FAMILIAL STRUCTURAL DIMENSIONS AND SOCIAL LEARNING OF JUVENILES' MARIJUANA USE AND DIVERSITY IN DELINQUENCY

By

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To my entire family, especially my mother, father, and sister, for their endless support, constant encouragement, and honest uplift throughout this journey

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This research examined the effects social structures and social learning processes have on juvenile marijuana use and diversity of delinquency. Previous research predicts that social processes will lessen the effect (mediate) that social structures have on juvenile drug use and delinquency. The researcher analyzed interview data from 146 juveniles housed in FCBDTI residential programs. The researchers found that social learning processes did not substantially mediate the relationship between social structure variables and juvenile marijuana use and diversity of delinquency. Although the broken home indicator variable was mediated, it was the only one that did for either of the dependent variables and very few of the other structures significantly predicted juvenile marijuana use or diversity of delinquency. Differential association with peers who engage in deviant activities was the greatest predictor for both DVs, but imitation/modeling for parents drug use was significant in the marijuana models, suggesting that parents may have an effect on specific, instead of general, juvenile deviant behavior.

CHAPTER 1
INTRODUCTION

Concern about juvenile behavior has been present at least since the movement to establish the first juvenile court in 1899 (Platt 1977; Greenwood 1996; Sprott 1996). The transformation that lead to the juvenile justice system was brought on by public recognition that more work needed to be done to help wayward youth and by people, specifically women known as the “child savers”, were willing to invest time and energy to see that change come to fruition (Platt 1977). Even with the growth and changes that have occurred in the juvenile justice system, people still yearn to understand more about the deviant behaviors of juveniles; the public is especially concerned with juvenile delinquency and drug use and how family and friends influence that behavior (Triplett and Payne 2004; Brook, Brook et al. 2006).

The public’s concern for juvenile behavior is not a new phenomenon and many American criminologists have sought to help with understanding juveniles through their research (Johnston, O'Malley et al. 2004; Bahr, Hoffmann et al. 2005). Theoretical perspectives dealing with peers and juvenile groups reach as far back as the 1920s with the Chicago School of thought (See Park, Burgess et al. 1984). In particular, Sutherland’s differential association theory focused on the role of peers and friends (Sutherland 1939). This work has become a large body of research which has confirmed that peers influence delinquent behaviors (Akers and Jensen 2006). Other theories like Hirschi’s (1969) social control or bonding theory and Gottfredson and Hirschi’s (1990) general theory place important emphasis on the role of families. The relationships of familial factors (broken homes, socialization, supervision, discipline, etc.) with delinquency have also been researched. Parents and siblings, as well as

peers, are thought to affect delinquency (See Stormshak, Comeau et al. 2004; Bahr, Hoffmann et al. 2005; Velleman, Templeton et al. 2005; Piko and Kovács 2010).

The purpose of this research is to examine some of the ways in which friends, parents, and siblings may contribute to drug use and delinquency among a sample of serious delinquents drawn from youth in residential facilities that were participating in a faith and community based treatment regimen—a regimen which had minimal impact according to an evaluation (See Lane, Lanza-Kaduce et al. 2009). The data are cross-sectional responses to a survey administered to the youth during their residential commitments. Akers' (1998) Social Structure Social Learning Theory (SSSL) is used to provide a framework for the research. His theory is selected because it incorporates interaction and social psychological components dealing with family and friends (i.e. the social learning process involving differential association, differential reinforcement, imitation/modeling, and definitions), as well as attends to different structural arrangements (like broken homes) and social locations (like race and gender) that might affect delinquency. Akers posits that the effects of social structural and social location variables will be mediated by the social learning process (Akers 1998; Akers 2009).

The research addresses three basic questions: 1. Do family structures explain marijuana use and diversity of delinquency among this group of offenders? 2. Do variables reflecting the social learning process account for drug use and delinquency among this group of offenders? 3. Will the impact of the family structure variables be mediated by the social learning variable among this group of offenders?

CHAPTER 2
SOCIAL STRUCTURE-SOCIAL LEARNING THEORY

Social Learning Theory

Because of Akers' 1988 social structure-social learning theory is used to provide a framework for this research, it is the springboard for reviewing the literature. Social structure-social learning theory is an effort to integrate our understanding of crime and delinquency across both structural and individual social psychological levels of analysis. Social structure-social learning theory is a general theory of crime and deviance. It purports to explain all kinds of crime, as well as specific crimes; it seeks to account for different kinds of involvement in crime such as frequency, duration, prevalence, and diversity across crimes (Akers, Krohn et al. 1979). Akers (1998) has provided a summary of his theory:

> Its main proposition is that variations in the social structure, culture, and location of individual and groups in the social system explain variations in crime rates, principally through their influence on difference among individuals on the social learning variables…

His integrated theory retains the four dimensions of the social learning theory that he developed over the years (Burgess and Akers 1969; Akers, Krohn et al. 1979). Historically, the theory that grew into social learning theory began as an advancement of Edwin Sutherland's differential association theory (Burgess and Akers 1969). Burgess and Akers (1969) debuted differential association-reinforcement theory. Sutherland's differential association theory introduced to criminology the notion that interaction with different people affected the different activities that people participate in (Sutherland 1939; Akers 1985; Akers 1998).

Differential association-reinforcement theory looked further into this connection and focused on the process of how interactions shaped behaviors, particularly operant

conditioning (Burgess and Akers 1969). From this theory, Akers formulated social learning theory and explained the elements that he thought were a part of the process of influencing behavior (Akers 1985). Social learning theory accepts Sutherland's key concept of differential association and contributes additional measurements to the process of learning: imitation, differential reinforcement, and definitions (Akers 1985). While each measurement plays its own individual role in the learning process, it is also enhanced by the others (Akers 1985).

Differential reinforcement is defined as a "primary learning mechanism" in which "behavior is a function of the frequency, amount, and probability of experienced and perceived contingent rewards and punishment…" (Akers 1998). This is an example of the role of operant conditioning in social learning processes. "Burgess and Akers (1966b) explicitly identified the learning mechanisms as those found in modern behavioral theory. They retained the concepts of differential association and definitions from Sutherland's theory, but conceptualized them in more behavioral terms and added concepts from behavioral learning theory. These concepts included differential reinforcement, whereby 'operant' behavior (the voluntary actions of the individual) is conditioned or shaped by reward and punishments. They also contain classical and 'respondent' conditioning (the conditioning of involuntary reflex behavior); discriminative stimuli (the environmental and internal stimuli that provide cues or signals for behavior); schedules of reinforcement (the rate and ratio in which rewards and punishments follow behavioral responses); and other principles of behavior modification" (Akers and Sellers 2004).

When people decide to engage in an activity they receive responses that can be positive, negative, social or nonsocial; the type of reinforcement received plays a role in determining whether or not the behavior will be continued (Akers 1998). For example, students who are rewarded for good grades are more likely to continue to work for good grades. Also, students who are cheered on by their friends for having bad grades are more likely to continue to get bad grades to impress their friends. The consequences and rewards for their actions will be taken into consideration when deciding to continue or stop the behavior. Additionally, people may have different perceptions of the same consequence (Akers 1990).

Imitation is defined as the other "primary learning mechanism" that happens when the "behavior of others and its consequences are observed and modeled" (Akers 1998); it also occurs when people observe a behavior from a person that they admire or respect and that they are interested in repeating (Akers 1985; Akers 1998). An example of this is when children first attend school and must get acclimated to the rigorous schedule. They may not initially know the daily routine, but they see how older children act and use that as a guide for what is expected of them and what is allowed. They are imitating the people around them. Although personal contact like the kind that takes place at school allows a venue for imitation, it can take place without physical interaction; i.e. people can imitate things that they see on television (Akers 1985).

Definitions are defined as "beliefs, attitudes, justifications, [and] orientations" that "become discriminative for engaging in deviant and criminal behaviors" (Akers 1998). Many of the differences in definitions are obtained through differential reinforcement and imitation (Akers 1998). Furthermore, they contribute to people's decisions regarding

whether or not to engage in certain activities. Definitions can be formed about specific behaviors such as walking alone at night or about general behaviors such as maintaining personal hygiene; they are usually defined as favorable or unfavorable toward a general or specific belief (Akers 1985). For example, students who have experienced praise for good grades at school are likely to form positive definitions about school that encourages them to continue to excel. Contrarily, students who are consistently in trouble with their teacher because of the behavior at school are likely to form negative definitions about school that discourage them from continuing. Decisions to engage in an activity are made on a continuum where multiple definitions shaped by differential association, differential reinforcement, and imitation/modeling may come into play; the more favorable definitions the more likely a person will engage in the activity (Akers 1990). Given Akers behavioral reformulation of Sutherland (1939), definitions are conceptualized as being cue or discriminative stimuli to which behaviors are paired depending on reinforcement and punishment contingencies (Akers 1998; Akers 2009)

Differential association is defined as “direct and indirect, verbal and nonverbal communication, interaction, and identification with others” (Akers 1998). This concept describes the variety of people with whom a person associates and provides different opportunities to imitate behavior and learn the norms of society (Akers 1985). Two of the most common groups that youths associate with include the family (specifically, parents and siblings) and peers; they are considered primary groups and each can have a strong influence on juveniles (Akers 1985). Borrowing from Sutherland’s focus on the importance of intimate groups and the frequency, primacy, and intensity of associations, Aker’s would expect that family and friends would be the most influential groups with

which individuals associate, especially juveniles (Akers 1998) Family and friends will more often have a greater influence than other groups such as a church, book club, or daycare; although, each type of group provides the opportunity to association with groups of different people (Akers 1998). It is through differential association that people are exposed to differential reinforcement and definitions (Akers 1985).

Altogether, differential association, imitation, differential reinforcement, and definitions constitute social learning theory (Akers 1985). This theory may have blossomed out of various other theories, but it has become one of the leading theories that researchers use to try and explain juvenile delinquency and drug use (Akers and Jensen 2006). Since its inception, many researchers have used it to provide support for their assertions about behavior (Krohn 1999; Akers and Jensen 2003). The following section looks at how social learning theory has been tested over the past 30 years.

Social Structure-Social Learning Theory

In 1990, social learning theory was extended beyond its study of social process to include an analysis of social structure (Akers 1998). Akers (1998) discusses several dimensions of social structure that may be useful in predicting delinquent behaviors. These structures include: differential social organization, differential location in the social structure, theoretically defined social structure, and differential social location (Akers 1998; Akers 2009). Only the theoretically defined social structure dimension incorporates directional relationships between structural variables and crime or deviance. For the other dimensions, the theory only states empirically established relationship between the variable and crime and deviance will be mediated by social learning variables (the theory's mediation hypothesis). Altogether these elements of social structure seek to add to the explanatory power of social process variables used in

Akers' original social learning theory (Akers 1998; Akers 2009). Social structure-social learning theory also theory hypothesizes that social structural variables will be mediated by the social process variables in social learning theory (Akers 1998; Akers 2009).

Differential social organization, one of the two structures that have to do with "social correlates or 'social covariates' of crime", includes "ecological, community, geographical differences across systems (urban versus rural communities, cross-national comparisons, regional variations in rates, differences by ecological areas of the city, differences in population size or density, etc.)" (Akers 1998). For example, when studying drinking behavior it may be good to understand if the participant is a white, male from America versus a black, woman, from Canada. Their differential social organization may explain some of the differences in the social processes that predict their behavior.

Differential location in the social structure, the second of the two structures that have to do with "social correlates or 'social covariates' of crime", includes "the known or probable variations in crime rates by sociodemographic characteristics, groupings, aggregates, collectives, or categories, such as race/ethnicity, class, gender, marital status, religion, occupation, and other dimensions of social differentiation that exist in societies, regions, and communities" (Akers 1998). For example, black children and white children may enjoy the same movie, but identify differently with messages or themes in the story. Just by being a part of their perspective locations in the social structure, these two groups view the same situation from different perspectives. Akers (1998) elaborates that locations in the social structure may be viewed as "direct causes of crime (e.g., there is something inherent being male that makes men more prone to

crime than women), but more frequently the relationship between and crime is viewed as the thing being explained” .

Theoretically defined social structures, the structure that “has to do with the conceptually defined features of social structure…”, includes well-known structural theories of crime and deviance that propose elevated rates in those societies, or segments of societies, that are hypothesized to have higher levels of some abstract defined condition like anomie, conflict, social disorganization, patriarchy, or class oppression” (Akers 1998). For example, some conflict theories focus on the dynamic of the authority and subordinate relationship. The theory suggests that we would expect different process to go on in these very different structural groups (Akers 1998; Akers 2009).

Differential social location, the structure that “has to do with the small group level of social structure”, includes “the more immediate primary, secondary, and reference groups comprising of the small-group and personal networks that impinge directly on the individual” which are “agents of informal and semiformal social control and socialization and are referred to specifically in social learning theory’s concept of differential association” (Akers 1998). For examples, social learning theory, as well as other theories, highlights the importance of social groups; families and friends are theoretically expected to have a different influence on peers. Depending on the theory being focused on for structural analysis different groups or characteristics will be identified.

For the purposes of the current research, the researcher will focus only on differential location in the social structure and differential social location. This study will

not be a complete test of social structure-social learning theory, but will instead focus on family structures from within the differential location in the social structure dimension and demographic information from within the differential social location dimension.

Testing of Social Learning Theory

Social learning theory has been tested in many ways and has stood the test of time by withstanding criticisms and receiving a lot of support from various researchers (Akers and Jensen 2006). In its earlier years, the theory was mostly used to explain juvenile delinquency (Krohn 1999). Krohn (1999) looked at how social learning measurements predicted behaviors such as use of alcohol, cigarettes and marijuana and they produced support for the theory. He paved the way for social learning theory to be considered one of the leading theories explaining juvenile delinquency and drug use (Bahr, Hoffmann et al. 2005). Akers, Krohn, Lanza-Kaduce, & Radosevich (1979) focused on how differential association with peers affected alcohol and drug use. They found support for their hypotheses and provided validation of the theory. Although the study supported learning theory, the authors recognized the need for further testing and urged other researchers to delve deeper into the predictive relationship of drug use and delinquency (Akers, Krohn et al. 1979). Despite extensive evaluation of the theory, there still exists a need for comprehensive testing of the theory that incorporates the effect of parents, siblings, and peers and that inquires about a drug use and delinquency of varying severity (McDermott 1984; Akers and Lee 1999; Bahr, Hoffmann et al. 2005).

Over time, social learning theory was used even more extensively researchers departed from focusing primarily on peers to focusing on other predictors of juvenile delinquency that social learning theory might help explain (Akers and Jensen 2006). Krohn, Lanza-Kaduce, & Akers (1984) examined how community contexts (suburban,

rural, and urban) affected juvenile delinquency. The researchers found that social learning measurements represented the differences in each of these places and were predictive of the level delinquency that juveniles in each area would participate in. This study added to the explanatory versatility of the theory and was support that social learning theory could explain delinquency across varying communities (Krohn, Lanza-Kaduce et al. 1984). Parents, siblings, and peers deal with juveniles in different social contexts that intermingle, and further research is needed to see how other contexts can be explored using social learning theory (Krohn, Lanza-Kaduce et al. 1984). The current research will investigate how parents, siblings, and peers provide different social contexts for juveniles to commit delinquent act and use drugs.

Further support for the theory came from its first longitudinal test. Krohn, Skinner, Massey, & Akers (1985) tackled criticisms that the theory received after the publication of Akers et al. (1979). Some researchers questioned the validity of the theory and if the causal order suggested by Akers would hold up to a longitudinal test. Theorist in support of social learning theory argued back against the mischaracterizations of the research (Lanza-Kaduce, Akers et al. 1982) and further support for social learning theory was provided over time (Akers and Jensen 2006). Krohn, et al. (1985) found support for the casual order suggested by the theory. This means that social learning variables were predictive of the juvenile's behavior over a period of time. The study also found that both parents and peers influence juveniles' drug use. This research provided additional support that it is necessary to investigate the effects that parents and peers have on juvenile delinquency and drug use. At different stages (initiation and maintenance) they are shown to have different effects (Krohn, Skinner et al. 1985).

Although it is clear that a complex relationship exists between parents and peers, siblings are another group that deserve consideration (Akers 1990) Peers have a greater effect on juveniles' behaviors than parents and siblings. It is unclear how interrelations of parents, siblings, and peers can impact how they explain juvenile behavior (Brook, Brook et al. 2006).

Another study that looked into factors that affect juvenile drug use and delinquency was Akers and Lee (1999). This research addressed one of the serious criticisms of social learning theory proposed in Krohn (1999); social learning theory was claiming to subsume the elements of other theories, but had yet to directly test if it was true. In seeking to address the issue that no theory could explain the age crime curve, Akers and Lee (1999) looked at adolescent smoking from social bonding and social learning theory perspectives. Their research supports the assertion that social learning theory makes about common measurements between the two theories, e.g. how the relationship with peers and family is measured through various interactions and situations; they also found support that social learning explains the variance in how age is mediated by social learning processes when predicting marijuana use in juveniles more than social bonding theory (Akers and Lee 1999). This supports the SS-SL mediation hypothesis as well since age can be a structural variable (Akers 2009). The current research will further test this theory by using family structure measures, as well as age.

Akers (1990) further highlights the versatility of the theory by providing examples of how features of other theories such as deterrence and rational choice can also be found in social learning theory. This article shows how many researchers have

disregarded the social learning variables that they are measuring when they look at other theories or attempt to integrate theories. Some studies do not even acknowledge that they are using social learning variables (Akers, 1990). This emphasizes the great reach that social learning theory has to explain criminal behavior, specifically juvenile delinquency and drug use (Akers and Cochran 1985).

Several general themes can be found in the research discussed above. First, social learning theory has made strides as a theory that explains how behavior is caused through the learning process (Benda 1994; Bahr, Marcos et al. 1995; Triplett and Payne 2004; Hwang and Akers 2006). Each of the articles looked at one or more of the social learning measurements and found it predicted behavior. Second, the articles urged for more studies to test the limits of the theory (Krohn, Lanza-Kaduce et al. 1984; Akers, La Greca et al. 1989; Hwang and Akers 2006); this has created a lineage of support for social learning theory which is especially strong in explaining the behavior of juvenile offenders (Akers, La Greca et al. 1989; Hwang and Akers 2006). Lastly, the articles that focused on juvenile delinquency and/or drug use found support for claims that parents and peers are amongst the most influential groups in a juvenile's life (Triplett and Payne 2004; Bahr, Hoffmann et al. 2005; Hwang and Akers 2006). Tests of social learning theory have rarely focused on parents, siblings, and peers in one study to explain juvenile drug use and delinquency (Akers and Jensen 2006); the current research seeks to bridge this gap in the literature.

Testing of SS-SL Theory

Akers (2009) goes into great detail on the progress that has been made in researching SS-SL theory over the past 12 years; although the body of literature is not large, it is increasing with time. Throughout the years, his students, friends, colleagues,

and critics have performed analyses of the theory and if it performs as predicted: social processes mediating the social structure measures to predict behavior (Akers, 2009).

In Akers (1998), SS-SL theory was first posed to address the gap in macro and micro level theories. This attempt to create a structural and process analysis of crime and deviance has not drawn a lot of attention since then, but has been supported by several researchers (Akers 2009). In Page (1998) the author found support for SS-SL theory and its mediation hypothesis in a study where family structure predicts juvenile delinquency. Family structure consisted of whether the juvenile had 1 or 2 parents and if either or both were birth- or step-parents; this was a measure of differential social location (Page 1998). Despite providing support for the mediation hypothesis, Page (1998) found that not all structural measures (specifically gender) were mediated. This issue has been found in other research as well.

In 2004, another attempt to test SS-SL theory was made using multiple structural measures to predict juvenile alcohol and marijuana use (Lee, Akers et al. 2004). Lee, et al. (2004) use structural equation model to test their hypotheses about SS-SL theory. They found support for the mediation hypothesis of SS-SL theory, but like other tests found that not all variables mediated by the social process measures; once again, gender/sex was not mediated (Lee, Akers et al. 2004). They address this issue by suggesting that moderation may be affecting the model and express the potential need to extend SS-SL theory to include consideration for moderation, as well as for mediation.

The comprehensive analysis of SS-SL theory provided by Akers (2009) suggest that there is much to still be understood about how different structural dimensions contribute to the overall understanding of crime and deviant behaviors (Akers, 2009).

Another major study focused on SS-SL theory took a feminist approach to analyzing drinking behavior of college students (Lanza-Kaduce, Capece et al. 2006). Association with a fraternity or sorority, age, sex, and race were used as structural measures and tested for mediation effect with social learning processes. The study found support for the SS-SL theory mediation hypothesis, but reported that gender was not mediated by the social learning processes (Lanza-Kaduce, Capece et al. 2006). In accord with the previously discussed research, the authors in this study suggest further consideration of which structural measures are not mediated by structural measures and that moderation effects should be taken into consideration (Lanza-Kaduce, Capece et al. 2006)

The first full test of SS-SL learning theory was used to predict juvenile alcohol, marijuana, and illicit drug use (Holland-Davis 2006). This study included measures for each of the four structural dimensions as well as a full social learning model; the research supported the SS-SL mediation hypothesis (Holland-Davis 2006). Although many of the variables were mediated, there was still no mediation effect found for gender suggesting, as did the previous studies, that the learning process affect boys differently than it affects girls and that moderation effects need to be considered in the SS-SL model (Holland-Davis 2006).

Building off the previous research, the current research plans to address the gap in understanding how different family structures can assist in predicting juvenile delinquency and marijuana use.

Research on Juvenile Drug Use

The next section will discuss the most current research on juvenile drug use, particularly identification, prevention, and intervention. These studies come from a variety of theoretical perspectives and approaches. Although some do not identify themselves as testing social learning theory, they have measurements that can be used to examine social learning theory (Akers 1990). The research discussed in this section not only highlights the pervasive need to address juvenile delinquency and drug use in research, but it also shows that a great deal of the policy solutions being suggested are grounded in social learning theory.

Most of the research discussed here occurred since 2000, but it can be beneficial to look at earlier studies because they help show how research on juvenile drug use and delinquency has evolved over time. McDermott (1984) examined the effects of perceived parental drug use and parental attitudes regarding drug use. The results showed that what parents say can be more important than what they do. The characterization of the measure speaks to the effect that parents behavior has on juveniles' definitions and on their imitation/ modeling. Newcomb, et al. (1986) looked at the current state of the research at the time arguing that people wanted to find one explanation for youths' drug use yet there seemed to be no consensus on how teens came to use drugs (Newcomb, Maddahan et al. 1986). In their study, Newcomb and his colleagues tried to understand what made teens susceptible to going down any pathway that led to a life of drugs (Newcomb, Maddahan et al. 1986). Their research borrowed

concepts already being applied to infectious diseases at the time and the risk factors that they used in their study such as poor relationship with parents, lack of social conformity, perceived peer and adult drug use can be considered social learning measurements of differential association and imitation/modeling (Newcomb, Maddahan et al. 1986). Their results supported the idea that multiple pathways lead to drug use. This study was a major contribution to research because it took a new approach to explaining the phenomenon, in addition to collecting longitudinal data so that the interpersonal process could be better understood. At this time public concern was rising about juvenile drug use, and more and more research began to indicate that school and family factors were predictive of juvenile drug use (Barnes and Welte 1986). Studies varied in whether they focused on the parents, siblings, or friends of the juvenile, but they continuously found that these groups were influential to juvenile behavior (Kandel 1980; Kaplan, Martin et al. 1984; Brook, Whiteman et al. 1986; Simcha-Fagan, Gersten et al. 1986; Krohn, Skinner et al. 1989).

Other researchers have followed this research trend by looking at different potential predictors in hopes of helping provide solutions to juvenile drug use. More recently, Botvin, et al. (2000) recognized the need for improved strategies in prevention and the need for program evaluation. Although previous research had reported support for prevention programs, those studies were limited in their scope because they only studied the effects on use of one or a few drugs (Botvin, Griffin et al. 2000). Understanding prevention beyond marijuana usage was needed to actively treat the vast array of drugs juveniles may use (Penning and Barnes 1982; Botvin, Griffin et al. 2000; Svensson 2000). Their research extended the previous understanding about

prevention program effects on use of gateway drugs, showing that prevention methods also have a deterrent effect later in life against illicit drugs. Additionally, they showed that researchers and practitioners need to pay careful attention to how prevention programs are structured. By better understanding the influence that parents and peers have on drug use programs, better use can be made of them as a preventative measure (Brook, Brook et al. 2006; Piko and Kovács 2010).

Researchers have also examined juvenile behaviors or characteristics that might affect the impact of parents and peers on their own drug use (Moon, Hecht et al. 1999; Rohde, Kahler et al. 2004; Triplett and Payne 2004) . Triplett and Payne (2004) highlight problem solving skills as an important factor that may prevent juveniles from getting involved in drug use. Problem solving skills are developed through socialization with family and friends (Triplett and Payne 2004). Youths who do not have good problem-solving skills may view drug use as a release from the problems and may be more likely to use and use to more frequently; youth with good problem solving skills are more likely to seek out other options to solve their problems besides drugs (Triplett and Payne 2004). The results supported social learning theory by reporting that parents and peers affect the definitions and reinforcement that the juvenile receives before and after making their decision about drug use (Triplett and Payne 2004). Although many juveniles encounter potential drug offers, it is necessary to remember juveniles are both similar and different from each other; research has shown that different characteristics such as race, gender or even psychiatric disorders can affect whether they are more or less susceptible to offers to use drug and drug use in general (Moon, Hecht et al. 1999; Rohde, Kahler et al. 2004).

As time progressed, research advanced in recognizing that peers were not the only primary group worth focusing on to address juvenile drug use; eventually researchers realized the need to focus more on parents and the combination of parents and peers as both preventative and risk factors (Brook, Whiteman et al. 1990; Andrews, Hops et al. 1993; Aseltine 1995). Research has shown that both groups have an effect on whether or not juveniles use drugs and that peers have a more significant effect than parents do , but their overall and interactive relationship is still not completely understood (Huizinga, Loeber et al. 1995; Stice and Barrera 1995; Hoffman and Johnson 1998; Dorius, Bahr et al. 2004; Stormshak, Comeau et al. 2004; Velleman, Templeton et al. 2005; Piko and Kovács 2010).Velleman, et al. (2005) discussed many factors that influence the relationship such as parental supervision, parent/peer influences, age of first use, and social coping skills. Bahr et al. (2005) took a theoretical approach to understanding how family and friends affect juvenile drug use using social learning and social bonding theories. Furthermore, research has also showed that juveniles are more likely to be introduced to drugs through family, friends, and other peers than through drug dealers as previously suggested (Khavari 1993).

Additionally, consideration is needed that parents and peers may affect how each other are able to influence juveniles. Mediator or moderator effects may be present, but undetected; research has drawn mixed conclusions about the presence of mediation and moderation effects in regard to juvenile drug use (Hoffman and Su 1998; Akers and Lee 1999; Hwang and Akers 2006).

Bahr, et al. (2005) concluded that their data were more consistent with social learning theory than social control theory measures; again providing confidence that

social learning theory has a role to play in uncovering the mysteries of the parent/peer effect of juvenile drug use. Velleman et al. (2005) includes a review of the literature that led the authors to suggest more integrated prevention and intervention methods involving parents, siblings and peers. The effects of the program can benefit the family, as well as the juvenile by allowing them to have greater knowledge of how their support can help the juvenile and their drug use problem. Together these articles show that just like there is no one pathway that leads people to drug use, there is no group that single-handedly can cause or solve the juvenile drug use issue (Simcha-Fagan, Gersten et al. 1986; Petraitis, Flay et al. 1995; Reed and Wilcox Rountree 1997; Brook, Brook et al. 2006).

As more focus is paid to the problem of adolescent drug use, adequate solutions need to continue being discussed (Terry, Vanderwaal et al. 2000). Parent and peer influences need to be considered regarding all aspects of juvenile drug use (Piko and Kovács 2010). Researchers have stepped up to the call for improved understanding of how parents and peers affect juvenile drug use. They have even begun to have an understanding, although limited, of how they interact. Brook et al. (2006) had results support the idea that the influences of parents and peers interact to affect youths' drug use. They found that a conflict-free parent-child attachment will increase the likelihood that a child will identify with the parent, that attachment and close identification with the parent will increase the likelihood that the child will incorporate the parent's personality traits, attitudes, and behaviors, and that those attained characteristics are common in children who affiliate with peers who do not use drugs (Brook, Brook et al. 2006).

This review of the current research has shown that parents and peers do have an effect on the types of approaches used in the prevention and intervention of juvenile drug use. The previously discussed studies offer different protective factors that may help juveniles not use drugs, as well as risk factors that may contribute to their drug use (Trost, Langan et al. 1999; Windle 2000). Some research even found that juveniles with drug-prone behavior may not be affected by protective factors (Brook, Brook et al. 2006).

Unfortunately, the need to understand juveniles' behavior does not stop with juvenile drug use. Although our knowledge has improved about juvenile drug use, understanding delinquency more generally and how it is affected by juvenile, parent, and peer drug use is also vital to understanding youth and their problems. Research indicates delinquency more generally is related often to juvenile drug use (Hwang and Akers 2006). A reason for this is that juveniles do not tend to specialize in a particular kind of crime, but to be generalist (i.e. to commit various kinds of delinquent acts; Visher 1995; Akers and Jensen 2003).

Research on Juvenile Drug Use and Delinquency

A lot more focus has been given to adult drug use and the criminal justice system than juvenile drug use and the juvenile justice system. Unfortunately, the problem exists and many youth are living delinquent lives that not only lead them to drug use, but also get them involved in the justice system (Chassin 2008). Research has shown that the system is not equipped to deal with juvenile drug use in the same way that it can deal with adult drug use (Terry, Vanderwaal et al. 2000). Terry et al. (2000) indicates that an increasing number of juveniles who enter the juvenile justice system have drug problems. Despite the support for drug programs throughout the justice system,

programs for juveniles are few and far between in most jurisdictions, and they are not well integrated to help the juvenile as they progress through the various stages of the system (Terry, Vanderwaal et al. 2000). Since no one treatment has been found to work in all cases (Terry, Vanderwaal et al. 2000), it is essential that programs are made to work with different types of offenders at different stages of their drug use (Chassin 2008). Without programs to help juveniles build skills to resist drug use, youths are likely to return to drug use once they are released from the system and return to their family and friends that facilitated the drug use in the first place (Khavari 1993; Trost, Langan et al. 1999; Terry, Vanderwaal et al. 2000).

In trying to prevent juveniles from entering the juvenile justice system it is equally as important to address drug use as it is to address delinquency (Chassin 2008). The two have been shown to have a strong relationship (Botvin, Griffin et al. 2000; Terry, Vanderwaal et al. 2000; Akers and Jensen 2003) and improving upon the status of one problem will help alleviate the other problem (Stice and Barrera 1995; Catalano, Kosterman et al. 1996). Without prevention and intervention methods, juveniles who are involved in delinquency and drug use are likely to end up in the justice system and have difficulties growing up to live a productive life (Bishop 2000). Unfortunately, drug and delinquency lead to more problems like homelessness (Mallett, Rosenthal et al. 2005) or incarceration for juveniles (Akers 1985).

CHAPTER 3
THE CURRENT RESEARCH

The current research uses cross-sectional data. The data are self-report data from a population of youth committed to several residential facilities. The outcomes of interest are marijuana use (a frequency of use) and diversity of delinquency (the count of different types of delinquency engaged in).

There are three hypotheses relevant to social structure-social learning theory. The direction of these hypotheses reflects empirical findings and is not derived from the theory itself. Their importance to the theory is that any significant relationship between structural dimensions and crime or deviance should be substantially mediated (See Hypothesis 3 below).

Hypothesis #1: Social Structure variables reflecting differential social location in family structures (e.g., differential physical lodging, broken home indicator, and residential mobility) and social location variables (e.g., sex, age, and race) will be significantly related to marijuana use and diversity of delinquency, respectively.

a) Juveniles who do not live at the dwelling of at least one parent (differential physical lodging) will be significantly more likely than those who do to have also participated in juvenile marijuana use and delinquency.

b) Juveniles whose parents are not married (broken home indicator) will be significantly more likely than those whose parents are married to have also participated in juvenile marijuana use and delinquency.

c) Juveniles who have changed residences (residential stability) will be significantly more likely than juveniles who have not changed residence to have also participated in juvenile marijuana use and delinquency.

d) Juveniles who are white (race), older (age), or male (sex) will be significantly more likely than juveniles who are of other races, younger, or female to have also participated in juvenile marijuana use and delinquency.

Hypothesis #2: Social learning process variables (definitions, differential reinforcement, differential association, and imitation) will be significantly related to marijuana use and diversity of delinquency, respectively.

a) Juveniles with definitions unfavorable to marijuana use and delinquency will be significantly less likely than those with definitions favorable to marijuana use and for delinquency to have also participated in juvenile marijuana use and delinquency.

b) Juveniles who are differentially reinforced for delinquency and marijuana use will be significantly more likely than those who are not to have also participated in juvenile marijuana use and delinquency.

c) Juveniles who associate with more peers who participate in delinquency and marijuana use will be significantly more likely than those who associate with fewer peers to have also participated in juvenile marijuana use and delinquency.

d) Juveniles who associate with peers who more often participate in religious activities will be significantly less likely to have participated in juvenile marijuana use and delinquency.

e) Juveniles whose parents have used illegal drugs or have been arrested will be significantly more likely to have also participated in juvenile marijuana use and delinquency.

f) Juveniles whose siblings use drugs or have been arrested significantly more likely to have also participated in juvenile marijuana use and delinquency.

Hypothesis #3: Social structure measures will be substantially mediated by social learning process in models significantly predicting juvenile marijuana use and diversity of delinquency, respectively.

a) The effects of social structure measures on juvenile marijuana use and diversity of delinquency will be substantially reduced in models that include social process measures.

CHAPTER 4
METHODS

Participants and Design

The current research conducts secondary analysis using cross-sectional data from an evaluation that was conducted from within the Florida Department of Juvenile Justice, the Florida Faith and Community-Based Delinquency and Treatment Initiative (FCBDTI; Lane, Lanza-Kaduce et al. 2009). Part of that initiative included cognitive behavioral programming, in particular the Thinking for a Change component, specifically designed to alter thinking patterns to which risky behaviors have been conditioned. The researcher will not collect data from new participants for this study. Participants (n=146) were youths committed to one of five juvenile residential incarceration facilities (Broward Intensive Halfway House, Britt, San Antonio Boys Village or SABV, First Step Residential Facility in Orange County or First Step, Orange Intensive Halfway House) who volunteered, with consent of their parents, to participate in a study evaluating a pilot program with faith-based components in juvenile institutions. Self-report data were collected from these participants in an interviewer-administered questionnaire[1].

Data were collected as part of a process and impact evaluation conducted on the program. Specifically, this project will use data collected from interviews conducted with the participants while housed in five facilities throughout Florida (three male facilities and two female facilities). Researchers from the University of Florida conducted the interviews which asked the participants both closed- and open-ended survey questions. Collection of the data took place from April 1, 2005-June 30, 2006.

[1] This group of participants was a portion of the total number of participants from the evaluation study; an additional 214 participants who official records were gathered for were included in the original study as a control group. Those individual are not included as participants in this study.

The original study included measures from multiple theories and asked the participants to self-report on a variety of activities including drug use and delinquency. Youths also answered questions about their family and friends. Other measures collected in the evaluation but not used in the proposed study are official records data, contact data and surveys from mentors and staff at the facility (Lane, Lanza-Kaduce et al. 2009). There was no evidence that these youth were different from offenders committed to other residential programs; results from the evaluation of the intervention program show that the intervention was not very effective (Lane, Lanza-Kaduce et al. 2009).

The interviews were conducted while the participants were incarcerated in residential centers. The questions were worded to reflect what happened before the juvenile was placed in the residential incarceration facility. Participants completed a self-report questionnaire; participants received cards with the questions on them, as well as had the interviewer read the questions aloud.

Study Variables

Dependent Variables

The dependent variables in this study are juvenile marijuana use and a diversity of juvenile delinquency index. The marijuana use and diversity of delinquency measures are self-report.

Marijuana use:

Respondents' marijuana use is measured by the following question: "How many days in the past 30 days before you were committed did you use marijuana?" Marijuana

use is coded for the number of days marijuana was used ranging from 0 to 30 days[2]. On average, juveniles reported using marijuana more than 13 days out of the 30 days prior to their entering the facility (mean=13.5753) with a standard deviation of a little more than 14 days (stdev= 14.1575). The most common answer was no use in 30 days prior to entering the facility (mode=0).[3]

Diversity of delinquency

As a general theory of crime and deviance, Aker's social structure social learning theory purports to be able to account for all kinds of involvement with crime and delinquency, specific crimes, as well as crimes generally. Recall that for this study the specific behavior of marijuana use is measured in terms of frequency use over the 30 days prior to placement in the residential facility. The summed frequency of involvement across a list of delinquent acts produced an extremely skewed distribution for this sample, so a different approach is taken. To measure juvenile delinquency, participants were asked to report their involvement in a 14 deviant or delinquent activities: (1) "damaged or set fire to school property", (2) "damaged or set fire to other property", (3) "broke into a house", (4) "building, or car in order to take something (when no one was there)", (4) "robbed or held up a place of business", (5) "robbed a person", (6) "tried to or beat somebody up or threatened someone with a weapon", (7) "stole or boosted something", (8) "stole a car, truck or motorcycle", (9) used check or credit cards illegally", (10) "ran cons or scams", (11) "provided sex for money", (12) "committed or

[2] Because of a skip pattern, some respondents who had not used marijuana in the past 30 days had to be reclaimed from the question asking if they had ever used marijuana and coded as a zero in the new variable.

[3] Marijuana use in this sampled yielded a bimodal distribution with many respondents reporting no use in the 30 days before placement and many others reporting what amounted to daily use.

attempted homicide", (13) "committed or attempted sex by force", or (14) 'been in a gang or posse fights". Additionally, they reported the number of times they had committed the act and the number of times they had been arrest for each crime. For the purpose of the current research, each delinquent act was dichotomously recoded 0 for zero times and 1 for one or more other times. Then an index was created from a count of the dichotomous variables. This index was coded from 0 to 14 for the number of criminal/ deviant acts that the juvenile participated in. This creates a diversity of juvenile delinquency index instead of a frequency measure or scale of delinquency4. Juveniles reported committing at least three types of delinquency/deviance on average (mean=3.34; median=3) with a standard deviation of over two offense types (stdev=2.54).

Independent Variables

The independent variables in the current study are social structure-social learning measurements, with a specific interest in how peer and family (parents and siblings) influences involving drug use or delinquency affect a respondent's own marijuana use and delinquency.

Social structure variables

Social structural measures will come from two structural dimensions from SS-SL theory: differential location in the social structure and differential social location. Although these structural dimensions have names that are similar, they differ in what they measure.

[4] The diversity index was used instead of an additive scale of frequency of use across the various kinds of delinquency/deviance because the scale was highly skewed. The diversity index was correlated the additive frequency scale (r=.350), and the diversity measure provided a less biased measure.

A. Differential location in the social structure: Differential location in the social structure measures characteristics of the individual that have a group effect such as race, age, or religion. This dimension “concentrates on background characteristics that place or locate people in macro social organization” (Lanza-Kaduce and Capece 2007) Differential location in the social structure (characteristics of the individual that have a group effect) will consist of age, sex, and race. Age is a continuous measure that is coded from 13 to 18 to represent the range in years of age of the participants. The average age in this sample is about 16 with a standard deviation of 1.3 years. Sex is a dichotomous measure that is coded 0 for females and 1 for males. The majority of participants (82%) in the sample are male (n=120). Race is a categorical measure that originally included 19 race and ethnic options. From the original measure, three dummy variables (white, black, and other) were created. White is coded 1 for white and 0 for everyone else. Black is coded 1 for Black and 0 for everyone else. Other is coded 1 for all other non-white/non-black races or ethnic groups. White serves as the reference group for analysis. The racial breakdown of the participants in the sample is 35% white, 44% black, and 21% other (not white or black).

B. Differential social location: Differential social location “shifts to more meso levels of social organization. The focus is the recognized groups with which individuals deal, as well as reference groups with which they identify” (Lanza-Kaduce and Capece 2007) measures characteristics of the group such as its size or the type of members that belong.

For this study, differential social location (characteristics of the group) consists of family structure measures: differential physical lodging, broken home indicator, and

residential stability. Differential physical lodging is measured by asking the juvenile to report where they were living before they entered the incarceration center: “Before you entered this facility, where were you living/ staying?” A dichotomous variable was created and coded 0 for residing in the house/home of at least one parent and 1 for not residing with at least one parent. Fewer juveniles reported living apart from their parent(s) (29%) than reported living with their parent(s) (72%). A broken home indicator was created from a question asking juveniles about their parents’ marital status: “Are your natural parents married to each other?” To indicate a broken home this question was recoded in the reverse: 0 for married to each other and 1 for not married to each other. The majority of respondents (78%) indicated they lived in a broken home where there parents are not married.

Residential stability is measured by asking juveniles to report the number of times they had moved; “How any time did you move in the year before you were committed to this facility?” The number of times is truncated four or more moves to eliminate outliers and decrease bias in the distribution of the variable. This variable was coded from 0 for no moves to 4 for 4 or more moves in the year prior to entering the facility. On average, the respondent had moved at least once in the year prior to entering the facility (mean=1.27).

The four dimensions of social learning theory (definitions, differential reinforcement, differential association, and imitation/modeling) are included in the study.

Social learning process variables

The four basic components of Akers’ Social Learning Theory are definitions, differential reinforcement, differential association, and imitation/modeling. Each component was operationalized for this research.

A. Definitions: For definitions, the researcher will look at statements that inquire about whether juveniles think certain actions are right or wrong depending on the circumstance. For the analysis of marijuana of use, the questionnaire item to agree or disagree with the following statement: “It is wrong for teenagers to use marijuana.” This item is coded from unfavorable to favorable definitions of marijuana use. The response format is coded 1 for strongly disagree, 2 for disagree, 3 for agree and 4 for strongly agree. On average, juveniles reported that they more agree than disagree that it is “wrong for teenagers to use marijuana” (mean=2.71).

For the delinquency analysis, the statements were focused on definitions favorable or unfavorable for four deviant activities, two of which were reverse coded. One definitional statement read: “It is wrong to beat up, threaten or use a weapon to hurt someone”. The second definitional statement read “It is wrong to break the law”. Two more definitions were worded in the opposite direction. “It is all right to break the law if you are not really hurting anyone.” and “It is sometimes justified or necessary to break the law”. The responses were coded 1 for strongly disagree, 2 for disagree, 3 for agree and 4 for strongly agree. To form a scale, the responses for the first and second items were reversed so that the coding for all four definitions was in the same direction. The coding, unlike that for the marijuana definition, runs from favorable to unfavorable definitions of delinquency. The four items were summed and the sum was divided by four to create an additive scale. Analysis of this scale found a reliability coefficient that is acceptable for use (α= 0.685). After recoding the two items, the scales score indicate that on average, juveniles reported that they tend to disagree more than agree that it is

wrong to partake in the listed delinquent activities (mean=2.1459). In other words, they averages suggest that the respondents hold definitions favorable to delinquency

B. Differential reinforcement: For differential reinforcement, the researcher will look at questions where juveniles were asked about their perceptions of the rewards and consequences of certain behaviors. For the analysis of marijuana use, respondents were asked “What do you think usually happens to a teenager who uses marijuana?” The response alternative were coded 1 for “mainly good, gain more than you lose”, 2 for “about as much good as bad”, and 3 for “mainly bad, lose more than you gain”.

For the delinquency analysis, the questions were focused on three deviant activities: “What do you think usually happens to a teenager who…: “tries to or beats somebody up or threatens someone with a weapon”, “steals money or property”, and “breaks into a house, building or car”?” The response alternatives were coded 1 for “mainly good, gain more than you lose”, 2 for “about as much good as bad”, and 3 for “mainly bad, lose more than you gain”. Differential reinforcement of delinquency variables were added together and then divided by the number of items to create a 3-item scale. Analysis of this scale found a reliability coefficient that is acceptable for use (α= 0.697). On average, juveniles reported that the effect on a teenager who uses drugs is slightly “mainly bad, lose more than you gain” (mean=2.1459) and that the effect on a teenager who commits delinquent acts is just about “mainly bad, lose more than you gain” (mean=2.8288).

C. Differential association: Two approaches were taken to tap differential association. For differential peer association the researcher will look at questions where the juvenile reported their perceptions of their friends’ behaviors and experiences. For

the marijuana analysis, the respondents were asked “During the year before you were committed to this facility, how many of your best friends, or the friends you spend the most time with, had used… “marijuana”? The response alternative were coded 1 for none, 2 for some, 3 for half, 4 for most, and 5 for all of their friends. Only the question about differential association of peers who use marijuana was included in the marijuana use models. On average, juveniles reported that more than half of their friends had used marijuana recreationally (mean=3.77).

For the delinquency analysis, the differential association questions were focused on 12 indicators of deviant activities measured through a series of questions: for example, “During the year before you were committed to this facility, how many of your best friends, or the friends you spend the most time with, had”: (1) “been suspended from school”, (2) “been picked up by the police”, (3) “appeared in juvenile court for a crime”, (4) “been put in juvenile detention”, (5)“damaged or set fire to another’s property”, (6) “stolen things worth a lot of money”, (7) “stolen a car, truck or motorcycle”, (8) “tried to or beat somebody up or threatened someone with a weapon”, (9) “stole small things not worth much money”, (10) “been put into a juvenile facility or program”, (11) been on probation”, or (12) “been transferred to adult court?” The response alternatives were coded 1 for none, 2 for some, 3 for half, 4 for most, and 5 for all of their friends. Differential peer association variables measuring deviant behavior indicators were added together and then divided by the number of items to create a 12-item scale. Analysis of this scale found a reliability coefficient that is acceptable for use (α= 0.899). On average, juveniles reported that between some and half of their friends had committed the listed delinquent activities (mean=2.5616)

In addition to the respective marijuana use and diversity of delinquency measures of differential peer association, the researcher included a measure of pro-social religious behavior. Respondents were asked “During the year before you were committed to this facility, how many of your best friends or the friends you spend the most time with, had”: regularly taken part in church or religious behavior. It is coded from 1 for none, 2 for some, 3 for half, 4 for most, and 5 for all friends participated in church religious activities. On average, juveniles reported that at least some of their friends had “regularly taken part in church or religious activities” (mean=2.21).

D. Imitation/modeling: To capture modeling or imitation influences, questions asked about parental and sibling use of drugs and official arrests for crime. For the marijuana analysis, the researcher will look into parent and sibling drug use as measures of modeling/imitation[5]. The questionnaire did not include items about specific drugs like marijuana for parents or siblings, but did ask about drugs generally. In one question juveniles were asked to report the drug use of either or both of their parents/guardians: “During the year before you were committed to the facility, did either or both of your parents/guardians use illegal drugs?” This measure is coded 1 for yes if either or both parents use drugs or 0 for if neither parent uses drugs. To measure sibling drug use the researcher uses a question where juveniles were asked to report the drug use of their siblings: “During the year before you were committed to the facility, did any of your brothers or sisters use illegal drugs?” This measure is coded 1 for yes, any of one’s brother or sisters used drugs or 0 for none. For the marijuana use models,

[5] Parental (and/ or sibling) involvement with drugs is usually conceptualized as imitation or modeling in social learning analysis Akers, R., M. Krohn, et al. (1979). "Social Learning and Deviant Behavior: A Specific Test of a General Theory." American Sociological Review: 636-655.. That a parent or sibling uses does not capture the quality of interactions for associations and is, therefore, not considered to be a form of differential association.

14% of juveniles reported that either or both of their parents had used illegal drugs (mean=.14) and 29% reported that any of their brothers and sisters had used drugs (mean=.29).

For the delinquency model, juveniles were asked to report the level of involvement that their parents and siblings had with the legal system in the year before the juvenile was incarcerated. The original measures specifically ask about mom/female guardian, dad/ male guardian, and siblings. For the purposes of this study, a new variable was computed to represent an arrest for either or both parents and was coded 1 for yes either or both parent were arrested in the past year or 0 for if neither parent was arrested. The measure of sibling arrests was coded 1 for yes any sibling was arrested in the past year or 0 for if no sibling was arrested. For the delinquency models 13% of juveniles reported that either or both of their parents had been arrested in the year prior to them entering the facility and 29% reported that any of their brothers and/or sisters (including natural or step) had been arrested in the year prior to them entering the facility (mean=.29).

Procedure and Analysis

To start the analysis several descriptive analyses are run to get information regarding the distributions of the major variables such as juvenile marijuana use, juvenile delinquency, social structure measures, and social learning process measurements. Then the basic bivariate statistics are obtained in the form of a correlation matrix. From there, several sets of Ordinary Least Square (OLS) regression models are run separately for both of the dependent variables (marijuana use and diversity of delinquency). Each of the two dependent variables will include three OLS regression models that address the respective research hypotheses. In the first set of

OLS models social structure measures are regressed on the dependent variables to isolate the effects of the social structure variables. In the second set of models, only social learning process measures are regressed the dependent variables to see what their impacts are. In the final set of OLS models, both the social structure and social learning process variables are regressed on the dependent variables so that the mediation hypothesis can be tested.

The researcher looked to see what measures are significant in each model[6], as well as whether mediation occurs for the social structure through the social learning process variables. Variables that are not significant will not be removed from the analysis because of their theoretical importance to SS-SL. The first set of analyses, in line with the first research question and related hypotheses (1 and 1a-1d), predicts the dependent variables (marijuana use and diversity of delinquency) separately using the four social structure variables (differential physical lodging, broken home indicator, residential mobility, and demographic information) to see how they relate to marijuana use and diversity of delinquency, respectively.

The second set of analyses, in line with the second research question and related hypotheses (2 and 2a-2f), predicts the dependent variables (marijuana use and diversity of delinquency) separately using variables for each of the four social learning processes (definitions, differential reinforcement, differential association, and imitation/ modeling) to see how they relate to marijuana use and diversity of delinquency, respectively.

[6] The researcher reported .01, .05, and .10 levels of significance. Given the relatively small sample size, the large number of independent variables, and the search for mediation, even the .10 level of significance might help interpret the results.

The third set of analyses, in line with the third research question and hypothesis 3, predicts the dependent variables (marijuana use and diversity of delinquency) separately on both the social structure variables and the social learning process variables to see how all together they relate to marijuana use and diversity of delinquency, respectively. If the mediation hypothesis is correct, the effects of the social structure variables should be diminished substantially from what they were in the models using only social structure variables for drug use and delinquency, respectively.

Missing Values

Because so many variables are included to create scales and indices, an occasional missing value could result in a number of lost cases if a list wise deletion of cases with missing values is employed. In the current study, three cases were excluded because they were missing data on the marijuana use dependent variable. Because the diversity of delinquency index was a count across 14 types of delinquent acts, the count was made of indications of delinquency with missing values counted as zeroes. The analyses, therefore, are performed on a 146 cases for both dependent variables.

To deal with missing values on the independent variables several steps were taken. First, frequencies were run to determine the best way to handle missing values. Second, it was decided that all missing values would be replaced with the median value of the respective variable because the questionnaire items used to measure or construct independent variables had only occasional missing cases. Therefore, it was decided that all missing values would be replaced with the median value of the respective item.

Before any values were replaced, a filter was put in place to include only the 146 cases that had measures for both dependent variables in the analysis. After this

change, six variables still had missing values: residential stability (n=142), definitions for marijuana use model (n=143), DA-peer religious behavior (n=145), definitions for delinquency (n=141), differential reinforcement of delinquency (n=145), and DA-peer delinquency (n=136). Both imitation measures (imitation/modeling-parent criminal behavior and imitation/modeling-sibling criminal behavior) were constructed as indicators and coded 1 if there was any indication of or parental or sibling involvement in crime or 0 if there not. Therefore, neither of these variables had missing values.

For the six variables with missing data median substitution was used. Across all these variables, if list wise deletion of cases was used, the result would have been a substantial decrease in the results of the number of cases included in each regression. Since no single variable was responsible for losing a lot of cases, median substitution was used. It was selected over mean substitution because the median was not as affected by extremes as the mean was.

Table 4-1. Dependent Variable: Marijuana Use

Purpose	Question Makeup
Determine the number of days in the 30 days prior to them entering the incarceration center that they used marijuana	"How many days in the 30 days before you were committed, did you use marijuana?" -responses can range from 0 to 30 days

Table 4-2. Dependent Variable: Diversity of Delinquency Index

Purpose	Question Makeup
Determine the types of delinquency that juveniles have committed in the past year prior to them entering the incarceration center	"Tell me whether you were involved in each activity during the year before you came to this facility?" 1. Damaged or set fire to school property 2. Damaged or set fire to other property 3. Broke into a house, building, or car in order to take something (when no one was home) 4. Robbed or held up a place of business (store, gas station, bank taxi, etc.) 5. Robber a person (street, robbery, mugging, purse snatching, hold-up in a house or car; exclude business robberies) 6. Tried to beat up somebody or threaten someone with a weapon (tried to shoot, stab, cut, beat, strangle, or strong-arm someone, even if no one was hurt 7. Stole or boosted something (stole from a till, shoplifted, picked pockets, or took something w/o owner's knowledge; exclude 8. Stole a car, truck, or motorcycle 9. Used check or credit cards illegally (forgery, used a stolen or bad credit card, passed a bad check) 10. Ran cons or scams (defrauded person, business or government) 11. Provided sex for money (prostitution) 12. Committed or attempted homicide 13. Committed or attempted sex by force (RAPE) 14. Been in gang or posse fights

Table 4-3. Model 1: Can social structures explain juvenile marijuana use and diversity of delinquency?

Purpose	Independent Variables	Dependent Variables	Analysis Plan
To determine if SSSL will significantly predict marijuana use and delinquency	Differential Social Location Diff. Physical Lodging Broken Home Residential Stability Diff. Location in Social Structure Age Black and Other Race, Sex	"How many days in the 30 days before you were committed, did you use marijuana?" "Tell me whether you were involved in each activity during the year before you came to this facility? "	OLS Multiple Regression Equation for Marijuana (coded for # of days ranging from 0-30) And Delinquency (coded from # of activities they admitted to)

Table 4-4. Model 2: Does social learning significantly predict marijuana use and diversity of delinquency?

Purpose	Independent Variables	Dependent Variables	Analysis Plan
To determine is SLT will significantly predict juvenile drug use and delinquency	Social Learning Theory Differential Peer Association Definitions Differential Reinforcement Imitation/ modeling	"How many days in the 30 days before you were committed, did you use marijuana?" "Tell me whether you were involved in each activity during the year before you came to this facility?"	OLS Multiple Regression for Marijuana (coded for # of days ranging from 0-30) And Delinquency (coded from # of activities they admitted to)

Table 4-5. Model 3: Will the impact of the family structure variables be mediated by the social learning variables?

Purpose	Independent Variables	Dependent Variables	Analysis Plan
To determine if social structure measures will be substantially mediated by social process variables.	Social Structure Measures Diff. Physical Lodging Broken Home index Residential Stability Age Black or Other Race Sex Social Learning Theory Diff. Peer Association Diff. Religious Ass'n Definitions Differential Reinforcement Parent Imitation/ models Sibling Imitation/models	"How many days in the 30 days before you were committed, did you use marijuana?" "Tell me whether you were involved in each activity during the year before you came to this facility?"	OLS Multiple Regression for Marijuana (coded for # of days ranging from 0-30) And Delinquency (coded from # of activities they admitted to)

CHAPTER 5
RESULTS

Univariate Analysis

The values for the univariate analysis have already been shared in the previous chapter as each variable was described. For further reference, Table 5-1 provides a summary of the univariate analysis.

Bivariate Analysis

The bivariate analysis consists of zero-order correlations between the independent and dependent variables. For marijuana use, the following variables were significantly correlated at a .1 level or higher : differential physical lodging (r=-.235), male (r=.197), definitions (r=-.232) [coded from unfavorable to favorable definitions of marijuana use], differential reinforcement (r=-.239), differential association-peer drug use (r=.473), differential association-peer religious behavior (r=-.174), and imitation/modeling-parent drug use (r=.186). For delinquency, the following variables were significantly correlated at a .1 level or higher: Black (r=.191), age (r=-.180), definitions r=(.318) [coded from favorable to unfavorable definitions of delinquency (opposite the direction of that used for marijuana definitions)], differential reinforcement (r=-.235), and differential association- peer delinquency (r=.482). For further reference, Tables 5-2 and 5-3 provide summaries of the bivariate analyses.

Multivariate Regression Analysis

The results that follow are from Ordinary Least Squares Regression predicting marijuana use and diversity of delinquency. One set of multivariate regression models is focused on predicting juvenile marijuana use and a second set is focused on predicting diversity of delinquency. The analysis discusses each hypothesis and provides an

explanation of the regression results presented in the tables (See Table 5-4 for Marijuana Use and Table 5-5 for Diversity of Delinquency).

Predicting Marijuana Use

The first analyses examine the ability for structural measures to predict marijuana use, the ability for social process measures to predict marijuana use, and the ability of the social process variables to mediate the effects of structural variables in predicting marijuana use. The hypotheses that were posed earlier in the paper will be discussed in regards to marijuana use, as well as an interpretation of the corresponding models.

A. Hypothesis 1-using social structures only: The first hypothesis states that "social structure variables reflecting differential social location in family structures (e.g., differential physical lodging, broken home indicator, and residential mobility) and social location variables (e.g., sex, age, and race) will significantly be related to marijuana use". Although only sex (male) was significantly related to marijuana use (r=.197), several familial structural variables were significantly related in the multivariate analysis. The first column of figures in Table 5-4 presents multivariate results that address this first hypothesis. Two structural dimensions (differential social location and differential location in the social structures) are included in the regression. Overall, Model 1 explains 8% of the variance (adjusted R^2=.081) and is significant at the .01 level (F=5.833). The constant is -8.325 days, but is arbitrary because it is negative. The multivariate analysis provides, at best, weak support for the first general hypothesis.

The results under Model 1 in Table 5-4 also address sub hypotheses concerning structural variables.

> Juveniles who do not live at the dwelling of at least one parent (differential physical lodging) will be significantly more likely than those who do to have also participated in juvenile marijuana use.

This was not supported and, instead, it was found that not living in their parents' dwelling decreased the number of days that they had participated in marijuana use. On average, juveniles who do not reside with their parents decrease the number of days in the past 30 days that they have used marijuana by almost 7 days (b=-6.964), in comparison with juveniles who do reside with their parents and with all other variables held constant. Note that since SS-SL is silent as to the direction of the relationship between this structural variable and marijuana use, the existence of a relationship allows the mediation hypothesis to be examined (See Hypothesis 3 below).

> Juveniles whose parents are not married (broken home indicator) will be significantly more likely than those whose parents are married to have also participated in juvenile marijuana use.

This was supported and it was found that juveniles used marijuana more days in the 30 days prior to entering the facility if their parents were not married. On average, juveniles who come from broken homes used marijuana at least four days more in the 30 days before placement (b=4.63), in comparison with juveniles who came from intact homes with all other variables held constant.

> Juveniles who have changed residences more often (residential stability) will be significantly more likely than juveniles who have not changed residence to have also participated in juvenile marijuana use.

This sub hypothesis was not supported since the residential mobility variable was not significant in the model.

> Juveniles who are white (race), older (age), or male (sex) will be significantly more likely than juveniles who are of other races, younger, or female to have also participated in marijuana use.

This sub hypothesis was partially supported; males used drugs more days in the 30 days prior to entering the facility than did females. On average, juveniles who are male increase the number of days in the past 30 days that they have used marijuana by

7 days (b=7.089), in comparison to juveniles who are female and with all other variables held constant. Age and race (as measured by dummy variables for Blacks and Others) were not significantly related to marijuana use.

Of the variables that were significant in this model, their relative importance (.i.e. the standardized effect of each variable) is ordered as follows: differential physical lodging (beta=-.233), male (beta=.199), and broken home indicator (beta=.140).

B. Hypothesis 2- using social learning processes only: The second hypothesis states that "social learning process variables (definitions, differential reinforcement, differential association, and imitation) will be significantly related to marijuana use". Six variables were used to predict marijuana use: definitions, differential reinforcement, differential association (peer drug use and religious behavior), and imitation modeling (parents and siblings). At the bivariate level, definitions (r=-.232), differential reinforcement (r=-2.39), differential association with marijuana-using peers (r=.473), differential association with religious behavior (r=-.174), and parental modeling imitation (r=.186) were statistically related to marijuana use.

The relevant multivariate results to address the second hypothesis (and its associated sub hypotheses) are found in the second column of figures in Table 5-4 under Model 2. Overall Model 2 explains 25% of the variance of marijuana use (adjusted R^2=.253) and is significant at the .01 level (F=9.173). The second general hypothesis receives modest support but not as many social learning variables are related to marijuana use in this sample as expected. The constant in the multivariate analysis is 7.550, and signifies that on average juveniles use marijuana more than 7

days out of the 30 days prior to them entering the facility, controlling for the independent variables.

The second hypothesis has several sub hypotheses reflecting what is expected for each of the social learning components.

> Juveniles with definitions unfavorable to drug use will be significantly less likely than those with definitions favorable to marijuana use to have also participated in juvenile marijuana use.

This was not supported since the definitions variable was not significant in the model. The finding is not expected by the theory and the strength of its relationship to marijuana use (as measured by the zero-order correlation of -.232) was diminished and was no longer significant in the multivariate analysis.

> Juveniles who are differentially reinforced for marijuana use will be significantly more likely than those who are not to have also participated in juvenile marijuana use.

This was not supported since the differential reinforcement variable was not significant in the model. This finding is not expected by the theory and the strength of its relationship to marijuana use (as measured by the zero-order correlation of .318) was diminished and was no longer significant in the multivariate analysis.

> Juveniles who associate with more peers who participate in marijuana use will be significantly more likely to have also participated in marijuana use.

This was supported and it was found the more peers that used marijuana, the more days juveniles used marijuana in the 30 days prior to entering the facility. On average, for every one unit increase amount of friends who use marijuana in the past year, juveniles increase the number of days in the past 30 days that they have used marijuana by more than 4 days (b=4.317), with all other variables held constant.

> Juveniles who associate with more peers who more often participate in religious activities will be significantly less likely to participate in marijuana use.

This was not supported since the imitation/modeling-siblings variable was not significant in the model. The finding is not expected by the theory and the strength of its relationship to marijuana use (as measured by the zero-order correlation of -.174) was diminished and was no longer significant in the multivariate analysis.

> Juveniles whose parents have used illegal drugs will be significantly more likely to have also participated in marijuana use than juveniles whose parents do not use illegal drugs.

This was supported and it was found that juveniles whose parents used illegal drugs used marijuana more days in the 30 days prior to entering the facility than juveniles whose parents did not use illegal drugs. On average, juveniles whose parents had used illegal drugs in the year prior to them entering the facility increase the number of days in the past 30 days that they have used marijuana by more than 5 days (b=5.594), in comparison to juveniles whose parents had not used drugs and with all other variables held constant.

> Juveniles whose siblings have used drugs are significantly more likely to have also participated in marijuana use than juveniles whose siblings have not used drugs.

This was not supported since the imitation/modeling-siblings variable was not significant in the model.

In the multivariate analysis, two of the independent variables were significant in predicting marijuana use: differential association- peer marijuana use and imitation/modeling- parents. Those who reported more association with marijuana-using peers and who had at least one parent who used drugs tended to use marijuana more regularly before their placement. Of the variables that were significant in this model,

their relative importance (.i.e. the standardized effect of each variable) is ordered as follows: differential association- peer marijuana use (beta=.402) and imitation/modeling-parents (beta=.144).

C. Hypothesis 3- mediating social structures with social learning processes: The third hypothesis expects the effects of social structure measures on marijuana use to be substantially mediated by social learning process variables. The sub hypothesis for marijuana use states:

> The effects of social structure measures on juvenile marijuana use will be substantially reduced in models that include social process measures

The relevant results are derived from comparing the coefficients and probabilities presented for Model 3 in the third column of figures in Table 5-4 with those from Model 1 (presented in the first column). Both the social structure and the social learning process measures are included in Model 3 but only the social structure ones are presented in Model 1. The hypothesis was partially supported since not all the structure variables experienced a substantial reduction in effect. The broken home indicator variable was substantially mediated in that the significant relationship to marijuana use in Model 1 was rendered insignificant in Model 3 (and the standardized regression coefficient or beta shrunk from .14 to .085). The sex (male) variable was partially mediated; it was significantly related to marijuana use at the .05 level in Model 1 but only at the .10 level in Model 3 (and the beta or standardized coefficient dropped from .199 to .151). Differential physical lodging was not mediated at all; its relationship to marijuana use was significant at the .001 level in both models 1 and 3 (and its standardized regression coefficients were stable at -.233 and -.214 in the two models. The other structural variables were not significant in the first model and therefore could

not be mediated since their effect was never significant. Additionally, the process variables differential association- peer marijuana use and imitation/modeling- parents increased slightly in their effect after the structure variables were added to the model and differential reinforcement became significant.

The overall analysis of Model 3 explains about 30% of the variance in marijuana use (adjusted R^2=.296) and is significant at the .01 level (F=5.688). The constant is -2.466 days, but is arbitrary because it is negative. Four of the independent variables were significant in predicting marijuana use: differential physical lodging, sex (male), differential association- peer marijuana use, and imitation/modeling- parents. Each of these can be interpreted.

On average, juveniles who do not reside with their parents decrease the number of days in the past 30 days that they have used marijuana by more than 6 days (b=-6.415), in comparison to juvenile who do reside with their parents and with all other variables held constant. On average, juveniles who are male increase the number of days in the past 30 days that they have used marijuana by 5 days (b=5.398), in comparison to juveniles who are female and with all other variables held constant. On average, for every one unit increase in negative reinforcement to delinquent activities, juveniles decrease the number of days in the past 30 days that they have used marijuana by more than 2 days (b=-2.519), with all other variables held constant. On average, for every one unit increase amount of friends who use marijuana in the past year, juveniles increase the number of days in the past 30 days that they have used marijuana by more than 4 days (b=4.060), with all other variables held constant. On average, juveniles whose parents had used illegal drugs in the year prior to them entering the facility

increase the number of days in the past 30 days that they have used marijuana by more than 6 days (b=6.153), in comparison to juveniles whose parents had not used drugs and with all other variables held constant. Of the variables that were significant in this model, their relative importance (.i.e. the beta or standardized effect of each variable) is ordered as follows: differential association- peer marijuana use (beta=.378), differential physical lodging (beta=-.214), imitation/modeling-parents (beta=.158), male (beta=.151), and differential reinforcement (beta=-.133).

Predicting Diversity of Delinquency

The second set of multivariate regression models is focused on predicting the diversity of juvenile delinquency. This section discusses the hypotheses and the corresponding models to examine the ability for structural measures to predict diversity of delinquency, the ability for social learning process measures to predict diversity of delinquency, and the extent to which the social learning process variables mediate the effects of the structural variables.

A. Hypothesis 1- using social structures only: The first hypothesis states that "social structure variables reflecting differential social location in family structures (e.g., differential physical lodging, broken home indicator, and residential mobility) and social location variables (e.g., sex, age, and race) will significantly be related to delinquency". The bivariate relationships between delinquency and race (Black) (r=1.191) and age (r=-.180) were confirmed in the multivariate analysis presented in Model 1 (the first column of figures) presented in Table 5-5. The general hypothesis, however, is only weakly supported. The structural model (Model 1) explains only 4% of the variance (adjusted R square=.040); its F value (1.864) is significant at the .10 level. The constant

is 8.155 types of delinquency. It can be interpreted from the constant that on average, juveniles participate in at least 8 types of delinquency, controlling for the other variables.

This structural hypothesis has several sub hypotheses.

> Juveniles who do not live at the dwelling of at least one parent (differential physical lodging) will be significantly more likely than those who do to have also participated in a greater diversity of delinquent activities.

This was not supported since differential physical lodging was not found to significantly predict diversity of delinquency.

> Juveniles whose parents are not married (broken home indicator) will be significantly more likely than those whose parents are married to have also participated in a greater diversity of delinquent activities.

This was not supported since broken home indicator was not found to significantly predict diversity of delinquency.

> Juveniles who have changed residences more often (residential stability) will be significantly more likely than juveniles who have not changed residence to have also participated in greater diversity of delinquency.

This was not supported since residential stability was not found to significantly predict diversity of delinquency.

> Juveniles who are white (race), older (age), or male (sex) will be significantly more likely than juveniles who are of other races, younger, or female to have also participated a greater diversity of delinquent activities.

This sub hypothesis was partially supported. Sex was not significant in the model, but race and age did significantly predict a greater diversity of delinquency. In line with the hypothesis, it was found that juveniles who are Black had less diversity of delinquency than other juveniles (White or Other). On average, juveniles who are Black decrease their diversity in delinquency by almost one type of delinquent act, in comparison to all other juveniles and with all other variables held constant.

Contrary to the hypothesis, it was younger rather than older juveniles who tended to participate in a greater diversity of delinquency. On average, for every one unit increase in age (1 year), juveniles in this sample decrease their diversity in delinquency by less than one type of delinquent act, with all other variables held constant.

Two of the structural variables were significant in predicting diversity of delinquency in the multivariate analysis: race (Black) and age. Of the variables that were significant in this model, the relative importance (i.e. the beta or standardized effect of each variable) is ordered as follows: race (Black) (beta=-.169) and age (beta=-.163).

B. Hypothesis 2- using social learning processes only: The second general hypothesis states that "social learning process variables (definitions, differential reinforcement, differential association, and imitation) will be significantly related to diversity of delinquency". In the bivariate analysis, definitions (r=.318), differential reinforcement (r=-.235), and differential association with delinquent peers (r=.482) were significantly related to delinquency. Only definitions and differential association with delinquent peers remained significant in the multivariate analysis presented in Model 2 (the second column of figures in Table 5-5). The overall model explains nearly 30% of the variance in diversity of delinquency (adjusted R^2=.297) and is significant at the .001 level (F=11.197). The constant is -.1119, but is arbitrary because it is negative.

This hypothesis has several sub hypotheses.

> Juveniles with definitions unfavorable to delinquency will be significantly less likely to have also participated in diversity of delinquency.

The relationship was statistically significant (at the .001 level); this sub hypothesis was supported because juveniles with definitions favorable to delinquency reported

significantly more diversity of delinquency. This direction is consistent with theoretical expectations. On average, for every one unit increase in the strength that juveniles agree that it is alright to commit delinquent activities, the juveniles increase their diversity of delinquency in the past year by at least one additional type of delinquency (b=1.302), with all other variables held constant.

> Juveniles who are differentially reinforced for delinquency will be significantly less likely than those who are not to have also participated in diversity of delinquency.

This was not supported since the differential reinforcement variable was not significant in the model.

> Juveniles who associate with more peers who participate in delinquent acts will be significantly more likely than those who associate with fewer peers to have also participated in diversity of delinquency.

This was supported and it was found the more peers who participated in delinquency, the greater the diversity in delinquency. The relationship was significant at the .001 level. On average, for every one unit increase amount of friends who committed delinquent acts in the past year, juveniles increase their diversity of delinquency in the past year by at least 1 addition type of delinquency (b=1.312), with all other variables held constant.

> Juveniles who associate with peers who more often participate in religious activities will be significantly less likely to have participated in a diversity of delinquency.

This was not supported since associating with religious friends was not significant in the model.

> Juveniles whose parents have been arrested in the year prior to the juveniles' incarceration will be significantly more likely to have also participated in a greater diversity of delinquency than juveniles whose parents had not been arrested.

This was not supported since the imitation/modeling of parent deviant experiences was not significant in the model.

> Juveniles whose siblings have been arrested in the year prior to the juveniles' incarceration will be significantly more likely to have also participated in greater diversity of delinquency than juveniles whose siblings have not been arrested.

This was not supported since the imitation/modeling of siblings' deviant experiences was not significant in the model.

Of the variables that were significant for the delinquency analysis in Model 2, their relative importance (.i.e. the beta or standardized effect of each variable) is ordered as follows: differential association- peer delinquency (beta=.442) and definitions (beta=-.264).

C. Hypothesis 3- mediating social structures with social learning processes: The third hypothesis expects the effects of social structure measures on the diversity of delinquency to be substantially mediated by social learning process variables. The sub hypothesis for this count of involvement with different kinds of delinquency states:

> The effects of social structure measures on juvenile delinquency will be substantially reduced in models that include social process measures.

This hypothesis was partially supported. The relevant results are derived from comparing the coefficients and probabilities presented for Model 3 in the third column of figures in Table 5-5 with those from Model 1 (presented in the first column). Both the social structure and the social learning process measures are included in Model 3 but only the social structure ones are presented in Model 1. The hypothesis was partially supported since some but not all the structure variables yielded a substantial reduction in effect. The age variable was significant at the .1 level in Model 1 (beta=.161), but not significant in Model 3 (beta=-.063). Its effect had been absorbed by the social learning

variables, so the mediation hypothesis is supported. The race (Black) variable was significant at the .1 level in Model 1 (beta=-.169) and became actually more significant (at the .05 level) in Model 3 but its beta weight remained almost exactly the same (beta==.170). The effects of being Black on delinquency were not mediated by the social learning variables.

Overall, Model 3, which combines both the structural and social learning variables, explains 32% of the variance in diversity of delinquency (adjusted R^2=.323) and is significant at the .01 level (F=6.317). The constant is .424 types of delinquency. Three of the independent variables were significant in predicting delinquency: race (Black), definitions, and differential association-peer delinquency. Each of these can be interpreted. On average, juveniles who are Black decreased their diversity of delinquency by almost one additional type (b=-.839), in comparison to other juveniles (Whites or Others) when all other variables held constant. On average, for every one unit increase in the strength that juveniles agree that it is wrong to commit delinquent activities, the juveniles increase their diversity of delinquency in the past year by at least one additional type of delinquency (b=-1.541), with all other variables held constant—a finding contrary to social learning theory. On average, for every one unit increase amount of friends who committed delinquent acts in the past year, juveniles increase their diversity of delinquency in the past year by at least one addition type of delinquency (b=-1.273), with all other variables held constant. Of the variables that were significant in this model, their relative importance (.i.e. the standardized effect of each variable) is ordered as follows: differential association-peer delinquency (beta=.429), definitions (beta=.312) and Black (beta=-.170).

Table 5-1. Univariate Analysis for All Variables

Variable	N	Mean	Median	Mode	St. Dev	Min	Max
Juvenile Marijuana Use	146	13.5753	8.5	0	14.1575	0	30
Juvenile Delinquency	146	3.3425	3	2	2.4648	0	10
Social Structure Variable for Both Models							
Differential Physical Location	146	.2945	0	0	.4574	0	1
Broken Home Indicator	146	.7808	1	1	.4151	0	1
Residential Stability	146	1.27	1	0	1.246	0	4
Race (Black)	146	.4315	0	0	.4970	0	1
Race (Other)	146	.2123	0	0	.4103	0	1
Sex (Male)	146	.8300	1	1	.378	0	1
Age	146	15.9726	16	16	1.2537	13	18
Social Learning Process Variables for Marijuana Use Models							
Definitions	146	2.7100	3	3	.856	1	4
Diff Reinforcement	146	2.41	3	3	.722	1	3
Diff Assoc- Peer MJ Use	146	3.77	4	5	1.275	1	5
Diff Assoc- Peer Religious Behavior	146	2.19	2	2	1.2	1	5
Imitation/Modeling- Parents	146	.1400	0	0	.352	0	1
Imitation/ Modeling- Siblings	146	.2900	0	0	.457	0	1
Social Learning Process Variables for Delinquency Models							
Definitions	146	2.1563	2.2500	2.25	.4991	1	3.75
Diff Reinforcement	146	2.8288	3	3	.3780	1	3
Diff Assoc- Peers Delinquency	146	2.5616	2.4583	2.25	.8308	1	4.58
Imitation/Modeling- Parents	146	.1336	0	0	.2442	0	1
Imitation/ Modeling- Siblings	146	.29	0	0	.454	0	1

Table 5-2. Bivariate Analysis for MJ Use Model Variables (Pearson's Correlations)

Variable	(x1)	(x2)	(x3)	(x4)	(x5)	(x6)	(x7)	(x8)	(x9)	(x10)	(x11)	(x12)	(x13)
1. Diff Physical Location	1												
2. Broken Home Indicator	.088	1											
3. Residential Stability	.184**	.050	1										
4. Race (Black)	.156*	.201**	.005	1									
5. Race (Other)	-0.068	-.058	.052	-.449***	1								
6. Sex (Male)	-.171**	-.074	-.157*	.050	.015	1							
7. Age	-.017	-.032	.002	.075	-.008	-.104	1						
8. Definitions	.082	-.105	.076	-.116	.096	-.203**	-.023	1					
9. Diff Reinforcement	-.014	-.089	.043	-.121	.110	-.058	-.001	.399***	1				
10. Diff Assoc- Peer Drug Use	-.098	.049	.022	-.006	-.043	.016	.131	-.175**	-.161**	1			
11. Diff Assoc- Peer Rel Beh	-.052	.025	-.016	.212**	.023	-.186**	-.084	.088	.089	-.287***	1		
12. Imi/Modeling- Parents	.121	.028	.161*	-.205***	.015	-.013	.020	.050	-.017	.104	-.024	1	
13. Imi/ Modeling- Siblings	-.088	-.021	-.058	-.117	-.031	.026	-.100	-.059	-.014	.162*	-.011	.078	1
14. Marijuana Use	-.235***	.104	.043	.002	-.069	.197**	.058	-.232***	-.239***	.473***	-.174**	.186**	.125

***p < 0.01 ** p < 0.05 *p < 0.10

Table 5-3. Bivariate Analysis of Delinquency Model Variables (Pearson's Correlations)

Variable	(x1)	(x2)	(x3)	(x4)	(x5)	(x6)	(x7)	(x8)	(x9)	(x10)	(x11)	(x12)	(x13)
1. Diff Physical Location	1												
2. Broken Home Indicator	.088	1											
3. Residential Stability	.184**	.050	1										
4. Race (Black)	.156*	.201**	.005	1									
5. Race (Other)	-.068	-.058	.052	-.449***	1								
6. Sex (Male)	-.171**	-.074	-.157*	.050	.015	1							
7. Age	-.017	-.032	.009	.075	-.008	-.104	1						
8. Definitions	-.036	.162*	.102	.129	-.075	.144*	-.127	1					
9. Diff Reinforcement	.187**	-.006	-.017	-.014	-.069	-.164**	.173**	-.382***	1				
10. Diff Assc- Peer Del	-.128	.079	.029	-.037	.024	.095	-.158**	.059	-.163**	1			
11. Diff Assc- Peer Rel Beh	-.041	.030	-.008	.205**	.032	-.195**	-.076	-.043	-.079	-.188**	1		
12. Imi/Modeling-Parents	.139	.053	.003	.054	-.070	.108	-.039	.123	-.049	.151*	-.112	1	
13. Imi/ Modeling-Siblings	-.055	.015	.086	.035	-.068	-.288***	.055	.042	-.012	.077	.085	-.015	1
14. Delinquency	-.102	.033	.035	-.191**	.109	.036	-.180**	.318**	-.235***	.482***	-.172	0.101	.020

***p < 0.01 ** p < 0.05 *p < 0.10

Table 5-4. Multivariate OLS Regression Predicting Juvenile Marijuana Use

Independent Variables	Model 1				Model 2				Model 3			
	b		B	SE	b		B	SE	b		B	SE
Social Structures												
Differential Social Location- Family Structure												
Differential Physical Lodging	-6.964	/	-.233	[2.490]***			-----		-6.415	/	-.214	[2.256]***
Broken Home Indicator	4.630	/	.140	[2.700]*			-----		2.818	/	.085	[2.390]
Residential Stability	1.279	/	.116	[.900]			-----		.900/	/	.082	[.801]
Differential Location in the Social Structure												
Race (Black)	-1.538	/	-.056	[2.547]			-----		.374/	/	.014	[2.479]
Race (Other)	-3.709	/	-.110	[3.023]			-----		-1.280	/	-.038	[2.728]
Sex (Male)	7.089	/	.199	[2.948]**			-----		5.398/	/	.151	[2.729]*
Age	.896	/	.053	[.872]			-----		.197/	/	.018	[.782]
Social Processes												
Definitions			-----		-1.832	/	-.115	[1.266]	-.954	/	-.060	[1.264]
Differential Reinforcement			-----		-2.320	/	-.120	[1.496]	-2.519	/	-.133	[1.465]*
Diff Assoc- Peer MJ Use			-----		4.317	/	.402	[.834]***	4.060	/	.378	[.829]***
Diff Assoc- Peer Rel Beh			-----		-.396/	/	-.035	[.891]	-.334	/	-.029	[.904]
Imitation/ Modeling- Parents			-----		5.594	/	.144	[2.821]**	6.153	/	.158	[2.916]**
Imitation/Modeling- Siblings			-----		1.205	/	.040	[2.188]	.960	/	.032	[2.170]
Constant			-8.325				7.550				-2.466	
Model Fit												
F			5.833***				9.173***				5.688***	
Adj. R-square			.081				.253				.296	
N			146				146				146	

Notes: Values shown for each model represented as follows: unstandardized coefficients / standardized coefficients [standard error]

****p< 0.01 ** p< 0.05 * p< 0.1

Table 5-5. Multivariate OLS Regression Predicting Juvenile Delinquency

Independent Variables	Model 1				Model 2				Model 3			
	b		B	SE	b		B	SE	b		B	SE
Social Structures												
Differential Social Location- Family Structure												
Differential Physical Lodging	-.523	/	-.097	[.458]			-----		-.187	/	-.035	[.405]
Broken Home Indicator	.411	/	.069	[.497]			-----		-.132	/	-.022	[.425]
Residential Stability	.207	/	.105	[.166]			-----		.198	/	.100	[.141]
Differential Location in the Social Structure		/								/		
Race (Black)	-.837	/	-.169	[.469]*			-----		-.839	/	-.170	[.414]**
Race (Other)	.139	/	.023	[.556]			-----		.210	/	.035	[.477]
Sex (Male)	.205	/	.032	[.542]			-----		-.447	/	-.070	[.501]
Age	-.317	/	-.163	[.161]*			-----		-.112/	/	-.063	[.140]
Social Processes												
Definitions			-----		1.302	/	.264	[.376]***	1.541	/	.312	[.383]***
Dif Reinforcement			-----		-.456	/	-.070	[.502]	-.283	/	-.043	[.510]
Diff Assoc- Peer Delinquency			-----		1.312	/	.442	[.217]***	1.273	/	.429	[.219]***
Diff Assoc- Peer Rel Beh			-----		-.169	/	-.082	[.148]	-.127/	/	-.062	[.156]
Imitation/ Modeling- Parents			-----		-.112	/	-.011	[.719]	.119/	/	.012	[.719]
Imitation/Modeling- Siblings			-----		-.102	/	-.019	[.379]	-.168/	/	-.031	[.392]
Constant			8.155				-.1119				.424	
Model Fit												
F			1.864*				11.197***				6.317***	
Adj. R-square			.040				.297				.323	
N			146				146				146	

Notes: Values shown for each model represented as follows: unstandardized coefficients / standardized coefficients [standard error]

****p< 0.01 ** p< 0.05 * p< 0.1

CHAPTER 6
DISCUSSION AND CONCLUSIONS

Although it is important to understand the results from a research study, it is equally important to understand those results in light of the theoretical paradigm applied. For the current study, the researcher's use of Social Structure-Social Learning Theory (SS-SL) guides how the results can be understood by looking at what the theory suggests and what other researchers have found.

Marijuana Use Models

For the marijuana use models, some support was found for the hypotheses; at most the results suggest partial support for the independent variables predicting marijuana use. The first hypothesis examined in Model 1 posited that social structure variables would relate to marijuana use. Only some social structure measures (broken home indicator and sex) were significant and performed in the direction suggested by theory. The other social structure variables did not hold up, suggesting either that poor social structure measures were selected or that family structure variables do not operate as anticipated for this sample of serious delinquents who have been placed in moderate and high risk residential treatment facilities. With the few tests of SS-SL theory that have used family structures, the current research found much less significance than other studies (Hoffman and Johnson 1998; Page 1998; Akers 2009). This could be due to several reasons, including different operationalization of family structures, a smaller sample size, or the incarcerated status of the juveniles in the sample.

The second hypothesis examined in Model 2 posited that social learning process variables would predict marijuana use. Only some of the social learning process

measures (differential association-peer marijuana use and imitation/modeling- parents) were significant and performed in the direction of the theory. The other social learning process measures did not hold up as SS-SL theory suggests. In most tests of social learning processes, definitions and differential association are the strongest predictors of the dependent variable. From the univariate and the bivariate analyses, it can be seen that limited variation exists in the responses for differential reinforcement since the mean, median, and mode are all about equal to 3. This helps explain why differential reinforcement is not significant in the model and may reflect the cognitive behavioral therapeutic environment that the juveniles were in during incarceration when they were interviewed. The cognitive behavioral programming, especially Thinking for a Change, was designed to help youth identify thoughts and emotions that were paired (i.e., reinforced) with risky behaviors so the learned patterns could be disrupted and changed. That programming may have also affected the definitions component of social learning theory. In the current research, the differential association-peer marijuana use variable comes in, but not the differential association- religious behavior. This suggests that the specificity of friends performing actions that are being predicted about juveniles works better than general measures of behaviors. The imitation/modeling-parent drug use variable adds support to the claim that peers are not the only important group to be aware of. The imitation/modeling-sibling drug use variable was not significant in the model, but this may be due to the fact that their role might not be different enough from parents and peers to become significant. This is supported by the lack of zero-order correlation between imitation/modeling-siblings and marijuana use.

Model 3 examined the mediation hypothesis of SSSL. Only one of the social structures (broken home indicator) was substantially mediated. Previous research on SS-SL, has found support for the mediation hypothesis, but not all variables are mediated well (Hwang and Akers 2006; Akers 2009). Another explanation for the partial support of the hypotheses predicting marijuana use is that the dependent variable had a high level cases that reported no marijuana use (coded 0) or daily marijuana use (coded 30), indicating that the distribution of the dependent variable was bimodal, which violates an assumption of Ordinary Least Squares Regression. To adjust for this, a logistic regression was run using a dichotomous dependent variable for marijuana use (coded 1 for used marijuana in the 30 days prior to being incarcerated and 0 for no marijuana use in the 30 days prior to being incarcerated). The main difference between the results of the Ordinary Least Squares Regression and the Logistic Regression is that differential reinforcement is significant (at the .01 level). Specifically, this is seen in the Logistic Regression models predicting marijuana use using social learning process variables (Model 2) and using social structure and social learning process variable (Model 3). Another difference between the results of the two types of regression can be seen in Model 3. When using Logistic Regression, differential physical lodging is the only social structure that significantly predicted marijuana use, whereas in Ordinary Least Squares differential physical lodging was significant, but other social structure measures were also significant and one structural variable (broken home indicator) was mediated.

Diversity of Delinquency Models

For the diversity of delinquency models, some support was found for the hypotheses. As with the marijuana use models, the results suggest partial support for

the independent variables predicting diversity of delinquency. In Model 1, testing the effects of the structural variables, only some social structure measures (Black and Age) were significant and performed in the direction of the theory. The other social structure variables did not hold up, as was also seen in the marijuana use models. As before, this suggests either that poor social structure measures were selected or that family structure variables do not operate as anticipated for this sample of serious delinquents who have been placed in moderate and high risk residential treatment facilities. The reasons mentioned in the discussion of the marijuana use models (different operationalizations and a small sample of incarcerated juveniles) hold true here, as well.

In Model 2, examining the impacts of the social learning process variables, only some of the social learning measures (definitions and differential association-peer delinquency) were significant and performed in the direction of the theory. The other social process measures did not hold up as SS-SL theory suggests. Just as with the marijuana use models, differential reinforcement had limited variability. As for the imitation/modeling-parent and -sibling variables, the lack of significance may be due to the small amount of people in the sample who had a parent (13%) or a sibling (29%) who were arrested in the year prior to the juveniles incarceration.

The mediation hypothesis was tested in Model 3. Only one of the social structures (age) was substantially mediated. As previously mentioned, the lack of mediation has been experience in other research using SS-SL, but may be related to issues with the sample or the measures. In the current research, race (Black) was not mediated by social learning processes. The social learning process variables remain highly significant. Overview

This research sought to answer three research questions

1. Do family structures explain marijuana use and diversity of delinquency among this group of offenders?

2. Do variables reflecting the social learning process account for marijuana use and diversity of delinquency among this group of offenders?

3. Will the impact of the family structure variables be mediated by the social learning variable among this group of offenders?

The independent variables (social structure and social learning processes) are all focused around important groups (family and peers) that affect juvenile behavior. Specifically, parents, siblings, and peers were selected because of their important role in both the structural and process factors affecting juvenile marijuana use and diversity of delinquency. Social structures at the group level (differential physical lodging, broken home indicator, and residential stability) and location of individuals within those groups (age, sex, and race) provide a context within which social interactions and social process occur. Social processes (definitions, differential reinforcement, differential association, and imitation/modeling) are sculpted by interactions within the same groups (parents, siblings, and peers).

Two dependent variables (juvenile marijuana use and diversity of delinquency) were selected in this sample incarcerated. Marijuana is a popular drug among many age groups, including juveniles, regardless of whether or not they have a history with the legal system. Additionally, the activities that represent the diversity of delinquency range from minor to serious offenses, covering a span of possible options. Each of these dependent variables was used to test three hypotheses, respectively.

Research Limitations

There are several important limitations that should be considered before attempting to generalize the findings of this study. First, the sample is made up of a small number of cases (n=146) in an unusual population (incarcerated juveniles). Second, the sample was purposive with non-randomized selection of juvenile offenders faced incarceration and volunteered to participate in the evaluation. Third, this sample is not representative of the population of all juvenile offenders since the juveniles included in the study had done something severe enough to be place in a residential facility. Fourth, this sample was receiving treatment at the time of data collection that may have affected responses, especially to the social learning process items. Lastly, these data are collected at one point in time (i.e., are in that sense “cross-sectional”) but the questions asked for current and retrospective responses. For example, the definitions favorable and unfavorable to marijuana and delinquency were asked as of the time of their residential treatment but the questions about marijuana use and delinquent behavior and associations were targeted before their commitments. Thus, these data pose potential problems of temporal ordering. This leads the researcher to assume that parent deviant behavior precedes peer deviant behavior in affecting juvenile deviant behavior and that being incarcerated may have impacted certain variables (such as definitions and differential reinforcement) since the environment molds the juveniles to have unfavorable opinions about deviant behavior.

Future Research

If this research was to be continued with this dataset, there are several things that should be considered in future analyses. First, the decision of what to do missing values is difficult and other options (besides median-substitution of missing values) could be

considered to improve the analysis. Second, instead of OLS multivariate regressions, using poisson regression may provide more accurate results since it is better suited to predict probabilities of dependent variables that are counts like the ones used in the current study.

If this research was to be continued with a new research project, a sample of non-incarcerated juveniles would be included so that a comparison could be made between offenders and non-offenders. In addition to the interview questions included in the current study, more specific questions on drug use and deviant behavior would be asked of parents, siblings, and peers. With more in depth information and a larger samples size, the research would be better able extrapolate to a larger population, as well as dig deeper into how the structures and process affect different segments of the sample (e.g. offender vs. non-offender, males vs. females, and younger vs. older).

Theoretical Implications

Overall, the current research provides moderate support for Social Structure Social Learning theory. The social process variables had significant bivariate correlations (direct effects) and although not all the variables were significant in the multivariate analyses (net effects), it is expected for some of the variables to drop out because of the interrelation expected by the theory. In regard to the social structure variables, the theory does not suggest that specific structures will be significant in the dimensions selected, but it does predict mediation of social structure variables in the presence of social process variables. This aspect of the theory did not hold up well. This research shows clear support for social learning theory even though it was tested on an extreme group of juvenile offenders with models explaining above 25% of the variance in the dependent variables expected beyond chance.

Policy Implications

Despite the limitations of the current research, there are still implications that policy makers should consider. This study highlights the importance of taking a holistic view at understanding juvenile behavior. Although juveniles' peer group has a very strong effect on their behavior, there are other primary groups that deserve consideration like parents and siblings. If the goal is to reduce juvenile deviant behaviors, then programs may need to incorporate how groups and processes beyond those involving peers to have optimal success.

APPENDIX A
VARIABLE CONSTRUCTION

Variable Type	Construct [Question #]	Questions	Coding	Recode
DV	juvenile drug use-days [137d]	How many days in the 30 days before you were committed, did you use marijuana?	enter # of days	The zeros from 137a are reclaimed as zeros in 136d
DV	Juvenile Delinquency Scale [157-165,167, 169-172]	# of times in the past year that you (a): -Damaged or set fire to school property -Damaged or set fire to other property -Broke into a house, building, or car in order to take something (when no one was home) -robbed or held up a place of business (store, gas station, bank taxi, etc.) -Robbed a person (street, robbery, mugging, purse snatching, hold-up in a house or car; exclude business robberies) -Tried to beat up somebody or threaten someone with a weapon (tried to shoot, stab, cut, beat, strangle, or strong-arm someone, even if no one was hurt -Stole or boosted something (stole from a till, shoplifted, picked pockets, or took something w/o owner's knowledge; exclude -Stole a car, truck, or motorcycle -Used check or credit cards illegally (forgery, used a stolen or bad credit card, passed a bad check) -Ran cons or scams (defrauded person, business or government) -Provided sex for money (prostitution) -Committed or attempted homicide -Committed or attempted sex by force (RAPE) -Been in gang or posse fights -Possessed marijuana or hashish -possessed hard drugs such as cocaine crack heroin, PCP, and LSD	enter #	Each type of delinquency was coded 1=committed act 1 or more times and 0= never committed act. A diversity index was created from the sum of dichotomous recodes from the count of types of delinquency
IV	Differential Physical Lodging	Before you entered this facility, where were you living/staying?:	1=your own house 2=your parent'(s)	0=live with in parent'(s) house/home 1= not living

Variable Type	Construct [Question #]	Questions	Coding	Recode
	[3]		house/ home 3=another relative's house or apartment 4=a friend's house or apartment 5=an hotel 6=a rooming or boarding house, or halfway house 7=a shelter or welfare boarding home 8=a foster home 9=on the streets (abandoned building, vacant lot, park, homeless) 10at a correction institution 11=other	with parents
IV	Broken Home Indicator [5]	Are your natural parents married to each other?	1=yes 0=no 8=DK 9=RF	Reverse coded so that 1= parents not married/broken home 2= parents married/ intact home
IV	Residential Stability [14]	How many times did you move in the year before you were committed to this facility?	# of times	
IV	Age	What is your age?	enter age	
IV	Sex	Youth's sex	1=male 0=female	
IV	Race [2]	What is your race/ethnicity?	Asian American=1, American Indian=2, Black/ African American=3, Cambodian=4, Chinese=5, Cuban=6, Filipino=7, Guamanian=8, Hispanic (not Cuban)=9,	Dummy variables are created for black, white and other. White is the reference group

Variable Type	Construct [Question #]	Questions	Coding	Recode
			Japanese=10, Laotian=11, Pacific	
Social Learning Process Variables for MJ Use				
IV	Definitions [202]	For each of the statements I read here, please tell me how much you agree or disagree: It is wrong for teenagers to use marijuana	1= strongly disagree 2=disagree 3= agree 4= strongly agree 8=DK 9= RF	
IV	Differential Reinforcement [211]	Whether or not you have ever used each of the following drugs, I'd like to know what you think the effects are or what usually happens to a teenager who uses. – Marijuana	1=Mainly good, gain more than you lose 2=About as much good as bad 3=Mainly bad, lose more than you gain 8=DK 9=RF	
IV	Differential Association- Peer Drug Use [94]	During the year before you were committed to this facility, to the best of your knowledge, about how many of your best friends, or the friends you spent the most time with, used marijuana	1=none 2=some 3=half 4=most 5=all 8=DK 9=RF	
IV	Differential Association- Peer Religious Behavior [98]	During the year before you were committed to this facility, to the best of your knowledge, about how many of your best friends, or the friends you spent the most time with, had: -Regularly taken part in church or religious activities	1=none 2=some 3=half 4=most 5=all 8=DK 9=RF	
IV	Imitation-Parent [51]	During the year before you were committed to the facility, did either or both of your parents/ guardians use illegal drugs?	1=yes 0=no 8=DK 9=RF	
IV	Imitation-Sibling(s) [53]	During the year before you were committed to the facility, did any of your brothers and sisters use illegal drugs?	1=yes 0=no 8=DK 9=RF	
Social Learning Process Variables for Delinquency				
IV	Definitions [204-208]	For each of the statements I read here, please tell me how much you agree or disagree: It is wrong to beat up, threaten or use a weapon to hurt someone It is wrong to break the law It is all right to take drugs if you don't get addicted It is all right to break the law if you are not really hurting anyone	1= strongly disagree 2=disagree 3= agree 4= strongly agree 8=DK 9= RF	A 5-item scale was created from the average score of the items

Variable Type	Construct [Question #]	Questions	Coding	Recode
		It is sometimes justified or necessary to break the law		
IV	Differential Reinforcement [214, 216-217]	Whether or not you have ever done it, what do you think usually happens to a teenager who does the following: -Tries to or beats somebody up or threatens someone with a weapon -Deals or delivers drugs -Steals money or property -Breaks into a house, building or car	1=Mainly good, gain more than you lose 2=About as much good as bad 3=Mainly bad, lose more than you gain 8=DK 9=RF	A 3-item scale was created from the average score of the items
IV	Differential Association- Peer Drug Use [103-110, 112-115]	During the year before you were committed to this facility, to the best of your knowledge, about how many of your best friends, or the friends you spent the most time with, had: -Been suspended from school -Been picked up (not just stopped) by the police (ex: were not free to leave) -Appeared in juvenile court for a crime -Been put in juvenile detention -Damaged or set fire to another's property -Stolen things worth a lot of money -Stolen a car, truck or motorcycle -Tried to or beat somebody up or threatened someone with a weapon -Dealt or delivered drugs -Stole small things not worth much money -Been put into a juvenile facility or program -Been on probation -Been transferred to adult court	1=none 2=some 3=half 4=most 5=all 8=DK 9=RF	A 12-item scale was created from the average score of the items
IV	Differential Association- Peer Religious Behavior [98]	During the year before you were committed to this facility, to the best of your knowledge, about how many of your best friends, or the friends you spent the most time with, had: -Regularly taken part in church or religious activities	1=none 2=some 3=half 4=most 5=all 8=DK 9=RF	
IV	Imitation-Parent [65,75]	During the year before you were committed to this facility, was your mom/ female guardian arrested During the year before you were committed to this facility, was your dad/ male guardian arrested	1=yes 0=no 8=DK 9=RF	A new variable was created from the 2 questions so that 1=either parent had been arrested and 0=neither parent had been arrested
IV	Imitation-Sibling(s)	During the year before you were committed to this facility, were any of your brothers and/ or sisters (including	1=yes 0=no 8=DK 9=RF	

Variable Type	Construct [Question #]	Questions	Coding	Recode
	[80]	natural or step): arrested		

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BIOGRAPHICAL SKETCH

Danielle Tolson was born and raised in St. Louis, Missouri and is the second child of her parents, Fred and Stephanie Tolson. She attended Truman State University in Kirksville, Missouri where she achieved a B.S. in justice systems, with a minor in business administration. After graduation from undergraduate in 2009, she started as a Research Assistant at the University of Florida in the Department of Sociology and Criminology & Law. As of May 2011, she will have achieved a MA in criminology and will continue on to pursue a PhD in criminology at the University of Florida.