rest of the state. The groups can be compared to each other by creating a ratio of the hazard ratios (Cleves, et al., 2008). In this sub-sample, the group of primary interest is not Los Angeles but appears to be the Bay Area. The same analysis could be done by changing the reference group and re-running the survival analysis.

[51] This might seem like a very small effect. It is important to consider the measurement scale of this variable. The average month served for this group is 28 months. The minimum is slightly over 1 month (recall, 30 days time served was a selection criteria for this study) and the maximum is over 110 months of

was divided into four categories. In this sub-group, the longer the incarceration time, the longer to recommitment. The results show that incarceration for one year or less leads to the shortest recommitment time. There is very little difference in the speed to recommitment for individuals incarcerated between one and three years. Individuals incarcerated for over three years took twice as long to return as those incarcerated for less than one year.

Participation in camp trends toward significance when variables are considered without importation. The observed direction suggests that individuals who served time in camp were less likely to be recommitted. An analysis of time to recommitment shows that they are also slower to return.

In summary, importation factors are more significant in predicting the likelihood of recommitment in this sub-group. Consistent with prior studies and theories, the younger an individual at admission, the more likely they are to be recommitted. The results suggest that Blacks compared to every other racial/ethnic group are more likely to return. Property offenders are more likely to be recommitted and faster than other offense groups. Bay Area commitments are significantly different than all other groups. They are less likely to be returned, but they are not the slowest to return.

In this sample, the facility level characteristics (i.e., environmental conditions the offender served time) are not important predictors of the likelihood of recommitment.

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incarceration. Therefore, a 1% decrease in likelihood of recommitment given this range of months served can be an important result.

The effect of months served is particularly noteworthy in this sub-sample. The variable is included as a measure of deprivation. Deprivation theorists suggest that the longer an individual in incarcerated, the more indoctrinated they become in carceral life, and the less likely they can be productive upon release. This variable is the strongest predictor of recommitment in this group, but the effect is not in a direction consistent with deprivation theory. In this sub-sample an increase in the time served 1) decreases the likelihood of recommitment, and 2) increases the survival time. This finding will be investigated in more detail in the next research question.

Criminal in CYA: CPH models for criminal court commitments housed in the CYA are presented in Table 10. Like the previous group, the deprivation model adds less to the full analysis than the importation model. Age at admission, offender race/ethnicity, commitment offense, months served, and number of moves were all significant in the final model. Region of California and participation in camp, while significant in the previous analysis, were not significant in this sample.

Table 10. Importation and deprivation effects on rate of recommitment for criminal court commitments housed in CYA.

	Importation			Deprivation			Full		
Variable	**Haz**	**SE**	**z**	**Haz**	**SE**	**z**	**Haz**	**SE**	**z**
Age at Admission	0.89	0.04	-2.89**				0.88	0.04	-2.96*
Race/Ethnicity									
Latino	0.57	0.05	-5.88**				0.59	0.08	-3.97**
White	0.53	0.07	-4.69**				0.57	0.10	-3.11**
Other	0.28	0.05	-6.71**				0.29	0.08	-4.44**
Commitment Offense									
Property	2.13	0.26	6.33**				1.91	0.23	5.32**
Drug	1.14	0.26	0.61				1.09	0.25	0.38
Other	1.25	0.37	0.77				1.12	0.33	0.37
Region of CA.									
Bay Area	0.92	0.12	-0.62				0.85	0.14	-0.91
Northern CA	1.30	0.15	2.31†				1.17	0.17	1.05
Southern CA	1.00	0.12	-0.02				0.93	0.11	-0.63
Months Incarcerated				0.98	0.00	-4.74**	0.98	0.00	-3.91**
Institutional Movement				1.19	0.05	3.68**	1.18	0.06	3.55**
Crowding				1.00	0.00	0.15	1.00	0.00	0.46
Violent Offenders				1.00	0.01	-0.04	1.00	0.01	0.16
Race "Like You"				1.01	0.00	1.98†	1.00	0.01	-0.17
Age of Inmates				0.89	0.13	-0.85	0.94	0.14	-0.40
New Admissions				0.98	0.02	-1.40	0.98	0.02	-1.18
Distance from Home				1.00	0.00	-0.05	1.00	0.00	0.34
Participate in Camp				1.19	0.15	1.43	1.22	0.16	1.54
	LR chi2 (10)=113.50, *p*<.001			LR chi 2 (9)=68.63, p<.001			LR Chi2 (19)=163.03, p<.001		
	Log Likelihood=-3992.93, n=1392			Log Likelihood= -4015.15, n=1392			Log likelihood=-3968.05, n=1392		

†*p<.05, *p<.01, **p<.001*

The rate of recommitment decreased by 12% for each increased year of age at admission while controlling for all other importation and deprivation factors (Hazard =

.88). Table 11 provides time to failure for significant covariates. A majority of calculations for the "median survival time" could not be estimated because only 41.6% of offenders in this group were recommitted. As was true in the previous analysis, the older the individual at age at admission the longer the time to recommitment.

Table 11. The 25% and median survival times for criminals in the CYA (* could not be calculated).

	n	25% Survival Time (days)	Median Survival Time (days)
Age at Admission			
16-18	614	830	*
19-21	778	914	*
Race/Ethnicity			
Black	431	675	1545
Latino	593	1004	*
White	217	822	*
Other	151	*	*
Commitment Offense			
Person	1126	991	*
Property	174	475	1237
Drug	59	679	*
Other	33	636	*
Region in CA.			
Bay Area	305	748	*
Northern CA	227	1001	*
Los Angeles	536	901	*
Southern CA	324	832	*
Months Incarcerated			
1-12 mos.	481	737	1748
12.01-24 mos.	403	874	*
24.01-36 mos.	276	1027	*
36.01+ mos.	232	1196	*
Institutional Movement			
1	58	934	*
2	829	994	*
3	315	786	*
4+	190	707	*
Race/Ethnicity "Like You"			
Lower	268	1365	*
Medium	870	752	*
Higher	254	1081	*

In the final model, race/ethnicity of the offender had a significant impact on the hazard rate. Latino, White, and other offenders had a lower likelihood of recommitment compared to Black offenders (41%, 43%, and 71% respectively). In the previous sample, Black, Latino, and White offenders had roughly the same 25% survival time. In this sample, Black offenders failed almost one year sooner and Latino offenders (who had the longest survival time). Black offenders are also the only group with over half of the group ever failing.

Commitment for a property offense (with person offense as reference category) increased the risk of recommitment 91% when controlling for all other covariates (Hazard ratio=1.91 in Table 10). Table 11 shows that property offenders are also failing faster than any of the other three groups. It takes over twice as long for the same proportion of person based offenders to fail as property offenders in this group.

Region of California was not a significant predictor of odds of recommitment in the final model (see Table 10). There was a weak finding that northern California commitments were more likely to be recommitted than Los Angeles county commitments in the importation model. Statistical support for this finding disappeared after the inclusion of deprivation variables. Despite the weak finding above, a time to recommitment analysis (Table 11) shows that northern California commitments are the slowest to return to custody.

Two deprivation variables were significant in the full model (see Table 10). An increase in time served decreased the hazard rate as also found in the juveniles in the CYA. The analysis of time to failure (Table 11) shows a longer period of incarceration

also increases the time to recommitment. Individuals who served over three years incarcerated took over a year longer (1196 days to recidivism) to be recommitted as compared to individuals who were incarcerated for less than one year (737 days to recidivism).

More institutional moves increased the rate of recommitment. The odds increased 18% for each additional institutional move, when controlling for all other covariates (Hazard ratio=1.18 in Table 10). In this sample, more than two institutional moves increased the speed to recommitment by about seven months (Table 11).

There is some support that spending time with inmates racially and ethnically similar to the offender increases the rate of recommitment. This finding is weak and disappears in the full model.[52] In order to conduct a time analysis on a continuous variable like race/ethnic "like you," informative categories must be created. In this case, the group was divided into a lower, medium, and higher group. The lower group includes individuals who were more than one standard deviation below the mean of the variable. The medium group includes individuals who were within one standard deviation (above and below) in this group. The higher group includes all people who were over one standard deviation above the mean on this variable (i.e., housed with comparatively more people racially/ethnically like them). The results in Table 11 show being housed with fewer people racially/ethnically like you results in the longest time to

[52] This variable and two other deprivation variables change the direction of their effect from the deprivation model to the full model. This could be due to the extreme lack of significance in these measures. However, the measure race "like you" is trending in the deprivation model and then not only loses statistical significance among all covariates, but also changes direction. This may suggest issues with collinearity, but no problems of this sort were detected in the prior examinations of VIF measures. An alternative explanation for this change cannot be offered.

recommitment. It is almost one year longer than those individuals with the most racially/ethnically like them, and almost two years more than people who were with around the mean on this measure. It is important to note that this is without controlling for other covariates, and the significance of this variable disappears in the presence of importation variables.

In summary, the profile for this group is relatively similar to the results of the previous group. Importation variables are still more informative than deprivation variables, though more deprivation factors are significant in this group. The effects of the significant variables are all in the same direction as the previous group. Violent offenders are less likely to be recommitted in both groups. Black offenders were recommitted more often than all other racial/ethnic groups in both sub-groups. An increase in months incarcerated decreases recidivism in CYA groups. It has already been established that this group has the lowest rate of recidivism. This analysis has also shown, that compared to juveniles in the CYA the speed at which they are recommitted is also drastically different. For most measures, the juveniles in the CYA group are recommitted in half the time of the criminals in the CYA group (see Table 9 and 11 for comparisons).

Criminal in CDC: Table 12 reports a distinct pattern of results for criminal offenders housed in the CDC. A number of importation and deprivation variables significantly affect the likelihood of recommitment. Still, like the other two groups, deprivation variables had a smaller impact on the likelihood ratio chi-square across models.

Table 12. Importation and deprivation effects on rate of recommitment for criminal court commitments housed in CDC.

	Importation			Deprivation			Full		
Variable	**Haz**	**SE**	**z**	**Haz**	**SE**	**z**	**Haz**	**SE**	**z**
Age at Admission	0.90	0.01	-6.56**				0.90	0.01	-6.55**
Race/Ethnicity									
Latino	0.82	0.03	-5.25**				0.81	0.03	-5.20**
White	0.91	0.04	-1.94				0.91	0.05	-1.78
Other	0.45	0.04	-10.08**				0.46	0.05	-6.67**
Commitment Offense									
Property	0.97	0.04	-0.73				0.91	0.04	-2.09†
Drug	0.69	0.03	-8.69**				0.66	0.03	-9.18**
Other	0.90	0.05	-1.76				0.84	0.05	-2.73*
Region of CA.									
Bay Area	1.63	0.09	9.09**				1.63	0.09	8.32**
Northern CA	1.54	0.07	9.51**				1.53	0.07	8.95**
Southern CA	1.41	0.05	8.84**				1.37	0.06	7.83**
Mos. Incarcerated				0.99	0.00	-3.41*	0.98	0.00	-4.49**
Mos. Incarc. Squared[53]				1.00	0.00	2.68*	1.00	0.00	2.76*
Institutional Movement				1.02	0.01	1.23	1.04	0.01	2.76*
Crowding				1.00	0.00	1.90	1.00	0.00	0.78
Violent Offenders				1.01	0.00	6.25**	1.01	0.00	4.00**
Race "Like You"				1.01	0.00	3.64**	1.00	0.00	0.21
Age of Inmates				1.00	0.01	0.03	0.97	0.01	-1.97†
New Admissions				0.99	0.00	-2.57†	0.99	0.00	-1.28
Distance from Home				1.00	0.00	-1.57	1.00	0.00	0.39
Participate in Camp				1.08	0.07	1.30	0.95	0.06	-0.70
	LR chi2(10)=385.44, p<.001			LR chi2(10)=73.12, p<.001			LR chi2 (20)=427.10, p<.001		
	Log likelihood=-34047.65, n=6694			Log Likelihood=-34177.44, n=6679			Log likelihood=-33997.01, n=6681		

†*p<.05, *p<.01, **p<.001*

[53] The interpretation of the hazard ratio for months squared is not as intuitive as the function is quadratic and not linear. The inclusion of the variable is for model fit, and it useful to describe the survival curve function. It is not as helpful to examine the hazard ratio for interpretive value.

Almost every importation variable was significant in the full model. Increases in the age at admission decreases the likelihood of recommitment in this group as it did in the other two. Table 13 shows the timing of recommitment across the significant covariates for this sub-group. As is consistent with the findings in the previous two groups, older offenders survived for a longer than younger offenders.

Table 13. The 25% and median survival times for criminals in the CDC (* could not be calculated).

	n	25% Survival Time (days)	Median Survival Time (days)
Age at Admission			
16-18	882	253	520
19-21	5812	308	739
Race/Ethnicity			
Black	2077	286	591
Latino	3105	312	797
White	1085	254	524
Other	427	477	*
Commitment Offense			
Person	2963	300	632
Property	1653	249	583
Drug	1531	355	1194
Other	547	333	755
Region in CA.			
Bay Area	1202	276	575
Northern CA	724	256	514
Los Angeles	2749	352	972
Southern CA	2019	263	584
Months Incarcerated			
1-12 mos.	2707	271	614
12.01-24 mos.	2230	305	755
24.01-36 mos.	946	331	807
36.01+ mos.	811	351	706
Institutional Movement			
1	1074	295	702
2	3015	289	673
3	1157	318	755
4+	1448	307	720
Violent Offenders			
Lower	1277	290	713
Medium	4104	307	742
Higher	1312	283	581

	n	25% Survival Time (days)	Median Survival Time (days)
Race/Ethnicity "Like You"			
Lower	617	372	*
Medium	5256	291	649
Higher	821	302	875
Age of Inmates			
Younger	744	302	630
Average	4738	312	735
Older	1212	256	583
New Admissions			
Lower	800	266	685
Medium	5491	302	699
Higher	403	319	809

Returning to Table 12, this study finds that Latino offenders in this group were less likely to be recommitted as compared to Black offenders. Offenders of other race or ethnicity had .46 times the likelihood of failure over the study period than Black offenders. Unlike the other two sub-samples, here the likelihood of recommitment did not differ between Black and White offenders. Survival times across racial/ethnic groups are also presented in Table 13. Offenders in the other racial/ethnic group had the longest survival time, followed by Latinos, Blacks, and then Whites. Whites failed in about half of the time of the Other racial/ethnic group.

In contrast to the CYA groups, being a person based offender in this group increased the rate of recommitment. Property offenders decreased the likelihood of recommitment 9% (Hazard ratio=.91 on Table 12), other offenders decreased the rate 16%, and drug offenders reduced the odds 34% compared to violent offenders in this

group. However, as shown in Table 13 and consistent with the findings of juveniles in the CYA and criminals in CYA, property offenders are recommitted the fastest.[54]

Being sentenced by Los Angeles county decreased the likelihood of recommitment as compared to every other region. This is a strong and consistent across each geographic region. It is also a departure from the findings in the other two groups. Table 12 indicates that commitment by the other three regions in California increased the risk of recommitment between 37% (Southern California) to 63% (Bay Area). The analysis of speed to recommitment (Table 13) shows that Los Angeles county offenders were also recommitted at a slower rate than the other three areas.

In general, the conditions of confinement seem are more important predictors of recommitment for offenders housed in adult prisons rather than offenders in juvenile facilities. The rate of recommitment decreased 2% for every month served (Hazard ratio=.98 on Table 12) when controlling for all other covariates. The significant quadratic function suggests a turning point in the function. At 45 months or 3.75 years the months served begins increasing the likelihood of recommitment.[55] This is the only group in which this occurs. Table 13 examines the speed to recommitment for months served. In this sub-sample there is small but incremental increases in time to recidivism as the time incarcerated increases. This finding is consistent across all three sub-groups, however, this sub-group has the shortest relative time to recidivism as compared to the

[54] In group of juveniles housed in the CYA individuals committed for "other" offenses actually had the fewest days until 25% survival. The difference between days for the "other" group and property offenders is small. Property offenders in this sub-sample had the shortest time median survival time.

[55] The squared term of months served is also significant. The turning point of the function is defined as x=-b/2a (where b=-.018 and a=.0002) or 45 months. The values for b and a represent the coefficient for the two covariates: months served and month served squared.

other two groups. The relationship between months served and recommitment will be examined more closely in the next section.

Institutional movement is significant in the presence of all covariates (see Table 12). In this sub-sample, each additional institutional move increased the odds of recidivism 4% (Hazard ratio= 1.04). In this group, the number of institutional moves does not change the 25% survival time (Table 14). There is less than a one month difference between the four groups comparing institutional movement.

This is the only sub-sample in which a change in violent inmates influences recommitment. A one percent increase in the proportion of violent inmates increased the likelihood of recommitment in this group (see Table 12). This is particularly noteworthy given that we have found that prisons have proportionally less violent offenders than youth facilities (see Table 6). As is reported in Table 13, there is no noteworthy difference in the 25% survival time to recidivism for the lower, medium, and higher groups. An analysis of the median survival time, however, shows that being exposed to more violent offenders speeds the time to recidivism.

A weak but trending association exists in the full model between age of inmates in facilities and a decreased likelihood of recommitment. Association with older inmates is related to a decrease in recidivism. This is contrary to the notion of "learning" from more sophisticated criminals. Despite the decrease in the rate of recommitment, being housed with older inmates speeds up the time to recidivism (Table 13).

Two deprivation variables are significant in the deprivation model but not in the full model. Table 12 shows that increased exposure to offenders of the same

race/ethnicity increased the risk of recidivism. Being incarcerated with a greater proportion of new admissions (i.e., less institutional turnovers) decreased the rate of recommitment. Table 13 shows that more new admissions slows the time to failure.

In summary, analyses for all three groups show that importation variables are more consistently significant predictors of recommitment than deprivation variables. The addition of deprivation variables does significantly change the likelihood ratio chi-square in the full model, but it is not as large as the inclusion of importation variables. It is not about the housing experience as much as it is about what offenders bring with them to the carceral environment. Across all three groups, offenders that enter older and serve more time are less likely to recidivate. I will explore this further in the following section. The only other common denominator across the three groups is that Black offenders are far more likely to be recommitted.

A comparison of Tables 9, 11, and 13 show that (with very few exceptions) criminal court commitments housed in the CYA are much slower to be recommitted than the other two groups. In many cases they take twice as long to recidivate than either of the other two groups. Juvenile court commitments housed in the CYA generally survive longer than criminals in the CDC.

There were far fewer similarities between the offenders housed in the CYA and those housed in the CDC. In general, juveniles in the CYA and criminals in the CYA are impacted by the same variables and in the same way. This profile is strikingly different for criminals in the CDC. The changes in the directions of the effects across CYA and CDC

groups suggest that being housed in adult facilities leads to substantively different experiences.

INTERACTIONS

Previous studies have highlighted the importance of importation and deprivation interactions. Numerous interaction terms were created and examined for each group. The change in sign and the emergence of significant variables after the addition of covariates suggest possible interactions, but no significant interactions were found between importation and deprivation variables for any of the three groups.

One "interaction" across the three groups is noteworthy. Person offenders are less likely to be recommitted in the CYA, but are more likely to be recommitted in the CDC. This is regardless of the larger proportion of individuals convicted of person offenses in the CYA groups. This cross correctional housing interaction suggests an important interplay across correctional housing lines as opposed to across sentencing court division.

Research Question 3: Are there age-graded differences that explain variation in future behavior? Is there any indication that different correctional experiences hinder development?

Previous studies have compared youth, regardless of age, that were tried in the juvenile justice system with those in the criminal justice system. This study has shown that court of commitment only informs the rate of recidivism when considered in conjunction with housing jurisdiction. The theory informing this study asserts that

developmental changes in a group of young offenders is more informative than distinguishing between court of commitment or any other legal distinction. This section will further examine the role of development has on release behavior.

Our previous models show that the older the individual is at admission, the less likely he is to be recommitted. In this study, age at admission was used as an importation variable. Prior research has shown that offenders that begin their criminal careers at an earlier age are more likely to recidivate (e.g., Ezell, 2007). I find support for this finding. As the age at admission increased the likelihood of recommitment decreased for every group in this study.

Months served, a deprivation variable, was also significant in all three groups. However, the effect was not in the direction consistent with deprivation theory. Deprivation theorists have asserted that as individuals spend a longer period incarcerated their ability to behave "normally" upon release decreases. This is due to increased prisonization (i.e., acceptance of the inmate culture), decreased contact with non-criminal people, and the loss of relationships and/or opportunities (e.g., Clemmer, 1940).

The effect of the direction of months incarcerated is not consistent with deprivation theory, but it is consistent with the theory proposed for this study. The Deprivation of Development theory would consider both the significance of age at admission and months served (in its current direction) as support for the notion that the longer one has to transition to adulthood, the more likely one is to recidivate. Under this

framework, offenders admitted at an earlier age have more maturing to accomplish and would be more likely to reoffend. Similarly, the longer the time incarcerated (in environments that do not hinder development) the less likely an offender would be recommitted because they have matured. The purpose of this section is to explore how the point of development might affect recommitment. I will also examine whether there is any indication that correctional housing affects this transition.

The age at release is an indicator of a subject's place in their developmental path at the end of the incarceration. It is comprised of both age at admission and months served. Someone released at 18 is at the end of adolescence. Someone released at 25 should be nearing the full transition to adulthood. If development to adulthood is a necessary mechanism for the cessation of offending, the older the individual the less likely they will be recommitted. This theory does not assert, however, that the transition to adulthood will occur in any environmental condition. It hypothesizes that carceral environments can, under certain conditions, negatively impact a phenomenon as reliable as aging out of crime.

The sample was divided into "developmental" age groups.[56] Table 14 reflects the rates of recommitments for these age groups. The individuals were divided in the following manner: 16-18 were considered late adolescence, 19-20 early emerging adulthood, 21-23 middle emerging adulthood, and 24-25 late emerging adulthood.

[56] These divisions were informed by research on adolescents and young/emerging adults. There has not been sufficient evidence on incarcerated young offenders to determine if maturation is significantly delayed by justice system contact.

These groups are informed by the literature with acknowledgement that the divisions are approximation of developmental change.[57] Also, one should always expect individual differences. [58]

Table 14. Recommitment rates distinguished by age at release categories.

Age Category	n	Total	No Recommitment	Recommitment
16-18	744	7.5%	6.6%	8.2%
19-20	3476	35.1%	32.8%	36.9%
21-23	4988	50.4%	52.9%	48.6%
24-25	684	6.9%	7.6%	6.4%

Table 14 shows the proportion of each age category that is recommitted. This table shows that as offenders age they are more likely to be classified in the non-recommitment group. For the entire sample, there is a clear division in the rates of recommitment between offenders 20-years and younger and 21-years and older.

The finding is elaborated by the analysis of survival curves for the release age categories. Figure 7 is a plot of cumulative survival curves (without adjusting for covariates) for the entire sample (tabular results of the CPA is not shown but is reported below). The two younger groups are at risk for recommitment at significantly higher rates than the two older groups. The group of 24-25 year olds was coded as the

[57] The most controversial division may be the addition of 18- year olds with 17- and 16-year olds as opposed to with 19-year olds. Without absolute agreement in the literature about the classification of 18-year old as "adolescent" or "emerging adult" these individuals were placed in the younger group to increase the sample size of the group.

[58] An analysis of the rate of recommitment at each year of age (not shown) confirms that these are well informed age categories. The rate of recommitment increases dramatically from 16 to 18. It levels off for 19 to 20 years old. It then decreases significantly for 21 to 23, and increases slightly for 24 to 25. This slight increase at 24 and 25 also likely created the conditions that made a squared term in the criminal in CDC sub-group necessary. Categories were retained to increase sample size and decrease significant changes in proportions due to few individuals.

reference category. Individuals in the 16-18 year group have a 28% increased risk of recommitment as compared to the 24-25 year olds (Hazard ratio=1.28, *z*=3.51, *p*<.001). The 19-20 year group has a 25% increased likelihood (Hazard ratio=1.25, *z*=3.95, *p*<.001). The 21-23 year olds are not significantly different from the 24-25 year olds (Hazard ratio=1.10, *z*=.10, *p*<n.s.). The older an offender at release the lower likelihood of recidivism. The most important age "distinction" in this sample is between offenders 20-years and younger and 21 and older.

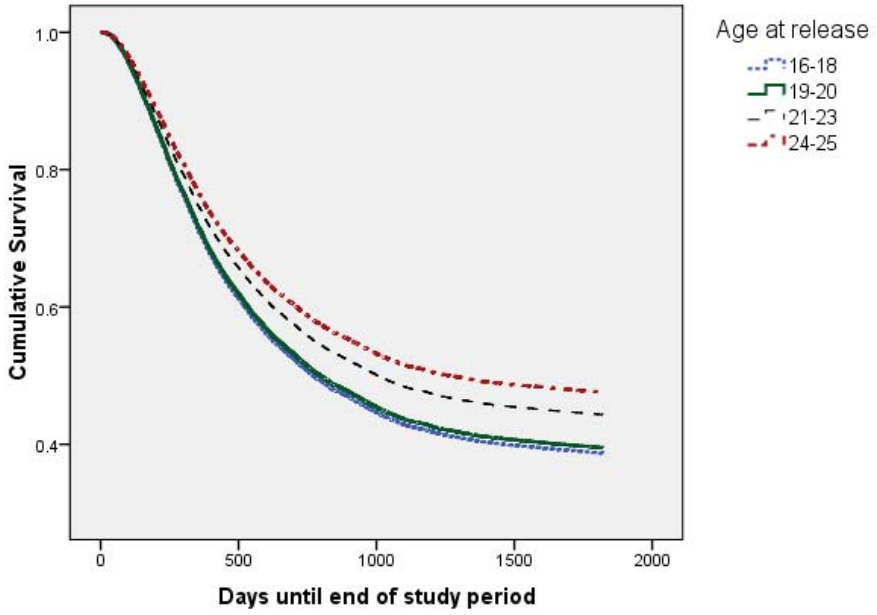

Figure 7. Survival curves of each category of age at release for entire sample.

These data suggest that 16-18 year olds behave similarly to 19-20 year olds. In the previous analyses, there was only a 2% decrease in hazard of recommitment for the

19-20 year olds as compared to the 16-18 year olds (Hazard ratio=.98, *z*=-.42, *p*=n.s., table not shown). This difference was far from being statistically significant. If development did not influence the likelihood of recommitment, we would expect no significant differences along age at release categories. That is not the case.

THREE GROUP COMPARISON

The next step is to understand whether the effect of age at release on recidivism changes after considering court of commitment and housing jurisdiction. The previous analysis shows that criminal court commitments housed in the CYA have the lowest rate of recommitment and the effect of importation and deprivation variables on these young offenders more closely resembles juvenile court commitments housed in the CYA than criminal court commitments in the CDC. Is there any evidence that the three groups display different results in regards to the distribution of reoffending by release age (as a proxy for development)?

Juvenile Court Commitments in the CYA

Figure 8 is a comparison of the proportion of recommitments across the age categories for the three groups. There are very different patterns of recommitment for the three groups across the dimension of age at release/maturation.

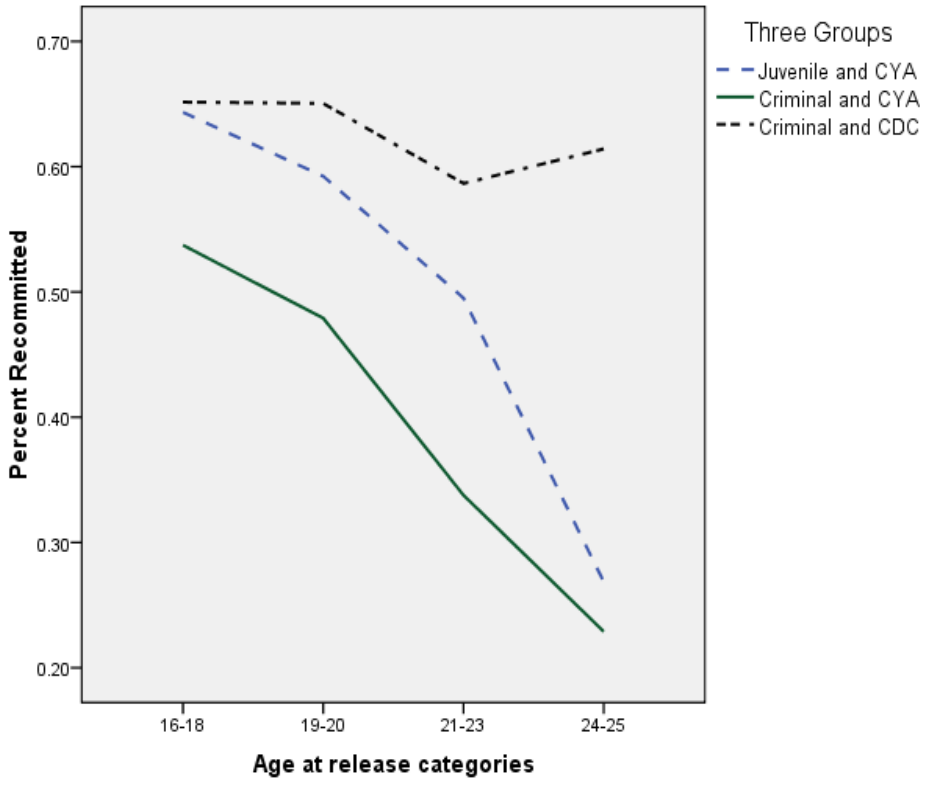

Figure 8. Percent recommitment by age at release categories for three groups.

As described previously, juveniles in the CYA have the second lowest rates of recommitment. There are very steep declines in the mean rate of recommitment across age groups. At 16-18 years the proportion of recommitment in this group closely approximates the criminal court commitments in the CDC.

Games-Howell post-hoc tests show no significant differences in the commitment rate of the 16-18 year (.64) and 19-20 year groups (.59) of juveniles in the CYA. There is a significant difference between the younger groups and the 21-23 year olds (.50) and

the 24-25 year group (.27). There were also significant differences between 21-23 year and 24-25 year olds.

CPH models for the eldest group as compared to all other age groups (while controlling for other covariates)[59] suggest huge decreases in the hazard of recommitment with development. The hazard of recommitment is lowered by 130% as we consider the 24-25 year group (n=67) with the 21-23 year group (n=307) (z=9.93, $p<.01$). The hazard decreases by 226% for 24-25 year olds as compared to 19-20 year olds (n=888) (z=21.98, $p<.001$). The risk of recommitment decreases by 277% for the oldest group compared to the youngest group (n=544) (z=21.98, $p<.001$).

Figure 8 shows an interaction effect. As offenders get older the rates of recommitment for the two groups housed in the CYA look as if they will converge. In fact, a test of means show no statistically significant difference in the rate of recommitment for the juveniles in CYA and criminals in CYA in the 24-25 year year old group ($t(148)=.56$, p=n.s.). In other words, the effect of the interaction between court of commitment and housing jurisdiction operates in younger offenders and disappears for older offenders.

[59] These models were built controlling for the importation and deprivation variables presented in research question 2 except for age at admission and months served.

Criminal Court Commitments in the CYA

Criminal court commitments housed in the CYA have the lowest rates of recommitment as compared to the other two groups. This is true for every age category of offender as can be seen in Figure 8. This figure shows the rate of recommitment decreases at each age category. The statistical results of the ANOVA show a similar pattern to juvenile court commitments housed in the CYA. Games-Howell post-hoc tests show no significant differences in the means of 16-18 year olds (.54) and 19-20 year olds (.48). Both 21-23 year (.34) and 24-25 year (.23) groups are significantly different from each other and the two younger groups.

Cox proportional hazard models were run on this group. The eldest group, 24-25 year olds, was entered as the reference category. Results show that, when controlling for all other covariates of interest, the likelihood of recommitment for the 21-23 year olds (n=530) and the 24-25 year olds (n=83) are not substantially different (z=1.30, *p=n.s.*). There is a 118% decrease in the risk of recommitment for the older group as compared to the 19-20 year olds (n=645). And there is a 143% decrease for the reference group compared to the youngest group (n=134).

Criminal Court Commitments in the CDC

Lastly, there is a very distinct trajectory for criminal court commitments housed in the CDC. The risk of recommitment for the two groups in the CYA decrease consistently as age at release increases. However, for the offenders housed in the CDC,

the percent of recommitment does not decline as dramatically. There is no significant difference in the mean recommitment rates for 16-18 year (.65) and 19-20 year groups (.65). Then, there is a slight drop from 19-20 years to 21-23 years (.59, $p<.05$). Finally, there is a slight upswing for the group of 24-25 year olds (.61, p=n.s.). In essence, there is little evidence of significant change in recommitment across development in this sub-group of offenders.

CPH models that control for all other covariates show relative conformity to the pattern in Figure 8. Again, the eldest group served as the reference group. There is no significant difference in the 24-25 year olds as compared to the 16-18 year group (n=66) (z=3.79, p=n.s.) and 21-23 year groups (n=4151) (z=1.21, p=*n.s.*) when controlling for all other covariates. The risk of hazard is significantly different for the eldest group as compared to the 19-21 year olds (n=1943)(z = 13.74, *p<.01.).*

This study has found that facility level characteristics, while modest in all three groups, are more pronounced in the group of criminal court commitments housed in the CDC. The Deprivation of Development theory expects the rate of recommitment to decrease as offenders age UNLESS characteristics of the carceral experience hinder the development to adulthood. This section finds that the rate of recommitment for the two groups housed in the CYA decreases substantially with age. The decline in recidivism by age for the offenders in the adult prisons is not evident. One potential explanation for these findings could be that the environmental conditions of the CDC hindered

development. Development could not as successfully proceed under these conditions. As a result, there were small to no changes in recommitment with age.

In contrast, there was less evidence of that deprivation is related to recommitment in the CYA. This carceral environment may have allowed for development. As such, we can see a decrease in the rate of recommitment as older offenders are released. Criminal court commitments housed in the CYA had the lowest rates of recidivism. This is likely due to two factors. First, the experience in the CYA allowed for substantial development while incarcerated that lowered the rate of recommitment. Second, this group had a lower rate of recidivism as compared to juveniles housed in the CYA. This can be partially explained by the higher proportion of younger offenders in the juvenile in the CYA group. As juveniles in the CYA age, they show marked declines in their recidivism rates. Had the juvenile in the CYA and criminal in the CYA groups been equivalent ages, I hypothesize that fewer differences in recommitment rate would have existed. While this study offers some evidence, future studies should further address this issue.

SUMMARY OF DATA ANALYSIS

These data analyses yield six major findings. First, an analysis of the entire sample shows that among young offenders sentenced to incarceration in facilities, the court of commitment is significant in determining recidivism only in conjunction with

the housing jurisdiction. Second, criminal court commitments housed in juvenile facilities have the lowest rates of recidivism. This is likely due to the housing jurisdiction and an effect of age (i.e., development). Criminal court commitments housed in adult facilities were recommitted most often. Third, an examination of the profile of significant (importation and deprivation) factors related to recommitment shows that factors that predict recommitment are more similar in people that were housed in the same correctional facilities than among the groups of offenders that were committed by the criminal court. This study finds that, in general, importation variables are more consistent predictors of recidivism across the groups than deprivation variables. Deprivation variables were most significant when considering offenders housed in adult prisons. Fifth, an analysis of the trajectory of recommitment across developmental age group concludes that a major distinction exists between offenders 20 and younger and 21 and older (even when allowing for multiple age cohorts). The likelihood of recommitment is significantly lower for offenders older than 21. Finally, offenders that are housed in juvenile facilities, regardless of the court of commitment, demonstrate a significant decrease in the likelihood of recommitment with age. The impact of development on the recidivism in offenders housed in adult prisons is far less obvious. In consideration with the other findings of this study, this may suggest that factors associated with incarceration in adult prison, like the deprivation factors found to be important, hinder development and increase recidivism.

Chapter 5: Discussion and Conclusion

On February 25, 2009 the Pittsburg Post Gazette ran a story about an 11-year old boy charged with murder that was being detained in an adult lockup. A Pennsylvania statute required he be automatically considered an "adult" (Malloy, 2009; Sherman, 2009). Both the District Attorney and the boy's defense attorney spoke of their reservations that the adult correctional system was the appropriate place for the offender. On the same day, the Texas Chronicle reported that the "scandal-plagued" Texas Youth Commission (i.e., the correctional system for young offenders) would no longer be allowed to handle youth ages 19 to 21. This policy was implemented as a measure to "protect" younger offenders in juvenile facilities from older offenders. As a response, the Texas Youth Commission began sending hundreds of young offenders to adult prisons for crimes they committed as juveniles (Sandberg, 2009). In short, states around the country are constantly struggling to determine the most appropriate and effective strategy for dealing with young offenders in correctional systems.

This is one of few studies that examines the effect of the incarceration environment, over and above the impact of imported characteristics, and with a consideration of the effect of the sentencing court. It adds much needed insight into the impact of corrections on a young offender sample. This study offers theoretical, methodological, and empirical contributions to the current knowledge base.

The state of deprivation and importation theory today closely resembles four decades ago. Numerous studies are presented without theory. Investigators that present theory still draw directly from Sykes (1958) and Irwin (1970), without modification, to inform their hypotheses regarding the impact of incarceration on inmate behavior (e.g., Gover and MacKenzie, 2000). Recently, the field of criminology has been inundated with developmental (i.e., life-course) theories of crime (see Liberman, 2008). It has become an important lens by which to consider change in behavior over time and people. Decades of research in corrections has shown that the behavior of young offenders incarcerated is distinct from older offenders (e.g., Gendreau, et al., 1996; Myner, et al; 1998). Yet, few studies investigate this group specifically. This research seeks to progress theories in corrections by integrating them in a developmental framework. In doing so, more specific hypotheses can be asserted about which qualities in correctional environments are important influences on later behavior for young offenders.

The focus specifically on young offenders is a theoretical strength of this study. Numerous studies show differences between young and older inmates both in prisons and in juvenile facilities (e.g., Kuanliang, et al, 2008; MacKenzie, 1987), yet few studies are able to compare this offender group across jurisdictions. Another contribution of this work is the definition of "young offenders" not by legal standards but by social construction and developmental expectation. This expands the literatures that can inform the effect of an event as profound as incarceration. It also widens our judgment of "what it means to be young" beyond what the law has deemed to be important.

Unfortunately, this study relied on official data. As such, perceptual measures of the incarceration environment, development, and self-report offending could not be conducted (i.e., a true test of the theory was not possible). It is certainly a limitation to use age at release as a proxy for development given the nuanced markers of transition that were proposed in the theory. It is an exploratory study. A stronger test of this theory would also, ideally, include a comparison with "adult" offenders. Measures that were found to be important to a youth population (but not adult samples) in prior studies were not significant in this study (e.g., crowding and distance from home). One possible explanation could be that this is the period in life when youth experience the lack of privacy and generally seeking independence from home. However, prior studies have shown that these factors are important for a younger group as compared to older offenders. Comparisons along this line may have resulted in a different finding. Future studies should offer a true test of the theory. Regardless of its limitations, this study still offers important theoretical contributions.

According to the Deprivation of Development theory, if the qualities of the incarceration experience hinder development the likelihood of recommitment will increase. This study provides support for two advances in theory on corrections and recidivism. First, the aging-out process can occur in carceral settings. As was suggested prior, young people are used to reasonable restrictions. In fact, restricting behavior, monitoring, punishment, and treatment are all part of good parenting. Even the most serious offenders (i.e., criminal court commitments convicted of person offenders) can show positive results after incarceration in a juvenile correctional setting. Second, the

aging out process can be hindered by the nature of the incarceration. Youth are not resilient to all levels of deprivation. Correctional experiences are not the same. The results of this study show significant deprivation is most likely occurring in adult prisons.

Given the findings of this study, the theory could use refinement. First, the negative effect of prisonization, measured by the length of time incarcerated, was not supported in any of the three sub-groups. Most research on prisonization is conducted with adult inmates. It is possible that young offenders are not adopting the inmate code of conduct as readily as older offenders. Alternatively, and in contrast to Haney (2003), prisonization may occur but does not hinder the transition to adulthood. Regardless, this study argues that length of time incarcerated as a measure of prisonization should be reexamined. Second, one hypothesis was that "belief in violence as appropriate behavior" (see Table 1) would affect a number of aspects of the transition to adulthood. In this study, an individual who committed a violent (i.e., person based) offense is someone who, arguably, agrees that violence is appropriate behavior. These findings show that person offenders can, in certain circumstances, age out of crime and are not always at the highest risk of recidivism. This would be consistent with the theory if we had evidence that the correctional experience had an impact on changing an offender's views or beliefs. This was not tested in this study.

Why would confinement in adult prisons lead to an increase in recidivism? For example, why would the proportion of violent inmates in a facility matter more in prison than in a CYA facility even though CYA has a larger proportion of violent offenders? This

research does not adequately answer this question, but theory can inform potential explanations. It is common practice to orient to person-based/violent offenders as the most serious threat to public and prison security. Person based offenders make up the majority of both groups housed in the CYA, and in both groups they were found to have a lower likelihood of recommitment than property offenders. In contrast, for youth serving time in adult prisons, being a person offender increased the risk of recommitment as compared to all other types of offenders. It is clearly not the case that person offenders simply recidivate more often. We can ask if there something about the way a prison orients to person offenders that increases the likelihood of recidivism upon release. The Deprivation of Development theory would hypothesize that prisons that orient specifically to violent offenders (i.e., Level 4s in California) put more extreme limitations on prisoner movement, autonomy, and independence. This stifles the potential to learn how to interact with others and how to behave independently which would increase the likelihood of future offending. Youth facilities, in contrast, do not make a distinction of offenders by level or crime. They claim to distinguish their facilities on the basis of age. This could be one possible explanation for differences across the jurisdictions. This is speculation and cannot be fully addressed with the measures provided in this study. But, it is a reasonable hypothesis, and notions like this deserve future attention.

Other theoretical hypotheses could not be directly tested but are important in explaining why CYA and CDC housing produced different results. The first could be juvenile facilities' orientation and provision of treatment. This was not a variable that

could be captured in this study, but the rhetoric and the mission of the CYA is to provide treatment. Referring back to Table 1, we can see numerous developmental markers that would benefit from educational, vocational, psychological, and/or emotional treatment. Second, the gang dynamics are well-noted in California prisons (e.g., Petersilia, 2006) and are less discussed in the CYA facilities. The impact of learning socially acceptable behaviors, interactions, responsible behavior and feelings of responsibility toward community would be significantly affected by a strong gang presence.

This research also improves previous methodologies. Past investigations would often select facilities and study individuals within those facilities (e.g., Forst , Fagan, and Vivona, 1989; Feld, 1977). These studies offer excellent insight into the day-to-day operations and experiences of inmates in those environments. However, these studies have narrowed the view of the incarceration experience to those specific institutions at that specific time. The dependent measure often is institutional violence, as opposed to post-release behavior, because of the limited number of people that are released from the few institutions during the study period.

The current investigation utilizes composite measures of institutional-level characteristics that represent every facility experienced during a youth's incarceration. In doing so, it does not prioritize the importance of some facilities over others. It also allows for a measurement of how incarceration, as a whole, affects behavior upon release (not behavior under environmentally specific conditions).

The biggest methodological improvement, however, is the ability to partial out the effect of being sentenced by the juvenile or criminal court and being handled by juvenile or adult correctional facilities. This has been a missing link in studies of transfer/waiver (see Bishop & Frazier, 2000).

Lastly, this study offers important empirical contributions. This research finds that the correctional experience matters. Commitment to an adult prison increases the likelihood of recommitment (regardless of court determination of "adulthood"). There is also preliminary evidence that suggests prisons may impede maturing out of crime. This finding cannot be explained simply by "more serious" offenders being sentenced to prison. In our three samples, criminals court commitments sentenced to adult prison had the smallest proportion of commitment for person offenses. In addition, offenders serving time in adult prisons were surrounded by a lower proportion of violent offenders. These offenders served less time incarcerated and were older at admission and release. In short, there were numerous reasons to believe that this group would have fared just as well, or even better, than offenders housed in juvenile facilities. But they did not. They had the highest likelihood of recommitment and they failed almost 3 times faster than criminal court commitments housed in the CYA. [60]

[60] An additional benefit to this study design is to partial out the effects of the collateral consequences related to a conviction in criminal court and the experience of incarceration in adult prisons. All criminal court commitments should be faced with the same challenges related to an adult, felony conviction. Yet, the criminal court commitments housed in the CYA still fared much better.

This study finds that the legal determination of adulthood (i.e., being tried and convicted in the criminal court) in and of itself did not determine the likelihood of recommitment. For these young offenders, the opportunity to serve time in a juvenile facility vastly improved the chances of success five years post-release. There is evidence that this is due to the environmental condition and also maturation (or perhaps the environmental condition that allowed for maturation while incarcerated). Regardless, this group performed better on release than even juvenile court commitments housed in juvenile facilities.

Juveniles in juvenile facilities did not have recommitment rates as impressive as their criminal court counterparts. But there is strong evidence that their behavior improves as they age, and soon they would be indistinguishable from the criminal court commitments housed in the CYA. The higher rate of recommitment in this group is at least, in part, due to a greater proportion of younger offenders.

This research suggests that the environmental condition matters more in prison than in juvenile facilities. Despite best efforts, it became clear that adult prisons were substantively different than juvenile facilities (hence the need to run separate group analyses). As states struggle to find the best housing options for their young offenders, serious investigation into the true differences between correctional systems (i.e., adult v. juveniles) is important. What are the characteristics of the environment that matter the most? How different are facility operations on the ground? Why might some environmental or personal qualities matter in prison but not in juvenile facilities? This

research offers some suggestions, but more work is necessary, for these questions are worth investigating.

LIMITATIONS

Any study that utilizes official data will have a lengthy limitations section. This study is no different. It suffers from 1) a reliance on available agency records (both individual and facility level), 2) data collection by agency personnel, and 3) the possibility of loss of data from unreported events. Great care was taken to ensure that comparable data were collected from both the CYA and CDC. Constant contact was maintained. Regardless, part of the challenge of applied research with government agencies is reliance on their staff. There is always the argument that likeness between the CYA groups is due to measurement error. However, there are findings that span all three groups (e.g., the 20 and younger, 21 and older division) which offer some support to the contrary. Future studies should also include measures that were unavailable in this study (e.g., mental health, gang membership, prior message, treatment received, and life prior to incarceration).

Additional measures of recidivism should also be tested. Maltz (1984) argues that time to re-arrest is a better measure of recidivism. It could be hypothesized that recommitment to an institution exemplifies agency decision making more than offender behavior. This should be explored.

This study sought to improve the research on deprivation by incorporating every facility experienced during a commitment. To do so required the use of facility level

characteristics available from published reports. The reported measures were at the facility level. It could be argued that the facility level is less important than the housing level or the "yard" level. These lower levels of analysis might be more central to the inmate experience. The characteristics at this level were not available in reports.

The dependence on objective measures of importation, deprivation, and development has benefits (Wooldrege, et al, 2001). They come at the costs of a true test of the Deprivation of Development theory. This is a retrospective study of official data. Subjects could not be contacted and their psychosocial maturation could not be measured in a way that would have allowed a true test of the theory. In addition, the variables available to measure importation constructs were also limited. The original intention of importation theory was to measure cultures and beliefs (e.g., Irwin, 1970). Numerous tests of importation rely on objective, individual characteristics like the current study (e.g., Zamble & Porporino, 1988), but it is a limitation. Future studies should improve in this area.

This was a study of incarceration on the outcome recommitment. Therefore, it was required that all individuals be released from incarceration for follow-up. Grand statements regarding the benefits of being committed by the criminal court but housed in juvenile facilities should wait for future research. Release cohorts were sampled due to the dependent variable of interest. This research does not inform the number of criminal court commitments housed in juvenile facilities that are never released. It is not known if these offenders are more likely to re-offend while incarcerated and be transferred to adult facilities. As stated in the methods, 89 individuals in this study were

excluded for serving time in both juvenile and adult facilities. Many of these individuals were criminal court commitments housed in the CYA. It is important to consider these results in light of the fact that the group under current study was released without being convicted of a new offense and being sentenced to an adult facility. We do know that criminals in the CYA that are released without serving time in both systems do better on follow-up than other groups. However, this may not represent the entire group of criminal court commitments ever sentenced to the CYA.

Finally, I have no empirical evidence of what determines a criminal court commitment in the CDC versus CYA. This study is informed by the knowledge of the intake officer in the Department of Corrections. However, this is not concrete evidence as to the judicial decision-making that inevitable selected these comparison groups.

POLICY RECOMMENDATIONS

What should we do with our young offenders? We should acknowledge that all incarceration experiences are not equal. We should not simply move offenders from one housing jurisdiction to another without evaluating the qualities of the systems. The Texas Youth Authority strategy of transferring older offenders out of juvenile facilities to "protect" younger offenders would not be supported by this research. This study finds that both groups of offenders in the CYA have a lower likelihood of recommitment. At first glance it might seem as though juveniles in the CYA are at a disadvantage. They were more likely to recidivate than the older criminal offenders in the CYA. However, a

consideration of the role of development shows that with time, the rates of recommitment for both groups converge. There seem to be noticeable benefits to being housed in youth facilities as compared to like-aged offenders in adult prisons.[61] This study showed that 19-21 year olds showed lower rates of recommitment in juvenile facilities than in prison.

California juvenile correctional facilities, like Texas, have been at the center of controversy. They have been accused of being too punitive, not rehabilitative enough, and indistinguishable from adult prisons. This study cannot address whether juvenile facilities are too punitive or whether they can and should increase the rehabilitation offered. An increase in the treatment provision within this system might decrease the likelihood of recidivism even further. This study does, however, offer evidence that juvenile facilities are NOT the same as adult prisons. Despite any critiques of the state juvenile correctional system in California – the characteristics of the facilities and the impact of these qualities on young offenders are distinct. Despite the retrospective nature of this study, it is particularly relevant now. California has begun closing CYA facilities. Young offenders will either be retained in the county or sent to adult prisons. In light of the findings of this study, the latter policy seems less than promising.

As stated prior, the role of development in law has been contentious. Legal changes in America suggest that we believe that youth should be held to adult standards for their actions. This country has often declared that offenders between 19

[61] One additional caution – this is not to suggest that a study of the Texas Youth Commission would produce similar results just because it is a comparison of juvenile versus adult facilities.

and 25 are too adult-like and serious to warrant special treatment. This is in contrast to social convention that has accepted that youth are taking longer to transition to adulthood and require more support. This study provides evidence that treating "adults" like "kids" has benefits. It is not known if all adult criminals can benefit from being treated like juveniles. For now, we might try to increase our comfort with the thought that a criminal court conviction should not preclude placement in juvenile facilities (i.e., does not also necessitate housing with adults). We should be more open to the prospect that criminal behavior, even serious criminal behavior, can dissipate with appropriate socialization and development. Lastly, we should consider that development need not by defined by outdated social expectations or current legal stipulation. Development should be considered by current convention AND even within an offender population.

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