LONG-TERM EFFECTS OF RESTORATIVE JUSTICE CONFERENCING ON FUTURE CRIMINALITY: THE INDIANAPOLIS EXPERIMENT

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Criminal Justice

2011

ABSTRACT

LONG-TERM EFFECTS OF RESTORATIVE JUSTICE CONFERENCING ON FUTURE CRIMINALITY: THE INDIANAPOLIS EXPERIMENT

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The purpose of this study is threefold: to develop an explanatory model that integrates social control theory, theory of the ecology of human development, and reintegrative shaming theory into a single paradigm that accounts for recidivism; to examine whether the processes leading to recidivism vary by demographic, background, and community characteristics; and to determine the efficacy of the restorative justice on recidivism. Using data collected on the restorative justice conferencing intervention for youthful offenders, a framework is established for testing the efficacy of restorative justice intervention compared to other court-ordered diversion programs. In order to examine efficacy, attempts to employ a longitudinal multilevel model to clarify methodological issues that would help researchers to conduct more sophisticated systematic research than has occurred in prior studies.

The longitudinal multilevel model discovered several notable findings. First, sex and race appears to be most significantly related to initial level of recidivism at age 14. The consistently significant influence of sex on initial status implies that boys are more likely than girls to recidivate. Second, it is notable that a significant effect of school and family background on initial status on recidivism at age 14 is discovered in this study. However, As can be seen, the type of intervention and related

characteristics show no significant effect in improving outcomes for youthful offenders. In addition, the youthful offenders in the restorative justice conference did not experience less risk of recidivism than their counterparts over time. It is important to examine the further questions of what happens over time to make this so. There are some concerns have to be taken into account. These findings have both theoretical and policy implications that contribute to the restorative justice interventions.

This dissertation is dedicated to my parents, Jaewoon Jeong and Mikyong Kim for their unending love, sacrifices, and encouragement. I Love You!

ACKNOWLEDGEMENTS

My deepest appreciating goes to Edmund McGarrell, my committee chair, for his time, and patience in guiding me to completion of this work. His support and mentoring made it possible for me to complete this research. I would like to thank Vincent Hoffman for his support throughout my education at Michigan State University. I would like to thank Sheila Maxwell for her support and guidance in helping me to complete this work. I am also grateful to Hui Cathy Liu for statistical expertise, support and assistance. I would like to thank Natalie Hipple for assist and helpful suggestions. This work would not have been possible without her.

My deepest gratitude also goes to my mentor, Merry Morash for her help, support, and feedback during my education. I am also grateful to a number of other people who supported me during my education at Michigan State University. Special thanks go to Marry Hoffman, Kihwan Oh, and Seung Chi for their lover and encouragement. Words cannot begin to express how grateful I am for your support. I am appreciative and grateful for Wook Kang, Dae-Hoon Kwak, and Byung Lee have proven to be two of the best friends a person could have. I am also very fortunate to consider Suyeon Park and Juyeong Song for your friendship and may laughs.

Finally, I would like to acknowledge and thank my parents, Jaewoon Jeong and Mikyong Kim for their eternal love and support. Without my mom and dad, I would not have been able to make it. Thank you for being my first teachers in my life. Without those lessons, I am nothing. You have special places in my heart. I Love You!

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CHAPTER I: INTRODUCTION

It is widely agreed that juvenile delinquency has received extraordinary levels of attention from the public, criminal justice resources, and theoretical inquiry. About 1.8 million juvenile delinquency cases had been processed in the formal system in 1997 (Sickmund, 2000). Among all of these cases, 6 out of 10 were referred to adjudication, and 3 out of 10 adjudicated delinquency cases ordered the juvenile placed in a residential facility (Sickmund, 2000). Although many juvenile cases are handled formally, rates of juvenile delinquency did not substantially decrease. According to Snyder (2006), the number of juvenile violent crime arrests increased from the 1980s and peaked in 1994. The number of juvenile violent crime arrests in 1997 was 49 percent above the 1990s rate. In addition, the juvenile court caseloads increased between 1990 and 1999. Specifically, whereas juvenile courts handled 1.3 million delinquency cases in 1990, it had risen to nearly 1.7 million (27 percent increase) in 1999. Furthermore, the number of delinquency cases involving detention increased by 11 percent between the same periods (Harms, 2003, OJJDP Detention in Delinquency Cases, 1990-1999).

Much of the late 20th century juvenile justice was focused on handling cases in the formal justice system, which was characterized as a period in which juvenile followed "get tough on crime" (Kratcoski, 2004), or "retributive justice" philosophy (Zehr, 1990). That is, crime prevention strategies of juvenile justice are often, but not exclusively, guided by retributive justice or get tough on crime. Despite the emphasis on "get tough on crime" strategy (or retributive justice), many critics contend that it failed to produce the desired results, which is crime prevention. Thus, both serious and non-serious juvenile delinquency remain crucial problems in the United States. In light of this reality, the failure of the 'get tough on crime' policy generates demand for alternative approaches on juvenile justice (Bazemore, 1999). The

search for alternatives has resulted in several possible models or strategies to address crime prevention. One of the alternative approaches is restorative justice. It focuses on victim's needs, repairing harm, and reparation through co-participation of victim, offender, and members of the community in the justice process (Bazemore, 1999; Kratcoski, 2004). In particular, victim and community are equally important to reach the main goal of restorative justice.

If someone violates the law, the retributive justice paradigm requires punishment. In other words, retributive justice emphasizes that "crime violates the state and its laws; justice focuses on establishing guilt; so that doses of pain can be measured out; justice is sought through a conflict between adversaries; in which offender is pitted against state; and rules and intensions outweigh outcomes" (Zehr, 1990, p 211). That is, the offender is owing a 'debt to society', which leads to some form of state imposed punishment (Wundersitz & Hetzel, 1996). However, in the last few decades, a new paradigm, which is called restorative justice, has increasingly received attention from many scholars (Bazemore, 1999; 2002). Restorative justice can be contrasted with the retributive justice paradigm, which represses and ignores victim and the community (Haft, 1999), and which focuses on the offender and where the offender has no responsibility for resolution (Zehr, 1990). Specifically, restorative justice emphasizes the role of victim and the surrounding community, and seeks to repair the harm that was caused by the offense through co-participation of offender, victim, and community, rather than solely punishing offender by the state (Zehr, 1990). In other words, the offender owes a specific debt to the victim which can only be repaired by making good the harm that was caused by the offense (Wundersitz & Hetzel, 1996). Specifically, the direct involvement between victim/offender, victim/community, and offender/community is the key process of reparation to repair harms that are caused by the offense.

Since the concept of restorative justice is ambiguous, there is no simple explanation for the question "what is restorative justice?" It emphasizes doing justice by repairing the harm which crime causes through reparative sanctions such as restitution, direct service to victims, and community service (Bazemore, 2000). It also can be characterized by co-participation of offender, victim, and community in the justice process (Bazemore, 1998). Thus, the offender, victim, and community are equally important to agree on the offender's responsibilities (Kurki, 2000). Restorative justice is also offered as a more effective response to the high rate of re-offending among juveniles. Indeed, there is growing interest in the impact of restorative justice interventions to reduce recidivism (Beus & Rodriguez, 2007; Bonta et al., 2002; Bradshaw & Roseborough, 2005; Hayes, 2005; Latimer et al., 2005; Maxwell & Morris, 2002; McGarrell, 2001; McGarrell & Hipple, 2007; Rodriguez, 2004; 2007; Sundell & Vinnerljung, 2004). Dealing with the issues of impact of restorative justice, most evaluation studies have found that re-offending or reconviction rates following restorative justice interventions have been decreased.

In a similar vein, researchers attempt to explain the effects of restorative justice using factors from different ecological contexts, such as family factors or local community factors (Beus & Rodriguez, 2007; Rodriguez, 2004). In their study, Beus and Rodriguez described that community involvement and community member participation in the restorative justice process have a positive impact on offenders such as reducing recidivism and enhancing reintegration (2007). Similarly, Rodriguez (2007) also found that community member participation allowed offenders to successfully reintegrate into the community and reduce juvenile recidivism. However, prior research has paid little attention to the contributions of family factors on restorative justice. Most studies also attempt to explain the relationship between restorative

justice, ecological factors, and recidivism as one dimensional, which means the impact of individual level factors, family factors, or community impact have been examined separately.

As discussed previously, one of restorative justice's primary points is that it offers a balanced approach to dealing with offending and its consequences based on victim-centered approaches (Robinson & Shapland, 2008). Although it is a particularly victim-centered approach, offender rehabilitation or the prevention of recidivism is another goal of restorative justice interventions. Therefore, many researchers, the public, and policy makers have agreed that the restorative justice interventions have rapidly become a useful approach for addressing concerns about rates of re-offending or reconviction (Hayes & Daly, 2003; Maxwell & Morris, 2001; McGarrell et al., 2000; Robinson & Shapland, 2008; Sherman et al., 2000). That is, prevention of re-offending is not a primary goal, but a legitimate goal of restorative justice interventions (Robinson & Shapland, 2008). A number of evaluative studies have found that restorative justice interventions are being carried out as planned and that they are having the desired outcome (e.g. reducing re-offending or reconviction rates). Having said that, however, few studies of restorative justices have studied the differential ecological contexts of influences simultaneously. Yet, the limited explanation based on one or two ecological contexts is insufficient because it ignores possible contributions of other ecological contexts in the near environment. In other words, studies of restorative justice have not paid attention to the relative influences of the factors from different ecological contexts, and how they are related simultaneously.

Therefore, the main purpose of this dissertation is to extend and test ideas which have been raised about restorative justice, especially on Family Group Conferences for young offenders, through comparative analysis of experimental and control group youths and predicting re-offense by factors within the ecological contexts. I will emphasize strengthening families and

community supports that allow opportunities for families to respond to problems that underlie juvenile offending. Then, I will discuss whether Family Group Conferencing is adequately achieving its goal and truly providing restorative justice, by examining recidivism of young people who have been involved in Family Group Conference in Marion County, Indianapolis. Besides focusing on contribution of Family Group Conference on recidivism, I will also develop and test an explanatory model of recidivism, attending to the diversity of ecological contexts.

CHAPTER II: RESTORATIVE JUSTICE

Reparation in the form of restitution did not become widely popular until the 1970s (Schneider, 1985; Umbreit, 1994). Since that time restorative justice has been used in many U.S. criminal and juvenile justice programs. In the 1990s, it received a high level of attention from juvenile justice officials and scholars in New Zealand, Australia, Canada, U.S., and some European countries (Bazemore, 1998). Restorative justice has emerged with diverse paradigms and as a social movement. For example, restorative justice has been influenced by the victim's rights movement and community policing (Young, 1995; Moore & Trojanowicz, 1988).

Key Concepts and Principles

As noted in Chapter One, since restorative justice is not a single concept, there is no simple explanation of what restorative justice is. However, many scholars agree on key concepts and core values of restorative justice. Restorative justice is defined as an "approach of bringing participants together in the less hierarchical and more informal setting of a circle and their common attempts to restore the equality that has been disturbed by the commission of a crime and to take a holistic approach to the experiences of both offending and victimization" (Roach, 2000, p. 256). Assuming this definition, restorative justice is characterized around several themes: (i) input from offender, victim, and community in a decision-making process; and (ii) not simply punishing the offender, but repairing the harms that were caused by the offense (Bazemore, 1998; 2000; Braithwaite, 2002; Maxwell & Morris, 2002; Umbriet, 1998; Zehr, 1990). That is, restorative justice attempts to reintegrate offender, victim, and community without attempting to isolate offenders (Roach, 2000).

Retribution vs. Restoration

The second characteristic can be best understood by comparison with the retributive justice paradigm. Since the 1980s, crime control policies have been rooted in a "get tough" philosophy, which has led to certain forms of punishment (Levrant et al., 1999). This orientation has been called retributive justice (Zehr, 1990). It assumes that people who commit crime deserve to be punished because the have intentionally hurt others and have gained advantage by crime (McLaughlin & Muncie, 2001). It does not require harsher punishment, but simply involves doing justice by punishing offender, despite it does not serve useful function to deter crime or serve a larger social good (Zehr, 1990). The principle of retributive justice emphasizes court procedures with consideration of guilt and innocence, and offender based punishment (Morris & Maxwell, 1994). In addition, it emphasizes the act of breaking the law, rather than focusing on actual harm done or on what the victim has experienced (Zehr, 1990).

The retributive justice plays an important part in the criminal justice system through treating offender should be held accountable for crime or wrongdoing. Although retributive justice emphasizes punishment for lawbreaking, and incarceration rates were dramatically increased, research found that offenders who served prison terms were more likely to return to a chain of recidivism (Palk et al., 1998). Furthermore, retributive justice often neglects crime victims and the community that was affected by the offense. They have no opportunity to express their hurt and outrage (Van Ness, 1990), and no opportunity to be asked whether they are satisfied with punishment of offenders (Palk et al., 1998).

Therefore, the new paradigm, restorative justice has appeared. Restorative justice primarily aims to repairing harm and rebuilding relationship, while retributive justice stresses punishing and inflicting pain on the offender (Levrant et al., 1999). It is often used to describe

informal forms of dispute resolution (Roach, 2000), and offer more lenient sentencing for offenders, particularly if they do not have a long record or have committed a serious offense (Levrant et al., 1999). Furthermore, the most significant difference between retributive justice and restorative justice is the crime victim's and community's role in the justice process.

There are mainly three key principles of restorative justice for offenders: (i) offender accountability; (ii) rehabilitative healing; and (iii) deterrence and crime prevention (Roach, 2000). First, restorative justice promotes the accountability and responsibility of offenders for the offense. Merely punishing offenders (e.g. short terms of imprisonment) may not be satisfying expectations of victims or community. Therefore, the focus on offender accountability engages crime victims and community to receive reparation. Another principle of restorative justice is rehabilitation of offenders. In many restorative justice practices, less formal processes are provided to offenders. Throughout these processes, victims and community play crucial roles in the offenders' rehabilitation. The last principle of restorative justice is that restorative processes should provide more effective means of crime prevention. This principle is based on the idea that healed or rehabilitated offenders are less likely to recidivate (Roach, 2002).

In addition, there are several key themes of restorative justice for victims and community: (i) meeting victim's myriad needs; and (ii) providing several benefits for community. First and foremost, restorative justice is a truly victim centered approach (Seymour, 2000). For instance, victims always have opportunities to actively participate in restorative justice process, such as discussing how the crime affected them, and provide input about their needs and recommendations, in order to repair the harm that was caused by the offense (Bazemore, 2001; Seymour, 2000). They also may receive services and restitution in restorative justice. Restitution may include financial compensation or restitution for physical/emotional victimization. The

second core theme in restorative justice is involvement of community members. According to Van Ness & Strong (1997), community member have an important role to play in the response to the offense. Specifically, young offenders grow up and socialize within a community and engage in interaction with community members. Thus, community and community members influence young offender's attitude and behavior. Therefore, the community should actively participate in restorative justice decision-making process, as well as support victims in the healing process (Bazemore, 2001).

MODELS OF RESTORATIVE JUSTICE

As the restorative justice philosophy has become increasingly popular, several models or restorative approaches have emerged. According to Bazemore and Umbriet (2001), the most widely used restorative justice models are: (i) Victim-Offender Mediation; (ii) Community Reparative Boards; (iii) Family Group Conferencing; and (iv) Circle Sentencing.

Victim-Offender Mediation is the most widely used program in restorative justice intervention (Bazemore & Umbreit, 2001). It aims to repair the victim's harm, allow the offender to learn accountability for his or her harmful behavior, and provide the opportunity to reconcile victim and offender (Bazemore & Umbreit, 2001). In the case of Victim-Offender Mediation, the victim and offender are the primary players of the mediation process. With the assistance of a trained mediator, the victim and offender reach some degree of reconciliation. The Community Reparative Board is a relatively recent version of restorative justice (Bazemore & Umbreit, 2001). The main goal of the Community Reparative Board is generating meaningful community-driven response to and consequences for offenses through participation of victim and community members in the justice process (Bazemore & Umbreit, 2001). Family Group Conferencing was originally developed and implemented in New Zealand. The primary goal of Family Group Conferencing is reconciliation and reconnecting the relationship between victim, offender, and community (Bazemore & Umbreit, 2001). Finally, Circle Sentencing is a holistic reintegrative model quite similar to Family Group Conferencing (Bazemore & Umbreit, 2001). During the process, the offender, victim, family of offender and victim, and community members participate to resolve conflict and heal harm.

These four restorative justice models vary by background, procedures, and type of participants. However, each model shares common goals to achieve: (i) a victim and community-

centered model; and (ii) reconcile the relationship and repair the harm that was caused by the offense. That is, restorative justice focuses informal sanctions (e.g. community based sanctions) and healing practice by victim involvement. In addition, it regards the role of family as a key to the success of programs, because the family is more likely to take more responsibility than others for decisions of various kinds affecting adolescents (Hassall, 1996). Given that the proposed study focuses on Family Group Conferencing, the next section addresses the goals and processes of Family Group Conferencing.

FAMILY GROUP CONFERENCING

Key Values and Principles

Among the four models of restorative justice, family involvement is inherent in the Family Group Conferencing process (Bazemore, 2001). It aims to promote effective functions in families by focusing on their unique strengths and by enlisting them in a problem solving process (Hudson et al., 1996, p. 3). It is inherent in the idea that all family members jointly act in some matters. Specifically, the functions of care, protection, education, and social integration of young offenders and the means of deciding how these functions are best fulfilled in the family (Hassall, 1996). Therefore, families have a greater affect on young offenders than any other individuals. As discussed previously, Family Group Conferencing attempts to connect directly the offender, victim, family of offender, family of victim, and community. Specifically, it has places value on "providing opportunities for victims of crime to be involved in settling the offenses committed against them and in receiving redress" (Hudson et al., 1996, p. 1). Therefore, the key resources of Family Group Conferencing are the young offender, victim, coordinator or facilitator, family, other persons requested by victim or offender. Family Group Conferencing emphasizes primary

responsibility with families for making decisions about their children (Bazemore & Schiff, 2001; Maxwell & Morris, 1993). For instance, since the family can provide protection, care, and fulfillment of children's needs, family decision-makings in the meeting is a key features of Family Group Conferencing (Hassall, 1996). The key assumptions underlying Family Group Conferencing is, therefore, "if family members are recruited, involved and provided with sufficient information, they will develop appropriate plans to care for their young people and deal with family problems" (Hudson et al., 1996, p. 3). In sum, although the primary goals in Family Group Conferencing are offender accountability, repairing harm, and reintegration, it equally focuses on effective family functioning to resolve problems. It also offers opportunities for family members to address problems whether the issues are abuse, neglect, or something else. Conferences also address issues based on the belief that all people should be treated with respect (Hudson et al., 1996). By participating in Family Group Conferencing, therefore, family members can be empowered. It seeks to help the young offender to develop social competence and confirm self-esteem, and encourages the family to create protective conditions. In this way, Family Group Conferencing allows the family to respond to concerns of young offenders.

Process of Family Group Conferencing

Any incident that caused harm or where there is a need to repair harm is potentially appropriate for Family Group Conferencing (O'Connell et al., 1999). In Family Group Conferencing, the victim, offender, family, police, community members, and social service agencies become involved in seeking appropriate solutions to problems (Bazemore & Griffiths, 1997). Therefore, the use of Family Group Conferencing is distinct from retributive justice. According to Hudson and his colleagues (1996), "while retributive justice deny victim's

participation and require only passive participation by offender, Family Group Conferencing as restorative justice is concerned with the broader relationships between offenders, victims, and communities. Crime is seen as more than simply the violation of the criminal law. Instead, the key focus is on the damage and injury done to victims and communities and each is seen as having a role to play in responding to the criminal act" (p. 4). As a result of meeting with victims in Family Group Conferencing, offenders are expected to understand consequences (e.g. harm) of their offense and to develop feelings of remorse (Hudson et al., 1996).

While Family Group Conferencing is a relatively new concept in the justice system, there is a long history of development of Family Group Conferencing (Hassall, 1996). It is used in diverse settings, from New Zealand, Australia, England, Canada, and the United States. It is based on the cultural priorities of Maori families in New Zealand to strengthen cultural values as disputes or conflicts arise (Hudson et al., 1996). New Zealand has laws to deal with children and young people in the case of they are without adequate care or are abused or neglected that place primary responsibility with families in decision-making process. Specifically, 1989 New Zealand passed an Act, *the Children, Young Persons and Their Families Acts*, which places primary responsibility with families with respect to their children and young people. According to this Act, families may assist police, when children or young offenders need care or protection (Hassall, 1996). In keeping with the principles, Family Group Conferencing can be seen as an educational tool for developing problem solving skills among offenders, victims, and families (Hudson et al., 1996). Specifically, family members can practice problem solving, learn how problem-solving skills are achieved and learn how to take advantage of available resources. Young offenders also can learn what they have done to the victim as well as their own family, what the consequences are, and how to correct their behavior. Family Group Conferencing also

provides several advantages for victims and community. For victims, Family Group Conferencing provides the opportunity to express their feelings about the harm that was caused by the offense on meeting victim needs. For family members, it provides the opportunity to express their disappointment, shame, or concern for their youths. In addition, it also provides a mechanism to express the value placed by society. For the community, Family Group Conferencing demonstrates the importance of the participation of community members is important as well as their responsibilities in solving community problems (Hudson et al., 1996). In sum, co-participation of offender, victim, family, and community in the Family Group Conferencing emphasizes the benefits from helping others, and the empowering sense of self worth for each participant.

There are three key stages in Family Group Conferencing: (i) Pre Family Group Conferencing; (ii) Family Group Conferencing; and (iii) Post Family Group Conferencing. First, there are several activities involved in preparing for Family Group Conferencing at the Pre-stage. For instance, coordinators and officers choose the time and place for conferencing, select and invite participants, contact offenders and their parents, contact victims and their family, and prepare additional resources. Specifically, coordinators and officers review information about the case, and consult with the young offenders who are referred to conferencing. After they refer young offenders to Family Group Conferencing, they contact young offenders' parents and discuss whether young offenders are going to admit or deny the charge. If they admit the offense and agree to conferencing, coordinators determine the time and place where it is appropriate (Wundersitz & Hetzel, 1996). Coordinators also consult with victims and explain the conference goals and process. They also seek to address victim concerns and ensure the victim is participating voluntarily.

Second, the conference stage focuses on the process of the conference with the key goal of reaching agreement among offender, victim, their family, and community. Foremost, victims should not feel threatened in the presence of the offender and his or her family. Therefore, coordinators have to make participants to feel comfortable and satisfied (Stewart, 1996). Throughout the process, participants examine the offense and its consequences. Family Group Conferencing focuses on an incident: what happened; what the offender did; and how the offense has affected the victim, family, and community (O'Connell et al., 1999). Then, they address the three key elements that are aimed at preventing reoffending through the mediation process: (i) putting things right; (ii) addressing any reparation; and (iii) penalty (Wundersitz & Hetzel, 1996). When these processes are completed, time frames for completing the reparation agreement are set, usually for three months. However, the seriousness of the offense influences whether a shorter or longer period of decisions will be made (Stewart, 1996). After all processes are completed, it is useful to invite all participants to make final comments.

During the entire process, the offender and victim do not have to participate and are free to leave at any time during conferencing. However, if the offender does not participate or leaves during conferencing, the case may be referred to formal court action. If the victim does not want to participate, coordinators should include victim's representative or otherwise enlist the victim's perspective during conferencing (O'Connell et al., 1999). Finally, once the conference is completed, the coordinator follows up by arranging community service placements or referrals for counseling, training, or employment. In addition, processes are set to address any compensation to the victim or community (Wundersitz & Hetzel, 1996). However, if terms of the reparation agreement are not completed, the coordinator may decide to refer young offenders to court, then formal action will be imposed on them.

As seen, the primary purpose of Family Group Conferencing is the care or protection of the young offender who is referred to conferencing, while at the same time meeting the needs of victims (Hassall, 1996). All participants should consider whether decisions or recommendations are necessary to deal with offense and whether victims and community are satisfied with plans.

INDIANAPOLIS RESTORATIVE JUSTICE CONFERENCING EXPREIMENT

Like other juvenile justice officials, key decision-makers in Marion County, Indiana were interested in implementing innovative approach to the treatment of young offenders that would be more effective in reducing re-offending and meeting victim needs. As a result, Marion County (Indianapolis) is one of the U.S. jurisdictions that implemented the Family Group Conferencing. Indeed, Indianapolis implemented Conferencing through an experiment that began in September of 1997, with the aim of targeting young offenders (McGarrell et al., 2000, McGarrell, 2001; McGarrell & Hipple, 2007). As already noted in previous parts, young offenders become the subject of a Family Group Conference after an arrest and subsequent referral for conferencing based upon criteria agreed upon by the Chief Judge of the Juvenile Division and the Marion County Prosecutor. For purposes of the experiment, Family Group Conferencing was restricted to young first time offenders. The primary purpose of the Marion County Family Group Conferencing was program to reduce re-offending. In deciding what constitutes very young offenders, the Chief Judge and Prosecutor distinguished first time appearances in court by very young offenders from first time appearances by older youths (e.g. 15 to 17 years of age) who are at lower risk of re-offending (McGarrell, 2001; McGarrell & Hipple, 2007). Therefore, the selection criteria for Family Group Conferencing was as follows: (i) first-time offender; (ii) very young offenders (14 years of age or younger); and (iii) charged with battery (or assault), trespass, mischief, conversion (shoplifting), and felony D theft (McGarrell et al., 2000).

As discussed previously, there were three stages in the Marion County Family Group Conferencing. Once a referral for the Family Group Conferencing was received by the Marion Superior Court, Juvenile Division, preliminary arrangements, including contacting the key participants was made by the coordinator. Specifically, the coordinator contacted the young

offender and his or her family member, as well as the victim and the victim's family members. In addition, the coordinator would often invite other persons to attend a conference such as relatives or others with a close relationship with the young offender or victim, and any other persons, such as friends, neighbors, teachers, or athletic coaches who were considered appropriate and important to the youth's life by coordinator. In most cases, coordinators contacted the victim first to encourage attendance by explaining what a conference is and what can be achieved by contributing the victim's participation. In addition, coordinators considered the victim's preference for time and place, while the offender's preference is given secondary consideration. Besides victim and offender, the other crucial participants are contacted at this stage. Therefore, the pre-conferencing stage is important to success of the conferencing because it allows coordinators to identify what incident happened, what the consequences were, what the participants want to achieve, and what role participants have.

The Indianapolis conferences followed procedures that were adopted from a typical Family Group Conferences developed in Australia and New Zealand. Typically, conferences begin by having every participant introduce himself or herself, and the coordinator explains the procedures to be followed. Moreover, participants discuss the offense and its consequences with particular attention to how the parties were affected by the offense. The next step is to determine an outcome for the young offender that typically includes accepting responsibility for their actions, and making good the harm that was caused by the offense (Maxwell & Morris, 1993). Similarly, the Family Group Conference provides opportunities to all participants to understand what happened, who was involved, how the offense affected the victim or community (e.g. physically, emotionally, or financially), and the responsibility for the offense. This process encouraged the family members' and victim's active participation and involvement in the

decision-making process, and allowed opportunity to confront the offender with feelings of anger and hurt and input into the final penalty or other outcome (Wundersitz & Hetzel, 1996). To identify appropriate penalty for young offenders, all participants in the conference discuss the appropriate reparation. The young offenders are advised about what needs to be done to repair harm that caused by offense. Then, other key participants negotiate until agreement is reached for some element of reparation, including restitution or paying compensation to victim, community service, apologizing to victim, or other steps that may be appropriate to circumstances of case. Ultimately, the outcome seeks to address the victim's needs, hold the youth accountable, and develop a community of support for both victim and offender.

CHAPTER III: THEORY – MAIN CONCEPTS AND CAUSAL PATHS

Many criminologists question whether restorative justice interventions (Family Group Conferencing) can control or predict the re-offending for participants (Menkel-Meadow, 2007; Mika et al., 2004; Sundell & Vinnerljung, 2004). To explore these research questions, attention has been focused on informal social control and interactions with members in the society. There are several ways of theorizing the links between restorative justice interventions (Family Group Conferencing) and re-offending. These theories draw attention to the interactions people have with various processes of society. Most juveniles are influenced by their familial relationships, and interactions with other members of society (Siegel, 2001). These theorists believe that re-offending is a product of lack of informal social control in restorative justice interventions. In addition, many theorists also regard the lack of appropriate attachment or interaction with ecological resources as key predictors of re-offending.

The objective of this chapter is to discuss the four of the most prominent theories that form the basis for the relationship between Family Group Conferencing and re-offending: social control theory, theory of the ecology of human development, reintegrative shaming theory, procedural justice/defiance theory. These theories will be grouped as *Theories of Youth Development* include social control theory and theory of the ecology of human development; and *Theories of Restorative Justice Intervention* include reintegrative shaming theory and procedural justice/defiance theory.

THEORIES OF YOUTH DEVELOPMENT

The common theme found among those theories group as theories of youth development is that poor socializations are conducive to crime and deviance, while proper socializations are conducive to conformity. On the one hand, families are considered to be the primary influence. For example, children are considered to be poorly socialized if there are family dysfunctions, such as family break-up, conflict, and abuse. Similarly, school and communities play a significant role in the socialization and social development of the adolescents. Specifically, poor school performance, academic failures, and lack of adjustment are linking inadequate socialization of adolescents. In addition, communities are considered to be a negative part of youth development if there are social disorder and malintegration of resources. Consequently, improper socialization leads adolescents to become involved in a delinquent way of life. Taken together, this section reviews the principal themes of social control theory and theory of the ecology of human development.

SOCIAL CONTROL THEORY

In previous decades, many researchers have examined how social processes (e.g. attachment to family), and social contexts (e.g. attachment to school or community) influence crime and crime prevention (Fuller, 2009). According to Sampson and Laub (1994), disadvantaged neighborhoods where poverty, drug use, and residential instability exist have great tolerance for delinquency. In contrast, communities with informal social control, such as collective efficacy, social cohesion, and trust are more likely to witness citizens intervene when laws are being violated or community threatened. Similarly, social processes are the ways that

adolescents develop social norms, as well as types of behavior that are expected from society (Fuller, 2009).

In addition to community social control, another factor highly regarded by many criminologists is social control, which includes four dimensions of social bonds: (i) attachment; (ii) involvement; (iii) commitment; and (iv) belief. Prior research finds that adolescents that are bonded to conventional society and institutions are less likely to be involved in delinquency (Hirschi, 1969). Specifically, delinquent behaviors may be stimulated by lack of affectionate bonds or weak or broken individual bonds to society (Bowlby, 1979; Hirschi, 1969). These affect the adolescent's ability to establish close and trusting relationships, which make up the concept of attachment (Fox, 1995).

According to Hirschi (1969), attachment refers to the affection and respect that adolescent holds toward significant others, such as parents. There is a causal relationship between attachment and social experience (Hirschi, 1969). For instance, adolescents who are strongly attached to their parents are more likely to accept social norms, and less likely to commit delinquent behaviors. Hirschi argued that there are five core elements of attachment: (i) time spent with parents; (ii) supervision by parents; (iii) intimate communication between parents and child; (iv) affectionate identification by child with parents; and (v) emotional support by parents (1969). Therefore, delinquent behavior can be controlled by attachment to parents (Note: Hirschi's idea is attachment to conventional society). Similarly, Hirschi saw that juveniles who are involved in positive activities are less likely to engage in delinquency, because spending time in positive activities reduces opportunities to committing delinquent acts (1969). The third idea in the theory is that commitment to conventional behaviors, such as succeeding at school or acquiring a reputation for virtue. Juveniles who are invested in conventional behaviors are less

likely to take the chance of committing delinquent behavior (Hirschi, 1969). The element of belief links to idea that people who respect the rules of society are less prone to delinquent behavior. Indeed, the emphasis during Family Group Conferences teaching offenders why offending is wrong is directly connected to belief.

Although the four elements of social control theory are equally important, this section focuses on the attachment to family element of social control theory because it is key for Family Group Conferencing. Social control theory considers the degree of closeness between parents (or caregiver) and children, and quality of bonds. However, studies of social control theory do not merely limit relationship between parent-child. Indeed, a wide variety of social bonds, such as parent-child, peer-child, and community-child has emerged within studies of juvenile delinquency (Rankin & Kern, 1994). As discussed, bonds fulfill basic social and personality needs, and help adolescents attain adequate social and cognitive development (Fishbein, 1984).

Family and parents are primary sources of social bonds to adolescents. Strong family bonds lead to acceptance of social norms and to behave acceptably within society (Cota-Robles & Gamble, 2005; Fuller, 2009). In contrast, when relationships are weak or broken, the probability of delinquent behaviors increase (Hirshi, 1969). Given the role of family bonds, family and parents play significant roles in restorative justice and are expected to influence the young offenders involved in conferencing. According to Crawford and Newburn (2003), there are five beneficial effects of parental participation during restorative justice: (i) encouraging accountability for their child's offense; (ii) encouraging responsibility for preventing re-offending; (iii) empowering parents in the decision-making process; (iv) parents' participation operating more effectively through informal process; and (v) assisting reintegration of offenders.

Insofar, a strong and positive bond between parents and child may provide an effective means to achieve the main goal of restorative justice and be an obstacle or barrier to delinquent behavior.

In addition, the social bond is not limited to the parent (or caregiver) and child relationship, but extended to key social contexts, such as the community-child relationship (Bazemore, 2001). Some communities have the power to regulate the behavior of their residents through the influence of community institutions such as the family. Cohesive communities with high levels of social control develop collective efficacy, such as mutual trust and a willingness to intervene in the supervision of children (Siegel, 2001). Therefore, another key resource of social control theory in restorative justice is the potential to increase the bond between the community and adolescents. In the study of restorative justice, community is defined as "interconnected networks of citizens who have tools and resources that can be mobilized collectively to promote healing and reintegration" (Bazemore, 2001, p. 214). Conferencing advocates believe that members of the community have better understanding of community problems, and have more commitment to resolve problems. Community also provides more flexible and effective care for problems (O'Malley, 2008). Therefore, the active involvement of community helps restorative justice interventions repair the harm that was caused by the offense. In his study of San Jose neighborhood accountability boards, Bazemore (2001) found that community functions to reduce re-offending and other negative outcomes. For instance, community can exercise the authority that parents have lost, and neighbors can care about young offenders. Moreover, community and neighbors have better understanding for young offender's situations and conditions than the formal justice system does. From this perspective, community has responsibility for adolescents by using numerous informal means for resolving disputes and restricting harmful behaviors (Bazemore, 2001). In sum, informal social control mechanisms include community tie,

community guide, and neighborhood networks support to maintain safe community and control delinquency (Cullen, 1994; McKnight, 1995).

It is clear that restorative justice interventions recognize and encourage strong and positive bonds between the community and young offenders (Kurki, 2000). However, community does not merely mean geographical area, rather it means the social networks and relations surrounding the youth and victim (Bazemore, 2005). In sum, the community plays a crucial role in restorative justice because "it enables young people to see the impact of their offending upon the community or it brings ordinary people and non-professionals into the process, and it enables the community to have an ownership of young people's problems and a responsibility to help in addressing them" (Crawford & Newburn, 2003, p. 147). In sum, the main purpose and principles of restorative justice regard the role of family, parents, and community as critical to the success of interventions.

THEORY OF THE ECOLOGY OF HUMAN DEVELOPMENT

A few studies have focused on the role that restorative justice, including Family Group Conferencing, play in recidivism, and a variety of theorists have proposed mechanisms which control and shame adolescents out of delinquent behaviors. In order for human beings to exist in society, they need to function within an interconnecting ecological context. Bronfenbrenner's theory of the ecology of human development helps us to understand individuals in these contexts. In accordance with ecological perspectives, the following section will review: (i) definition of the ecological framework; and (ii) broader context of the ecological framework on restorative justice and recidivism.

The theory of ecology of human development has recognized the interaction between various ecological contexts within an environment (Bronfenbrenner, 1979; 1986). It assumes "humans are dependent on their environment and other human beings" (White & Klein, 2002, p. 207). The ecological framework emphasizes that social problems exist as part of complex systems and are influenced by factors at many levels of social environment (Juras, 2004). Consequently, the main idea of the ecological framework is interconnectedness across different levels of systems, such as family-adolescent, peer-adolescent, community-adolescent, as well as family-peer, and family-community. Regarding the ecological perspective on recidivism or delinquency, ecological theorists assume that human behavior is shaped by both individual, environmental factors and interactions with one another (Juras, 2004). According to Bronfenbrenner (1979), adolescents' development is affected by family and community contexts, and interactions among each element on an ongoing basis. Therefore, individuals function within nested ecological systems.

The central features of ecological perspectives are four different ecological levels of interaction: (i) microsystem; (ii) mesosystem; (iii) exosystem; and (iv) macrosystem (Bronfenbrenner, 1979). The microsystem involves interactions with the individual's immediate environment. The microsystem includes patterns of activities, roles, and interpersonal relationships. Families are generally the first microsystem within which adolescents function (Hagens, 1993). For instance, parents may have the closest and the greatest influence on an adolescent's behavior. Specifically, positive relationships with parents influence an adolescent's pro-social behavior, whereas negative relationships with parents affect an anti-social behavior pattern (Berk, 2000). The second ecological system is the mesosystem, which refers to interrelations of two or more elements within the microsystem. For example, harmonious

relationships between parents and peers or parents and the school may influence an adolescent's pro-social behavior. Thirdly, the exosystem is defined as "system that is not in direct interaction with the developing person but has indirect effects on the person" (Bronfenbrenner, 1979, p. 26). For instance, parents in poor neighborhoods may face greater obstacles in taking proper care of their children. In addition, there is a lack of community resources to support adolescents in poor neighborhood. The relationships between lack of parental support and lack of community resources may not directly affect an adolescent's behavior, but indirectly affect it. The last system is identified as the macrosystem, which is the "general cultural context" (Bronfenbrenner, 1979, p. 26), such as the culture, norms, or laws of the society where the family lives, or the adolescent's environment. These contextual factors may also influence adolescents. In sum, the theory of ecology of human development has not produced one uniform set of explanations for interaction between individuals and environment. Rather, it provides many possible explanations, such as various interactions between parents and/or community factors from all of these ecological sources.

There are four assumptions underlying the theory of ecology of human development (Germain & Bloom, 1999). The first assumption is an individual can be examined within his or her environment. The next assumption is that individuals attempt to fit into their environment well. Flow of negative or positive life events is the third assumption. Finally, the forth assumption is that the individual's life events can be understood by consideration of all aspects of the individual-environment interrelationship. These assumptions lend the "logical basis of ecological perspective upon which human development can be studied and understood" (Bronfenbrenner, 1979, p.19). Consequently, the ecological perspective takes into account many possible relationships other than the linear relationship between several ecological contexts.

Specifically, partnerships with communities and local institutions (e.g. school or church) ensure that youths are held accountable to their victims, and provides offenders with mentors in the community. It also offers extensive and comprehensive supervision, which promotes self-discipline and self-esteem for youthful offenders. In sum, partnerships among ecological contexts provide fuller and deeper explanations of a holistic picture of conferencing impact on youths' behavior.

THEORIES OF RESTORATIVE JUSTICE INTERVENTION

Unlike the youth developmental perspectives, theories of restorative justice intervention is concerned with such things as quality of intervention procedure, quality of sanctioning (i.e. fairness), and form of shaming. In particular, intervention related theories focus on process and results of interventional rather than focus on youths' developmental process over time. In short, procedural justice/defiance theory, as Tyler (1990) and Sherman (1993) refer to them, attempt to examine relationship between unfairness or disrespectfulness of the process/sanctioning and future behavior. Moreover, John Braithwaite's (1989) theory of reintegrative shaming has been one of the most interesting frameworks related to restorative justice intervention. This theory posits the idea that reintegrative shaming reduce further crime and deviance if the restorative justice intervention is based on reintegrative shaming principles, such as bonds and intimates. Taken together, two clear frameworks of the restorative justice intervention, procedural justice/defiance theory and reintegrative shaming theory, will be examined.

REINTEGRATIVE SHAMING THEORY

According to the rational choice perspective, rational people may commit a crime when they are left free or unrestricted (Clarke, 1992). In other words, many people do not violate or break the law because they fear being caught and punished. A number of potential strategies stem from this perspective: (i) general deterrence; and (ii) specific deterrence. Deterrence refers to control of behavior through the fear of consequences (Fuller, 2009). General deterrence is a method of control in which the punishment of a single offender sets an example for the rest of society (Fuller, 2009, p. 143). That is, general deterrence is aimed at potential criminals by communicating the fear or threat of punishment. However, specific deterrence refers to a method

of control in which a specific offender is prevented from committing more offenses by punishment (Fuller, 1999). Therefore, specific deterrence is aimed at preventing recidivism by punishing known offenders. Although the deterrence model focuses on fear on punishment, it is not necessarily restricted to the consideration of legal sanctions (Grasmick &Bursik, 1990). Rather, fear of shame and embarrassment can also be a powerful deterrent to crime (Siegel, 2001). These factors might be taken into account by offenders in two ways: (i) threat of the shame of breaking the law; and (ii) fear of public humiliation and stigmatizing social disapproval (Barak, 1998; Siegel, 2001). Therefore, shame is a powerful tool of informal social control that may decrease crime rates.

The specific deterrence concept of fear of shame provides foundations for Braithwaite's reintegrative shaming theory. It also links to control theory by utilizing social bonding (Braithwaite, 1989). There are two distinctive features in the shaming process: (i) disintegrative forms (e.g. stigmatizing shame and removing offenders from society); and (ii) reintegrative forms (e.g. restorative justice or family group conferencing). Central to Braithwaite's theory of reintegrative shaming is an emphasis on why some societies have more crime and why some individuals are more likely to re-offend. In addition, his theory posits fear of shaming is more effective than formal criminal punishment as social control. From this perspective, crime is higher when shaming is disintegrative, while it is lower when shaming is reintegrative (1989). The disintegrative or stigmatizing form of shaming is linked to an attraction to criminal subcultures (Braithwaite, 1989). For instance, the consequences of disintegrative shaming are related to amplifying crime and the rejection of social control or approval. Therefore, disintegrative or stigmatizing form of shame removes the offender from society. In contrast, the reintegrative form is a key concept of crime control linked to the cultural responsibility of

shaming (Braithwaite, 1989). For instance, the reintegrative form of shame maintains bonds of respect, love, and forgiveness. Thus, it controls crime and wrongdoings from society and individuals.

Consequently, Braithwaite (1989) delineated two distint concepts: (i) interdependency; and (ii) shaming. Interdependency entails conditions of individuals, which refers to "individuals [who] participate in networks wherein they are dependent on others to achieve valued ends and others are dependent on them" (Braithwaite, 1989, p. 85). The concept of interdependency is directly connected with Hirschi's social control theory, including attachment and commitment, and Bronfenbrenner's theory of the ecology of human development, including interconnectedness across different level of systems (Braithwaite, 1989). Another core concept in reintegrative shaming theory is shaming, which refers to "all social processes of expression of disapproval which have the intention or effect of invoking remorse in the person being shamed and/or condemnation by others who become aware of the shaming" (p. 87). As briefly discussed, Braithwaite (1989) distinguished between reintegrative and disintegrative or stigmatizing forms of shaming. Reintegrative shaming helps to maintain community bonds as offenders begin to understand and recognize their wrongdoing and internalize feelings of shame for their offending. Once offenders shame themselves, they are reintegrated into society through mild rebuking and degradation ceremonies, expressions of society's disapproval of the wrongdoing, then finally gestures of reacceptance (Braithwaite, 1989). By way of contrast, the disintegrative form of shaming involves the offender being labeled as an evil person and not being accepted by society. In addition, disintegrative shaming involves no effort to reconcile the offender into the community (Braithwaite, 1989). In this process, rebuking and degradation ceremonies coupled with reintegration, therefore, are not followed. Rather, it stigmatizes people and turns them into

outcasts, such as in the formal court action or imprisonment that breaks or weakens bonds with conventional society (Hughes, 2001).

In sum, Braithwaite (1989) has made an argument that crime control can be better achieved through a policy of reintegrative shaming than stigmatization or disintegrative shaming. Based on key concepts of his theory, interdependent persons are more susceptible to shaming (Braithwaite, 1989, p. 88). Between two types of shaming, the reintegrative form is more likely to become effective, because reintegration can occur when the offender recognizes wrongdoing and fear for disapproval from society. Therefore, society plays a crucial role in reintegrative shaming theory to prevent crime, especially re-offending. In addition, the reintegrative form of shaming occurs within a pro-social network, as intended through restorative justice or conferencing.

PROCEDURAL JUSTICE AND DEFIANCE THEORY

All three theories have endorsed efforts to increase control on offenders in the community and family through informal processes. Other criminologists recognize that certain circumstances, such as criminal justice sanctions also influence recidivism (Sherman, 1993; Tyler, 1990). The key issue is not only whether a sanction is applied, but also the quality of the sanction (Lilly et al., 2007). Two important theories have been developed to explain how the quality of sanctioning affects re-offending: Tyler's procedural justice and Sherman's defiance theory. Tyler argued that procedural justice judgments by offending youths are influenced by a wide variety of reactions to young offenders (1990). The central concept of procedural justice is fairness, which is defined as consistency, bias suppression, accuracy, correctability, representativeness, and the ethicality of the decision-making procedures (Leventhal, 1980; Tyler,

1990). In brief, the quality of decision-making (e.g. sanctioning) may influence young offenders to behave politely, respectfully, or rudely. Applying these ideas to Family Group Conferencing, when conference participants view the legal process and the decision-making process as procedurally fair and trustworthy, they may affirm the legal order and commit to law-abiding behavior (Hayes & Daly, 2003). That is, the procedural fairness of sanctioning decreases re-offending for young offenders who have participated in Family Group Conferencing.

Given these realities, Sherman (1993) realized that there also are examples in which sanctions increase re-offending. He attempted to answer the question "under what conditions does each type of criminal sanction reduce, increase, or have no effect on future crimes?" (p. 445). The central concept of his theory is defiance which results in a net increase in the prevalence, incidence, or seriousness of future offending against a sanctioning community caused by a proud, shameless reaction to the administration of a criminal sanction (Sherman, 1993, p. 459). Indicators of defiance include two distinctive features: (i) specific defiance (reaction of one person to his or her own punishment); and (ii) general defiance (reaction of a group or society to group member's punishment). Defiance may occur when an offender defines a criminal sanction as unfair, has a lack of social bonds to the community, and defines the sanction as stigmatizing or as rejecting a person (Sherman, 1993). When criminal sanctions are viewed as unfair or disrespectful, therefore, offenders are more likely to deny the shame, and the deterrent effect of the sanction is decreased. Thus, procedural justice and defiance theory can used in combination to theorize the links between Family Group Conferencing and re-offending.

Although procedural justice typically focuses on the influence of formal rules and policies on fairness perceptions, it can be connected to conferencing through the emphasis on respect, decision-makers' neutrality, and being treated fairly (Morris & Maxwell, 2001). In other

words, the quality of decision-making and quality of treatment are key issues faced by the offender. Since Family Group Conferencing focuses active participations of key resources to achieve the final agreement, it allows the offender and the victim to be satisfied with both the process and the outcomes reached. Therefore, the incorporation of conferencing promotes a fully integrated model to repairing the harm and preventing re-offending.

The current study combines models of social control theory, theory of the ecology of human development, reintegrative shaming theory, procedural justice, and defiance theory to understand how social structural conditions and social processes condition the impact of conferencing, and ultimately, individual youth behavior (re-offending). This study also utilizes integration of micro level settings, such as family and parents, macro level environments, such as neighborhood characteristics, along with the restorative justice intervention program, known as Family Group Conferencing to understand how these factors affect youth development and re-offending simultaneously.

CHAPTER IV: PRIOR RESEARCH ON RESTORATIVE JUSTICE

This study focuses on the development of an integrated model that incorporate four major theoretical approaches to predict the impact of restorative justice intervention (i.e. Family Group Conferencing) on re-offending: social control theory, theory of the ecology of human development, and reintegrative shaming theory. Besides the issues discussed in the previous section, several reasons justify the selection of these three perspectives. First, restorative justice emphasizes the effects of family and community structures or cultures on crime (Bazemore, 1998; 2001; Blechman et al., 2001; Bradshaw & Rosenborough, 2005). Second, social control theory and reintegrative shaming theory are the two dominant theoretical perspectives on the effects of restorative justice on delinquency (Daly & Hayes, 2001; Hayes & Daly, 2003). In a recent review of research on restorative justice, these two principles from each theory were used to understand the impact on delinquency (Rodriguez, 2004; 2007). Third, although there is increased attention to the macro-level approach (e.g. effect of neighborhood characteristics), little research has examined the theory of the ecology of human development for explanations of the relationship between restorative justice and delinquency, especially re-offending. Therefore, this section reviews the results of empirical research, testing hypotheses from each theory. Then, based on the literature review, an integrated theoretical model will be developed.

EFFECTS OF FAMILY GROUP CONFERENCING ON RE-OFFENDING

Does Family Group Conferencing reduce the subsequent probability of adolescent's re-offending? Many scholars and policy makers are paying increasing attention to restorative justice, and its effectiveness in terms of crime prevention or reduction of recidivism. However, since intervention models are so varied, and there is a lack of conventional methods of evaluation of its

effectiveness, those evaluating restorative justice interventions should be worried about the viability their studies (Presser & Van Voorhis, 2002). Although this complexity exists, many empirical studies have reported findings supportive of restorative justice interventions, including Family Group Conferencing, in reducing re-offending. In this section, studies that have been conducted to ascertain the level of effects of Family Group Conferencing are reviewed. Although a few studies found that restorative justice conferences have no effect on reducing re-offending (Umbreit, 1994; Umbreit & Shichor, 1993), empirical studies generally reported findings that support reductions in re-offending (Beus & Rodriguez, 2007; Bonta et al., 2002; Bradshaw & Roseborough, 2005; Hayes, 2005; Latimer et al., 2005; Maxwell & Morris, 2002; McGarrell, 2001; McGarrell & Hipple, 2007; Rodriguez, 2004; 2007; Sundell & Vinnerljung, 2004).

Comparison studies

Evaluations of restorative justice interventions mainly haven been concerned with re-offending within a certain time period after interventions. Several studies have used experimental design by comparing between restorative justice intervention participants and other court-ordered programs participants.

More recently, three of the studies cited most often by researcher were those conducted by Beus and Rodriguez (2007), Rodriguez (2007), and Luke and Lind (2002). The first study was conducted in 2002 using 9255 juvenile referrals under either the restorative justice program or standard diversion program in the Maricopa County Juvenile Probation Department. In this study, they have a quasi-experimental design to examine the research question "is there a relationship between restorative justice program completion and recidivism?" The estimations of recidivism based on this question were that juveniles who completed restorative justice programs

were less likely to re-offend than were juveniles in the comparison group. Of the juveniles who completed restorative justice programs, girls and younger juveniles were less likely to recidivate than their counterparts were. Regarding offense type, public order offenders (e.g. loitering, resisting arrest, obstruction, disorderly conduct, and alcohol possession) and status offenders were less likely to re-offend than were property offenders. Additionally, the results revealed that restorative justice program allowed juvenile offenders to change perspectives regarding re-offending.

Rodriguez (2007) also reported on a study examining the impact of restorative justice on juvenile recidivism. This is one of the studies that used a quasi-experimental design and reviewed court records to assess program success. The author found that restorative justice participants (Odds is equal to .704) were less likely to recidivate than the comparison group. Regarding gender, boys were more likely to recidivate than were girls. Additionally, both girls and boys who participated in restorative justice interventions were less likely to recidivate than were their counterparts.

Other than the Maricopa County studies (Beus and Rodriguez, 2007; Rodriguez, 2007), Luke and Lind (2002) conducted a study of patterns of re-offending among young people in New South Wales, Australia. They compare young people who went to conference to young offenders who went to court between 1998 and 1999. Of the 590 first time offenders who attended a conference and 3830 who went to court, the authors attempted to investigate whether a conference provided a form of restitution, encouraged the reintegration of young offenders, and had an impact on reducing re-offending. In a survival analysis and poisson regression of the data, they found that conferencing had the effect of reducing re-offending for first time offenders.

Specifically, they reported that conferencing had a significant effect (15 to 20 percent) on reduction in re-offending after controlling for the effects of gender and offense type.

As part of a broader outcome evaluation of restorative justice, Bonta and his colleagues (2002) examined restorative resolution (e.g. Victim-Offender Mediation) operating in Winnipeg, Manitoba. The sample of restorative resolutions included 72 offenders and 72 probationers who were matched by gender, race, age, offender risk classification, violent offense, and first offense, for the analysis of offender recidivism. They found that the recidivism rate was significantly lower for the restorative resolutions participants. One might argue that restorative justice programs (restorative resolutions) are more effective than probation for reducing recidivism because restitution, community service, and giving an apology may have influenced the rates of recidivism.

In Marion County, Indianapolis, two phases of an experimental study were conducted (McGarrell, 2001; McGarrell & Hipple, 2007). The procedures used in both phases were quite similar. The first phase of the study was conducted in 2000 using 232 youth offenders who were assigned to an experimental group (restorative justice conferencing) and 226 offenders who were assigned to a control group (other diversion programs) under Marion County Court, Juvenile Division. The key research question was "is there evidence conferences can reduce re-offending?" The estimate of re-offending was based on two different measures: (i) six-month rearrest rates for all youthful offenders; and (ii) twelve-month rearrest rates for offenders who had completed their assigned program. First, youthful offenders in Family Group Conferencing were about 14 times less likely to be rearrested after six-months than were control group youthful offenders. Second, in terms of twelve-month rearrest rates, Family Group Conferencing participants were about 6 times less likely to be reaarested than were their counterparts (McGarrell, 2000). The

second phase of the study was conducted in 2002 by addressing the same research question; "does participation in a Family Group Conferencing, contrasted with other court-ordered diversion programs affect the incidence of re-offending among a sample of young, first-time offenders?" The second phase included a larger sample (Treatment N=400; Control N=382) and a longer follow-up period. After 24-month follow-up study, McGarrell and Hipple (2007) found that a greater proportion of the Family Group Conferencing participants did not re-offend after 24-months compared to the participants of other diversion programs based on Cox regression analysis. Specifically, assignment to the Family Group Conferencing group decreased the hazard rate by 17.4 percent, regardless of offender characteristics and offense related variables.

The Reintegative Shaming Experiments Projects (RISE) is also important for its research design of randomly assigning to conference and court. Specifically, The RISE researchers compared offending rates 3 years before assignment to either a conference or court to 3 years after assignment. The RISE project gathered data on offenses including drink driving, juvenile property crime (with personal victims and with organizational victims), and juvenile violent crime. Although they found no reduction for certain types of offense, the results from RISE experiments suggest that conference delivered a better kind of justice than do courts. Specifically, youthful offenders who committed violent offenses and were sent to a conference were less likely to re-offend during the follow-up period (Sherman & Strang, 2004).

Drawing on an experimental study of restorative justice samples and probation samples in Winnipeg, Manitoba, Bonta and colleagues (2002) tested a model in which the satisfaction of program procedures and final results influence the recidivism. They found that the reparation activities, such as apology given to the person that he or she harmed, or restitution and community service agreements was more encouraged by restorative justice interventions.

Regarding the recidivism, the recidivism rate was significantly lower for the restorative justice program participants. In an attempt to understand what may have influenced the recidivism, in terms of the rehabilitative value for the offender, restitution, and opportunities for the offender to atone for offender's wrongdoings led to a reduction in recidivism.

In sum, these prior studies have been evaluating the effectiveness of restorative justice interventions on re-offending by using experimental or quasi experimental designs. Although all studies have used different statistical techniques, they were generally supportive of the idea that there was a significant difference between groups on rates of re-offending. That is, juveniles participating in restorative justice interventions had lower rates of re-offending than those in other programs or court ordered sanctions.

Non- Comparison Studies

In assessing the impact of Family Group Conferencing on re-offending, Maxwell and Morris (2002) analyzed dimensions of the conference process and predicted re-offending of participants by these characteristics. The study subjects had participated in Family Group Conferencing between 1990 and 1991 and the study included four year follow-up (N=161). In their 2002 study, they attempted to extend the earlier study by examining 108 young people (67% of the earlier study) and 98 parents for more than a 4 year follow-up. They found that several Family Group Conferencing characteristics, such as young the offender's feeling remorseful, and meeting and apologizing to the victim, were related to reductions in re-offending.

Bradshaw and Roseborough (2005) used meta-analysis methods in an effort to provide a summary estimate of effects of restorative justice on re-offending. They estimated effect sizes on re-offense based on 19 prior studies with 11950 juveniles from 25 different sites. Under the

assumption of a fixed effects model, the average effect size was weighted by giving greater weight to studies with larger sample sizes. Their results indicated effectiveness of restorative justice interventions in reducing re-offending for juvenile offenses. Similarly, Latimer, Dowden, and Muise (2005) conducted meta-analysis to test the effectiveness of restorative justice interventions by using 22 prior studies of 35 restorative justice programs. Although the average effect size was also calculated, the unweighted estimates only were used in this study. The results revealed that restorative justice programs have an impact on reductions in recidivism compared to nonrestorative justice approaches. Overall, these meta-analysis studies of the effects of restorative justice intervention on re-offending provide significant results for the reduction of re-offending compared to other diversion programs or nonrestorative justice approaches.

EFFECTS OF FAMILY ON RECIDIVISM

Restorative justice interventions, including Family Group Conferencing, involve multiple concepts and likely involve multiple causes of re-offending for participating juveniles. However, a growing body of research demonstrates the possible impact of the role of parents and family. As part of the socialization process, juveniles are expected to adopt society's rules, attitudes, values, and norms through social activities. Criminologists' recognize the importance of parents and family in the etiology of antisocial behavior and have repeatedly found an association between parent-child relationship and re-offending (Laub et al., 1998; Rand, 1987; Sampson & Laub, 1993). Specifically, some of the factors, which are associated with recidivism in juveniles, such as family characteristics and exposure to criminal activity within the family environment have been identified in prior research.

Most of all, family stability is the key factor that plays a crucial role in establishing a juvenile's attitude and behavior (Friedemann & Andrews, 1990; Epstein et al., 1983). That is, juveniles with a problematic family or ignorant/neglectful environment may be more motivated to engage in delinquency. For instance, living in a single-parent family is associated with increased risk for recidivism (Dembo et al., 1998; Minor et al., 1997). In addition, family management styles such as poor childrearing practices, punitive parental strategies, neglect, or abuse, demonstrates significant association with delinquency (Wells & Rankin, 1988). In contrast, supportive family relationships and family stability are likely to reduce prevalence of recidivism for delinquents. Furstenberg and colleagues (1999) indicated that adolescents with positive family climate, discipline effectiveness, and family support are expected to be less likely to respond with delinquency. In addition to parental management styles and family environment, exposure to criminal environment also has been linked to juvenile recidivism (Farrington, 1989; Rowe & Farrington, 1997; Wells & Rankin, 1988). Adolescents who live with parents or care-givers who have histories of criminality are more likely to participate delinquency (Farrington, 1989). More recently, Rowe and Farrington (1997) found that living in households with family criminality has direct impact on criminality of adolescents.

EFFECTS OF NEIGHBORHOOD ON RECIDIVISM

Factors for juvenile recidivism are not limited to family characteristics but also include influences of broader features of ecological contexts such as neighborhood or community characteristics. A large body of research exists on the effects of neighborhood characteristics on recidivism. In ecological contexts, measures of economic disadvantage, which generally reflect the extent of poverty and segregation of a neighborhood, and residential stability influence

adolescents' behaviors (Cattarello, 2000; Sampson, 1997; Sampson & Groves, 1989; Sampson et al., 1997; Veysey & Messner, 1999). Specifically, neighborhood economic disadvantage, poverty, disorganization, and instability make it difficult to establish quality social institutions and impede the development of informal social control and watchful neighbors (Anderson, 1999; Sampson & Groves, 1989; Veysey & Messner, 1999). These features, then, increase levels of unsupervised adolescents in the community and decrease mutual engagement by residents to resolve community problems (Sampson & Groves, 1989). Therefore, the devastating impact of negative neighborhood characteristics has been reported in myriad studies. Specifically, Elliot and colleagues (1996) found that adolescents' who reside in disadvantaged neighborhoods are substantially affected by the social and physical structure of community. That is, they are involved in more delinquent activities than adolescents' in stable neighborhood. Similarly, Hay and his colleagues (2006) reported that adolescents' who reside in poor neighborhood are involved in considerably more delinquent activities.

Furthermore, several studies attempt to understand the mechanisms by which neighborhood effects might be transmitted into adolescents' behavior by examining the association between neighborhoods and the quality of life of the families who reside there. These orientations promote researchers to begin to identify the influence of mechanisms on behavioral outcomes among youth. According to Gephart (1997), adolescents who reside in neighborhoods with high value consensus and high levels of monitoring and supervision are less likely to engage in delinquency. In contrast, Bursik and Grasmick (1993) argue that a high concentration of single parent families in a neighborhood creates a high risk for delinquency.

EFFECTS OF SHAMING ON RECIDIVISM

Several researchers have identified the concept of shaming as an influence on both attitudes and behaviors related to recidivism. Research on the effects of shaming have distinguished between reintegrative and stigmatizing shaming and reached a general conclusion that the reintegrative form of shaming appears to decrease the chances of recidivism. In contrast, subjects who have been stigmatically shamed displayed increased recidivism (Tittle et al., 2003). Significant findings were also reported by Tyler and his colleagues (2007). Using the offenders who participated in restorative justice conference in Canberra, Australia, they attempted to examine the role of reintegrative shaming and its link to recidivism. Their analyses revealed that subjects restored their ties to others after experiencing shame over their misbehavior, and it was concern about those ties that motivated subsequent rule following. In sum, consistent with Braithwaite's ideas of reintegrative shaming theory, many prior studies have reported that the reintegrative form of shaming and shame-related emotions directly and indirectly affect subsequent offending behaviors.

EFFECTS OF ADOLESCENT BEHAVIORS ON RECIDIVISM

As regards age as a predictor of recidivism, age at first adjudication and age at release play a very crucial role for juveniles. For example, higher probabilities of recidivism have been reported such that younger juveniles were more likely to recidivate than were older juveniles (Jacobs, 1990). Similarly, younger age offenders at the time of first adjudication are more represented in reoffending (Duncan et al., 1995; Farrington & Hawkins, 1991). Specifically, Loeber and Farrington (2000) found that younger age groups at first arrest have more than 40 percent of increased risk of later serious, violent, and chronic offending. In addition, Katsiyannis and Archwamety (1997) stated that younger delinquents have a higher chance of re-offending as

they have a longer period time for recidivism. In addition, Miner (2002) studied predictors of recidivism in juvenile sex offenders and found that juveniles who began offending at younger age were at increased risk of committing a recidivate sex offense.

Similarly, age at release and the probability of recidivism has an inverse relationship. In other words, the younger the offender is at the time of release the higher the probability of recidivism and vice versa (Klein & Caggiano, 1986; Ashford & LeCroy, 1990; Carr, 1994; Sanders, 1998). According to Langan and Levin, while the recidivism rate of offenders who were released at the age of 45 or above is 45 percent, the rate is around 80 percent for offenders who were released at the age of 18 or under (2002).

The association between substance abuse and juvenile delinquency is very strong. In general, heavy drug users are disproportionately likely to engage in criminal activity. Regarding substance abuse, although there are inconsistencies regarding influence of substance abuse, it has been found to be a strong predictor of recidivism in myriad studies (Grenier & Roundtree, 1987). Especially, for the young offender, substance abuse, including alcohol, is substantially associated with recidivism in juveniles (McCoy et al., 2004).

CHAPTER V: THE CURRENT STUDY

Research Questions and Hypotheses

The results of the literature review on social control theory, theory of the ecology of human development, and reintegrative shaming theory provide evidence that the construction of social bonds, interactional effects of ecological contexts, and reintegrative shaming are all influential in whether young offenders re-offend. However, the casual structure of re-offending is still uncertain, and little research has tested the efficacy of theoretical models across combined theoretical perspectives. The current study seeks to address several issues that remain unresolved. First, this study focuses on developing an explanatory model that integrates social control theory, theory of the ecology of human development, and reintegrative shaming theory, to understand the connection of Family Group Conferencing to re-offending. Second, it is evident from the review that the research on restorative justice of delinquency is insufficient. Existing theoretical models are usually tested for recidivism, which are based on short time period follow-up studies; little is known whether these models could be extended to explain the long-term effect of restorative justice programs. The current study examines the relative explanatory power of the long-term effect of Family Group Conferencing of future criminality.

The initial Indianapolis experiment found that re-offending prevalence and incidence was lower at 24 months compared to youths in the control groups (McGarrell & Hipple, 2007). This study builds on that analysis and extends it to a follow-up period ranging up to nine years. Therefore, based on the early study as well as the review of the literature on Family Group Conferencing and theoretical explanations suggests several hypotheses relevant to re-offending:

H1: Subjects in Family Group Conferences will have lower prevalence of long-term offending.

H2: The type of primary offense (initial offense) committed by subjects will predict re-offending.

H2-a: Youthful offenders who committed violent offenses are more likely to be associated with re-offending than those who committed property offenses or public order offenses.

H3: Family Backgrounds (i.e. home adjustment and abused/neglected) affect one's involvement in re-offending.

H4: School Backgrounds (i.e. academic history, attendance pattern, and school adjustment) affect one's involvement in re-offending.

H5: Neighborhood structural conditions will have an indirect impact on re-offending by increasing the instance of positive parental characteristics.

H5-a: Neighborhoods with more economic advantage will have more community resources, which help facilitate youth development and the ability of parents to support their children to decrease involvement in re-offending.

H5-b: Neighborhoods with more residential stability will have more informal social control and a greater sense of community, which helps facilitate the development of social norms as well as intense parental involvement and support which help to decrease involvement in re-offending.

H6: Procedural justice and Defiance framework (i.e. perception toward quality of sanctioning or procedure) affect one's involvement in re-offending.

H6-a: Youths who are more satisfied with how their initial case was handled will have lower long-term re-offending.

H6-b: Youths who are more satisfied with procedure have lower risk for re-offending.

H7: Shaming (i.e. reintegrative form of shaming) affects one's involvement in re-offending.

Methodology

Original Study – The Indianapolis Family Group Conferencing Experiment of 1997

As noted in previous sections, the Indianapolis Family Group Conferencing Experiment tested a diversion framework that involved how restorative justice intervention programs that were structured with the goal of providing the necessary resources to decrease future delinquency sponsored within the Marion County Juvenile Court. To provide a holistic picture of the effect of Family Group Conferencing, an experimental design was implemented with random assignment to conference and control group. The control group was based on assignment into 23 other diversion programs, which are the usual procedures for handling young, first-time offenders in Marion County Juvenile Court. Random assignment of Family Group Conferencing used criteria as follows: first time offenders; 14 years of age and younger; committed one of five offenses, including battery (assault), trespass, mischief, conversion, and felony D theft. Random assignment into conference occurred through an one-month block procedures where by approximately 10-15 youths were admitted each month in the Family Group Conferencing and another 10-15 youths were sent to other diversion programs during the period of September 1, 1997 through September 30, 1999.

The initial participants included in the original study are seven hundred eighty two youths. Four hundred youthful offenders were assigned to the Family Group Conference experimental group, while three hundred eighty two youths were in the control group (i.e. the other 23 diversion programs). However, some youths refused to participate in a conference (N=11) or other diversion program (N=1), failed to show up, were re-arrested, or failed to complete programs. In addition, some parents of youths refused to participate in a conference for their young child. Therefore, the program completion of the study consists of three hundred twenty

two (80.5% of initial subjects) youths in the experimental group, and 61 percent program completion rate (two hundred thirty three) for subjects in the control group. However, in terms of the analysis, the sample for the original study includes all youths from the experimental and control groups (N=782). The first step in the analysis was to compare treatment effect with the Family Group Conferencing and other court-ordered diversion programs. Program completion was then included as one of the variables to examine impact of incidence of re-offending.

Current Study – Extending the earlier research to 2009

The current study proposes three different types of theory, including social control theory, theory of the ecology of human development, and reintegrative shaming theory, as an appropriate framework for conceptualizing how Family Group Conferencing provides the necessary resources to curb re-offending or future criminality in a sample of conference participants in the Indianapolis Family Group Conference in Marion County. As indicated earlier, the current study is an attempt to extend the original study of *Family Group Conferencing and Re-Offending Among First-Time Juvenile Offenders: The Indianapolis Experiment* (McGarrell & Hipple, 2007). The current study will not examine why juveniles break the law or display delinquent behaviors, because the sample only includes first-time juvenile offenders. Instead, the purpose of this study is to determine the effectiveness of restorative justice intervention, which is Family Group Conferencing, in creating protective factors related to re-offending. The major research questions will be addressed: does Family Group Conferencing mediate re-offending among participants, compared to participants in other diversion programs from 24 months follow-up period extending to early adulthood?

This study also addresses the relationship between risk factors of re-offending and protective factors of re-offending by investigating factors drawn from social control theory, theory of the ecology of human development, and reintegrative shaming theory. Specifically, using court records from Marion County, Indiana, this study aims to conduct an in-depth examination of the long-term effect of Family Group Conferencing. It has been hypothesized to offer an alternative to traditional court processes that reduces youth re-offending and better meet the needs of crime victims. As discussed, the current study subjects had participated in either conference or other diversion programs between 1997 and 2000. All subjects consented to participating in the original study and will not be directly contacted in the current study. Rather, criminal history ascertained from court records will be reviewed for the source of the major dependent variable, re-offending. According to McGarrell and Hipple (2007), youths participating in the Family Group Conferencing offended at a reduced level compared to youth randomly assigned to other diversion programs. Therefore, the proposed research seeks to extended the earlier original study by examining whether the reduction in re-offending continued beyond the original 24-month follow-up period and as the youths moved into young adulthood. It will involve a follow-up analysis based on a review of court records in 2008-2009 to assess rate of arrests and disposition in the period following the original study. For the primary outcome, which is prevalence, incidence, and seriousness of re-offending, this study will use official Marion County Court records of criminal history for 10 years after Family Group Conferencing and other diversion programs as indicators of early adulthood re-offending. The study benefits from the original experimental design. A better understanding of the long term effect of the Family Group Conferencing would enable us to inform policy and potentially help more youths involved in the juvenile court system adjust to life with lower re-offending rates.

Neighborhood characteristics have been assumed to be important predictors of re-offending. A consideration of the role of community characteristics on re-offending is important; therefore, census data will be used based on where individuals resided at the time of original study. Census data are publicly available and aggregate indicators of neighborhood characteristics to units of analysis referred to as census block groups. In addition, it also includes other measures of community disorganization. As such, the U.S. Census 2000 was utilized to measure the community characteristics.

The information gathered will include demographic information, such as date of birth, race, gender, and grade at time of original offense, along with any arrests and court dispositions of cases following the original arrest. The cases will be searched and data will be gathered by using a court-issued identification number. Once the court files are reviewed and the data are collected, the court-issued identification number will be replaced by a current study identification number. All names and any other identifying information will be removed from the data file. The current study case number will not allow linkage to any name or identifying information. Therefore, the data will be anonymous.

Sample

The original study included the full sample for purposes of assessing impact on recidivism as well as a sub-sample of youths who were interviewed. The current study follows a similar approach. The overall assessment of the impact of Family Group Conferencing is based on the full sample. The exploration of the theoretical questions is based on the sub-sample for which interview data are available. The sample of the current study consists of participants from

the earlier original study. In other words, all recruitment is based on participation in the earlier study.

As noted above, there are two groups that will be examined in this study. The first group (i.e. experimental group) will include subjects who participated in Family Group Conferencing between 1997 and 2000. The other group (i.e. control group) will include subjects who participated in one of a number of court-ordered diversion programs in the same period. Only the court records of youths who participated in the original study and who, along with their parent or guardian, provided informed consent to having their records reviewed are included in the current follow-up study. The experimental group (N=400) includes all youthful offenders who participated in Family Group Conferencing between September 1, 1997 to September 30, 1999. The control group (N=382) is a sample of similarly situated youth, yet were placed in other diversion programs during the same time period.

A significant part of the current study is to assess how offenders felt about Family Group Conferencing or other diversion programs. Specifically, it involves exploring offenders' attitudes and beliefs about how their cases were handled and how their perceptions toward justice or law were changed. This portion of the study will be based on the sub-sample for which were completed. The surveys were attempted during a portion of the full study. Consequently, some subjects in the original study were not interviewed in the post-conference and post-diversion surveys. Thus, the sample size for the sub-group analysis is smaller than for the total sample of experimental group and control group. Therefore, samples for sub-group analysis include 269 youthful offenders who successfully completed post program surveys. Of these subjects, 156 youthful offenders completed post-conference survey (39% response rate) and 113 youthful

offenders completed post-diversion survey (34% response rate).[1] Although the sub-sample and unknown number of failed attempts to reach particular youthful offenders is a potential source of bias, initial comparisons suggest the sub-samples are representative of the full sample. This analysis will be included in the dissertation.

[1] The response rate is actually higher if I limit to time period when interviews were in the field.

CHAPTER VI: DATA DESCRIPTION

The current study differs from the majority of previous restorative justice intervention effects studies based on reintegrative shaming theory. This study examines a causal model to explain re-offending and Family Group Conferencing that integrates procedural justices/defiance theory, social control theory, theory of human development, and reintegrative shaming theory by conceptualizing and measuring the proposed independent variables of neighborhood characteristics and residential stability with legal and extra-legal variables.

Dependent Variable

The primary outcome measures are official record of re-offending from age at 14 up to age at 26 (every half year old of age) following their initial arrest. Much recidivism research has used official records of police incident reports or arrests, or official court referrals as indicators of crime and delinquency. In terms of the re-offending analysis, officially recorded Marion County Court records are employed in the current study. Court referral data do not necessarily reflect every instance where an individual was officially detained by the police and subsequently referred to court, but those occasions where an arrest and referral were made and the court substantiated the arrest to the point where charges were filed against the individual. Prevalence of re-offending will be operationalized as a dichotomous variable, with 0 indicating youth was not re-arrested and re-contacted to court after the initial arrest that brought the youth to juvenile justice system for the first time, and 1 indicating youth was ever contact to court system every 6 month after initial arrest. It is measured for both groups at 12 year follow-ups. In the case where multiple charges were filed against an youthful offender, the re-offense was the most serious substantiated charge.

Independent Variables

The proposed study examines the effectiveness of the Family Group Conference in affecting individuals' behavior and thereby reducing the likelihood of future criminality. Based on literature review and the availability of information from the original study, the current study identified a list of multiple factors to re-offending. In addition, other control variables relevant to procedural justices/defiance theory, social control theory, theory of human development, and reintegrative shaming theory, including individual, family, and community levels. The dimensions and related items are presented as following.

Measures of the Intervention/Diversion Programs

Intervention related variables are coded after subjects had finished program. Youthful offenders in the experimental and control group will be compared. Group is dichotomized as 0, which means experimental group (or Conferencing experiment), and 1, which means control group (or 24 other diversion programs). Complete is a dichotomous variable, with 0 indicating fail to complete, and 1 indicating completed program.[2]

Measures of the Demographic Characteristics

Three background variables, *Race, Sex,* and *Type of Offense* are included in the study. Beus and Rodriguez (2007), and Maxwell and Morris (2002) pointed out that race and gender have important direct and indirect effects on recidivism among participants of restorative justice

[2] Breakdown of offenders in the control group is as follows: teen court (23.6%); shoplifting program (23.9%); Victim-Offender Mediation (21.7%); community service (14.9%); and other (15.9%).

practice. They also indicated that type of primary offense affects recidivism. In this study, *Race* is nominal variable (1=African American, 2=White, 3=Hispanic, and 4=Other). Then, it is collapsed into new dichotomous variable with 0 indicating Non-White, and 1 indicating White.[3] *Sex* is a dichotomous variable with 0 indicating female, and 1 indicating male. *Type of primary offense* is measured on nominal scales, 1=Person Crime, 2=Property Crime, and 3=Public Order Crime.

Measures of the Family Characteristics

During intake process, staff were required to complete a intake interview form, which would be investigated and dealt with individual backgrounds characteristics (i.e. family characteristics and school characteristics). Therefore, family and school background characteristics are compiled from arrest reports, intake interview forms, and court records. Three family characteristics, *Single Parent*, *Abuse/Neglect,* and *Home Adjustment* are used in the current study. Minor and colleagues (1997) and Dembo and colleagues (1998) found that living with a single parent could increase children's association with recidivism. In this study, Single Parent is a dichotomous variable, with 0 (No) and 1 (Yes). In addition, Archwamety and Katsiyannis (1998) found that victim of physical or sexual abuse is significantly associated with recidivism. Abuse/Neglect indicates the extent to which individuals having been a victim of physical or sexual abuse, or neglect (0=No & 1=Yes). Home adjustment is dichotomous variable with 0 indicating poor adjustment or does not follow rules, authority, and curfew, and 1 indicating good home adjustment.

[3] The majority of Non-White category of racial/ethnic group was almost all African-American (57.7%). The percentage of Hispanic and other were only about 2 %.

Measures of the School Characteristics

The theory of the ecology of human development is proposed as a theoretical framework for interaction between various ecological contexts within environment (Bronfenbrenner, 1979; 1986). One set of dimension suggested by the theory is school functioning. In response, the current study examines school characteristics to reflect interaction with ecological contexts. Arrest records and intake interview also provide these school related characteristics. Three predictors related to re-offending are considered in the school characteristics domain: *Attendance Pattern, Academic History,* and *School Adjustment*. Myner et al. (1998) indicated that regular school attendance decreases the risk of re-offending. In this study, School Attendance is measured a dichotomous variable, with 0 indicating regularly attend, and 1 indicating suspended or expelled. A similar approach is taken herein. Jung and Rawana (1999) reported that students with better teacher reports, grade point average, or grade placement show lower risk of recidivism. In the present study, Academic Performance is an ordinal variable based on, 1=Below Average, 2=Average, and 3=Above Average. Similarly, School Adjustment is dichotomous variable with 0 indicating poor adjustment or does not follow rules, regulation or authority, and 1 indicating good school adjustment.

Measures of the Community Characteristics

Measures of community characteristics are taken from 2000 Census Track files provided by the U.S. Department of Census. The measure is available only for the participants who provided home address with the intake interview form. Community characteristics were only measured at time of program participation. They, therefore, reflect community context at time of initial offense. The first step of this process included mapping each individual's home address

that is recorded at time of referral. After locating each individual in a particular Census Tract, the following data elements are used as measures of community characteristics: *Economic Disadvantage; Residential Instability; and Immigrant Concentration*. *Economic Disadvantage* is measured as follows: percent of families below the poverty line, percent of families receiving public assistance, percent of unemployed individuals; and percent of female-headed household ($\alpha = .654$). It is hypothesized that individuals residing in a more concentrated disadvantaged community are more likely to be involved in future criminality. *Residential Instability* is measured by 2 items: percent of residents who lived in the same house 5years or earlier; and percent of homes that are owner occupied ($\alpha = .698$). Similar to *Economic Disadvantage*, it is also hypothesized that individuals residing in highly instable communities are more likely to exhibit re-offending tendencies. *Immigrant Concentration* construct is measured by combined scale of percent of foreign-born residents and percent of Latino residents ($\alpha = .861$). It is hypothesized that residing in immigrants' concentrated community are positively associated with future criminality.

Measures for Sub-Group Analysis

A significant aspect of the current study is to examine how youthful offenders feel about conferencing as an alternative to traditional court-ordered programs. It involves exploring how perceptions toward conferencing or other diversion programs affect youthful offenders' future behavior. The interviews conducted in the original study were designed to ask following questions that were intended to quantify the extent on participants' attitudes and beliefs about how their cases were handled. Guided by Tyler (1990), Sherman (1993), Bronfenbrenner (1979), and Braithwaite's (1989) theoretical frameworks, four measures are used to capture the concept of key elements of each framework.

Measures of the Satisfaction about Procedure

Tyler argued that the procedural fairness and trustworthiness of sanctioning decreased re-offending for young offenders (1990). Thus, the current study includes a measure of the satisfaction about outcomes of intervention program. Six items are used to construct the variable of satisfaction about outcome, which asks questions about whether respondents' had opportunity to express their views in the program; were personally involved in the program; felt they were treated with respect during the program; believed the program gave a chance to tell my side of the story; believed they had a say in how case was handled; and perceived that people at the program were very polite to me. These items are measured on five point scales, with 1=Very Dissatisfied; 2=Dissatisfied; 3= Neither Agree nor Disagree; 4=Satisfied; and 5=Very Satisfied. The high value means higher level of satisfaction about procedure (α = .851).

Measures of the Satisfaction about Outcome

Defiance theory focuses on the role of perceived unfairness and disrespect in increasing future crimes (Sherman, 1993). In this study, the respondents are asked to answer whether they are satisfied with the outcome. The satisfaction scale is measured by three indicators assessing respondents' feeling about the outcome: whether it was fair; how satisfied are they with how case was handled; and the whether the program allowed respondents to make up for their behavior. Indicators are provided with the following options and companion values: 1=Very Dissatisfied; 2=Dissatisfied; 3= Neither Agree nor Disagree; 4=Satisfied; and 5=Very Satisfied, or 1=Very Dissatisfied; 2=Dissatisfied; 3=Satisfied; and 4=Very Satisfied. A high value on this variable reflects high level of satisfaction about outcome (α = .806). It is hypothesized that individuals who are more satisfied are less likely to be involved in future criminality.

Measures of the Attitude toward Parents

Social control theory considers the degree of closeness between parents (or caregiver) and children, and quality of bonds /attachment as key factors in conformity and offending (Hirschi, 1969). Since parents and family are primary resources of attachments to adolescents, youths are asked about their attachment to parents. Thus, *Attitude toward Parents* is a construct that reflects a sense of closeness and perceptions about levels of support from their parents. The construct is comprised of the indicators: "my family is the most important thing in my life"; "throughout my life, I have had a lot of respect for my mother"; "throughout my life; I have had a lot of respect for my father"; "I feel close to my mother"; "I feel close to my father"; "throughout my life, I have gotten along well with my mother"; and "throughout my life, I have gotten along well with my father". Each item was coded on a 5 item scale that included: 1=Strongly Disagree; 2=Disagree; 3=Neither Agree or Disagree; 4=Disagree; and 5=Strongly

Agree. The scale is summarized by computing the average scale score, a process that involved dividing the total sum of the scale by the number of items (α = .754). Total scale score is hypothesized to be positively associated with re-offending. That is, adolescents with higher scores are hypothesized to experience less instances of re-offending.

Measures of Reintegrative Form of Shaming

Central to reintegrative shaming theory is the belief that fear of shaming is more effective than formal criminal punishment as social control (Braithwaite, 1989). Specifically, the reintegrative form of shaming argues that maintaining bonds of respect, love, and forgiveness will result in less re-offending. In response, participants are asked the following questions to quantify how much they are ashamed after program: "how ashamed or proud did you feel that your family found out about the offense you committed"; "how ashamed or proud did you feel that your friends found out about the offense you committed"; "how ashamed or proud did you feel that the police found out about the offense you committed"; and "how ashamed or proud did you feel that other people in your life found out about the offense you committed". Available responses are: 1=Very Proud; 2=Proud; 3=No Feeling; 4=A Little Ashamed; 5=Ashamed; 6=Very Ashamed. The scores are computed the total scale sum of each item. A negative relationship between reintegrative form of shaming and future criminality is hypothesized (α = .795).

Table 1. Link the Variables to Research Questions

Hypothesis	Independent Variables	Dependent Variables	Sample
H1	Group (Conferencing vs. Other Diversion)	Prevalence	Full
H2	Primary Offense (Person vs. Property vs. Public Order)	Prevalence	Full
H3	Family Background (Abuse/Neglect and Adjustment)	Prevalence	Full
H4	School Background (Grade, Attendance, and Adjustment)	Prevalence	Full
H5 H5-a H5-b	Community Economic Disadvantage Residential Instability	Prevalence	Full
H6 H6-a H6-b	Satisfaction about Intervention Procedure Outcome	Prevalence	Sub
H7	Reintegrative Form of Shaming	Prevalence	Sub

Analysis Approach

To examine the empirical relationships among the variables described in the theoretical model, this dissertation attempts to conduct a two-step analysis: (i) the discrete-time event model; and (ii) the longitudinal multilevel model linking ecological contexts. First, I will conduct the discrete-time event model for all samples to estimate the effects of Family Group Conferencing or other diversion programs on event timing (e.g. time to arrest at 6 months, 12 months, 24 months, and up to early adulthood). The discrete-time event model (i.e. life table) is a powerful method for analysis of repeated event data. Survival models (or hazards models or event history models) were originally developed to study the occurrence of event that could only be experienced once (Ezell et al., 2003). However, there are developments of statistical models available for analyzing multiple event history data (or multiple failure time data), which refers to event time where there is a natural, sequential ordering of the event times or the occurrence of one event prior to the occurrence of another event (Ezell et al., 2003). The sequential dates (e.g. 6 months, 12 months, or 24 months) of re-offending for youthful offenders are an example of multiple failure time data. A youthful offender's second re-offending cannot occur until on or after the day of the first re-offense. In this study, T_{ij} is the event time for the j^{th}event (j = 1, …..,j_i) for individual i (i = 1, …, n). The most common type of multiple failure time data is repeated event data, which refers to the case in which the subject may experience the same event multiple times (e.g. re-offending) during the follow-up period (Ezell et al., 2003). Most survival models attempt to estimate the probability of failing during time distributions. However, merely describing the failure rate of each sample does not allow us to examine the relationships between survival and multiple predictors or covariates. That is, it cannot control for various background characteristics that may also be affecting the time until failure. In contrast, the alternative method,

which is called the proportional hazards model, allow us to take a closer look at the many factors that may contribute to time until failure (or a multivariate comparison of hazard rates) and to control various background characteristics that effect the time until failure. Therefore, the proportional hazard model provides information on whether hazard rate (or the risk of failure at a specific point in time) is influenced in a positive or a negative way by the independent variables (or covariates). Therefore, researchers dominantly use this model for negative events such as recidivism. However, the survival analysis for recidivism only allows researchers to explain the time until failure (i.e. recidivism). That is, survival techniques may not be appropriate for addressing questions about how each person changes over time.

What kind of statistical model is needed to address change processes in longitudinal data? What kind of statistical model is needed to represent how each person changes over time and how these changes differ across people simultaneously? Clearly, the most appropriate technique for treating developmental change over time is longitudinal multilevel analysis. Consequently, the only life table will be used to compare difference in hazard rates at various points in the follow-up period to determine whether the Family Group Conferencing or other diversion programs has impact on re-offending when controlling for various background characteristics (N=782).

In addition to the life table model, secondly, a longitudinal multi-level modeling for change, which is called the growth curve model, will be used to determine if characteristics of ecological contexts affect in future criminality significantly. This approach allows us to examine within-person and between-person questions about change simultaneously (Singer & Willett, 2003). Specifically, the multilevel model for change can be specified by "simultaneously postulating a pair of subsidiary models – a level-1 submodel that describes how each person

changes over time, and a level-2 model that describes how these changes differ across people" (Singer & Willett, 2003, p. 45). The level-1 component of the multi-level modeling for change, which is called the individual growth model, provides the individual change in outcome variable during the time period under study. This level-1 equation specifies to

$$\text{Level 1: } Y_{ij} = \pi_{ij} + \pi_{ij}(Age) + \varepsilon_{ij} \quad \text{(Repeated-Observation Model)}$$

for $i = 1, \ldots\ldots, n$ subjects, and it is most common to assume a simple error structure for ε_{ij}, namely, that each ε_{ij} is independently and normally distributed with a mean of 0 and constant variance, σ^2.

The level-2 submodel modifies the relationship between individual differences in the change trajectories and time-invariant characteristics of the individual. Specifically, each of the individual growth parameters,

$$\text{Level 2: } \pi_{0i} = \beta_{01} + \epsilon_{0i} \text{(Person-Level Model)}$$

The composite form level-1 and level-2 model is,

$$Y_{ij} = \beta_{01} + \epsilon_{0i} + \varepsilon_{ij}$$

The multi-level analysis has many advantages over traditional multivariate models, which often ignore the multi-level nature of the data (Bryk & Raudenbush, 1992; Raudenbush & Bryk, 2002). These traditional modeling techniques are likely to result in the model exhibiting more overall misfit, hypothesis tests that are overly optimistic, and increase validity concerns (Bryk & Raudenbush, 1992). In contrast, the multi-level model allows us to resolve these problems, while simultaneously modeling both within and between group variance (Bryk & Raudenbush, 1992).

In the current study, official court records of re-offending are collected from multiple follow-up periods. It is nested within a sample of youthful offenders who participated in the

original study who are in turn nested within the Census Tract. Therefore, there are two levels of random variation, variation among follow-up periods, variation among each individual within each follow-up period[4].

The two-level model consists of two sub-models, one for each level (i.e. Level-1: Time-level model; Level-2: Individual-level model and Community-level model). The level-1 model will represent the relationships among the time-level variables (i.e. the number of repeated measure; every 6 months or every half-year-old), the level-2 model will capture the influence of individual-level factors and incorporate community-level effects.

$$\text{log}itP(Y_{ij} = 1|b_i) = \eta_{ij}$$
$$\text{Level 1: log}itP(Y_{ij} = 1) = \beta_{0i} + \beta_{1i}(Age_{ij} - 14)$$
$$\text{Level 2: } \beta_{0i} = X_{1i}'B_1 + \xi_{0i}$$
$$\beta_{1i} = X_{2i}'B_2 + \xi_{1i}$$

Where:

η_{ij} represents the outcome variable (i.e. recidivism of individual *i* and age *j*.

$Age_{ij} - 14$ is time variable.

β_{0i} is the *i*th individual's true intercept.

β_{1i} is the *i*th individual's true slope.

X_1 and X_2 are covariate vectors of variables for *i*th individual.

B_1 and B_2 are the corresponding parameter vectors of populations-average effects.

ξ_{0i} and ξ_{1i} denote the individual-level (Level-2) residuals.

[4] This study does not specify variation among individuals within the Census Tract at level-3.

CHAPTER VII: RESULTS

The purpose of this dissertation is to assess the efficacy of restorative justice, especially on Family Group Conferences for young offenders. Using an experimental design, the proposed research questions test the extent to whether Family Group Conferences are more effective in reducing recidivism than other diversion programs. Insofar, this chapter presents the results of various analyses. First, the research describes the demographic and general characteristics of the sample, and analyzes the pattern of recidivism across subgroups of restorative justice participants, and other diversion programs. Second, the life table tracks discrete time event (i.e. recidivism) of the sample from the beginning of the study through the end of data collection. And finally, the longitudinal multilevel model is employed to examine the theoretical model that linking to the ecological contexts to explain recidivism.

Youthful Offenders Involvement in Re-Offending – Full Sample

Table 2 presents the descriptive findings for each follow-up period (i.e. every 6 month). The table presents the total number of re-offending and percentage for all two study groups. The re-offending distributions for each group are similar with a few exceptions. For example, the total number of re-offending is generally decreasing over time for both groups. About twenty percent of youthful offenders re-offended by 36 months follow-up period, and it is decreased by ten percent at 120 months. Only less than one percent of youthful offenders re-offended at 150 months follow-up period. This trend is common to recidivism data.

Table 2. Re-Offending by Youthful Offender Groups (N=782)

	Control		Experimental	
	N	%	N	%
Re-Offending				
6 Months	94	24.6	73	18.3
12 Months	76	19.9	86	21.5
18 Months	89	23.3	72	18.0
24 Months	81	21.2	62	15.5
30 Months	76	19.9	81	20.3
36 Months	79	20.7	75	18.8
42 Months	64	16.8	76	19.0
48 Months	60	15.7	69	17.3
54 Months	67	17.5	78	19.5
60 Months	55	14.4	72	18.0
66 Months	58	15.2	58	14.5
72 Months	60	15.7	56	14.0
78 Months	69	18.1	59	14.8
84 Months	44	11.5	57	14.3
90 Months	57	14.9	69	17.3
96 Months	52	13.6	63	15.8
102 Months	49	12.8	51	12.8
108 Months	66	17.3	62	15.5
114 Months	53	13.9	48	12.0
120 Months	43	11.3	36	9.0
126 Months	17	4.5	26	6.5
132 Months	15	3.9	19	4.8
138 Months	12	3.1	16	4.0
144 Months	6	1.6	5	1.3
150 Months	2	.5	1	.3

General Characteristics of Full Sample

The research design compared a sample of 400 experimental youthful offenders assigned to the conferencing between September 1, 1997 and December 31, 2000, and control group sample of 382 youthful offenders processed through the same Court during the same time period. There were a total of 782 youthful offenders in the two groups. The two study populations are compared on several dimensions of demographic characteristics including age at initial offense, race, and type of offense for initial offense (See Table 3).

Age distributions of each group are generally equivalent. The sample population is comprised primarily of youths who were 13 and 14 years of age at initial offense. Approximately 30 percent of the control group (N=109) and twenty-six percent of experimental group (N=104) were age 13. Another one-third of the control group (N=130) and experimental group (N=125) were age 14. However, youthful offenders in control group are slightly older than in experimental group ($\overline{X}$ = 12.71 and 12.49, respectively).

The percentage of females and males for each group are similar. About 41 percent of females (N=155) were in the control group, and 35 percent of females (N=141) were in the experimental group. That is, males account for a little more among the experimental group. The race was dichotomized into the categories “Non-White” and “White”. The race distributions for each group are also similar. About 64 percent (N=243) of the youths were non-white in the control group, and 57 percent (N=228) of youths were non-white in the experimental group. It indicates that the sample population is comprised primarily of minority youths.

Table 3. Demographic Characteristics by Youthful Offender Groups (N=782)

	Control		Experimental	
	N	%	N	%
Age				
7	1	.3	2	.5
8	5	1.3	7	1.8
9	5	1.3	14	3.5
10	21	5.5	20	5.0
11	33	8.6	45	11.3
12	78	20.4	83	20.8
13	109	28.5	104	26.0
14	130	34.0	125	31.3
Mean Age	12.71 (S.D. = 1.45)		12.49 (S.D. = 1.55)	
	(F = 4.168 with $p = .042$)			
Sex				
Female	155	40.6	141	35.3
Male	227	59.4	259	64.8
	(χ^2 = 2.356 with $p = .125$)			
Race				
Non-White[a]	243	63.6	228	57.0
White	139	36.4	172	43.0
	(χ^2 = 3.567 with $p = .059$)			
Offense				
Person	133	34.8	118	29.5
Property	177	46.3	204	51.0
Public Order[b]	72	18.9	78	19.5
	(χ^2 = 2.715 with $p = .438$)			

a: Non-White = African American, Hispanic, and Other
b: Public Order = Public Order and Other

Table 3 also presents characteristics of the referral initial offense. Initial offense is categorized into three groups and represents the criminal charge for which youthful offenders were referred to the Marion County Court. Offense type does not considerably differ for each group. Most control group youths (N=177 or 46.3%) were referred for property offense, and more than half (N=204 or 51.0%) of the experimental group were referred for property offense. It is followed by person crime and public order crime. Specifically, about thirty-five percent of the control group and thirty percent of the experimental group were referred for person offense,

and remaining about twenty percent (N=72: Control & N=78: Experimental) represents a wide range of less serious offenses or public order offenses. In summary, demographic characteristics for each group are similar. Specifically, more than half of youthful offenders are aged at 13 and 14, yet youthful offenders in other diversion programs are somewhat older than that of youthful offenders in the conferencing. In addition, the sample population is comprised primarily of non-white male who were referred for property offenses for each group.

The descriptive statistics for school/family background characteristics are provided in Table 4. A total of 735 youthful offenders comprised the sample of background characteristics[5]. The control group constituted 337 and the experimental group constituted 398 in the sample. The examination of school and family characteristics for each group indicated that youthful offender who ever been suspended or expelled from school and attended regularly were almost the same proportions in the samples of the control group (76.3% of Suspended/Expelled & 23.5% of regularly attend) and the experimental group (73.9% of Suspended/Expelled & 25.6% of regularly attend). That is, the majority youthful offenders in the both groups have experience of suspension or expulsion from school.

The school grade of the control group youths tend to be lower than that of the experimental group. About 57 percent of control group youths had below average compared to 50 percent of the experimental group. In contrast, the experimental group achieved better academic history (about fifty percent) than other counterparts (about 52 percent). The school behavior patterns of youthful offenders are similar to school grade patterns in both groups. For example, youths in the control group are less likely to follow rules and regulations for appropriate school behavior maximizing opportunities to succeed in school (N=231 or 68.5 %)

[5] Forty-seven youthful offenders excluded to missing data.

than that of the experimental group youths (N=242 or 60.8%). To sum up, youthful offenders in the both groups tend to show that having experience of suspension/expulsion from school, having lower levels of academic performance, and are less likely to abide by school rules and regulations. Youthful offenders in the other diversion programs are slightly somewhat more likely to exhibit all three types of school background characteristics than their counterparts.

Table 4 also contains the descriptive statistics of family background characteristics of the each group. A larger percentage (76.6% of control group & 75.4% of experimental group) of youthful offenders lived in a household with single parents, legal guardian, or grandparents. Only about less than 25 percent of youths in each group lived with both parents. The experiences of abuse or neglect as a child are equivalent in the two groups. Only about five percent of youthful offenders are abused or neglected as a child. The percentage of behaviors in the home (i.e. follow curfew or complete chores) for each group is also equivalent. About eighty percent of youths complete chores and follow curfew. The descriptive examination of family background hence shows that youthful offenders in both groups lived in households with a single parent, legal guardian, or grandparents; less likely to be abused or neglected as a child; and more likely to complete chores or follow curfew. In general, the levels of school adjustment are significantly higher among the youths in the experimental group compared to the control group. However, it should be noted that most of the differences of school and family background characteristics are not statistically significant between the two groups.

Table 4. Background Characteristics by Youthful Offender Groups (N=735)

	Control (N=337)		Experimental (N=398)	
	N	%	N	%
School Background				
Attendance				
Suspend/Expelled	257	76.3	294	73.9
Attend Regularly	80	23.5	102	25.6
	(χ^2 = 3.368 with p = *.338*)			
Grade				
Below Average	192	57.0	199	50.0
Average	109	32.3	142	35.7
Above Average	33	9.8	50	12.6
	(χ^2 = 4.917 with p = *.296*)			
School Adjustment				
Poor	231	68.5	242	60.8
Fair	105	31.2	150	37.7
	(χ^2 = 6.752 with p = *.034*)			
Family Background				
Single Parent				
Both Parents	79	23.4	98	24.6
Single Parent[a]	258	76.6	300	75.4
	(χ^2 = 6.198 with p = *.045*)			
Abuse/Neglect				
Not Abused	319	94.7	377	94.7
Abuse/Neglected	18	5.3	21	5.3
	(χ^2 = .002 with p = *.969*)			
Home Adjustment				
Poor	68	20.2	77	19.3
Fair	269	79.8	321	80.7
	(χ^2 = .080 with p = *.778*)			

a: Single Parent = Single Parent, Legal Guardian, and Grandparents

The experimental and control groups are also compared on community characteristics such as economic disadvantage, residential instability, and immigrant concentration. Community characteristics are employed from 2000 census block data provided by the United States Census Bureau. The descriptive statistics for community characteristics are presented in Table 5, and higher values on three scales indicate greater risks associated with living in such community. A total of 765 youthful offenders comprised the sample of background characteristics[6]. According to the table 4, the economic disadvantage group mean for the control group is lower than the experimental group. Conversely, the group mean for immigrant concentration and residential instability are higher for the control group youths than those who the experimental group. Although not statistically significant, the control group youths seems to come from more highly immigrant concentrated and instable neighborhoods, while the experimental group seems to come from neighborhoods characterized by higher levels of economic disadvantage[7]. Similar to demographic and school/family background characteristics, the differences between the two groups are not significant.

Table 5. Community Characteristics by Youthful Offender Groups (N=765)

	Control (N=373)				**Experimental (N=392)**			
	Mean	**S.D.**	**Min**	**Max**	**Mean**	**S.D.**	**Min**	**Max**
Economic Disadvantage	.425	.838	-1.411	3.428	.461	.913	-1.411	3.428
Immigrant Concentration	.157	.897	-.568	6.750	.077	.872	-.568	6.750
Residential Instability	.185	.877	-1.786	2.731	.173	.843	-1.786	2.731

[6] Seventeen youthful offenders excluded due to missing data.

[7] The sample statistics are as follows: Economic Disadvantage (d/f=1; F=.328; Sig.=.567); Immigrant Concentration (d/f=1; F=.039; Sig.=.844); and Residential Instability (d/f=1; F=1.564; Sig.=.212)

Youthful Offenders Involvement in Re-Offending – Interviewed Sample

As discussed, a significant part of this dissertation is to assess how offenders felt about conference or other court-ordered diversion program. It involves exploring youthful offenders' perceptions and beliefs about how their cases were handled. As noted earlier, the interviews were completed with a sub-sample. Specifically, 267 youthful offenders completed post intervention surveys including 154 of the experimental group and 113 of the control group (See table 6).

Table 6. Re-Offending by Interviewed Youthful Offender Groups (N=267)

	Control		**Experimental**	
	N	%	N	%
Re-Offending				
6 Months	11	9.7	21	13.6
12 Months	20	17.7	27	17.5
18 Months	19	16.8	30	19.5
24 Months	24	21.2	16	10.4
30 Months	20	17.7	21	13.6
36 Months	19	16.8	27	17.5
42 Months	20	17.7	23	14.9
48 Months	15	13.3	20	13.0
54 Months	13	11.5	39	25.3
60 Months	11	9.7	27	17.5
66 Months	12	10.6	22	14.3
72 Months	13	11.5	13	8.4
78 Months	23	20.4	18	11.7
84 Months	12	10.6	20	13.0
90 Months	14	12.4	23	14.9
96 Months	11	9.7	24	15.6
102 Months	13	11.5	16	10.4
108 Months	12	10.6	27	17.5
114 Months	12	10.6	21	13.6
120 Months	15	13.3	16	10.4
126 Months	3	2.7	9	5.8
132 Months	0	0	3	1.9
138 Months	0	0	0	0
144 Months	0	0	0	0
150 Months	0	0	0	0

The outcomes (i.e. re-offending) noted in the table 5 are consistent with the distributions of full sample, which indicates that trend of re-offending decreased over time. However, the re-offending patterns are inconsistent with full sample in 54 months and 108 months.

Table 7. Demographic Characteristics by Youthful Offender Groups (N=267)

	Control		**Experimental**	
	N	%	N	%
Age				
7	1	.9	0	0
8	1	.9	4	2.6
9	0	0	6	3.9
10	4	3.5	4	2.6
11	11	9.7	17	11.0
12	18	15.9	29	18.8
13	31	27.4	46	29.9
14	47	41.6	48	31.2
Mean Age	12.94 (SD = 1.45)		12.55 (SD = 1.52)	
	($F = 4.374$ with $p = .037$)			
Sex				
Female	42	37.2	54	35.1
Male	71	62.8	100	64.9
	($\chi^2 = .125$ with $p = .723$)			
Race				
Non-White[a]	59	52.2	73	47.4
White	54	47.8	81	52.6
	($\chi^2 = .603$ with $p = .437$)			
Offense				
Person	39	34.5	52	33.8
Property	48	42.5	73	47.4
Public Order[b]	26	23.0	29	18.8
	($\chi^2 = 1.031$ with $p = .794$)			

a: Non-White = African American, Hispanic, and Other
b: Public Order = Public Order and Other

General Characteristics of Interviewed Sample

Table 7 presents the demographic characteristics of post intervention youthful offenders in both groups who were interviewed. Approximately more than two-thirds of youthful offenders are aged 13 and 14. However, about less than five percent of youthful offenders in the control group are aged 7 to 10, while around ten percent of sample in the experimental group are in this category. Therefore, control group participants are slightly older than youthful offenders in the experimental group. The percentages of females and males for each group are generally equivalent at around 35 percent females and 65 percent males. However, the percentage of non-whites and whites for each group are considerably different. About 52 percent of the control group offenders are non-white, while about forty seven percent of the experimental group participants are white.

Table 7 also presents characteristics of the referral offense type. The results are similar to characteristics of the referral offense of full sample. About 43 percent of the control group are referred to property offenses, thirty five percent for person related offenses, and twenty three percent for public order offenses. The experimental group does not differ in terms of referral offense distribution, including 48 percent for property offenses; 34 percent for person offenses; and nineteen percent for public order offenses. Therefore, the sample population of both groups is comprised primarily of males who are referred to the court for property offenses. The race distributions for each group are similar, yet non-white offenders are slightly above fifty percent in the control group and they are slightly below fifty percent in the experimental group.

The descriptive results of school and family background characteristics are presented in table 8. The examination of school and family characteristics for each group indicated that about sixty nine percent of youthful offenders in the control group have been suspended or expelled

from school, yet about seventy seven percent of offenders in the experimental group are suspended or expelled. That is, the majority of youthful offenders in both groups have had the experience of suspension or expulsion from school, despite the experimental group are somewhat higher level of attendance problem than youthful offenders in the control group.

The school grade of the control group youths are distributed lower than that of the experimental group (see table 8). About fifty five percent of control group youths had below average, while fifty one percent of the experimental group youths had same grade. In contrast, the experimental group achieved slightly better academic history (about forty seven percent) than their counterparts (about forty four percent). The school behavior patterns of youthful offenders are considerably different in each group. For example, youths in the control group are less likely to follow rules and regulations for appropriate school behavior maximizing opportunities to succeed in school (N=70 or 62.5 %) than that of the experimental group youths (N=85 or 55.6%). That is, the experimental group youths are more likely to follow rules and regulations. To sum up, youthful offenders in the both groups tend to show that having attendance problem at school, having lower level of school grade, and less likely to follow school rules and regulations. Youthful offenders in the other diversion programs are having lower level of grade and school adjustment than those of the experimental group. However, they are less likely to having been suspended or expelled from school than youthful offender in the experimental group.

Table 8. Background Characteristics by Youthful Offender Groups (N=265)

	Control (N=112)		Experimental (N=153)	
	N	%	N	%
School Background				
Attendance				
Suspend/Expelled	77	68.8	118	77.1
Attend Regularly	35	31.3	34	22.2
		(χ^2 = 4.382 with *p* = *.223*)		
Grade				
Below Average	61	54.5	78	51.0
Average	42	37.5	52	34.0
Above Average	8	7.1	20	13.1
		(χ^2 = 4.039 with *p* = *.401*)		
Behavior				
Poor	70	62.5	85	55.6
Fair	42	37.5	67	43.8
		(χ^2 = 1.887 with *p* = *.389*)		
Family Background				
Single Parent				
Both Parents	25	22.3	42	27.5
Single Parent[a]	87	77.7	111	72.6
		(χ^2 = 1.275 with *p* = *.529*)		
Abuse/Neglect				
Not Abused	105	93.8	146	95.4
Abuse/Neglected	7	6.3	7	4.6
		(χ^2 = .362 with *p* = *.547*)		
Behavior				
Poor	17	15.2	27	17.6
Fair	95	84.8	126	82.4
		(χ^2 = .285 with *p* = *.594*)		

a: Single Parent = Single Parent, Legal Guardian, and Grandparents

Table 8 also presents the three types of family background characteristics. The family background distribution patterns of youthful offenders are similar to both groups. For example, three-fourths of youthful offenders (77 % of the control group vs. 73% of the experimental group) lived with a single parent, legal guardian, or grandparents. The sample population is also comprised primarily of youths who were not abused or neglected as a child (94% and 95%

respectively) and who were more likely to complete chores or follow curfew (85% and 82% respectively).

Table 9. Community Characteristics by Youthful Offender Groups (N=259)

	Control (N=109)				Experimental (N=150)			
	Mean	**S.D.**	**Min**	**Max**	**Mean**	**S.D.**	**Min**	**Max**
Economic Disadvantage	.285	.855	-1.411	3.428	.292	.921	-1.411	3.428
Immigrant Concentration	.160	.756	-.568	6.750	.068	.884	-.568	6.750
Residential Instability	.305	.912	-1.786	2.731	.030	.824	-1.786	2.731

Note: Economic Disadvantage (d/f=1; F=.134; Sig.=.714); Immigrant Concentration (d/f=1; F=.002; Sig.=.965); and Residential Instability (d/f=1; F=1.606; Sig.=.206)

Table 9 shows the descriptive statistics of community characteristics of the both experimental and control groups. The mean scores of economic disadvantage is .285; immigrant concentration is .160; and residential instability is .305 for the control group. For the experimental group, the mean scores of economic disadvantage is .292; immigrant concentration is .068; and residential instability is .030. Interestingly, youthful offenders in the other court-ordered diversion programs lived in highly concentrated immigrant and neighborhood with more residential mobility neighborhood than those of offenders in the conference. Overall, however, participants in the both groups tend to live in similar economically disadvantaged neighborhoods.

Sample Representativeness

Table 10. Representativeness Post Interviewed Offenders to the Full Sample

Variable	Interviewed Sample Statistic	Full Sample Statistic	t value	χ^2 value	*P value*
Demographic Characteristics					
Age	Mean = 12.72	Mean = 12.60	1.108		.593
Sex (1=Male)	64%	62%		.306	.580
Race (1=White)	51%	40%		9.485	.002
Initial Offense					
Person Offense	34%	31%			
Property Offense	45%	49%		2.406	.493
Background Characteristics					
Attendance (1=Fair)	26%	25%		.773	.856
School Performance (Average)	36%	34%		1.563	.815
School Adjustment (1=Fair)	41%	35%		4.089	.129
Single Parent (1=Yes)	85%	86%		.575	.750
Abuse/Neglect (1=Yes)	5%	5%		.001	.989
Home Adjustment (1=Fair)	83%	80%		1.240	.265
Community Characteristics					
Economic Disadvantage	Mean = .443	Mean = .289	-2.439		.653
Immigrant Concentration	Mean = .116	Mean = .107	-.145		.420
Residential Instability	Mean = .179	Mean = .145	-.541		.693

In summary, the distributions of demographic characteristics and school/family characteristics for the post interviewed youthful offenders are similar to patterns of full sample. Therefore, although the unknown number of failed attempts to reach particular youthful offenders is a potential source of bias, initial comparisons suggest that the post intervention samples who were interviewed are well representative of the full sample (See table 10).

Life Table Analysis => Time until failure

Two different analytic techniques are used to examine the impact of conferences, and other court-ordered diversion programs on recidivism. The first technique examines time to recidivate using survival analysis. Survival models have the advantage of mechanisms to deal with the problem of censoring (Regoeczi et al., 2008). For the survival analysis, I used the standard life table model, the primary tool for describing event occurrence data. Life table tracks the event histories of a sample from the beginning of an experiment or intervention through the end of data collection (Singer & Willett, 2003). Therefore, it is used to examine time until the first recidivism of youthful offenders in the experimental and control group. The survival distributions for the experimental group and the control group are compared[8].

Table 11 presents a life table for the youthful offenders in the control group. Every youthful offender is followed until Dec, 2009, when data collection ends. Defining the "beginning of time" as the youthful offender's date of finish court-ordered diversion program, the research interest centers on whether and when these youthful offenders recidivate. Divided into a series of rows indexing 6 month intervals (column 1), a life table includes information on the number of offenders who entered the interval (column 2) and experienced the target event during the interval (column3). These columns provide a narrative history of event occurrence

[8] Three statistical summaries of information about event occurrence over time: (i) the hazard function; (ii) the survivor function; and (iii) the median lifetime, will be used in this study. First, the hazard function is the "conditional probability that individual *i* will experience the event in time period *j*, given that he or she did not experience it in any earlier time period" (Singer & Willett, 2003, p. 330). It tells us that whether and when events occur in each discrete time period. Second, the survivor function provides another way of describing the distribution of event occurrence over time. It is defined as the "probability that individual *i* will survive past time period *j*" (Singer & Willett, 2003, p. 334). It assesses only individuals who must not experience the event in the specific time period, and must not experience in any earlier period. Last, the median lifetime is the value of time period or time for which the value of the estimated survivor function is ".5" or "distribution's center" (Singer & Willett, 2003).

over time. At the beginning of time, all 382 youthful offenders in the control group do not recidivate. During the first interval (after 6 months), 96 offenders recidivate, leaving 286 (N=382-96) to enter the next interval, after 12 months. During the second interval (after 12 months), 37 offenders recidivate, leaving 249 (N=286-37) to enter the next interval, after 18 months. Of the 208 offenders who do not recidivate continuously for 24 months, 28 individuals recidivate by the end of that interval. This left only 180 offenders to enter the 5th interval.

Table 11. Results from Cumulative Proportional Rate – Control Group (N=382)

Interval (months)			Number		Proportion	
			Entered	Exited	Survival Function	Hazard Function
0	~	6	382	96	.7487	.2513
6	~	12	286	37	.6518	.1294
12	~	18	249	41	.5445	.1647
18	**~**	**24**	**208**	**28**	**.4712**	**.1346**
24	~	30	180	19	.4215	.1056
30	~	36	161	18	.3743	.1118
36	~	42	143	6	.3586	.0420
42	~	48	137	12	.3272	.0876
48	~	54	125	8	.3063	.0640
54	~	60	117	9	.2827	.0769
60	~	66	108	6	.2670	.0556
66	~	72	102	5	.2539	.0490
72	~	78	97	5	.2408	.0515
78	~	84	92	0	.2408	.0000
84	~	90	92	2	.2356	.0217
90	~	96	90	1	.2330	.0111
96	~	102	89	2	.2277	.0225
102	~	108	87	2	.2225	.0230
108	~	114	85	0	.2225	.0000
114	~	120	85	4	.2120	.0471
120	~	126	81	0	.2120	.0000
126	~	132	81	1	.2094	.0123
132	~	138	80	0	.2094	.0000
138	~	144	80	0	.2094	.0000
144	~	150	80	0	.2094	.0000

The examination of survival function (column 4) and hazard function (column 5) of the life table reveals that it is a commonsense summary of event occurrence. The column 4 reveals

the maximum likelihood estimates of the population survivor function[9]. In table 11, the survivor function takes on the value 1 for the beginning of the time. As events occur, the estimated survivor function drops, here to .7487 by 6 months, to .6518 by 12 months, to 5445 by 18 months, and to .4712 by 24 months. Because 80 offenders do not recidivate for more than 150 months, the estimated survivor function does not reach zero, ending here at .2094. That is, an estimated twenty-one percent of all youthful offenders in the control group do not recidivate for more than 150 months; by subtraction, an estimated seventy-nine percent recidivate in 150 months or less. Examining the estimated survivor function presented in column 4 of table 11, estimate of central tendency, which is called the median lifetime falls somewhere between fourth follow-up period. In other words, the average the youthful offenders in the control group recidivate after 18 months, yet before 24 months.

The column 5 presents the proportion of youthful offenders' recidivism at the beginning of each follow-up period (or interval) who exits by the end of the interval[10]. In other words, it reveals that the proportion of each offender's hazard which experiences the recidivism during particular interval. Among these 382 youthful offenders, .2513 (N=96) exit by the end of their first follow-up period. Of those 286 who stay more than 6 months, .1294 (N=37) recidivate by the end of their second follow-up period. This allows the proportions to be computed in every follow-up period. Among the 208 offenders who continuously stay for third follow-up, .1346 (N=28) recidivate be the end of their fourth follow-up period; of the 180 who does not recidivate for 24 months, .1056 (N=19) exit at the end of their fifth follow-up period. Notably, because no

[9] At the beginning of time, when no offenders has yet recidivated, everyone in the control group is surviving, and so by definition, its value is 1. Over time, as events occur, the survivor function declines toward 0. And it will never increase. But the survivor function simply remains steady at its previous interval, when no events occur.

[10] In follow-up period when hazard is high, the survivor function declines rapidly.

one is eligible to experience the recidivism (or target event) during the 14th, 19th, 21st, 23rd, 24th, and 25th follow-up periods, hazard functions are undefined. Based on these results, it shows that in the first six follow-up time periods (by 36 months), hazard is consistently high, exceeding .10. This indicates that over ten percent of the youthful offenders in the control group who do not recidivate at the beginning of each of follow-up period exit by the end of the each period due to a new offense. After these initial hazardous intervals, the risk of recidivism declines steadily over time. By the 15th interval or 90 months, hazard never exceeds five percent, and by 132 months, it is just barely above zero.

Table 12 presents the results of life table of the experimental group's recidivism that occurs during each follow-up period. In particular, column 2 reports the number of offenders entering each period without recidivate. The column 3 shows the number of offenders who recidivate in each follow-up period, whereas columns 4 and 5 report the survival and hazard function respectively. According to the results, the probability of surviving beyond six, eighteen, and thirty months are .8175, .6075, and .4675 respectively. Also, the survival rate seems to decrease quicker during the period 6 months to 30 months. This basically means that the probability of failing during the first three (36 months) year is higher than that of failing during the six (72 months) or twelve years (150 months). Regarding distribution's center, the estimated median lifetime falls somewhere between twenty-four months (when an estimated .5325 of the youthful offenders survive at the end of the fourth follow-up period) and thirty months (when this proportion drops below .5 to .4675). The results concerning the hazard function confirms that result by indicating that the probability that a youthful offender who has survived to the

beginning of the respective follow-up period would recidivate in a specific interval is quite high for the first three years (by 36 months) and it drops considerably over time.

Table 12. Results from Cumulative Proportional Rate – Experimental Group (N=400)

Interval (months)			Number		Proportion	
			Entered	Exited	Survival Function	Hazard Function
0	~	6	400	73	.8175	.1825
6	~	12	327	52	.6875	.1590
12	~	18	275	32	.6075	.1164
18	~	24	243	30	.5325	.1235
24	**~**	**30**	**213**	**26**	**.4675**	**.1221**
30	~	36	187	23	.4100	.1230
36	~	42	164	15	.3725	.0915
42	~	48	149	8	.3525	.0537
48	~	54	141	15	.3150	.1064
54	~	60	126	9	.2925	.0714
60	~	66	117	6	.2775	.0513
66	~	72	111	2	.2725	.0180
72	~	78	109	1	.2700	.0092
78	~	84	108	0	.2700	.0000
84	~	90	108	3	.2625	.0278
90	~	96	105	3	.2550	.0286
96	~	102	102	3	.2475	.0294
102	~	108	99	1	.2450	.0101
108	~	114	98	1	.2425	.0102
114	~	120	97	1	.2400	.0103
120	~	126	96	0	.2400	.0000
126	~	132	96	3	.2325	.0313
132	~	138	93	0	.2325	.0000
138	~	144	93	1	.2300	.0108
144	~	150	92	0	.2300	.0000

The valuable way of examining the estimated discrete-time event occurrence data is to graph its values over time (Singer & Willett, 2003). Therefore, figure 1 shows the cumulative survival functions (survival curves) for both the experimental and control group youthful offenders' recidivism. The horizontal axis represents time in every 6 months, and the vertical axis represents the cumulative proportion of those at risk of recidivism for those who have not

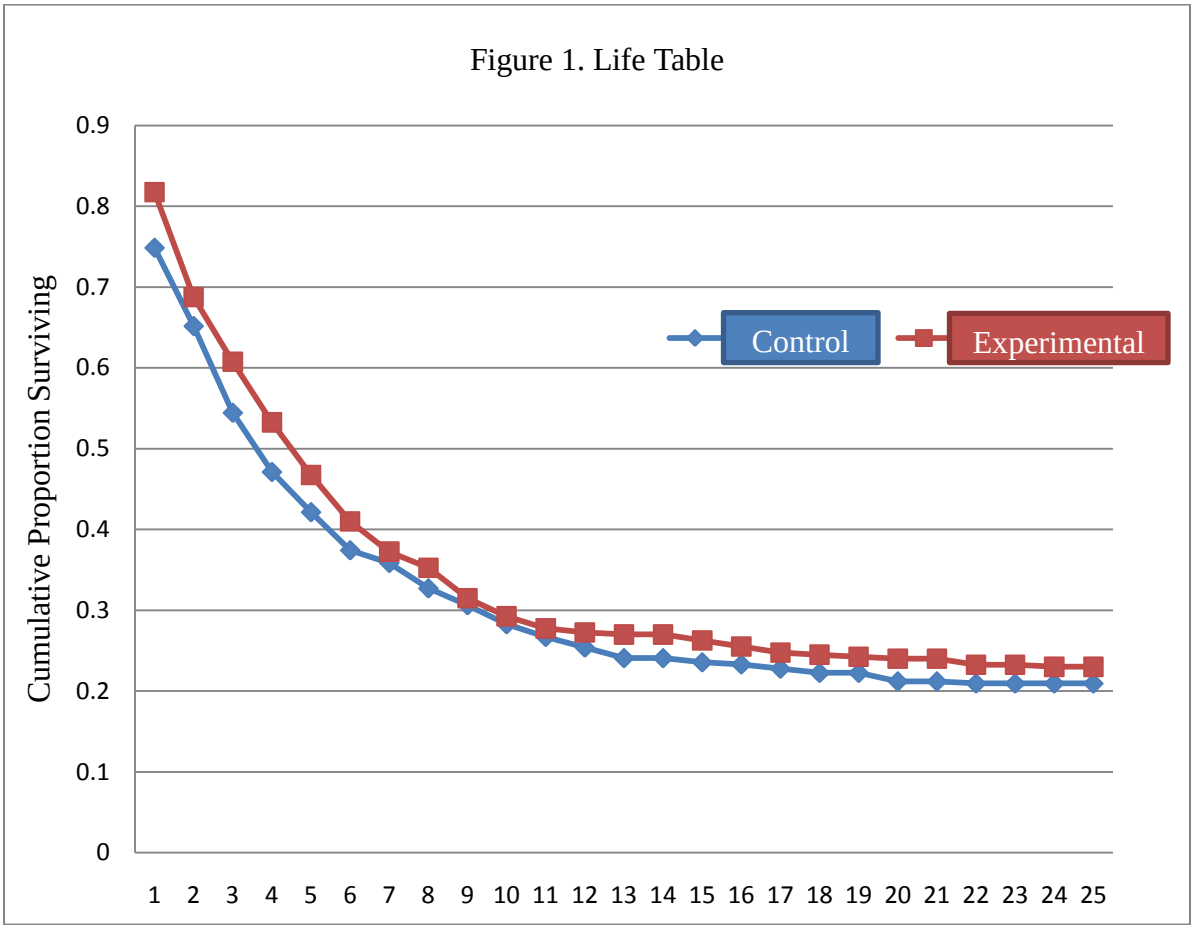
been recidivated[11]. As seen in figure 1, the survival curves (by group) show a discernible difference between the 1st follow-up (6 months) and the 7th follow-up period (42 months). Specifically, youthful offenders in the control group fail at a faster rate than those who in the experimental group for the first 7 follow-up periods. Between the 8th and 12th follow-up period, youthful offenders in the both groups fail at similar rates. After the 12th interval (72 months), however, the cumulative proportion of each sample surviving reveal a barely obvious comparability between the both groups. In other words, very few youthful offenders in the both groups recidivate during the remainder of the follow-up period (72 months – 150 months).

In summary, the numbers who recidivate, the survival function, and the hazard function for 25 follow-up periods event histories are examined in this section. For youthful offenders in this study, I examine each statistic by group (control group vs. experimental group). Consistent with the findings for prior recidivism studies (McGarrell, 2001; McGarrell et al., 2000; McGarrell & Hipple, 2007), the findings from the discrete-time event occurrence data indicated that the recidivism rate decreases over time. Specifically, an examination of 150 months recidivism rates shows that the cumulative proportion surviving drops consistently over time for the control group. Although at a slightly higher level, the probability of surviving beyond 6, 12, 18, and 24 months is .7487, .6518, .5445, and .4712 respectively. The estimated survival function of the experimental group shows a similar pattern to the control group. Among the experimental group samples, the survival rate also decreases, here to .8175 by 6 months, to .6875 by 12 months, to 6075 by 18 months, and to .5325 by 24 months. That is, the results of the life table analysis for the both groups closely match each other across follow-up periods. However,

[11] The statistical difference in the survival curves for two groups is assessed with a Wilcoxon (Gehan) test of survival curve equality.

the analysis suggests that the experimental group (i.e. conference participants) survives at a somewhat higher level for the most of the follow-up period when compared to participants of the other diversion program (control group).

Figure 1. Life Table



Wilcoxon = 2.223 (df=1), p < .05
Note: For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this dissertation.

In summary, life table analysis is used to determine whether the conference participants fail at a slower rate, I conduct life table analysis. A parallel examination of the life table analysis comparing the cumulative proportion shows that an obvious visual difference between the experimental and control groups. In fact, survival curves slightly favor the experimental group

with slower failure rate to recidivate. In addition, results of the median lifetime particularly support the proposition that conferencing is more effective to buffer risk of recidivism than other court-ordered diversion programs. The median lifetime to recidivate is between 18 and 24 months for the control group individuals, while it is between 24 and 30 months for the experimental group (*Wilcoxon = 2.223 & p < .05*)[12].

[12] Another life table model is conducted to examine age until the first recidivism of youthful offenders in the experimental and control group. Even though the results show similar pattern with "time until first failure", the comparison between two groups are statistically not significant (See Appendix A).

Longitudinal Multilevel Analysis Full Sample => Continuous of time

Many criminologists ask questions about recidivism, such as the occurrence and timing of events (Singer & Willett, 2003). They use survival analysis techniques to describe whether events occur and when events occur. Therefore, survival analysis techniques for recidivism are suitable when research questions are centered on whether the offenders recidivate or time to first recidivism (Singer & Willett, 2003). Having said that, however, survival analysis techniques only allow for explanations of the time until failure (i.e. recidivism). That is, survival techniques may not be appropriate for addressing questions about how each person changes over time.

What kind of statistical model is needed to address change processes in longitudinal data? What kind of statistical model is needed to represent how each person changes over time and how these changes differ across people simultaneously? Clearly, the most appropriate technique for treating developmental change over time is longitudinal multilevel analysis[13]. This technique was developed as a generalized method to treat repeated measures of individual behavior (Singer & Willet, 2003). Therefore, the longitudinal multilevel model allows empirical exploration of trajectories of change over time based upon participating in conferences or other diversion programs. It also allows the comparisons of two groups controlling for other explanations of the association between group assignment and the changes in recidivism during follow-up period.

In this section, I develop and explain the longitudinal multilevel model of 24 follow-up periods by using STATA 11.0. To study of the effects of the Family Group Conferencing or other court-ordered diversion programs, I track the recidivism pattern of 782 youthful offenders.

[13] The term longitudinal multilevel analysis is synonymous with growth models, growth curve analysis, or latent growth curve analysis, which treat measurement of change either increase or decrease over time. It can be expressed a type of multilevel model to panel data in which individuals are observed across time such that repeated measures can be considered to be nested within the individual (Hser et al., 2001, p. 244).

The longitudinal multilevel model conceptualizes recidivism as a function of age. 782 youthful offenders in the Marion County, Indiana were randomly assigned into a conferencing (experimental group) or 24 other court-ordered diversion programs (control group) at the baseline wave. 24 follow-ups are conducted, with the first being 6 months after baseline and then once every 6 months apart for the other 23 follow-ups. Assuming that adolescents pass through different stages of development over the life course (Sampson & Laub, 1993), *age* is used as time variable. Specifically, age is centered at 14 and it is increased by every half-year-old through end of the follow-up. The official court records of the youthful offenders are reviewed at each of the 24 follow-ups to see whether they have recidivated. The repeated measures of recidivism at each follow-up are assumed to be affected by the two growth parameters with the initial status (i.e. intercept) and the growth trajectory (i.e. slope).

To examine the change of recidivism pattern over time, an unconditional growth model is tested first. Next, longitudinal multilevel models are performed, including a random intercept model and a conditional model, to test the study hypotheses[14]. In the longitudinal multilevel framework, each individual's development is represented by a growth trajectory that depends on a set of parameters (i.e. intercept, slope, and residual) at level 1. And these growth parameters become the outcome variables in a level-2 (Hawkins et al., 2001) [15].

[14] This study has proposed taxonomy to be used in the creation of empirically derived statistical models. A taxonomy of statistical model is a systematic sequence of models that address research question.

[15] The method of maximum likelihood (ML) is used in this study. ML estimations have three desirable properties: (i) asymptotically unbiased; (ii) asymptotically normally distributed; and (iii) asymptotically efficient or S.E. are smaller than S.E. by other methods. It allows researchers to maximize probability of observing a particular sample of data (Raudenbush & Bryk, 2002).

Table 13. Summary of Taxonomy Table

Control Dimensions	Full Sample					Interviewed Sample	
	1. Basic	2. Group	3. Demographic	4. Background	5. Community	6. Basic Intervention	7. Intervention
Age (Centered at 14)	V	V	V	V	V	V	V
Group		V	V	V	V		V
Sex (1=Male)			V	V	V		V
Race (1=White)			V	V	V		V
Initial Offense			V	V	V		V
Attendance (1=Fair)				V	V		V
School Performance				V	V		V
School Adjustment (1=Fair)				V	V		V
Single Parent (1=Yes)				V	V		V
Abuse/Neglect (1=Yes)				V	V		V
Home Adjustment (1=Fair)				V	V		V
Economic Disadvantage					V		V
Immigrant Concentration					V		V
Residential Instability					V		V
Outcome						V	V
Procedure						V	V
Shaming						V	V

Equation 1 simplifies to:

$\text{logit}P(Y_{ij} = 1|b_i)$[16] $= \eta_{ij}$

Level 1: $\text{logit}P(Y_{ij} = 1) = \beta_{0i} + \beta_{1i}(Age_{ij} - 14)$[17]

Level 2: $\beta_{0i} = X_{1i}'B_1 + \xi_{0i}$

$\beta_{1i} = X_{2i}'B_2 + \xi_{1i}$

Where:

η_{ij} represents the outcome variable (i.e. recidivism of individual *i* and age *j*.

$Age_{ij} - 14$ is time variable.

β_{0i} is the *i*th individual's true intercept.

β_{1i} is the *i*th individual's true slope.

X_1 and X_2 are covariate vectors of variables for *i*th individual.

B_1 and B_2 are the corresponding parameter vectors of populations-average effects.

ξ_{0i} and ξ_{1i} denote the individual-level (Level-2) residuals.

It is assumed that η_{ij}, the predictive probability of recidivism at age *j* for individual *i*, is a function of a growth trajectory. An important feature of the level 1 model is the assumption that the growth parameters vary across individuals (Raudenbush & Bryk, 2002). That is, both the intercept (β_{0i}) and growth rate parameter (β_{1i}) are varied at level 2 as a function of measured individual characteristics.

Next, each model in the taxonomy will be examined to assess whether each level 2 predictors are important for level 1 parameters. Six tables are presented to test hypotheses using the longitudinal multilevel analysis.

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[16] The estimated parameters can be interesting as an interpretation of any logistic regression odds ratio, with one key difference: the level 2 outcomes that these fixed effects describe are the level 1 individual growth parameters themselves (Singer & Willett, 2003).

[17] Since this study imply logit model, the level 1 residual variance is fixed.

Taxonomy 1. Unconditional Growth Model

The first analysis examines the basic model (i.e. unconditional model) to check whether the variances of outcomes are statistically significant across the level 2 units. It is the first step to verify the ability of the multilevel approach to fit the data. Each youthful offender has 24 records, one for each follow-up period (every half year). The latent intercept component of the multilevel model, also known as the individual growth model, represents the intercept of the true change trajectory for the individuals in the sample. The latent slope component represents the slope of the true change trajectory for the individual in the sample.

Equation 1 specifies the level 1 and level 2 models. At level 2, I begin with the simplest individual-level model:

(Equation 1)

$$\text{logit}P(Y_{ij} = 1|b_i) = \eta_{ij}$$
$$\text{Level 1: logit}P(Y_{ij} = 1) = \beta_{0i} + \beta_{1i}(Age_{ij} - 14)$$
$$\text{Level 2: } \beta_{0i} = X_{1i}'B_1 + \xi_{0i}$$
$$\beta_{1i} = X_{2i}'B_2 + \xi_{1i}$$

Where:

η_{ij} represents the outcome variable (i.e. recidivism of individual *i* and age *j*.

$Age_{ij} - 14$ is time variable.

β_{0i} is the *i*th individual's true intercept.

β_{1i} is the *i*th individual's true slope.

X_1 and X_2 are covariate vectors of variables for *i*th individual.

B_1 and B_2 are the corresponding parameter vectors of populations-average effects.

ξ_{0i} and ξ_{1i} denote the individual-level (Level-2) residuals.

The rate change of recidivism among the 782 youthful offenders is displayed in table 14. I present standardized coefficient and standard errors. For an adequate interpretation of the coefficient, I also present the odds ratio, and the percent odds of recidivism due to particular predictors at each follow-up period. The odds ratios in the results are based on an analysis of the

risk, where 'no recidivate' is the comparison category at each follow-up period. I also calculate odds ratios for these results so that negative scores imply a lower risk of recidivism.

Table 14. Longitudinal Multilevel Analysis Both Groups – Taxonomy 1. Basic Model

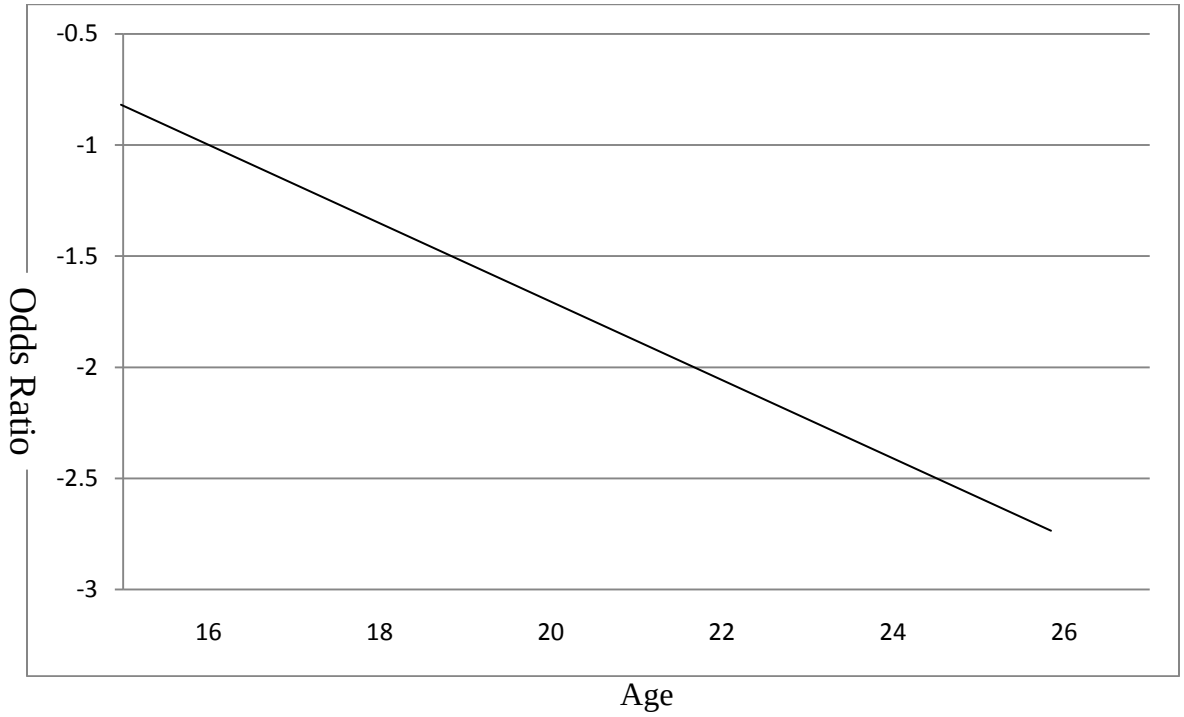
	Latent Intercept				**Latent Slope**			
	β	Sig.	e^b	SE	β	Sig.	e^b	SE
Fixed Effects								
Age (Centered at 14)	-1.363	***	.256	.035	-.088	***	.916	.005
Random Effects								
Variances in growth parameters	.989	***			.001			
Goodness of Fit								
AIC								
BIC								

* p<.05; ** p<.01; *** p<.001

Notes: AIC = Akaike information criterion. BIC = Bayesian information criterion. Smaller value of the both goodness of fit indices indicate better model.

The true value (or true initial status) of recidivism at age 14 for the average youthful offenders is -1.363 (OR=.256). There is evidence that the subject-specific log odds of recidivism decrease over the follow-up periods (β=-.088; OR=.916; p<.001). That is, the odds of being a recidivate decline about 9 percent every half year old. In addition, the level 2 variance component .989 assess the between-person variability in change trajectories. It is simple to plot the trajectories to examine growth rate trajectory. As can be seen in figure 2, at age 14, 6 months after the intervention ended, the rate of change begins to decrease at age 14 continuing to about end of the study. As a result, the average level of risk of recidivism is clearly decreasing over time for youthful offenders in this study.

Figure 2. Growth Trajectory – Unconditional Model



Taxonomy 2. Conditional Model - Group

The next analysis examines whether there is a significant intervention effect on the change in risk of recidivism during the period from age 14 to age 27 (Hypothesis 1). I examine this question by including intervention as a level 2 predictor (control vs. experimental) in the model 2. The level 1 model remains the same as in equation 1. However, I now expand the individual-level model to incorporate one predictor: Group. The resulting level 1 and level 2 models can be written:

Equation 2.

$$\text{logit}P(Y_{ij} = 1|b_i) = \eta_{ij}$$
$$\text{Level 1: logit}P(Y_{ij} = 1) = \beta_{0i} + \beta_{1i}(Age_{ij} - 14)$$
$$\text{Level 2: } \beta_{0i} = X_{1i}'B_1 + \xi_{0i}$$
$$\beta_{1i} = X_{2i}'B_2 + \xi_{1i}$$

Where:

η_{ij} represents the outcome variable (i.e. recidivism of individual *i* and age *j*.

$Age_{ij} - 14$ is time variable.

β_{0i} is the *i*th individual's true intercept.

β_{1i} is the *i*th individual's true slope.

X_1 and X_2 are covariate vectors of variables for *i*th individual.

B_1 and B_2 are the corresponding parameter vectors of populations-average effects.

ξ_{0i} and ξ_{1i} denote the individual-level (Level-2) residuals.

*Note: ξ_{0i} and $\xi_{1i,}$ the level 2 residuals, represent those portions of initial status or rate of change that are unexplained at level 2. They represent deviations of the individual change trajectories around their respective group average trends (Singer & Willett, 2003, p.80).

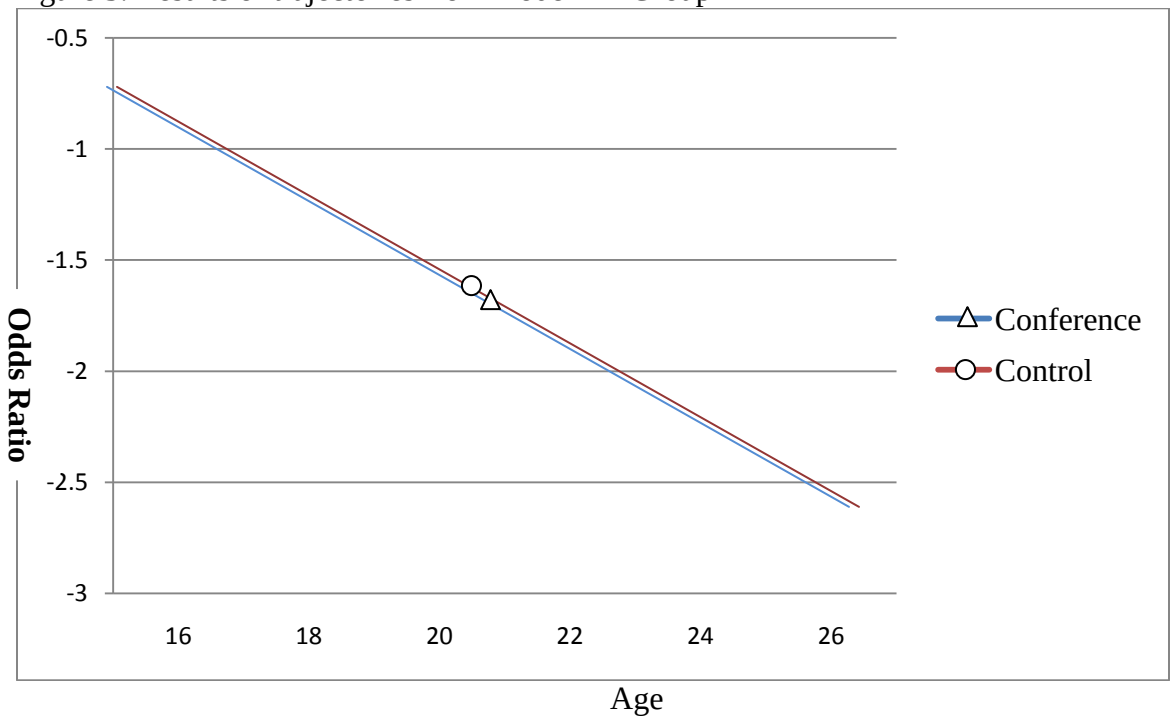
Table 15. Longitudinal Multilevel Analysis – Taxonomy2. Group Model

	Latent Intercept				Latent Slope			
	β	Sig.	e^b	SE	*β*	Sig.	e^b	SE
Fixed Effects								
Age (Centered at 14)	-1.334	***	.263	.056	-.094	***	.910	.007
Group (1=Experimental)	-.043		.957	.075	.012		1.012	.010
Random Effects								
Variances in growth parameters	.999	***			.001			
Goodness of Fit								
AIC	10234.71							
BIC	10271.22							

* p<.05; ** p<.01; *** p<.001

Notes: AIC = Akaike information criterion. BIC = Bayesian information criterion. Smaller value of the both goodness of fit indices indicate better model.

Figure 3. Results of trajectories from model 2 – Group



The parameter estimates of model 2 are presented in table 15. As can be seen from the estimates of latent intercept and slope, the group on average intercept is -1.334 (OR=.263) with a decreasing average rate of change by -.094 or 9 percent per every half year old. Although the youthful offenders in the experimental group on average had a lower level of initial status (4 percent), the average level of recidivism for the experimental group offenders appeared to be 1 percent higher than the control group over time. However, there is no significant difference in risk of recidivism at age 14 and rate of change over time between the experimental and control groups. Based on these results, Hypothesis 1 is not supported. There is no significant difference between the experimental, control groups, and initial status and rate of change in risk of recidivism over time. Again, in contrast to the event history analysis that only accounts for time to first failure, the longitudinal multilevel analysis account for individual change or trajectory of behavioral change. Therefore, the remaining taxonomies of the current study will not examine time to first failure, but examine trajectory of change over the follow-up periods.

Taxonomy 3. Conditional Model - Demographic

Model 3 includes demographic characteristics as a predictor of both initial status and rate of change. The estimates of the model, including sex, race, types of initial offense, and interaction effects between intervention and each demographic characteristic, are examined for the both groups. The resulting level 1 and level 2 models can be written as:

Equation 3.

$$\text{logit}P(Y_{ij} = 1|b_i) = \eta_{ij}$$
$$\text{Level 1: logit}P(Y_{ij} = 1) = \beta_{0i} + \beta_{1i}(Age_{ij} - 14)$$
$$\text{Level 2: } \beta_{0i} = X_{1i}'B_1 + \xi_{0i}$$
$$\beta_{1i} = X_{2i}'B_2 + \xi_{1i}$$

Where:

η_{ij} represents the outcome variable (i.e. recidivism of individual *i* and age *j*.

$Age_{ij} - 14$ is time variable.

β_{0i} is the *i*th individual's true intercept.

β_{1i} is the *i*th individual's true slope.

X_1 and X_2 are covariate vectors of variables for *i*th individual.

B_1 and B_2 are the corresponding parameter vectors of populations-average effects.

ξ_{0i} and ξ_{1i} denote the individual-level (Level-2) residuals.

In model 3, which includes three demographic predictors, the intercepts describe initial status and rate of change for the youthful offenders with for controls for being female, non-white, and initial offense as not person offense or not property offense.

Table 16. Longitudinal Multilevel Analysis – Taxonomy 3. Demographic

	Latent Intercept				Latent Slope			
	β	Sig.	e^b	SE	β	Sig.	e^b	SE
Fixed Effects								
Age (Centered at 0)	-1.336	***	.263	.178	-.086	***	.918	.021
Group (1=Experimental)	.214		1.239	.220	.030		1.030	.027
Demographic Controls								
Sex (1=Male)	.250	*	1.284	.116	.003		1.003	.016
Race (1=White)	-.267	*	.766	.121	-.022		.978	.014
Initial Offense								
Person Offense	-.125		.883	.174	-.006		.994	.019
Property Offense	-.044		.957	.163	-.004		.996	.018
Interaction Effects								
Group*Sex	-.225		.799	.154	-.009		.991	.021
Group*Race	-.180		.835	.158	-.001		.999	.019
Group*Person Offense	.067		1.071	.220	-.011		.989	.027
Group*Property Offense	-.114		.892	.206	-.017		.983	.025
Random Effects								
Variances in growth parameters	.981	***			.001			
Goodness of Fit								
AIC	10234.64							
BIC	10387.96							

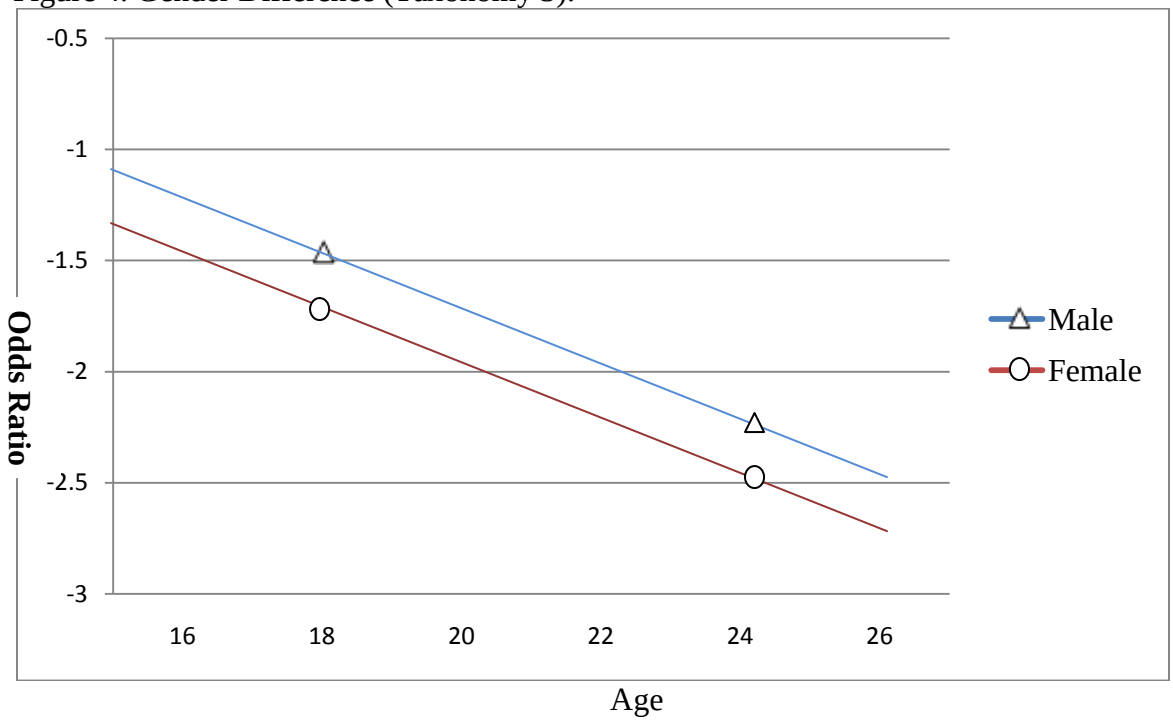
* p<.05; ** p<.01; *** p<.001

Notes: AIC = Akaike information criterion. BIC = Bayesian information criterion. Smaller value of the both goodness of fit indices indicate better model.

The estimated initial log odds of recidivism for the average youthful offenders is -1.336 (p<001). In addition, the estimated rate of change in recidivism for average youthful offenders continuously decreases over time after controlling for covariate effects (log odds = -.086 & OR = .918). That is, the estimated rate of change in recidivism is decreasing by about 8 percent per every half year old. The estimated differential in initial log odds of recidivism between females and males is .250 (OR = 1.284). That is, males are 30 percent higher in initial status than females are. However, the estimated differential in the rate of change in odds ratio is 1.003, yet it is not statistically significant. The nonsignificant term for the latent slope suggests that there is no

difference between males and females in the rate change of the recidivism over time. I use these estimates to plot the fitted change trajectories in figure 4. In comparison to females, males has a higher risk of recidivism at age 14 ($p<.05$), yet the same rate of decline over time (See table 16).

Figure 4. Gender Difference (Taxonomy 3).



Controlling for the effects of sex and initial offense, the estimated differential in initial risk of recidivism between non-white and white is -.267 (OR = .766); and the estimated differential in the rate of change in recidivism between non-white and white is -.022 (OR = .978). That is, the white offenders are 23 percent lower at initial status than are non-white offenders. Since the estimated differential in rate of change is indistinguishable from 0, however, the rate of change for risk of recidivism for the white offenders and non-white offenders are the same (See figure 5). In other words, race/ethnicity is not significantly associated with rate of change in recidivism.

As regarding the type of initial offenses for referral, offenders with property offenses had a lower level of initial status than person or public disorder offenders, and the rate of decrease in

that odds ratio of recidivism is lower than that of offenders with person or public disorder offenses. However, the estimated differential in initial status and rate of change if indistinguishable from 0. Therefore, youthful offenders who were referred to conference or other diversion programs with person, property, and public disorder offenses have no significant difference in initial status at age 14 and decreasing rate of change in recidivism.

Table 16 also presents the results of the effects of interaction between group and demographic characteristics (i.e. group*sex; group*race; and group*initial offense). The interaction between group and sex is not a statistically significant predictor, indicating that type of intervention did not affect to relationship between sex and initial status and rate of change in recidivism. Similarly, the interactions between group*race and group*initial type of offense are not statistically significant predictors. Therefore, these show that type of intervention does not affect the connection of race or initial type of offense and initial status and rate of change in recidivism. This model provides answers to Hypothesis 2, suggesting that offenders with person offenses do not initially recidivate more or less than offenders with property or public disorder. Furthermore, their rate of change in recidivism between ages 14 and 29 does not differ. Notably, there is no significant interaction effect among group and demographic predictors.

Figure 5. – Race Difference (Taxonomy 3).

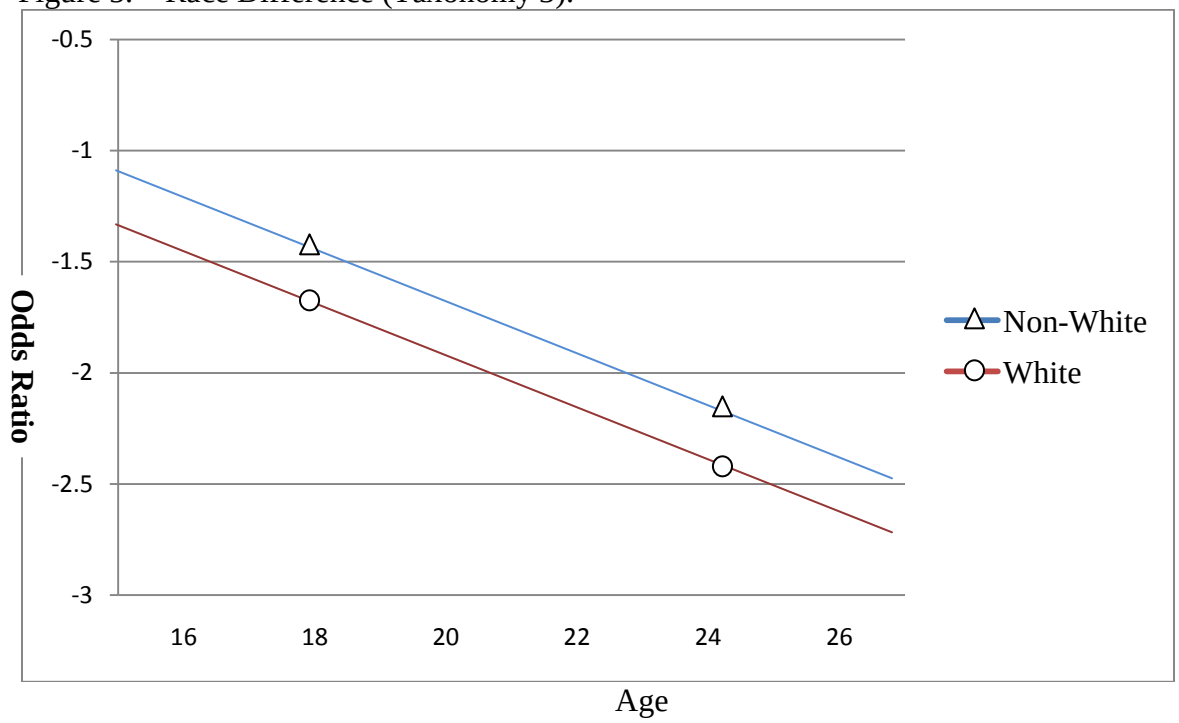
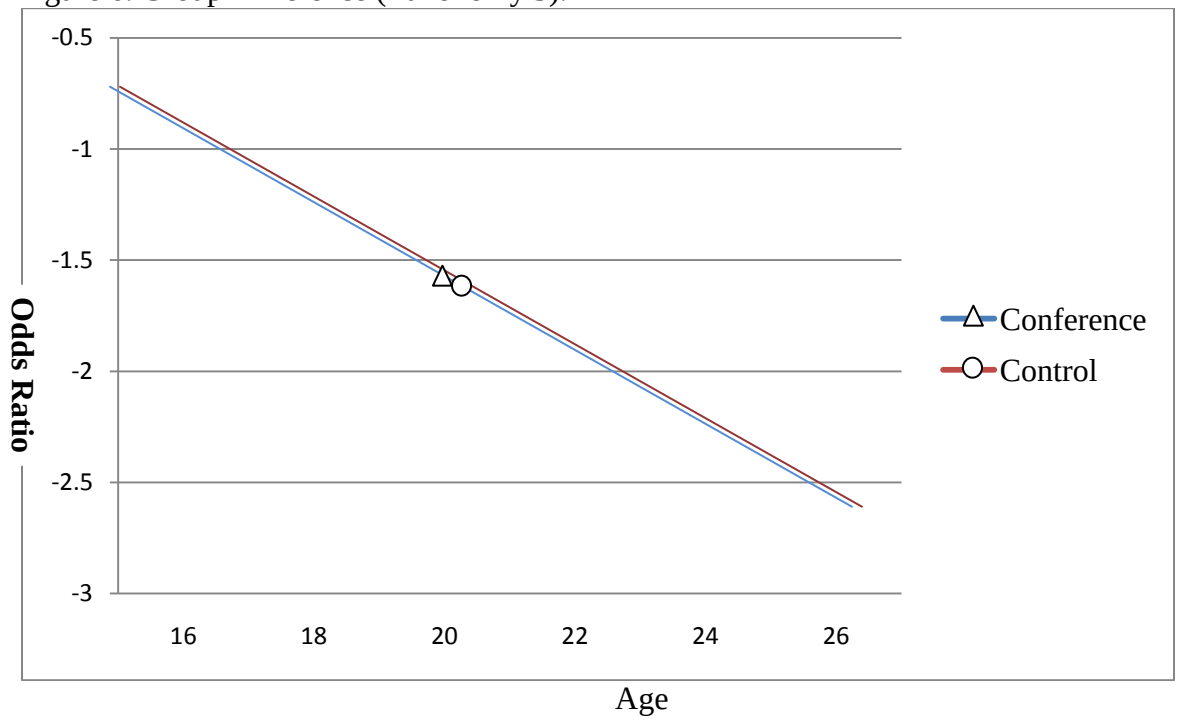


Figure 6. Group Difference (Taxonomy 3).



Taxonomy 4. Conditional Model - Background

Next, the conditional growth model with school and family background characteristics is conducted. The level 1 model remains as basic model (Equation 1). I now introduce 6 background characteristics into the level 2 model. That is,

$$\text{logit}P(Y_{ij} = 1|b_i) = \eta_{ij}$$
$$\text{Level 1: logit}P(Y_{ij} = 1) = \beta_{0i} + \beta_{1i}(Age_{ij} - 14)$$
$$\text{Level 2: } \beta_{0i} = X_{1i}'B_1 + \xi_{0i}$$
$$\beta_{1i} = X_{2i}'B_2 + \xi_{1i}$$

Where:

η_{ij} represents the outcome variable (i.e. recidivism of individual *i* and age *j*.

$Age_{ij} - 14$ is time variable.

β_{0i} is the *i*th individual's true intercept.

β_{1i} is the *i*th individual's true slope.

X_1 and X_2 are covariate vectors of variables for *i*th individual.

B_1 and B_2 are the corresponding parameter vectors of populations-average effects.

ξ_{0i} and ξ_{1i} denote the individual-level (Level-2) residuals.

Table 17 presents estimates, standard errors and odds ratio from the longitudinal multilevel model including family and school background as predictors of both initial status and change in risk of recidivism. As can be seen from the latent slope, the estimated rate of change in recidivism is decreasing over time (log odds = -.089 & OR = .914) controlling for other predictors. In addition, controlling for the other predictors, the estimated average initial risk of recidivism is -.984 (OR = .374).

Table 17. Longitudinal Multilevel Analysis – Taxonomy 4. Background

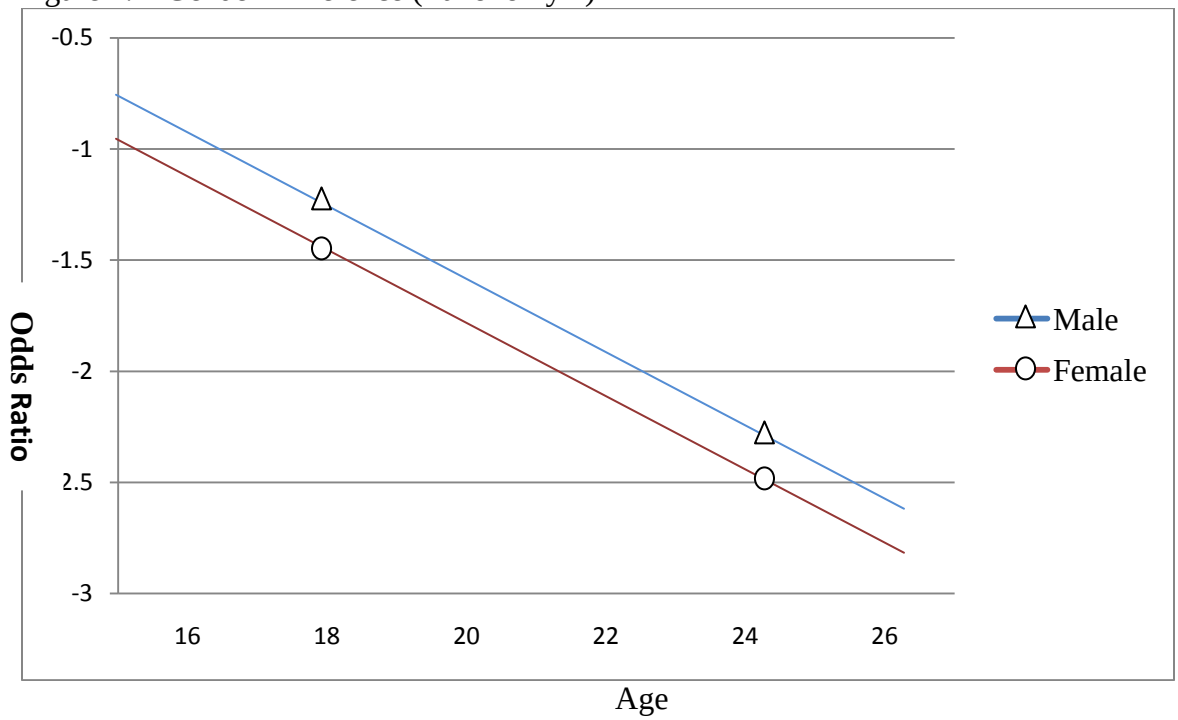
	Latent Intercept				Latent Slope			
	β	Sig.	e^b	SE	β	Sig.	e^b	SE
Fixed Effects								
Age (Centered at 0)	-.984	***	.374	.257	-.089	***	.914	.034
Group (1=Experimental)	-.212		.809	.331	-.009		.991	.042
Demographic Controls								
Sex (1=Male)	.249	*	1.282	.114	.005		1.005	.016
Race (1=White)	-.255	*	.775	.124	-.024		.977	.015
Initial Offense								
Person Offense	-.095		.910	.169	-.009		.991	.020
Property Offense	-.015		.985	.159	-.005		.995	.019
Background Controls								
Attendance (1=Fair)	-.257	**	.773	.134	-.007		.993	.017
School Performance	-.134	*	.875	.067	.002		1.002	.006
School Adjustment (1=Fair)	-.118		.889	.175	.025		1.025	.025
Single Parent (1=Yes)	.212	*	1.236	.102	-.009		.991	.014
Abuse/Neglect (1=Yes)	-.252		.777	.254	-.046		.955	.031
Home Adjustment (1=Fair)	-.362	*	.696	.134	.012		1.012	.020
Interaction Effects								
Group*Sex	-.200		.819	.153	-.012		.988	.021
Group*Race	-.156		.856	.162	.005		1.005	.020
Group*Person Offense	.062		1.064	.217	-.006		.994	.027
Group*Property Offense	-.131		.878	.203	-.018		.982	.026
Group*Attendance	.274	**	1.315	.148	.018		1.018	.019
Group*School Performance	.107		1.113	.073	-.003		.997	.007
Group*S Adjustment	.091		1.096	.179	-.038		.963	.025
Group*Single Parent	-.021		.979	.147	.015		1.015	.018
Group*Abuse/Neglect	.302		1.352	.356	.081	*	1.085	.038
Group*H Adjustment	.246		1.279	.189	.035		1.036	.025
Random Effects								
Variances in growth parameters	.978	***			.001			
Goodness of Fit								
AIC	9619.944							
BIC	9945.696							

* p<.05; ** p<.01; *** p<.001

Notes: AIC = Akaike information criterion. BIC = Bayesian information criterion. Smaller value of the both goodness of fit indices indicate better model.

Likewise demographic model, sex and race are significantly related to initial status. Specifically, the estimated differential in initial log odds of recidivism between females and males is .249 (OR = 1.282). That is, males are more likely to recidivate than females about 28 percent age at 14 (See figure 7). However, although the estimated differential in the rate of change in odds ratio is 1.005, it is not statistically significant. It suggests that there is no difference between males and females in the rate change of the recidivism over time. As regarding race, white offenders tend to show lower risk of recidivism that non-white offenders about 22 percent (β = -.255), yet there is no difference between white and non-white offenders in the rate of change (See figure 8).

Figure 7. – Gender Difference (Taxonomy 4)



Controlling for the demographic factors, attendance pattern and level of school performance are also significantly related to initial status age at 14. The estimated differential in initial risk of recidivism between offenders with higher levels of school performance and those lower level of performance is about .88 times or 12 percent (See figure 10). Similarly, offenders

who regularly attend started lower risk of recidivism than offenders who have been suspended or expelled (Log odds = -.257 & OR = .773) (See figure 9). That is, the offenders who having trouble in school have a greater risk of recidivism age at 14. Although these school related characteristics effect on the estimated rate change, it is not significantly different and Hypothesis 3-a is not supported.

Figure 8. – Race Difference (Taxonomy 4)

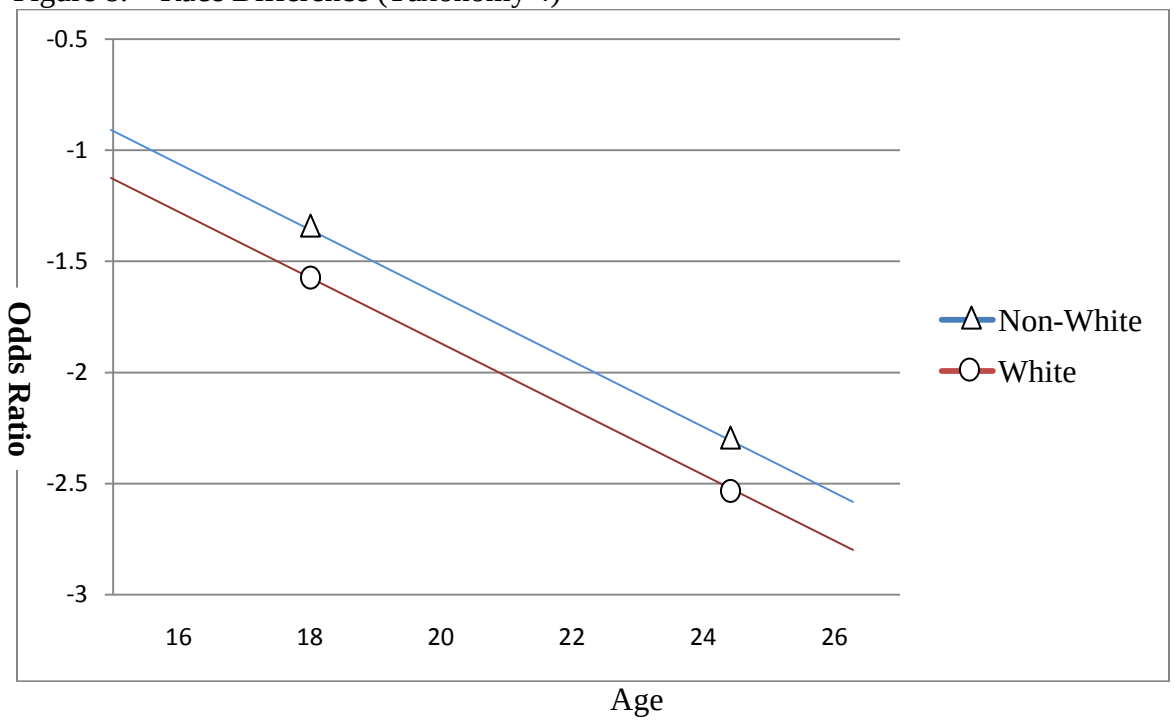


Figure 9. – Attendance Pattern Difference (Taxonomy 4)

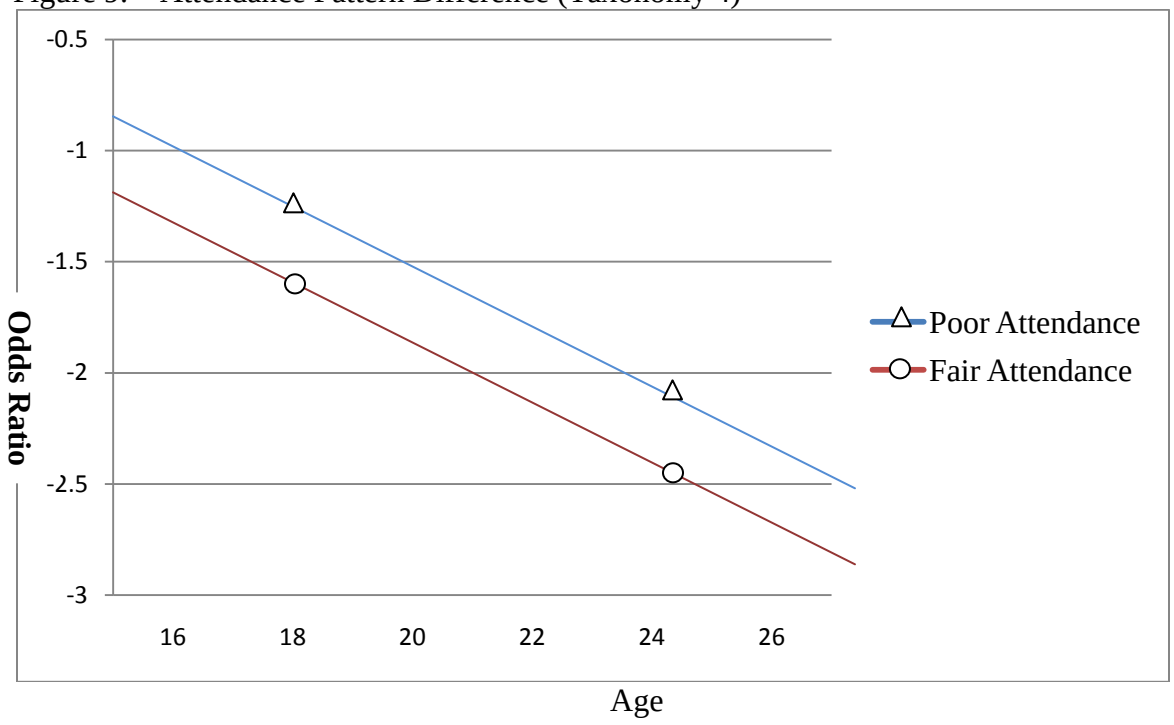


Figure 10. – School Performance Difference (Taxonomy 4)

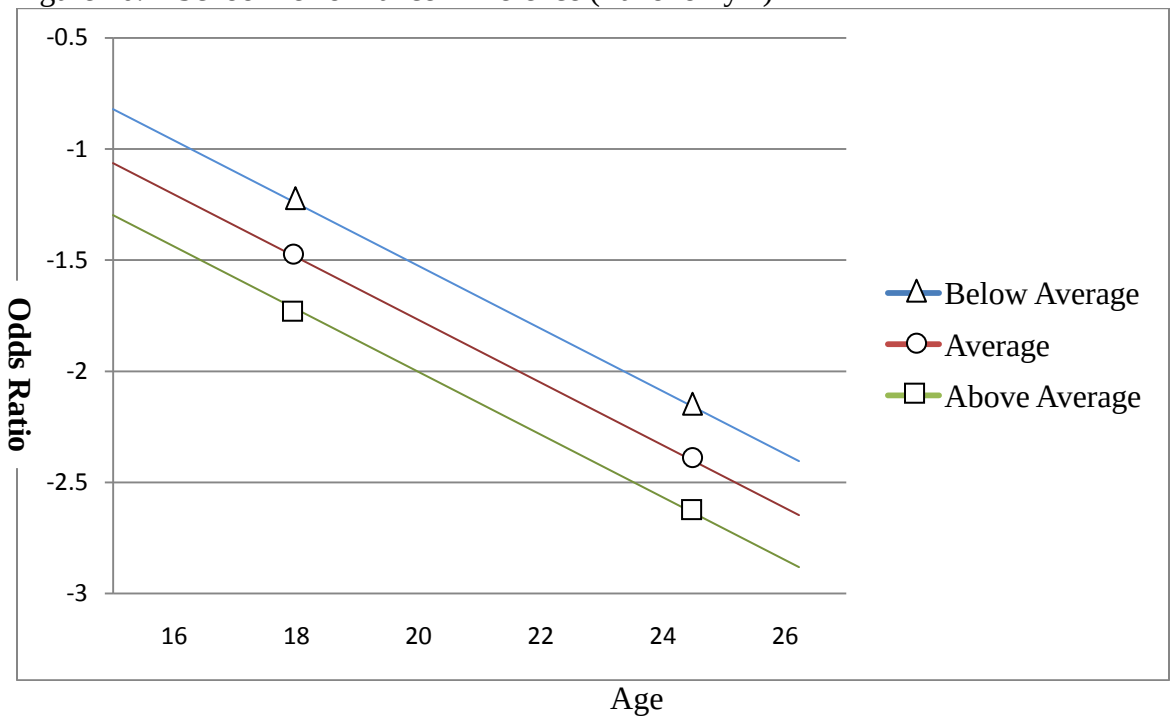


Figure 11. – Family Structure Difference (Taxonomy 4).

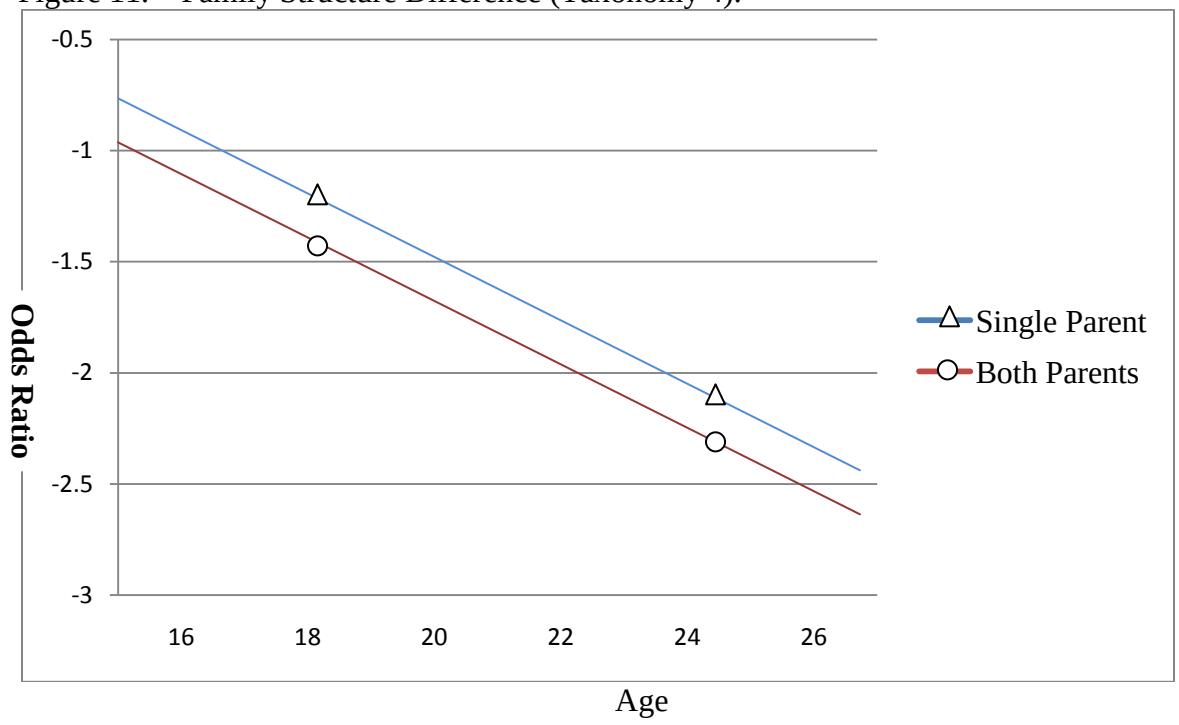
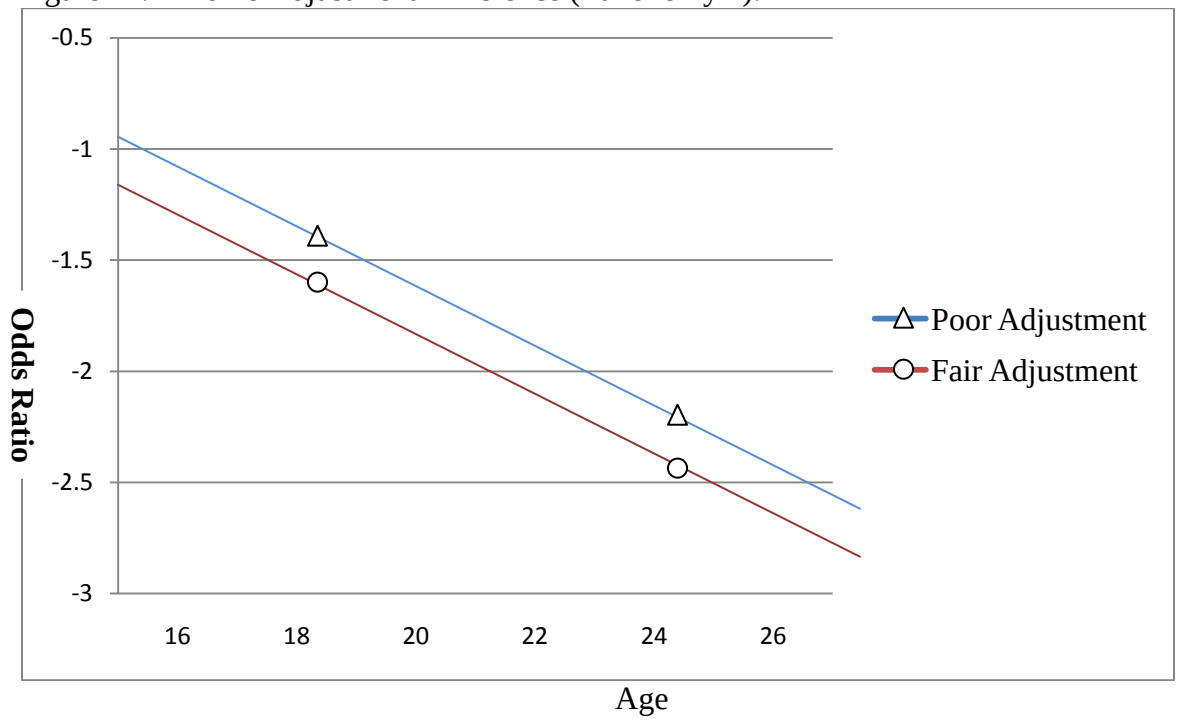
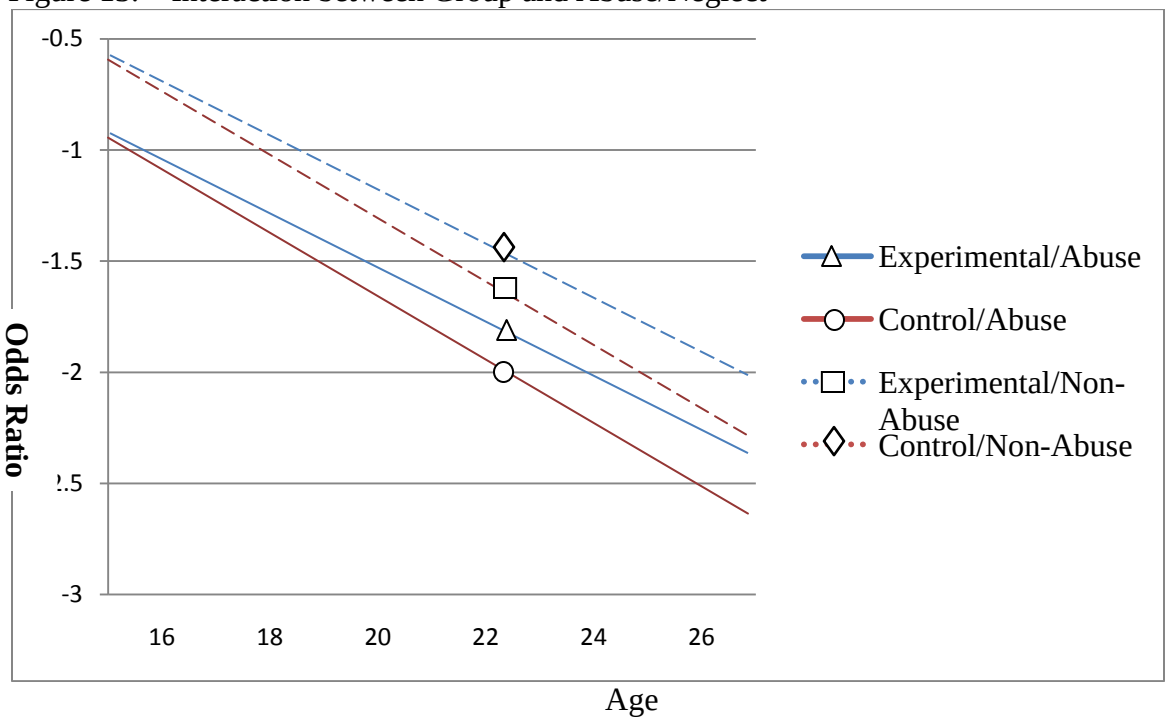


Figure 12. – Home Adjustment Difference (Taxonomy 4).



The family structure and home adjustment are also significantly related to risk of recidivism at age 14. The estimated differential in recidivism between offenders lived with single parent/legal guardian and who lived with both parents is .212 (OR = 1.236). As expected, offenders with a single parent show higher level of risk in recidivism by 24 percent at age 14 (See figure 11). In contrast, offenders who follow curfews or complete chores at home tend to show lower risk of recidivism than those who do not (Log odds = -.362 & OR = .696) (See figure 12). That is, offenders who are well-adjusted at home are less likely to recidivate than those who are poorly adjusted by 30 percent. Although home adjustment effect on the estimated entry level, it is not significantly related to the rate of change over time. Neither experience of abuse/neglect as a child nor family structure is related to differential in the rate of change in recidivism over time.

Figure 13. – Interaction between Group and Abuse/Neglect



The interaction between types of intervention and experience of abuse/neglect as a child is a statistically significant predictor, indicating that the restorative justice conference affected the relationship between being abused or neglected and risk of recidivism. Although youthful offenders do not differ in risk of recidivism at age 14, the rate of change differs by types of intervention or by experience of abuse/neglect as child. Regardless of other predictors, the fitted change trajectory for abused/neglected offenders in the restorative justice conference is consistently fast decreasing risk of recidivism than of abused/neglected offenders in the control group. From table 17, graph of fitted trajectories for prototypical individuals can be displayed in figure 13. Unexpectedly, it clearly indicates that the rate change of recidivism is decreasing over time and abused/neglected offenders in the experimental group shows significantly slower than those in the control group. However, there is no evidence that other interaction terms between group and background characteristics effect on rate change of recidivism over time; that is, the 5 interactions terms are small and statistically nonsignificant.

In sum, attendance pattern, level of school performance, family structure (i.e. single parent), and home adjustment are significantly related to entry level risk of recidivism at age 14. That is, offenders with higher levels of school performance, with good school attendance records, living with both parents, and following curfew/chores at home have a lower risk of recidivism than those who are not at age 14. However, these school and family background characteristics do not affect the rate of change in recidivism. In addition, the interaction between type of intervention and abuse/neglect is statistically significant on rate change of recidivism over time, which suggests that the restorative justice conference is less effective than other court-ordered diversion programs for offenders who were abused or neglected as child.

Taxonomy 5. Conditional Model -Community

The next taxonomy is the introduction of community characteristics into the level 2 model. As a last set of statistical models, this model evaluates the effects of three community characteristics (i.e. economic disadvantage, immigrant concentration, and residential instability) on initial status and rates of change in recidivism, controlling for the effects of demographic and background characteristics. I therefore write the level 1 and the accompanying level 2 models as follow:

$$\text{logit}P(Y_{ij} = 1|b_i) = \eta_{ij}$$
$$\text{Level 1: logit}P(Y_{ij} = 1) = \beta_{0i} + \beta_{1i}(Age_{ij} - 14)$$
$$\text{Level 2: } \beta_{0i} = X_{1i}'B_1 + \xi_{0i}$$
$$\beta_{1i} = X_{2i}'B_2 + \xi_{1i}$$

Where:

η_{ij} represents the outcome variable (i.e. recidivism of individual *i* and age *j*.
$Age_{ij} - 14$ is time variable.
β_{0i} is the *i*th individual's true intercept.
β_{1i} is the *i*th individual's true slope.
X_1 and X_2 are covariate vectors of variables for *i*th individual.
B_1 and B_2 are the corresponding parameter vectors of populations-average effects.
ξ_{0i} and ξ_{1i} denote the individual-level (Level-2) residuals.

Table 18 presents estimates for this analysis. The estimated initial status for the average youthful offenders is -1.142 (OR = .320); and the estimated rate of change in risk of recidivism for average youthful offenders is -.073 (OR = .929). Likewise previous models, it suggests that rate of change in recidivism is decreasing 7 percent every half year old ($p<.001$). After controlling community characteristics, the estimated differential in initial log odds of recidivism

between females and males is .267 (OR = 1.305). That is, males are 30 percent higher in risk recidivism at age 14 than are females (See figure 14).

Figure 14. – Gender Difference (Taxonomy 5).

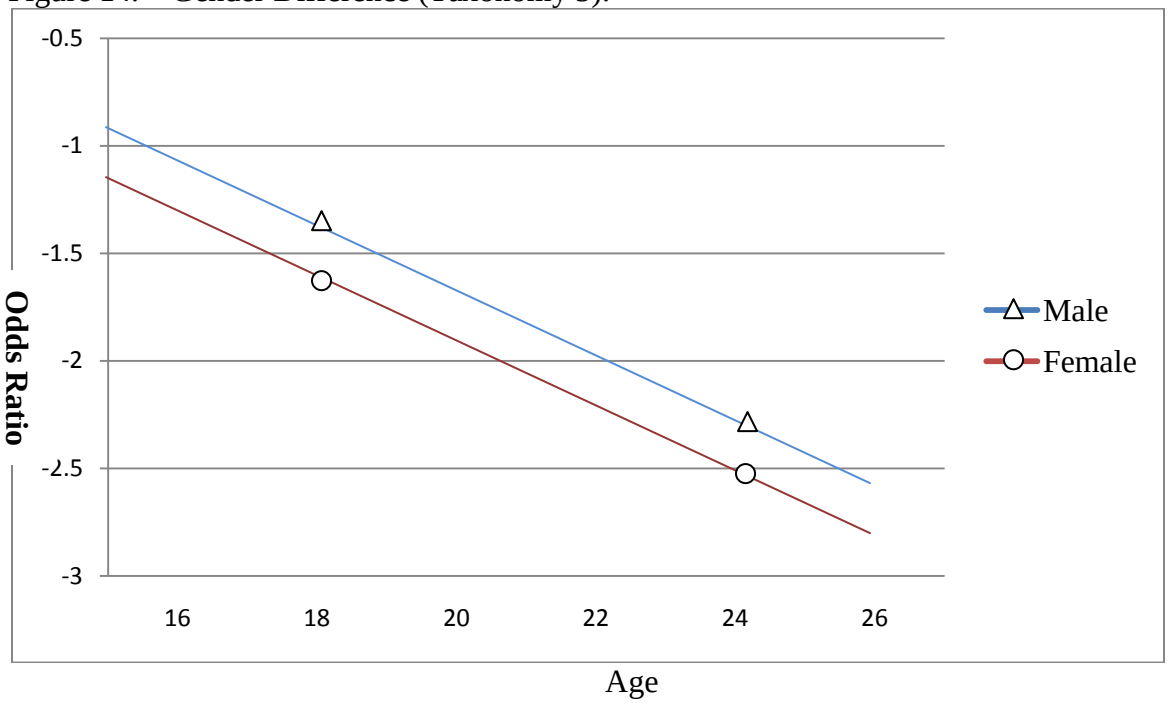


Table 18. Longitudinal Multilevel Analysis – Taxonomy 5. Community

	Latent Intercept				Latent Slope			
	B	Sig.	e^b	SE	*β*	Sig.	e^b	SE
Fixed Effects								
Age (Centered at 0)	-1.142	***	.320	.261	-.073	*	.929	.036
Group (1=Experimental)	-.150		.861	.333	-.043		.958	.043
Demographic Controls								
Sex (1=Male)	.267	*	1.305	.112	.002		1.002	.016
Race (1=White)	-.100		.906	.143	-.043	*	.958	.017
Initial Offense								
Person Offense	-.124		.883	.167	-.005		.995	.020
Property Offense	-.020		.980	.158	-.003		.997	.020
Background Controls								
Attendance (1=Fair)	-.220	**	.802	.132	-.012		.988	.017
School Performance	-.137	*	.872	.067	.003		1.003	.006
School Adjustment (1=Fair)	-.112		.894	.172	.024		1.024	.024
Single Parent (1=Yes)	.210	*	1.234	.103	-.008		.992	.013
Abuse/Neglect (1=Yes)	-.252		.777	.235	-.049		.952	.033
Home Adjustment (1=Fair)	-.379	*	.685	.135	.013		1.013	.019
Community Controls								
Economic Disadvantage	.209	*	1.232	.075	-.025	*	.975	.011
Immigrant Concentration	.151	*	1.163	.074	-.007		.993	.007
Residential Instability	-.067		.935	.080	.004		1.004	.009
Interaction Effects								
Group*Sex	-.227		.797	.151	-.010		.990	.021
Group*Race	-.236		.790	.189	.035		1.035	.023
Group*Person Offense	.072		1.075	.215	-.011		.989	.028
Group*Property Offense	-.123		.885	.203	-.019		.981	.06
Group*Attendance	.217		1.243	.146	.023		1.023	.019
Group*School Performance	.116		1.123	.073	-.004		.996	.008
Group*S Adjustment	.099		1.104	.176	-.035		.965	.024
Group*Single Parent	-.021		.979	.148	.014		1.014	.018
Group*Abuse/Neglect	.322		1.379	.341	.082	*	1.086	.040
Group*H Adjustment	.283		1.327	.188	.040	**	1.041	.024
Group*ED	-.074		.929	.097	.039	*	1.040	.014
Group*IC	-.036		.964	.100	.025	*	1.025	.011
Group*RI	-.093		.911	.101	-.009		.991	.013

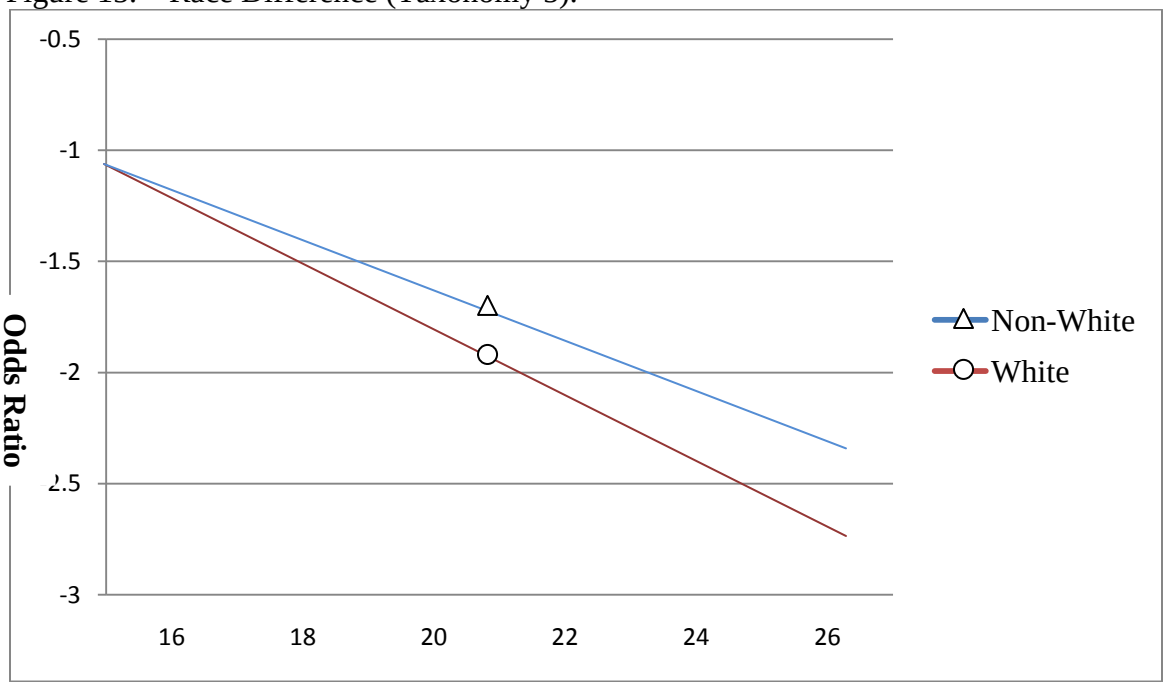
Table 18. cont'd.

Random Effects			
Variances in growth parameters	.971	***	.001
Goodness of Fit			
AIC	9445.238		
BIC	9856.682		

* p<.05; ** p<.01; *** p<.001
Notes: AIC = Akaike information criterion. BIC = Bayesian information criterion. Smaller value of the both goodness of fit indices indicate better model.

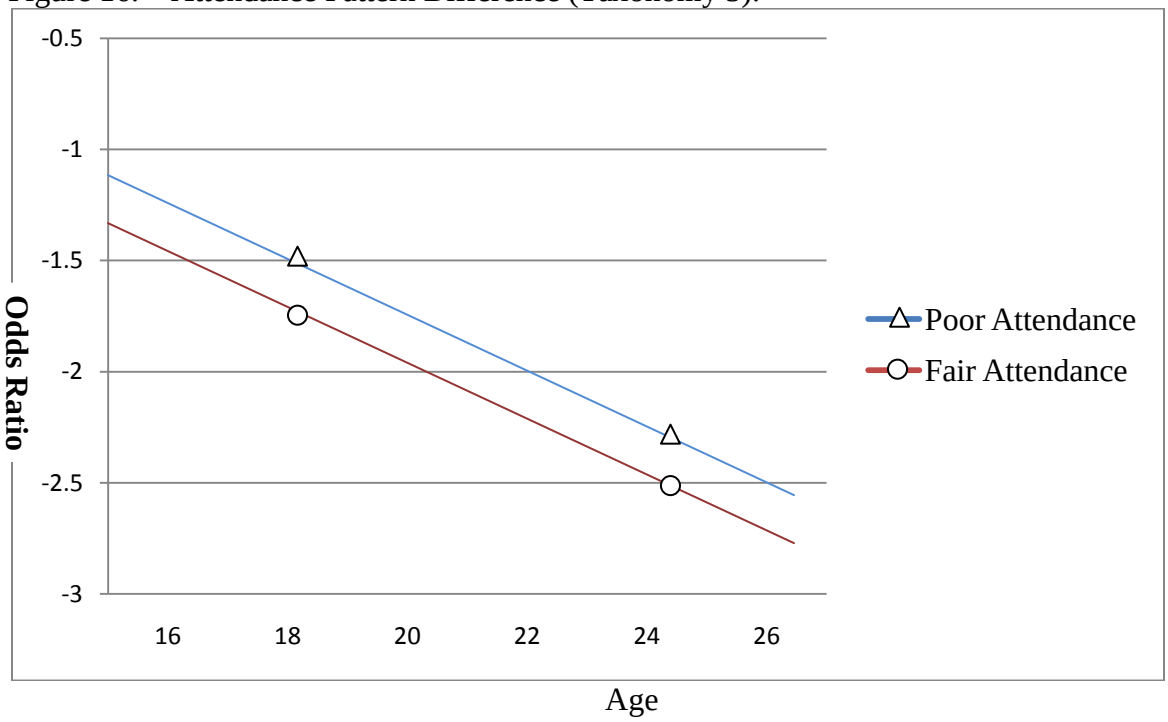
The estimated differential in the rate of change in odds ratio of recidivism is -.043 between White and Non-White, which represent that Whites show a faster rate change than Non-Whites by 4 percent for every half-year-old. However, the estimated differential in initial log odds of recidivism between Whites and Non-Whites is not statistically significant. That is, there is no difference in risk of recidivism between Whites and Non-Whites at age 14 once control for community characteristics (See figure 15).

Figure 15. – Race Difference (Taxonomy 5).



As regarding family and school background as predictors of both initial status and change in risk of recidivism, attendance pattern, school performance, single parent, and home adjustment are significantly related to initial status at age 14. On average, youthful offenders who regularly attend school (i.e. without suspension or expulsion) started lower than those who with attendance problems by .8 times or 20 percent ($p<.05$). Similarly, offenders who have higher levels of school performance started lower than those who have lower level of performance by .9 times or 13 percent. Although school performance and attendance pattern appear to have an effect on the estimated rate of change in recidivism, it is not statistically significant (See figure 16).

Figure 16. – Attendance Pattern Difference (Taxonomy 5).



In addition, table 18 describes the differential in risk of recidivism between offenders who live with both parents and who live with single parent or legal guardian controlling for the effects of other predictors. The estimated differential in initial risk of recidivism at age 14 between two groups is .210 (OR = 1.234). That is, offenders who live with single parent/legal guardian started with a higher level of risk in recidivism at age 14 by 23 percent. In contrast,

offenders who follow curfew and complete chores show lower level of initial risk of recidivism than those who do not by 31 percent at age 14. Overall, attendance pattern, school performance, single parent, and home adjustment are significantly related to entry-level risk of recidivism. However, these school and family background predictors do not affect the rate of change in recidivism over time (See figure 17).

Figure 17. – Home Adjustment Difference (Taxonomy 5).

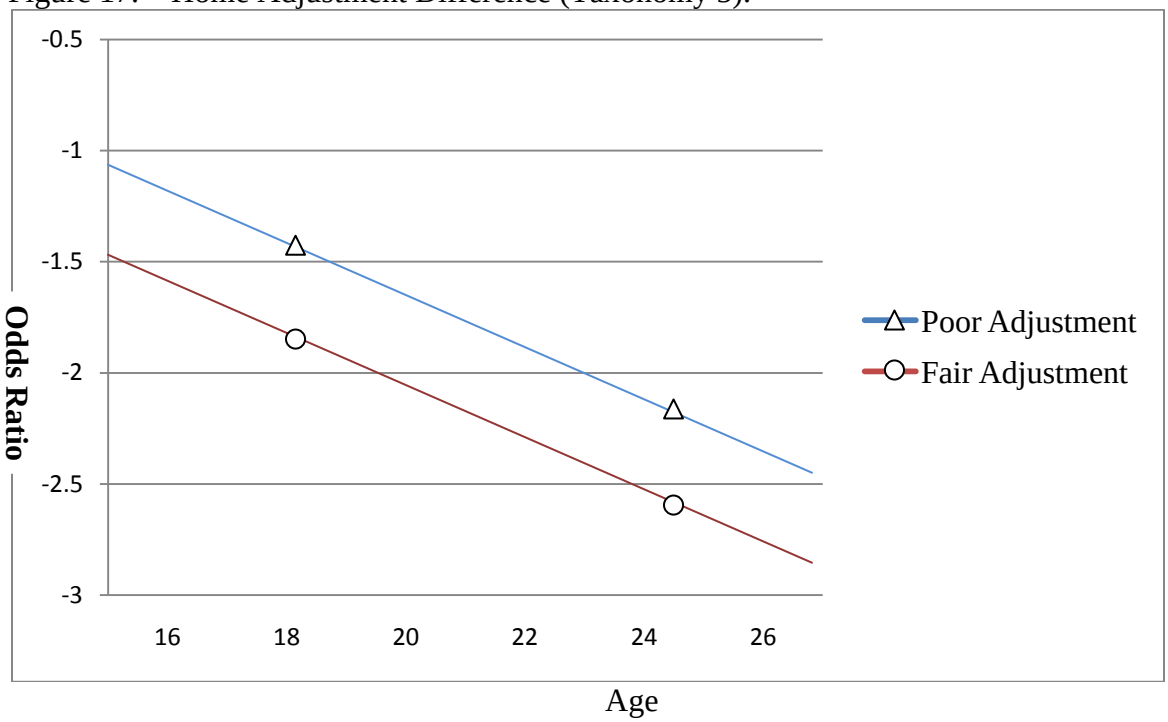
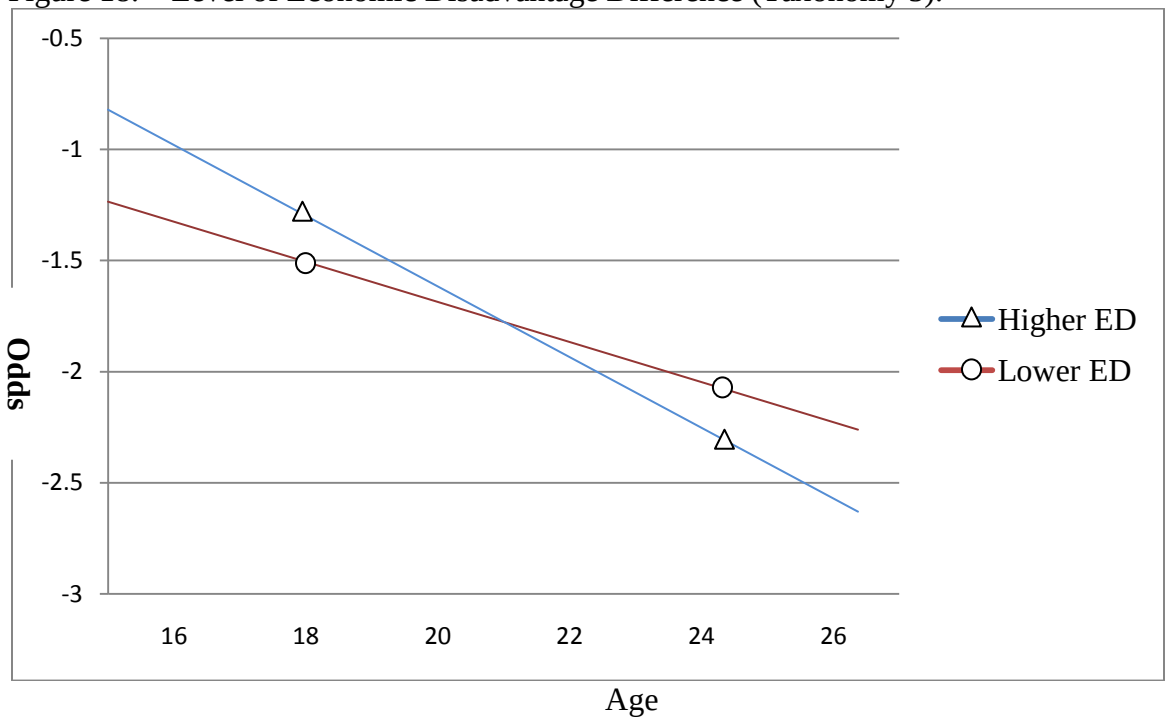


Table 18 also presents estimates for the effects of three community characteristics. Both economic disadvantage and immigrant concentration are significantly related to risk of recidivism at age 14, .209 (OR = 1.232) and .151 (OR = 1.163), respectively. That is, youthful offenders who live within community with concentrated poverty and extreme economic disadvantage are more likely to recidivate than those who do not by 23 percent. In addition, offenders who live within highly concentrated immigrants' neighborhood are more likely to recidivate than those who do not by 16 percent. It is concluded that neighborhood structural characteristics substantially influence on risk recidivism.

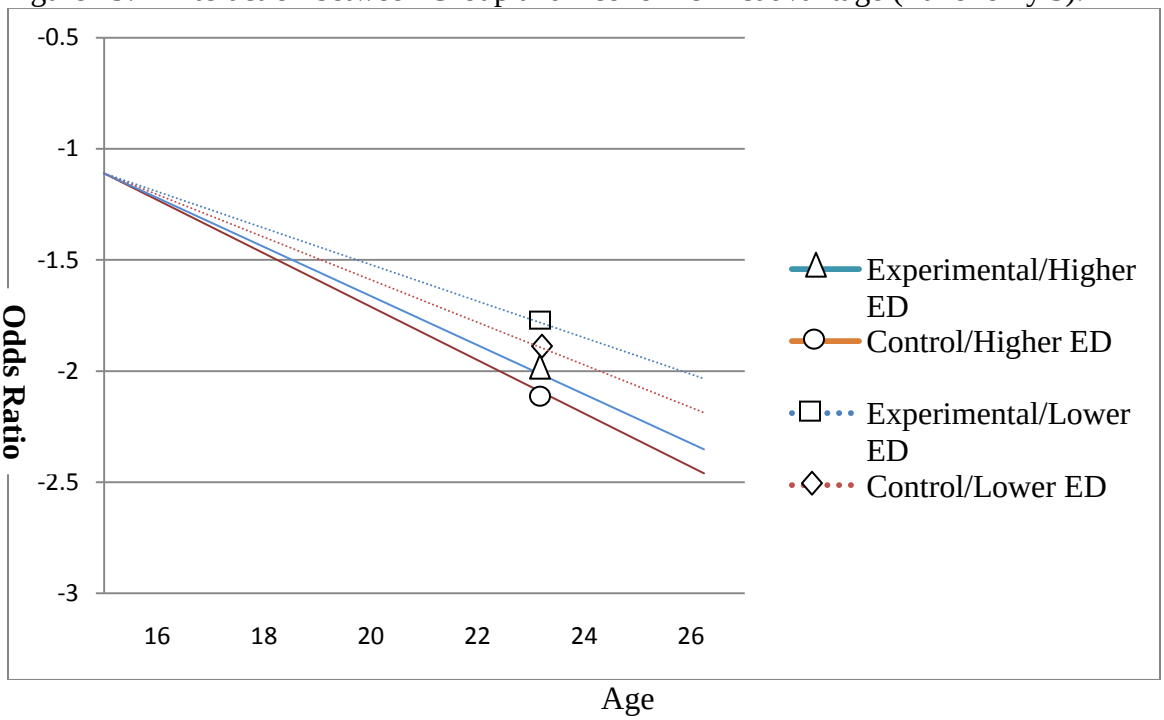
The level of economic disadvantage also affects the rate of change in recidivism over time. The differential in the rate of change between offenders in the highly concentrated economic disadvantage neighborhood and those who do not is estimated to be about 2 percent ($p<.05$). In other words, unexpectedly, offenders who lived in poor neighborhood tend to show faster rate of change in recidivism than those who lived in better community (See figure 18).

Figure 18. – Level of Economic Disadvantage Difference (Taxonomy 5).



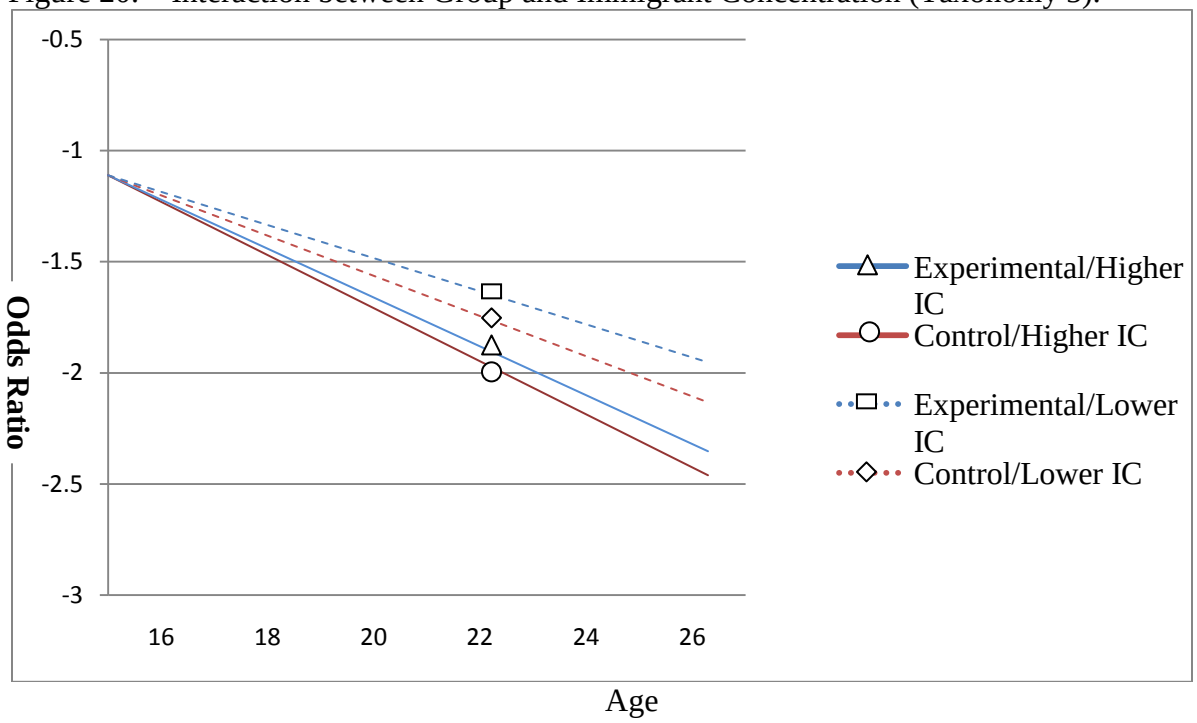
The results also indicate that type of intervention affected the association between level of economic disadvantage and rate of change in recidivism. For offenders who lived in poor neighborhoods, unexpectedly, the restorative justice conference participants show slower rate of change in recidivism than those who participate in the other court diversion by 4 percent. For offenders who lived within concentrated immigrants' neighborhood, similarly, the estimated differential in the rate of change in recidivism offenders who participated in the conference and other diversion programs is .025 (OR = 1.025). The interaction effects between types of intervention and other community characteristics (i.e. residential instability and immigrant concentration) are not statistically significant. Based on these results, Hypothesis 4 is rejected. Instead, the study finds that the restorative justice intervention negatively affects the youthful offenders' rate of change in recidivism over time, when controlling for community characteristics.

Figure 19. – Interaction between Group and Economic Disadvantage (Taxonomy 5).



The interactions between types of intervention and community characteristics (i.e. economic advantage and immigrant concentration) are statistically significant predictors on rate of change. Specifically, unexpectedly, offenders living in poor neighborhood or immigrant concentrated neighborhood and who participated in the restorative justice conference show slower rate of change than those who participated in the other diversion programs in recidivism over time. That is, although youthful offenders do not differ in risk of recidivism at age 14, the rate of change differs by types of intervention. Regardless of other predictors, the fitted change trajectory for offenders in the poor neighborhood or immigrant concentrated neighborhood and in the restorative justice conference is consistently slow decreasing risk of recidivism than of those in the control group. From table 18, graph of fitted trajectories for prototypical individuals can be displayed in figures 19 and 20. These clearly indicate that the rate change of recidivism is decreasing over time and offenders in the poor neighborhood and in the experimental group shows significantly slower rate of change than those who in the control group. However, there is no evidence that other interaction terms between group and background characteristics effect on rate change of recidivism over time.

Figure 20. – Interaction between Group and Immigrant Concentration (Taxonomy 5).



Longitudinal Multilevel Analysis Interviewed Sample => Continuous of time

The interviewed sample model is developed based on the full sample model. Mainly the last set of the longitudinal multilevel analysis contain more variables representing procedural justice/defiance theory and reintegrative shaming theory. The two major dimensions of Tyler's procedural justice and Sherman's defiance theory: satisfaction of procedure and outcome are considered for interviewed samples in this study. Previous research indicated that satisfaction of procedure or outcome has significant impact on a person's recidivism patterns (Tyler, 1990; Sherman, 1993; Tyler et al., 2007). In addition, the reintegrative form of shaming is also considered to test Braithwaite's reintegrative shaming theory. Braithwaite (2002) assumed that delinquent or criminal behavior is buffered by a reintegrative form of shaming. In this study, therefore, satisfaction of outcome, satisfaction of procedure, and reintegrative form of shaming are included as elements of theoretical constructs.

Taxonomy 6. Conditional Model – Intervention Characteristics I

Following previous analyses in this study, the risk of recidivism is estimated by the longitudinal multilevel analysis. As a basic model for the intervention characteristics, I examine whether the effect of the intervention (i.e. satisfaction of outcome, satisfaction of procedure, and the level of reintegrative form of shaming) on risk of recidivism when other characteristics such as demographic, school/family background, and community are not controlling for.

The level 1 and level 2 model are now specifies as:

$\text{logit}P(Y_{ij} = 1|b_i) = \eta_{ij}$
Level 1: $\text{logit}P(Y_{ij} = 1) = \beta_{0i} + \beta_{1i}(Age_{ij} - 14)$
Level 2: $\beta_{0i} = X_{1i}'B_1 + \xi_{0i}$
$\beta_{1i} = X_{2i}'B_2 + \xi_{1i}$

Where:

η_{ij} represents the outcome variable (i.e. recidivism of individual *i* and age *j*.
$Age_{ij} - 14$ is time variable.
β_{0i} is the *i*th individual's true intercept.
β_{1i} is the *i*th individual's true slope.
X_1 and X_2 are covariate vectors of variables for *i*th individual.
B_1 and B_2 are the corresponding parameter vectors of populations-average effects.
ξ_{0i} and ξ_{1i} denote the individual-level (Level-2) residuals.

Table 19 shows that the effects of three intervention related characteristics (i.e. procedure, outcome, and shaming) on the risk of recidivism over the 12 years follow-up. The initial risk of recidivism at age 14, and the rate of change over time are not significant even after the effects of intervention related characteristics are considered. Therefore, other key factors such as demographic, school/family background, and community characteristics will be included in the last set of taxonomy to determine whether the effects of intervention related characteristics significantly affect the initial status and rate change of recidivism over time.

Table 19. Longitudinal Multilevel Analysis – Taxonomy 7. Intervention Characteristics I

	Latent Intercept				**Latent Slope**			
	B	Sig.	e^b	SE	*β*	Sig.	e^b	SE
Fixed Effects								
Age (Centered at 0)	-.479		.620	.989	-.054		.948	.105
Group (1=Experimental)	1.679		5.360	1.594	.150		1.162	.178
Intervention Controls								
Outcome	-.058		.944	.090	-.001		.999	.011
Procedure	-.075		.927	.111	-.002		.998	.015
Shaming	.037		1.037	.048	-.002		.998	.006
Interaction Effects								
Group*Outcome	-.021		.980	.105	.008		.992	.013
Group*Procedure	.108		1.114	.126	.012		1.012	.017
Group*Shaming	-.150		.861	.099	-.007		.993	.010
Random Effects								
Variances in growth parameters	1.075	***			.000			
Goodness of Fit								
AIC	4587.175							
BIC	4696.073							

* p<.05; ** p<.01; *** p<.001

Notes: AIC = Akaike information criterion. BIC = Bayesian information criterion. Smaller value of the both goodness of fit indices indicate better model.

Taxonomy 7. Conditional Model – Intervention Characteristics II

As discussed, the last step of the analysis is to consider the effects of various intervention related characteristics on the log odds of recidivism. Specifically, level 1 and level 2 model are now specifies as:

$\text{logit}P(Y_{ij} = 1|b_i) = \eta_{ij}$

Level 1: $\text{logit}P(Y_{ij} = 1) = \beta_{0i} + \beta_{1i}(Age_{ij} - 14)$

Level 2: $\beta_{0i} = X_{1i}'B_1 + \xi_{0i}$

$\beta_{1i} = X_{2i}'B_2 + \xi_{1i}$

Where:

η_{ij} represents the outcome variable (i.e. recidivism of individual *i* and age *j*.

$Age_{ij} - 14$ is time variable.

β_{0i} is the *i*th individual's true intercept.

β_{1i} is the *i*th individual's true slope.

X_1 and X_2 are covariate vectors of variables for *i*th individual.

B_1 and B_2 are the corresponding parameter vectors of populations-average effects.

ξ_{0i} and ξ_{1i} denote the individual-level (Level-2) residuals.

Table 20. Longitudinal Multilevel Analysis – Taxonomy 6. Intervention Characteristics

	Latent Intercept				Latent Slope			
	B	Sig.	e^b	SE	*β*	Sig.	e^b	SE
Fixed Effects								
Age (Centered at 0)	-.784		.456	.886	-.219	**	.803	.117
Group (1=Experimental)	1.169		3.219	1.409	.250		1.284	.166
Demographic Controls								
Sex (1=Male)	.469	*	1.598	.182	.043		1.044	.028
Race (1=White)	.357		1.428	.234	.022		1.022	.030
Initial Offense								
Person Offense	-.388		.678	.262	-.033		.967	.034
Property Offense	-.080		.923	.228	-.028		.973	.035
Background Controls								
Attendance (1=Fair)	.291		1.338	.201	.024		1.025	.030
School Performance	-.462	*	.630	.132	.012		1.012	.019
School Adjustment (1=Fair)	.829	***	.436	.208	.017		1.018	.029
Single Parent (1=Yes)	-.178		.837	.182	-.030		.970	.019
Abuse/Neglect (1=Yes)	-.290		.748	.345	-.057	**	.945	.034
Home Adjustment (1=Fair)	.091		1.096	.257	.119	*	1.127	.037
Community Controls								
Economic Disadvantage	.484	***	1.623	.118	.041	*	1.042	.016
Immigrant Concentration	.443	*	1.557	.146	.013		1.013	.014
Residential Instability	-.250	*	.779	.114	-.002		.998	.017
Intervention Controls								
Outcome	-.047		.954	.054	.001		1.001	.007
Procedure	-.045		.956	.074	-.001		.999	.011
Shaming	.063		1.065	.040	-.002		.998	.006
Interaction Effects								
Group*Sex	-.491	*	.612	.247	-.038		.962	.036
Group*Race	-.758	*	.468	.326	-.094	*	.910	.038
Group*Person Offense	.751	*	2.120	.339	.062		1.064	.045
Group*Property Offense	-.033		.968	.306	.055		1.056	.044
Group*Attendance	-.137		.872	.266	.007		1.007	.036
Group*School Performance	.501	***	1.651	.142	-.021		.980	.020
Group*S Adjustment	.490	**	1.632	.261	-.038		.962	.033
Group*Single Parent	.331		1.392	.251	.030		1.031	.026
Group*Abuse/Neglect	.730		2.075	.618	.144	*	1.155	.045
Group*H Adjustment	-.084		.919	.336	-.079	**	.924	.046

Table 20. cont'd

Group*ED	-.350	*	.705	.166	-.046	*	.955	.022
Group*IC	-.360	*	.697	.172	.023		1.023	.019
Group*RI	.158		1.171	.156	-.007		.993	.023
Group*Outcome	-.032		.969	.067	-.009		.991	.009
Group*Procedure	.104		1.109	.086	.011		1.011	.012
Group*Shaming	-.135	**	.874	.076	-.003		.997	.008
Random Effects								
Variances in growth parameters	.996	***			.001			
Goodness of Fit								
AIC	3043.358							
BIC	3470.340							

* p<.05; ** p<.01; *** p<.001
Notes: AIC = Akaike information criterion. BIC = Bayesian information criterion. Smaller value of the both goodness of fit indices indicate better model.

The rate of change in recidivism among the 267 youthful offenders is displayed in table 20.[18] Similar to full sample models, I present log odds, odds ratios, and standard error in this interviewed sample model. For an adequate interpretation of log odds, I also calculate the percent odds of recidivism due to particular predictors at each follow-up period, after controlling offenders' attitudes and beliefs about how their cases were handled and how they were ashamed. According to table 20, there is evidence that the subject-specific log odds of recidivism decrease over time by -.219 or by 20 percent for every half-year-old (p<.05). That is, the average level of recidivism is clearly decreasing over time for the interviewed sample. In addition, the youthful offenders' experience of abuse/neglect as child and level of home adjustment are significantly associated with rate of change over time, after controlling intervention related predictors (i.e.

[18] The sample size for the sub-group analysis is smaller than for the total sample of experimental group and control group. Therefore, samples for sub-group analysis include 267 youthful offenders who successfully completed post program surveys. Of these subjects, 155 youthful offenders completed post-conference survey (39% response rate) and 112 youthful offenders completed post-diversion survey (34% response rate).

satisfaction about procedure/outcome and reintegrative form of shaming). Notably, abused or neglected offenders show a faster rate of change than those who are not abused or neglected by -.057 (OR = .945) respectively. Furthermore, offenders who are more likely to follow curfew or complete chores show slower rate of change than those who with home adjustment problems by .119 (OR = 1.127) respectively. It is simple to plot the trajectories to compare the difference between the two groups in figure 21. These are very unexpected results that problematic youths tend to show faster decreasing rate of change over time. It is also inconsistent with the results from prior studies that family problems (i.e. conflict, abuse/neglect, or witnessing the victimization) might be a symptom of an underlying issue for children who are constantly creating problems or violence (Fuller, 2009).

Figure 21. – Home Adjustment Difference (Taxonomy 7).

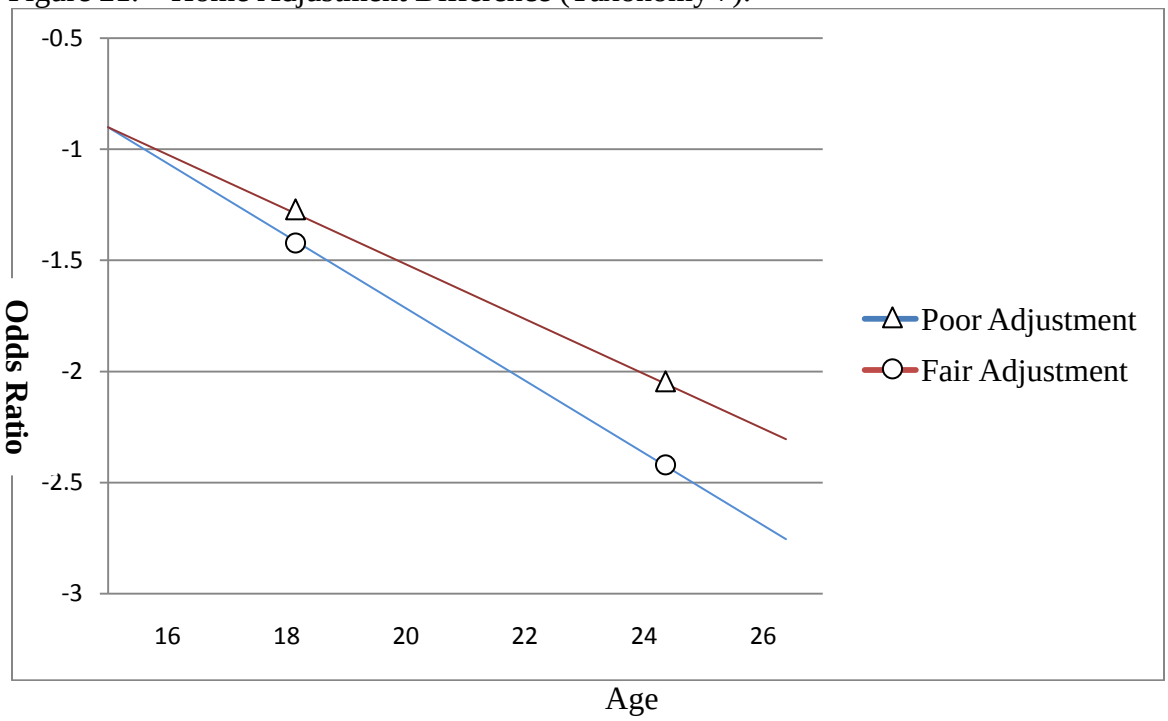


Table 20 also presents the effects of three community characteristics (i.e. economic disadvantage, immigrant concentration, and residential instability) on initial status and rates of change in recidivism. All community characteristics are related significantly to initial status, .484 (OR = 1.623), .443 (OR = 1.557), and -.250 (OR = .779), respectively. That is, youthful offenders who live within highly concentrated economic disadvantage neighborhood and highly concentrated immigrants neighborhood initially recidivate more at age 14 than youthful offenders who live within better neighborhood (See figure 22). However, residential instability tends to show reverse relationship indicating that offenders in the instable neighborhood are less likely to recidivate at age 14 than those who are in the stable neighborhood. In addition, economic disadvantage is significantly associated with rate of change by .041 (OR = 1.042) for every half year old. It is concluded that offenders in the poor neighborhood with started higher level of recidivism at age 14 and have a faster rate of decreasing in recidivism over time than those who are in the better neighborhood.

The estimated differential in initial recidivism between offenders who are highly satisfied with procedure, highly satisfied with sanction, and highly ashamed and those who are not is -.047, -.045, and .063, respectively. However, these differences in initial status and the rate of change are indistinguishable from 0 (not statistically significant). In sum, neither satisfaction of procedure, satisfaction of sanctioning, nor reintegrative form of shaming is related to differential in the initial risk of recidivism at age 14 and the rate of change in recidivism over time. Although Tyler and Sherman (2007) argued that quality of procedure and sanctioning is related with recidivism, this study does not find support the idea that perceived procedural justice and defiance have a lasting effect during the life span.

Figure 22. – Level of Economic Disadvantage (Taxonomy 7).

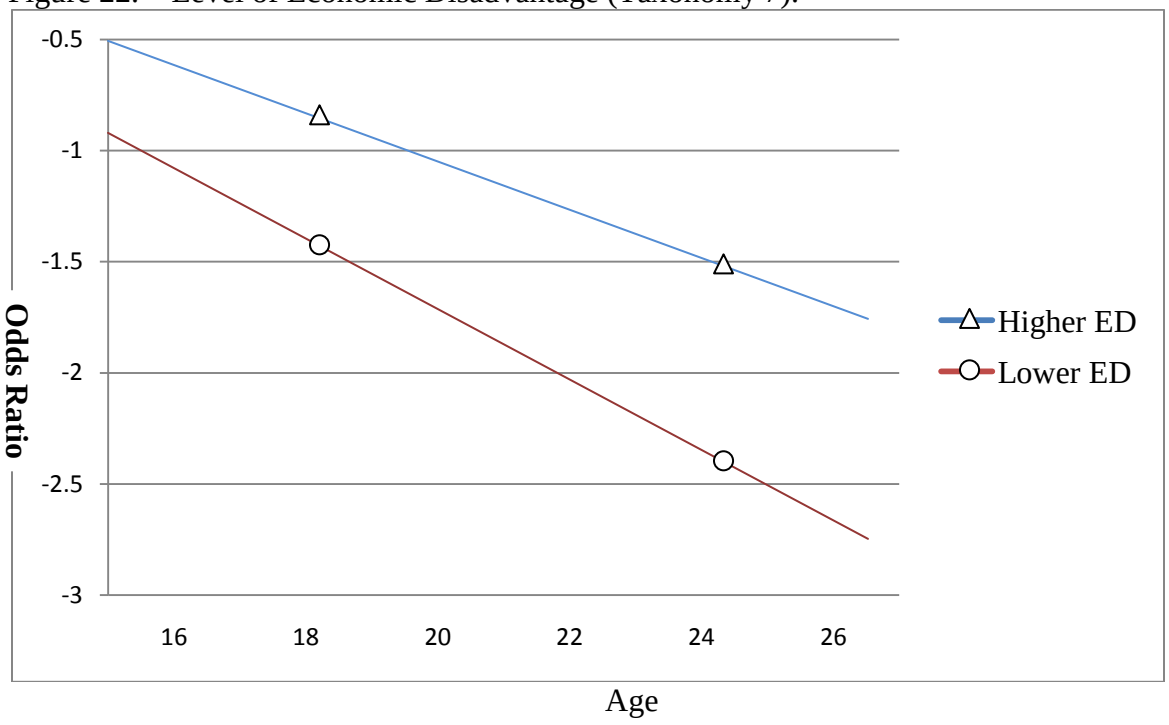
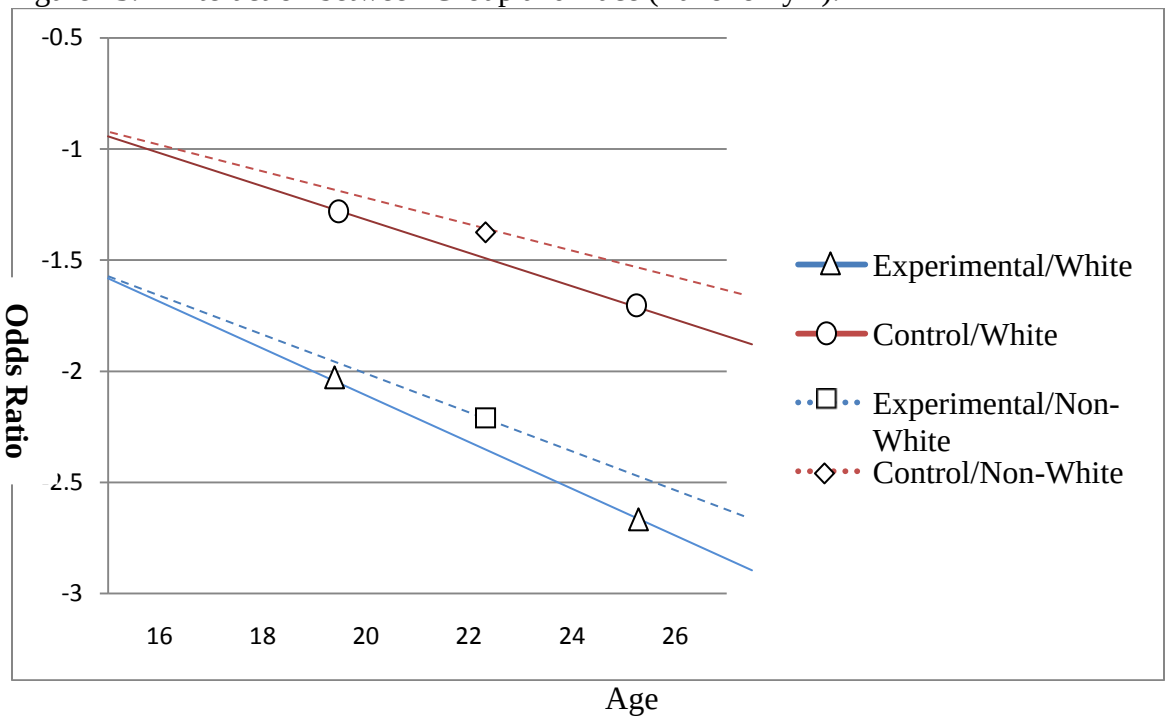


Figure 23. – Interaction between Group and Race (Taxonomy 7).



As done before at the full sample models, interaction terms between types of intervention and covariates are added to the interviewed sample model to incorporate the joint effect of group

and each covariate on an initial status and rate of change over time. The interaction between types of intervention and race is a statistically significant predictor on initial status at age 14. That is, males in the experimental group started lower on initial status than males in the control group by -.491 (OR = .612) or by 40 percent at age 14. Additionally, White offenders in the restorative justice intervention were less likely to recidivate at age 14 than White offenders in the other court diversion programs by -.758 (OR = .468). The interaction between types of intervention and race is also a significant predictor on rate of change in recidivism. White offenders in the experimental group show faster decreasing rate than those who are in the control group by -.094 (OR = .910) over time (See figure 23).

The interaction between types of intervention and family backgrounds (i.e. abused/neglected and home adjustment) are significant predictors on rate of change in recidivism over time. Specifically, abused/neglected offenders in the experimental group tend to show slower rate change in recidivism than those who are not abused/neglected by .144 (OR = 1.155) or by 15 percent for every half year old (See figure 24). Similar to the previous model, the restorative justice intervention is not effective than the other court ordered diversions for offenders who had been abused or neglected as child. In contrast, offenders who complete chores and follow curfew and participated in the restorative justice conference show faster decreasing rate of change than their counterparts by -.079 (OR = .924) or by 8 percent for every half year old (See figure 24). That is, the restorative justice conferences are more effective than other diversion programs for offenders who are fairly well adjusted at home.

Figure 24. – Interaction between Group and Abuse/Neglect (Taxonomy 7).

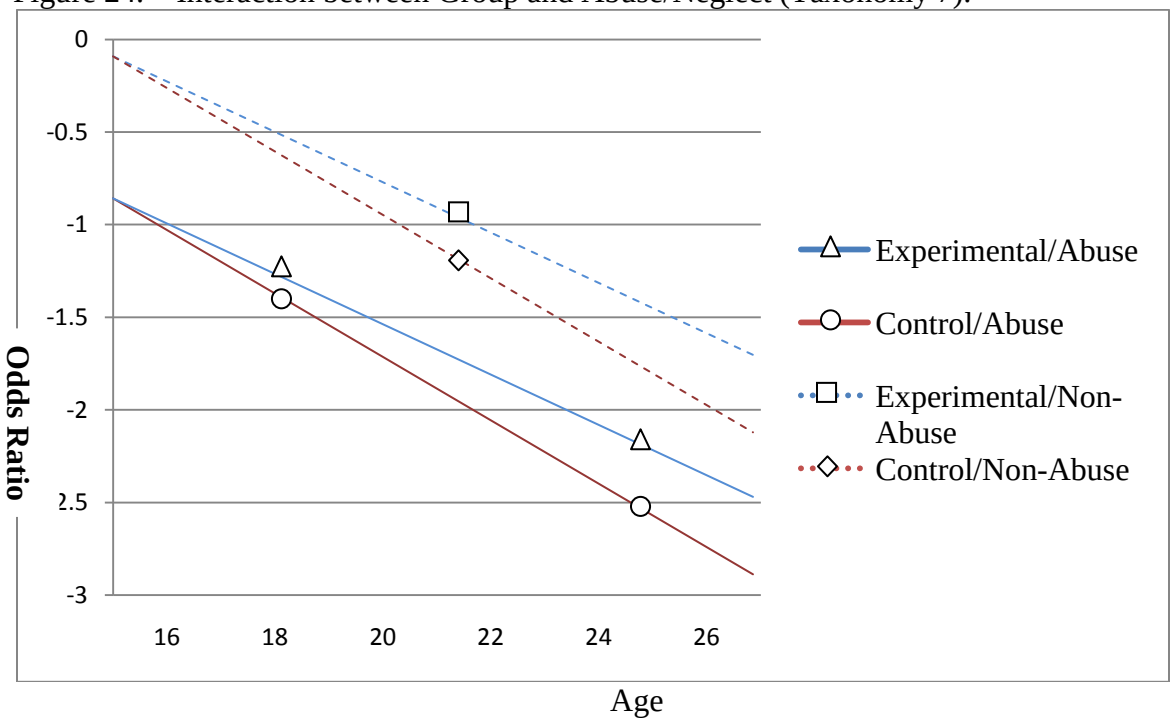


Figure 25. – Interaction between Group and Home Adjustment (Taxonomy 7).

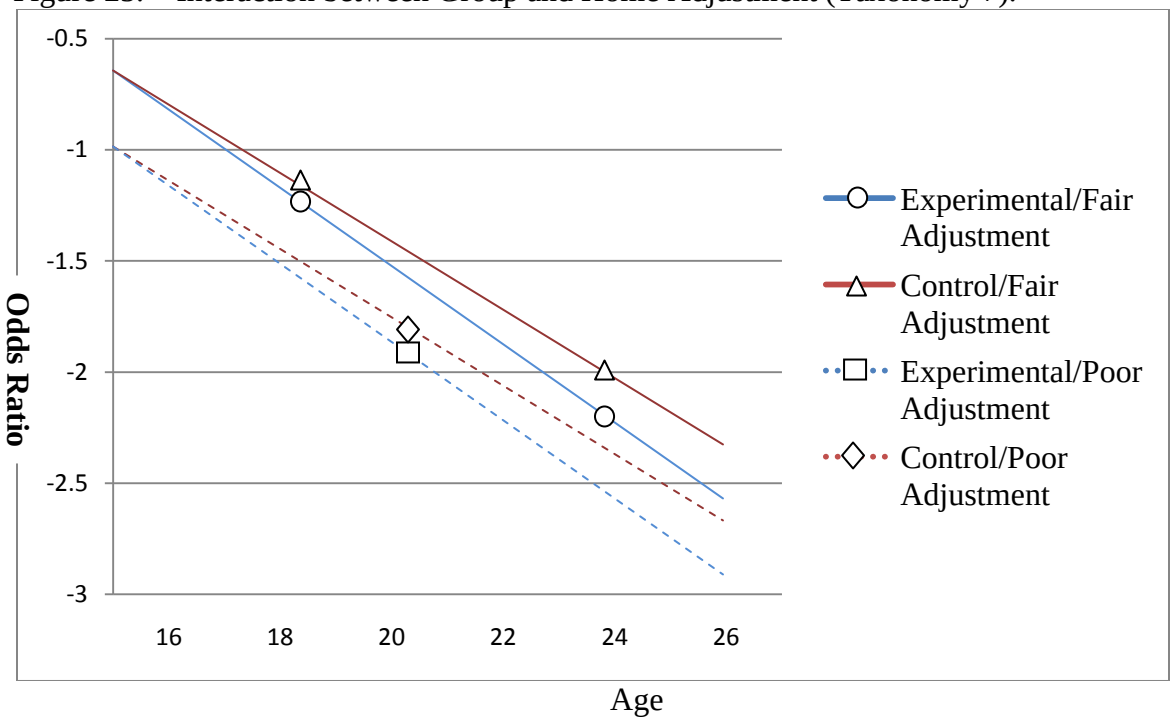
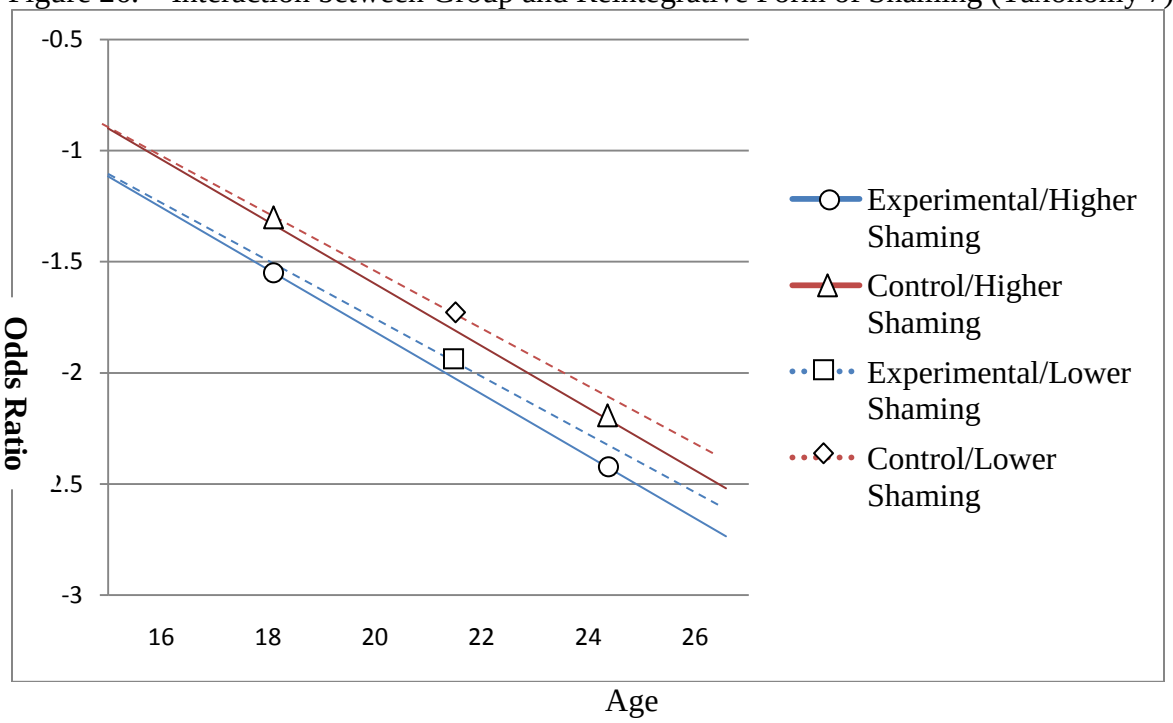


Table 20 also presents the results of interactions between types of intervention and community characteristics. Specifically, unexpectedly, offenders who live in poor neighborhoods and who participated in a restorative justice conference show lower initial status by -.350 (OR = .705) and faster rate of change by -.046 (OR .955) over time than those who participated in the other diversion programs. That is, offenders in the experimental group started lower than those who are in the control group by 30 percent at age 14 and the rate of change differs by types of intervention, indicating that offenders in the restorative justice conference show faster decreasing rate than offenders in the control group by 4 percent for every half-year-old.

Regardless of other predictors, the fitted change trajectory for the experimental group offenders who are highly ashamed slow lower level of risk of recidivism at age 14 than of those in the control group (See figure 26). It clearly indicates that the rate change of recidivism is decreasing over time for experimental group offenders who are highly ashamed shows consistently faster rate of change than those who in the control group, although it is not statistically significant. However, there is no evidence that other interaction terms between group and intervention related characteristics effect on rate change of recidivism over time.

Figure 26. – Interaction between Group and Reintegrative Form of Shaming (Taxonomy 7).



Overall, initial status and rate of change in recidivism are examined in this section. For youthful offenders in this study, I examine log odds, odds ratios, and percentage of odds to determine effectiveness of restorative justice conferences. The findings from the longitudinal multilevel analysis show that the restorative justice conferences are effective at age 14 with few exceptions. However, the expected outcome (i.e. long-term effect) of the restorative justice conference did not carry out. That is, the effects of restorative justice conference are not long lasting. In sum, the findings reported in Chapter VII were fairly inconsistent with the research hypotheses presented earlier. These findings have the potential to inform future research and policy implications, which will be discussed in the last chapter.

CHAPTER VIII: DISCUSSION AND CONCLUSION

Many researchers have examined the effects of restorative justice intervention on recidivism. However, existing research has usually tested for recidivism based on a short follow-up period. It is surprising that there has been a lack of attempts to examine the long-term effect of restorative justice intervention on recidivism. Therefore, the current study examines the relative explanatory power of the long-term effect of Family Group Conferencing on future criminality. In addition, this study attempts to employ a longitudinal multilevel model to clarify methodological issues that would help researchers to conduct more sophisticated systematic research than has occurred in prior studies. The majority of prior recidivism studies use an event history analysis, which interest centers on describing the "whether" and "when" events occur. However, it cannot reveal two types of research question: (i) how individuals change over time; and (ii) how these changes vary across individuals. Instead, longitudinal multilevel model (or multilevel model for change) allows researcher to address within-person and between-person questions about change by examining level 1 model for how each person change over time (i.e. within-person) and level 2 model for how these changes differ across people (i.e. between-person) (Singer & Willett, 2003).

The purpose of this study is threefold: to develop an explanatory model that integrates social control theory, theory of the ecology of human development, and reintegrative shaming theory into a single paradigm that accounts for recidivism; to examine whether the processes leading to recidivism vary by demographic, background, and community characteristics; and to determine the efficacy of the restorative justice on recidivism. Using data collected on the restorative justice conferencing intervention for youthful offenders, a framework is established for testing the efficacy of restorative justice intervention compared to other court-ordered

diversion programs. A series of hypotheses were tested in order to determine the relationships between type of intervention, theoretical controls, and recidivism. Therefore, this final chapter provides an overview of the research and discusses major findings for each of the tested hypotheses. It is followed by limitations of the research and suggestions for future directions of restorative justice research. Finally, this chapter closes with the contributions of this study as well as the theoretical and policy implications of it.

Summary and Discussion

The first objective of the research is to develop an explanatory model that integrates three different theories. An integrated theoretical perspective offers several advantages over other theories of recidivism. It has advantages not only because it provides holistic pictures of the trajectory of delinquency careers, but because it also offers implications for developing and implementing effective interventions for youthful offenders. Moreover, the integrated model posits the assumption that recidivism is influenced by multiple domains of predictors that originate from ecological perspectives. The longitudinal multilevel model discovered several notable findings.

Event History Analysis – Life Table

Most empirical researchers are so comfortable conducting event history analyses when examining questions about recidivism. As explained in chapter 7, using the Indianapolis databases, the current study examines the recidivism history of each subject from date of release

from intervention through 2009.[19] Research interest using survival analysis centered on whether and when the offenders first recidivate. Across the entire sample, 50 percent of the youthful offenders in the control group had recidivated by the 24-month point, while 50 percent of the youthful offenders in the experimental group had recidivated by around 30 months. That is, the offenders in the restorative justice intervention were less likely to recidivism during first 3 years than those who participated in the other diversion programs. Overall, the analysis suggests that the different survival curves slightly favor the experimental group with slower failure rate to recidivate. In addition, results of the median lifetime support the idea that conferencing is more effective to buffer risk of recidivism than other court-ordered diversion programs. These results were consistent were prior research from the Indianapolis Restorative Justice Experiment (McGarrell & Hipple, 2007).

However, longitudinal model for discrete-time event occurrence data only allow for explanations of the time until first recidivism. It may not be appropriate for addressing questions about how each person changes over time. Clearly, the most appropriate technique for treating developmental change over time is longitudinal multilevel analysis because it allows empirical exploration of trajectories of change over time based upon participation in conferences or other diversion programs. In the next section, I conclude longitudinal multilevel analysis by examining the comparisons of two groups controlling for other explanations of the association between group assignment and the changes in recidivism during follow-up period.

Impact of Type of Intervention

[19] All youthful offenders were tracked for up to 12 years for those released between 1998 and 2000.

The experimental group and control group are compared on initial status and rate of change in recidivism without ecological or intervention characteristics. The purpose of this analysis is to determine whether type of intervention predicted risk of recidivism over time (up to age at 29). Of the two groups considered in the initial set of analysis, there is no significant differences in initial status at age 14 and rate of change in risk of recidivism (See Table 2). The finding suggests that the risk of recidivism could not be effectively influenced by type of intervention. In other words, although it was expected that there would have been greater differences between the restorative justice intervention and other diversion programs, the differences are not found.

There are mainly two reasons to believe that type of intervention may not be particularly salient as a determinant of recidivism of either adolescents or adults. First, the development of individual, social, and ecological domains may have influences throughout the life-course. Second, the best predictor of future behavior is past behavior. Therefore, although there is general agreement that offense rates decline with age, it may be influenced by other covariates. From this point of view, it is still important to determine if the interaction of multiple domains of risk explains recidivism.

Impact of Demographic Characteristics

Related to the above discussion, it must be considered whether demographic factors have a measurable effect on recidivism. Sex and race appears to be most significantly related to initial level of recidivism at age 14. The consistently significant influence of sex on initial status implies that boys are more likely than girls to recidivate. It provides evidence that supports Elis' (2005) argument that girls may be less likely than boys to engage in delinquent behavior.

Additionally, a significant relationship is found between race and initial status of recidivism. It seems clear that white offenders are less likely to recidivate than non-white offenders. This finding is also consistent with the findings from a prior study arguing that the recidivism rate is higher among non-whites (Lanza-Kaduce et al., 1999). However, there is no significant relationship between demographic characteristics and rate of change in recidivism. In addition, the predictive power of the restorative justice intervention is limited over time. The lack of a meaningful relationship between the two groups and recidivism may be partly caused by other significant factors. Although the majority of research would suggest demographic factors as risk factors for recidivism, this model clearly shows that there is no long term effect of these predictors on rate of change in recidivism. In addition, it suggests the idea that the impact of restorative justice intervention is not long lasting.

Impact of School/Family Background

The results of the conditional model with school and family background characteristics are consistent with the prior models. Specifically, the rate of change in recidivism significantly declines over time. Additionally, the current study find that sex and race have different influences on initial status of recidivism. It is particularly notable that a significant effect of school and family background on initial status on recidivism at age 14 is discovered in this model. Youthful offenders who do not regularly attend school and achieve lower level of school performance have higher initial level of risk of recidivism. That is, the students may not be prepared for school and those who are not prepared for educational expectations may act out with delinquent behaviors.

The research also suggests that family background, including marital status of the parents and an adolescent's home adjustment, are important predictors of recidivism. As poor family relationships have long been linked to the problem of recidivism, offenders who lived with a single parent or legal guardian, did not follow curfew, or did not complete chores have higher level of initial status (i.e. higher levels of risk of recidivism at age 14) than those who did not. This finding complements those by Loeber (1996), Loeber and Stouthamer-Loeber (1998), and Thornberry (1997) that consistently identify that family conflict may have a greater effect on offending than once believed.

This study, however, does not support the proposition that there are long-term effects of abuse and neglect on the rate of change of recidivism. Unexpectedly, it clearly indicates that abused or neglected youthful offenders in the restorative justice intervention tend to show a slower rate of change in recidivism than those abused offenders who were in the other diversion program. Although a significant amount of literature suggests restorative justice intervention helps youthful offenders to be able to develop positive goals, achieve success, and support reductions in re-offending (Latimer et al., 2005; Maxwell & Morris, 2002; Sundell & Vinnerljung, 2004), exposure to conference may increase stress for abusive parents. Then, it may elevate the risk of violent disciplinary tactics or another types of abuse/neglect against their children. This study, however, does not show hypothesized differences between the two groups in the rest of the school and family background characteristics.

Impact of Community

Many criminologists have commonly viewed disorganized neighborhood characteristics as the major cause of delinquency (Sampson & Laub, 1994). Likewise, initial status of risk of recidivism appears to be most significantly related to economic disadvantage and immigrant concentration. The adolescents who lived within highly disorganized neighborhoods face many hardships. They are more likely to be deprived of standard living conditions than those who do not, and less likely to achieve higher status in conventional society than those who in reside stable communities. They may also attend poor schools, lack good health care, and exposure to delinquent peers and adult offenders. Accordingly, these ecological conditions have a significant influence on delinquency and their recidivism.

In general, and related to the above discussion, deprived neighborhood conditions are favorable to delinquency because of the lack of social bonds and collective efficacy. However, the parameters of interaction effects between type of intervention and community characteristics specify that ecological conditions have a greater effect on recidivism in restorative justice conferences than in other diversion programs. Among offenders in the conferences, unexpectedly, the effects of economic disadvantage and immigrant concentration cause the rate of change in recidivism to change about 5 percent more slowly every half-year-old. Although this rate of change is not substantial, there is a possible explanation for the effective outcome of restorative justice conferences. Adolescent behaviors are significantly influenced by members of society, not just by deprived neighborhood characteristics, in particular their family and neighbors. The restorative justice conferences are made up of the offender's family and community members. In the most direct sense, family members participate in the decisions and have responsibility for their children. In this way, the restorative aspects of conferences are achieved, showing that the

rate of change in recidivism is slower than others. Consistently, restorative justice conferences provide community values and expectations that allow youthful offenders to reintegrate into the community.

Impact of Intervention Characteristics

There are several distinguishing characteristics between the restorative justice conferences and other diversion programs. Mainly, the restorative justice conferences emphasize the role of quality of sanctioning and procedure (Sherman, 1993; Tyler, 1990). Although understanding the role of sanctioning and procedure quality is a critical piece to evaluating the outcome of restorative justice, the consequences of shame about wrongdoings should also be considered (Braithwaite, 1998). Therefore, the measures of how youthful offenders view the processes and outcomes from the structured interview are added to the last model.

Although the literature suggests that quality of sanctioning and procedures reducing future criminality vary across the level of satisfaction and type of interventions, the results of the study do not suggest these relationships. It is inconsistent with the idea postulated by Sherman (1993) and Tyler (1990), in that the effects of satisfaction with outcomes or procedure on recidivism are invariant across two groups. In addition, the hypothesis that the two groups vary according to the effects of reintegrative forms of shaming on recidivism is not supported. Although Briathwaite (1998) posits the idea that restorative justice interventions increase reintegrative form of shaming, and as a result, reduce risk of recidivism, this study fails to find that the level of shaming had an impact on future criminal behavior. Moreover, it is also assumed that the restorative justice interventions that are based on reintegrative shaming principles have a greater impact on recidivism than regular court ordered diversion programs (Braithwaite, 1998;

Jenson & Gibbson, 2002). Contrary to what was expected, this study found that the effect of type of intervention on recidivism is invariant across groups. As can be seen, the type of intervention and related characteristics show no significant effect in improving outcomes for youthful offenders. Although restorative justice intervention is more effective in terms of buffering first time failure (See Figure 1), there is little doubt that the extent of the effect of restorative justice interventions on recidivism does not last a long time.

Summary

Based on these findings, the expected outcome was not borne out. That is, the youthful offenders in the restorative justice conference did not experience less risk of recidivism than their counterparts over time. Thus, it is important to examine the further questions of what happens over time to make this so. There are some concerns have to be taken into account. Although restorative justice intervention is associated with decreased likelihood of recidivism in the short-term periods, it is not sustained in subsequent time periods. Furthermore, there is no difference between the conference and other court diversion groups on risk of recidivism over time.

Limitation of the Current Study

Prior research indicates that restorative justice conferences have many attractive features, including victim satisfaction, positive effects on offenders, and importance of reintegration, as a result, decrease recidivism. However, this study does not support the argument that the restorative justice conferences will be more effective than other court diversion in risk of subsequent recidivism. Having said that, however, this study is not without limitations that should be considered.

The notion of early intervention can be applied to the youthful offenders in this study. The main reason for early intervention is to enhance the adolescent's development. Likewise, the Indianapolis restorative justice conference seeks to address the victim's needs, hold the youth accountable, and develop a community of support for both victim and offender through early intervention. Although it is considered a restorative justice principle (i.e. reparation and reintegration), intervention has no effect on recidivism and overall function. This may be because of lack of information about key principles throughout 12 years follow up periods. In other words, youthful offenders in this study participated in an only one time intervention and, as a result, it cannot be fully examined the association between restorative justice conferences and recidivism.

The current study mainly considers whether youthful offenders recidivate through follow-up periods. However, it should be noted that two other major characteristics of offense, (i) seriousness of offense and (ii) numbers of incidents, are not adequately represented in this study. One of the alternative emerging question about restorative justice intervention concerns seriousness and prevalence of outcome measures. A relatively small number of youthful offenders commit a significant part of serious offenses in the community, and many of the same

offenders are more likely to become the chronic offenders who are responsible for a large proportion of total crime. According to this view, this study does not fully scrutinize the effect of restorative justice conferences on the seriousness and incidence of recidivism.

This study is limited to an examination of risk of recidivism among conference- or other diversion-involved adolescents. The family group conference and other diversion programs are clearly distinct from formal justice system. In particular, they substitutes for formal system for providing services for non-serious offenders while minimizing physical restriction and penetration (Cite). Hence, it is more likely that the subjects possessed less serious antisocial features than would a sample of offenders of formal court process. Although family group conference has unique features in the justice system, it is considered a diversion-type intervention that is designed to reduce the level of formal justice system involvement. Therefore, the comparison between participants of conference or other diversions may not fully reflect distinctive features of each intervention.

According to Sampson and Laub (1993), a series of life course events (i.e. occupational attainment and marital attachment) explain changes in crime over the life span. However, it may be argued that the specific measures of life course events are not available in the current study. Lacking this information limits the analytical power of the model to predict patterns of recidivism over the life span.

The samples for sub group analysis involved 112 individuals considered participants of the control group and 153 offenders of the experimental group. The limited numbers in each group reduced the ability to perform additional analyses that may have further clarified some of the relationships between intervention characteristics and recidivism. Specifically, if all

participants were interviewed, it would have been meaningful to analyze the effects of the sanction process and the notion of the shaming on recidivism.

Directions for Future Research

Given the evidence reported throughout the current study, an interesting question remains to be addressed: how can restorative justice conferences maximize effective outcomes that reduce recidivism? To answer this question, future research in restorative justice interventions is warranted. First, research should closely examine more characteristics of restorative justice intervention. As Sherman, Strang, and Woods (2003) noted, conference characteristics, such as apologizing to victims, forgiving the offender, and the role of facilitators had direct and indirect relationship with recidivism. By including these key predictors provided from the restorative justice conference, we can gain a better sense of the effect of restorative justice and its ability to reduce recidivism.

Second, it is clear that the principles of restorative justice focuses on the harm caused to victim while emphasizing the importance of key participants such as family and supporters. For the victim perspective, it is important to understand how to dealing with grief or loss, and how to cope stress or damage. For the family and supporters perspective, it is important to understand how to make them actively engaging intervention process and highly satisfying procedure and sanctioning. Insofar, it is becoming increasingly clear that thorough understanding of the benefits to victim and satisfaction of family and supporters should be considered to help further development and analysis.

Third, not all juvenile offenders re-offend and all juvenile delinquency isn't equally serious. For example, only a small number of chronic delinquents are involved in the majority of re-offending and all serious crimes, such as homicide and robbery. Therefore, future research should examine characteristics of outcome measures based on total number of offenses

(incidence) or the seriousness of offenses. These outcomes will provide a wide variation of restorative justice intervention that is more likely to produce the results expected[20].

Fourth, the comparison process makes program evaluation difficult, since both diversion programs and conference with restorative justice philosophy provide similar type of practice. Hence, researchers should consider comparison between conference and formal court system to evaluate the true crime prevention effects of the family group conference. Then, the results of the true experimental study would suggest whether family group conference is more effective at reducing recidivism and would reduce bias against findings a program effect.

Lastly, researchers should investigate time varying predictors, such as life pathways and turning points. Sampson and Laub (1993) argued that certain pathways (i.e. employment career and parenthood) and transition points (i.e. graduation from high school and marriage) influence individual's chances of committing crime. Therefore, future research also should consider more predictors representing time varying contextual effects in the multilevel model for change. Although time invariant predictors (i.e. most independent variables in the current study) the values remain constant, the time varying predictors' value will vary and provide a better sense of the effect over time.

Policy Implication

Consistent with Maxwell and Morris (1996; 2002), the results of the current study point to the critical role that some demographic characteristics and school/family backgrounds play in the risk of recidivism at age 14 and over time. It also has been shown that community characteristics influence recidivism through one's bonding to conventional society. As regarding

[20] Controlling for the presence of these multiple offenders could show us that restorative justice interventions work very well for others, less violent populations.

type of intervention, this study also posits that restorative justice intervention did no worse than other court-ordered diversions. However, while much of the restorative justice intervention literature indicated the effective outcome of restorative justice, the main goal of this study, the long-term effect of restorative justice conference on recidivism, has not been found. These findings have obvious implications for preventing recidivism.

This pattern of findings reported above suggests that restorative justice intervention should seriously consider the role that restorative justice interventions play in recidivism. However, the key question is not whether restorative justice interventions work better than other court diversion programs. Rather, it is how the values of processes and outcomes underpin the "what works" perspective. As previously mentioned, the restorative justice conference is inherent in the idea that effective functions in family, such as care, protection, and social integration, have a great impact on youthful offenders. It also emphasizes offenders' better understanding and accepting accountability of what they have done by hearing from victim or others. Throughout these processes, the youthful offenders are held accountable for their offense and feel remorse for what they have done. As a result, these processes play a more active role on reducing future criminality. It is extremely difficult to say that the restorative justice intervention works at all time in every situation. As all key participants in the restorative justice intervention are equally important in reducing recidivism, the increased active participation and collaboration with victim, offender, and community is needed.

Assuming that the quality of sanctioning and processes take a more active role in crime prevention (Sherman, 1993; Tyler, 1993), the practice of the restorative justice intervention should consider the ways to encourage offenders' satisfaction with the agreement reached and

satisfaction with feeling involved in the process and decision. Therefore, the state should implement the restorative justice intervention with guidance for actions and procedures.

The literature on the restorative justice interventions of youthful offenders leaves little reason to doubt that there has been success in preventing delinquency. Despite the best of intentions, the results of the longitudinal multilevel analysis suggests that the effects of the restorative justice intervention did not last over time. To maximize effects, intervention programs should focus on enhancing this ability through providing services more than once. This study (i.e. life table) and other prior research found an immediate and short-term effect of restorative justice intervention on recidivism. Therefore, in order to improve intervention effects, the states should require the restorative justice intervention not merely once, but several times, for the youthful offenders (Braithwaite, 2002).

Findings of the current study imply that family conflict is an important predictor that has an influence on recidivism over time. Indeed, the intervention may work best when combined with enhanced family relations. In order to enhance family functions, strategies should focus on four qualities of parenting: (i) providing a positive role model; (ii) encouraging productive behavior that is opposed to wrongdoings; (iii) providing adequate supervision; and (iv) engaging in effective and consistent discipline (Fuller, 2009). Furthermore, strategies should work with families as a part of the restorative justice intervention. Specifically, the state should combine restorative justice intervention and interventions for child abuse/neglect and family conflict. However, each family environment can be change over time through family conditions such as structure, size, and economic conditions. Therefore, family environment also should be considered to improve the effects of the restorative justice intervention.

The findings of the current study also imply that schools clearly contribute not only delinquency, but they also have the opportunity to provide protective impact on adolescents. Insofar, it is necessary to regard adolescent's behavioral modifications for establishing self-esteem and social competence. Furthermore, any attempt and interventions need to consider and provide a warm and positive school climate, order, and discipline.

While family and school intervention strategies are helpful, they remain too simplistic. Although family functions have an important role, community characteristics of social disorganization and economic disadvantages influence adolescents' behavior over time. According to Sampson, Raudenbush, and Earls (2003), structural problems in the neighborhood are related to weakening informal social control, collective efficacy, and social cohesion. As a result, the weakened informal social control lead to higher community crime rates. Research had shown that adolescents residing in impoverished neighborhoods may have lack opportunities for familial and community support system and it would become a critical aspect of reintegration efforts (Beus & Rodriguez, 2007). Therefore, strategies should focus on generating resources of public control and informal social control that are likely to facilitate collective efficacy. However, the restorative justice intervention cannot implement community level services that enhance informal social control. Therefore, the state should seek interagency coordination and collaboration to better facilitate informal social control and collective efficacy to help to reduce crime.

Overall, the current study has provided a unique perspective on the long-term effect of restorative justice interventions by examining the ecological features that are likely or unlikely to influence future criminality. According to Fuller (2009), juvenile delinquency does not change in a linear fashion, meaning that it isn't all progress or regress. Therefore, we cannot expect

patterns of the risk of recidivism to change if we treat youthful offenders in a separate and only one intervention. To truly acquire a sense of the long-term effects of the restorative justice intervention, researchers should consistently use theories of crime to guide evaluation research, and practitioners should devote attention to issues of the intervention. In addition, society must devote attention to its obligations to provide proper care for the youthful offenders, to reduce recidivism, and to enhance quality of life.

APPENDIX

Appendix A.

Table 21. Results from Cumulative Proportional Rate – Control Group (N=382)

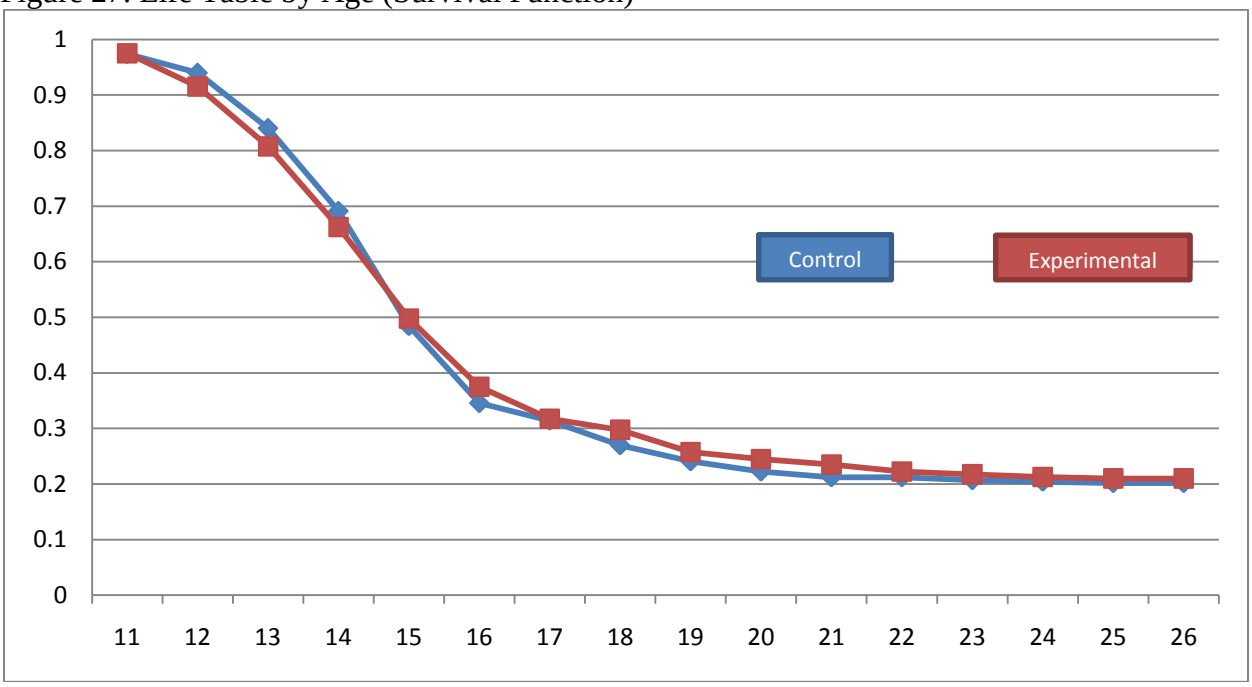
Interval (Age)			Number		Proportion	
			Entered	Exited	Survival Function	Hazard Function
	~	12	382	10	.9738	.0262
12	~	13	372	13	.9398	.0349
13	~	14	359	38	.8403	.1058
14	~	15	321	57	.6911	.1776
15	**~**	**16**	**264**	**79**	**.4843**	**.2992**
16	~	17	185	52	.3455	.2811
17	~	18	132	12	.3141	.0909
18	~	19	120	17	.2696	.1417
19	~	20	103	11	.2408	.1068
20	~	21	92	7	.2225	.0761
21	~	22	85	4	.2120	.0471
22	~	23	81	0	.2120	.0000
23	~	24	81	2	.2068	.0247
24	~	25	79	1	.2042	.0127
25	~	26	78	1	.2016	.0128
26	~	27	77	0	.2016	.0000
27	~	28	77	0	.2016	.0000

Table 22. Results from Cumulative Proportional Rate – Experimental Group (N=400)

Interval (Age)			Number		Proportion	
			Entered	Exited	Survival Function	Hazard Function
	~	12	400	10	.9750	.0250
12	~	13	390	24	.9150	.0872
13	~	14	366	43	.8075	.1175
14	~	15	323	58	.6625	.1796
15	**~**	**16**	**265**	**66**	**.4975**	**.2491**
16	~	17	199	49	.3750	.2462
17	~	18	150	23	.3175	.1533
18	~	19	127	8	.2975	.0630
19	~	20	119	16	.2575	.1345
20	~	21	103	5	.2450	.0485
21	~	22	98	4	.2350	.0408
22	~	23	94	5	.2225	.0532
23	~	24	89	2	.2175	.0225
24	~	25	87	2	.2125	.0230
25	~	26	85	1	.2100	.0118
26	~	27	84	0	.2100	.0000
27	~	28	84	0	.2100	.0000

Wilcoxon = .103 (df = 1), p = .749

Figure 27. Life Table by Age (Survival Function)



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