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## Delinquent Recidivism and Diversion from Formal Juvenile Court Proceedings: A Cognitize Restructuring Approach

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DELINQUENT RECIDIVISM AND DIVERSION FROM FORMAL JUVENILE  
COURT PROCEEDINGS: A COGNITIVE RESTRUCTURING APPROACH

By

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Bachelor of Science, University of North Dakota, 1998

A Thesis Submitted

To the Graduate Faculty

Of the

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In Partial Fulfillment of the Requirements

For the Degree of

Master of Arts

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This thesis, submitted by Robert James Amos Jr. in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work is done and hereby approved.

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This thesis meets the standards for appearance, conforms to the style and format requirements for the Graduate School of the University of North Dakota, and hereby approved.

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December 11, 2003  
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Title            Delinquent Recidivism and Diversion from Formal Juvenile Court  
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## ABSTRACT

This thesis takes a deductive approach by formulating and testing hypotheses, derived via theoretical proposition. A history of juvenile delinquency, delinquency intervention and development of the juvenile court is also presented and discussed. Social control theory is the main perspective in this study. Social learning theory is also a relevant perspective in this thesis.

Literature in this thesis indicates delinquent intervention has failed to reduce recidivism throughout history. A more effective form of intervention needs to be implemented and examined pertaining to the influence of juvenile delinquency recidivism reduction. Cognitive restructuring is a popular form of intervention today, which is assumed to help reduce recidivism.

Specifically, Keys to Innervision's cognitive restructuring program participants are examined in this thesis. Keys to Innervisions delinquents are compared to a similarly situated group of delinquent youth from the juvenile court in Grand Forks, ND. Keys to Innervisions focus on four factors the literature in this thesis claim to influence delinquency. The factors include self-concept issues, anger management skills, drug and alcohol awareness and goal orientation. As we will see in the literature, evidence fruitfully exists supporting Keys to Innervisions assumption pertaining to these factors influencing delinquency. One unique distinction between Keys to Innervision participants and non-participants is that Keys to Innervisions receive education in all four



factors; non-participants usually receive none or one or two at the most. Funds and shortage of staff seem to influence participation.

Pre-existing records of delinquency cases from the North East Judicial Juvenile Court in Grand Forks serve as the primary data source for this study's retrospective document review. The time frame under analysis is from 1998 thru 2001. Both groups received probation by 1998. Keys participants entered the cognitive restructuring program at one of four possible times depending when each youth was assigned to Keys by the juvenile court. Recidivism rates, in terms of juvenile court reappearance for offenses other than technical probation violation during this time frame are measured and are the basis for comparison of means between two groups. It is hypothesized there is difference of recidivism rates between an experimental and control group.

Overall, this study, by testing four hypotheses by way of tests of significance, statistical significance was determined in three of four tests. Significance is observable for Keys youth who entered Keys to Innervisions at times one, three, and four, not do to chance alone (observable in chapter III). Keys to Innervision juveniles had substantially lower recidivism and reappearance rates than non-Keys youth in three of four comparisons. Youth who entered at time two into Keys displayed no statistical significance of group differences.

Other findings include significant differences in relation to gender of the juveniles, and parental marital status of juvenile's parents. First of all, male juveniles outnumbered female juveniles overall in the study. Secondly, juveniles living with both had higher court appearance rates than juveniles living with single parents in G.F., ND

## CHAPTER I

### INTRODUCTION

#### Juvenile Delinquency and the Young Juvenile Court

The American concept of delinquency became a matter of social concern during the colonial years. During the early years, members of society were unsure how to treat the juvenile delinquent. Members of society were often disturbed by methods officials used for coping with juvenile delinquency often using methods for treating adults. One group, the Society for the Prevention of Juvenile Delinquency (SPJD) was pleading for the separation of juvenile and adult offenders (Empy, 1967). Early years of the development of delinquency states and delinquent coping methods influenced the development of the concept of delinquency (Regolli and Hewitt, 2000).

Juvenile delinquency as a separate class of states became recognized at the end of the 1800's. Prior to the development of delinquency states, youthful offenders would have been criminally charged, although youth below the age of seven were presumed to be incapable of criminal intent and were therefore exempt from prosecution and punishment (Snyder and Sickmund, 1999). Children as young as 7, however, could stand trial in criminal adult court for offenses committed and, if found guilty, could be sentenced to prison or even death (Snyder and Sickmund, 1999).

Soon after the arrival of issues raised by the SPJD, facilities exclusively for juveniles were established in most major cities, like the houses of refuge; by mid 19<sup>th</sup>



century these privately operated facilities were under criticism for various abuses, and thus, many states then took on their own responsibility for operating their juvenile facilities (Snyder and Sickmund, 1999). The concept of delinquency was in the hands of each State.

Prior to the initiation of the concept "juvenile delinquent", youth were handled either by the adult criminal justice system or through more informal means. An example of one of those means was intervention by the houses of refuge (Krisberg & Austin, 1978). Houses of refuge was a project designed as a result of the Adolescent Diversion Project (ADP). The ADP was modeled after poor houses used in the early colonial times as a form of juvenile delinquent intervention; ADP houses were not created for reform or humane care, but rather were designed to remove troubled youth from bad environments (Krisberg & Austin, 1978). Members of the SPJD believed juveniles were still being treated un-humanely during the 19<sup>th</sup> century in the houses of refuge; children were still receiving harsh punishment similar to adults (Empy, 1967).

According to Davidson II, et al. (1990) houses of refuge were designed to house not merely juvenile criminals, but all problem children including the runaway, disobedient, or vagrant children who were in danger of falling prey to loose women, taverns, gambling halls, or theatres (Snyder and Syckmund, 1999). Given what they considered to be interrelated goals, officials were not bothered by any thought that they might be violating the rights or wishes of these children, because children had no rights. Many supposed that a good dose of institutionalization could only work to the child's benefit (Davidson II, et. al., 1990).

Prior to the introduction of modern state facilities, (commonly known today as intervention programs) and the development of juvenile laws separate from adult laws, methods for addressing delinquent children varied. The most common method during the early parts of the 19<sup>th</sup> century was punishing the child (Empy, 1967). Delinquent children faced consequences designed by the people of the community as the people saw fit. The most common punishments were the fine and whip, but wide use was made of such mechanisms of shame as stocks, pillory, and sporadic branding (Snyder and Sickmund, 1999). Both the stocks and the pillory were located in public places for the public to witness punishments as a deterrent. Often the children would have body parts nailed to the stock, such as the hand or ear as men, women, and children of the colony observed (Empy, 1967).

This inconsiderate and thoughtless form of sentencing, by today's standards was the norm during these times. The punishments were often played out by intoxicated adults in the community through speculation, without proper or official investigation and judgment (Snyder and Syckmund, 1999). As a result, members of society and SPJD were demanding more humane means for managing young delinquent children.

With early methods of intervention failing, concern continued to surface from local community members. One unsatisfied group was the Chicago Women's Club who moved to open a court for juveniles separate from the adult court in 1885 (Empy, 1967). The juvenile court was established shortly thereafter, in 1899. The juvenile court, from its origin in the state of Illinois in 1899, became the model across America to deal with the delinquent juvenile; the juvenile justice system was designed and expected to act both



as a concerned parent, and to serve as a corrective function (Mennel, & Shultz, 1973). The corrective function included intervention.

The intervention strategy based on the British doctrine of “*parens patriae*” (the state as a parent) was the rationale for the right of the State to intervene in the lives of children in a manner different from the way it intervenes into the lives of adults (Regoli, and Hewitt, 2000). This doctrine was interpreted to mean that because children were not of full legal capacity, the State had the internal power and responsibility to provide protection when children’s natural parents were not providing appropriate care or supervision (Regoli, and Hewitt, 2000). A key element of this philosophy was the focus on the welfare of the child. The delinquent child was seen as in need of the court’s helpful intervention (Regoli, and Hewitt, 2000). From there, the concern of the juvenile court was to find the most effective intervention strategies to reducing recidivism.

By the mid-1900’s groups such as the SPJD again came to question the ability of the juvenile court to succeed in rehabilitating delinquent youth (Snyder and Sickmund, 1999). The intervention techniques available to juvenile justice professionals never reached the desired levels of effectiveness. Although the goal of rehabilitation through individualized justice (the basic philosophy of the juvenile justice system) was not in question, professionals were concerned about the growing number of juveniles institutionalized indefinitely in the name of intervention treatment (Snyder & Sickmund, 1999).

As juvenile courts began to appear across the country in the early 1900’s, each state was free to develop its new juvenile courts in its own unique style. Thus, the early juvenile courts evolved in idiosyncratic ways (Snyder and Sickmund, 1999). States

might have asked only that juvenile court judges follow their conscience when assigning court dispositions, much like the early colonial discretion. Since the purpose of the juvenile court system was to help young offenders rather than establish their guilt, juvenile courts typically were not considered trial courts and thus there were fewer restrictions on their procedures. Juvenile court judges were free to impose whatever form of intervention they thought was appropriate for juvenile delinquents.

Use of judicial discretion was perhaps the best and the worst feature of the young juvenile court. For many judges the quasi-civil juvenile court provided the freedom to intervene with troubled youth, even those only at risk of future criminality (Snyder and Sickmund, 1999). For a few judges, however, the informal process was an invitation to impose their private view of morality and decency on young, and sometimes relatively innocent youth (Snyder and Sickmund, 1999). Intervention was now becoming a common practice at the juvenile court. From 1899 to the present time, modifications have been applied to the juvenile justice system, particularly with juvenile case assessment and intervention strategies. Very slowly, the 1930's and 1940's saw real development (Snyder and Sickmund, 1999). As a treatment court, with low visibility, the courts tried various treatment modalities. During the late 1960's, Martinson proclaimed nothing thus far works (Martinson, 1974).

#### The Modern Juvenile Court

Sociologists and the sociological perspective are concerned with the effectiveness of delinquency intervention programs and future improvement plans. Moderately, delinquency intervention has seen slight changes from colonial days to modern with the methods for treating juvenile offenders (Regoli and Hewitt, 2000). One change



mentioned by Snyder and Sickmund, (1999) involved states attempting to strike a balance in their juvenile justice systems among system and offender accountability, offender competency development, and community protection. This form of intervention includes having juveniles repair the harm done to victims and communities and accept responsibility for their delinquent actions. Most states today hold juveniles accountable for delinquent behavior, provide effective intervention, protect the public from delinquent activity, balance attention to offenders, victims, and community, and impose punishment consistent with the seriousness of the delinquent act (Snyder & Sickmund, 1999).

A major change involves assigning probation and dispositions by the juvenile court designed to influence future delinquency. The dispositions are aimed to influence delinquency by means of monitoring and treating delinquent behavior (Kuhn and Antonelli, 1990). Dispositions such as probation and conditions of probation, such as cognitive restructuring are examples of these intervention strategies.

The juvenile court today functions somewhat like an automobile shop. In the case when you have a mechanical problem with your vehicle, a service technician will assess the problem and recommend a suitable type of remedy. In this sense, the juvenile court assesses each juvenile as he or she finds his or her way into the juvenile court process. The court is presumed to carefully review each case and then make a recommendation as the court sees fit.

Today the juvenile court intervenes into the lives of each juvenile with trial periods, such as probation, and conditions of probation, which are designed to reduce recidivism. With knowledge of earlier forms of intervention seen today as being unsuccessful, youth are assigned conditions such as cognitive restructuring that are

designed and supposedly address delinquent behavior in a more effective manner. The conditions include programs dealing with issues relating to delinquency factors. The delinquency factors include anger management, drug and alcohol use, self-concept principals, and goal orientation. Particularly, "cognitive restructuring" is thought to be effective in the aforementioned area of addressing juvenile delinquency today (Kuhn and Antonelli, 1990).

This thesis examines the effectiveness of treating delinquent youth through cognitive restructuring intervention programming. The juvenile justice system at the Northeast Judicial District Court in Grand Forks, ND provided data pertaining to juveniles who had official contact with the juvenile court. When youth are assigned probation, they are given conditions of probation as well. Cognitive restructuring conditions will be examined. In Grand Forks this approach is undertaken by Keys to Innervisions, a cognitive restructuring program that specializes in addressing the potential delinquent factors listed above.

### Summary

In this Chapter I have introduced the concept of juvenile delinquency, a brief history of the juvenile court, and presented an introduction to intervention programs and cognitive restructuring. In chapter II, studies are reviewed such as the Adolescent Diversion Project, (ADP) which were concerned with delinquency intervention and recidivism reduction. These projects were interested in theoretical aspects of causes of delinquency.

Specifically, I will be addressing cognitive restructuring and the way in which it attempts to address juvenile delinquency through the Keys to Innervisions Program, its

purpose, and issues with self-concept principals, anger management, drug and alcohol use, and goal orientation. Chapters III and IV address the methodology, analysis, and results of this study. Finally, recommendations that are a result of the Keys to Innervisions examination are discussed in Chapter V.



## CHAPTER II

### REVIEW OF LITERATURE/THEORY

Many factors frequently cited as causes of delinquency are perhaps more fruitfully interpreted as concomitants of delinquency; they are not causes in the sense that if they were removed, delinquency would be eliminated (Hirschi and Selvin, 1967). According to Hirschi and Selvin (1967) among these concomitants are broken homes, poverty, poor housing, and single parents. Though these conditions are often present in delinquency cases, according to Hirschi and Selvin they are not direct factors, causal in themselves (1967).

Cognitive social psychologists, such as Hirschi and Selvin, (1967) suggest a maladaptive cognition that affects the self-concept, goal orientation, anger management, or that influences the use of drug and alcohol usage maybe a direct factor associated with juvenile delinquency. Hirschi and Selvin (1967) stress these variables are influential to delinquency no matter the social economic status. Thus, if these issues are dealt with in an appropriate manner, delinquent behavior should be influenced (Kuhn and Antonelli, 1990).

Research regarding single parent families and delinquency is of high interest involving Sociologists and Psychologists as well. A family structure lacking either the father or the mother is thought to have an influence on juvenile delinquency. Regoli and Hewitt contend: "much research exists reporting that children from single parent families

are more likely to become delinquent than children from two-parent families" (Regoli and Hewitt, 2000, p.180).

Sociologists such as Regoli and Hewitt (2000) imply that variables pertaining to broken homes and single parents may also be direct factors with delinquency. "The term broken home refers to the family structure broken by divorce, separation or death of a spouse" (Regoli and Hewitt, 2000, p.180). The result of a broken home leaves a household led by a single parent. The family and home are briefly examined in the later portion of this thesis.

Various theories also address and explain delinquency. The most popular and widely cited are the control theories of delinquency. Hirschi traces control theory as far back as Durkheim in the nineteenth century, thus the core idea behind control theory has a rather long history (Hirschi, 1969). Empey and Stafford (1991) characterize nineteenth-century and early twentieth century theories of delinquency as "control theories", especially psychoanalytic explanations. Most often control theories of delinquency are equated with self-concept research and social control mechanisms, such as family, peer and school experiences.

Containment theory, an aspect of control theory, stresses a positive self-concept as an important insulator against pressures toward delinquency (Shoemaker, 1984). Therefore control theories may be historically placed in the 1950's and early 1960's with the development of containment theory of self-concept explanation of delinquency (Shoemaker, 1984). In the late 1960's, Travis Hirschi broadened containment theory leading to the social or psychosocial perspective, which became an important part of control theory (Hirschi, 1969).



The idea that juveniles will commit delinquency because some controlling force is absent has been generally supported (Hirschi, 1969). Control theories assume a basic point, "human beings, young or old, must be held in check, or somehow controlled, if delinquent tendencies are to be repressed" (Shoemaker, 1984, p. 260). Thus, control theories of delinquency assume that juveniles will participate in delinquent activities in the absence of "barriers" to those factors that make delinquency attractive. In particular, a lack of barriers are influenced by low levels of self-esteem, participation in drug and alcohol use, lack of anger management skills, and failure to set goals. (Kuhn and Antonelli, 1990). Some modern programs are concerned with intervention in these areas and recidivism reduction, such as the ADP.

Studies involving the Adolescent Diversion Project are still in practice in American society. Today, they are concerned with how intervention influences recidivism. That is, once youth become involved with the juvenile justice system, how likely are they to recidivate after receiving some form of intervention? Intervention used by the ADP was designed to answer various questions. I will address two specific questions.

One modality was whether further delinquency could be reduced by removing youth from the juvenile justice system with appropriate intervention (Davidson et al. 1990). According to labeling theory, one would expect involvement in the juvenile justice system to contribute to the labeling of the youth as delinquent (Goldberg, 1971; Schur, 1971). That is, the longer youth remain involved in the juvenile justice system, the more likely both youth, significant others and peers would think of them as delinquent (Akers, 1997). "Expectations shared by the youth and significant others of



how delinquents behave would subsequently lead to increased delinquent behavior on the part youth” (Hackler, 1970 p. 11). Youth identified as “delinquent” might be more likely to get caught engaging in illegal activities, to have contact with the police or courts, officially recorded, and to be sent to juvenile court. Regardless of how labeling works to stigmatize, removing youth from the juvenile justice system with appropriate intervention should stop the labeling process and reduce delinquency (Davidson et. al., 1990).

Another modality addressed by the ADP was whether removing youth from the juvenile justice system was sufficient or whether additional action was required in order to prevent further delinquency (Davidson et al., 1990). If recidivism is a product of the effects of justice system labeling, youth diverted from the system should recidivate less often depending upon the specific intervention, or nonintervention they receive (Davidson II, et al., 1990). Therefore social control (Akers, et al. 1979) theory state a proposition; interventions strategies as well as specific intervention techniques used should have positive effects on reducing recidivism rates.

Social control theory (Hirschi, 1969) contends that delinquent youth need to become consciously aware they lack attachment, commitment, involvement, and beliefs consistent with conventional societal norms. Control theory postulates that youth receiving interventions designed to affect “bonding” or “learned history” would be less likely to recidivate than youth simply diverted from further court processing without any specific intervention by building barriers against delinquent behavior. (Regoli and Hewitt, 2000).

According to Hirschi’s social control theory (1969) the strength of the youth’s “bond to society” determines the likelihood that the youth will engage in delinquent

behavior, which is important to building barriers against delinquent behavior. This bond consists of attachment to others, commitment to conventional goals, involvement with conventional activities, and beliefs consistent with conventional values (Hirschi, 1969). Control theory holds that delinquency will occur with a lack of such a bond/barrier. Cognitive restructuring intervention helps by altering the bond to society, which is thought to influence the barrier elements, thus reducing recidivism (Kuhn and Antonalli, 1990).

One way of affecting these elements of the youth's social bond would be to improve the quality of the youth's thinking, decision making, and goal orientation (Kuhn & Antonelli, 1990). Another would be to improve the quality of the youth's involvement with family members, school, and non-delinquent peers (Regoli and Hewitt, 2000). Intervention, paired with cognitive restructuring that focuses on and effects these domains, would be expected to be more effective in reducing recidivism than diversion from the juvenile justice system without interventions in these areas (Davidson II, et al., 1990).

Social learning theory also contends that intervention should influence recidivism. To the degree that intervention teaches youth that conformity to social standards of behavior is rewarded, recidivism should be reduced (Akers, 1997). Davidson, et al. (1990) contend that following the youth's socially acceptable behaviors, influenced by barriers against delinquency, with reinforcement obtained from non-delinquent peers and family members would be expected to reduce later recidivism. They mentioned, therefore reinforcement obtained in response to non-delinquent behavior together with the effects of non-delinquent role models, would strengthen the barrier between positive



behavior and reward and would weaken the association between negative behavior and reward. Thus social learning and control theories both would indicate the specific nature of intervention should have some impact on recidivism beyond the effects of diversion itself (Davidson II, et al. 1990).

Aside from the theoretical issues of what specifically effects recidivism, there are also pragmatic reasons to be concerned with the question of the efficiency of specific interventions and whether these interventions are successful with influencing learned delinquent behavior; a way to test the question, does intervention influence recidivism, must be constructed.

#### Cognitive Restructuring

Cognitive restructuring programs address delinquency issues that concern questions raised by the ADP. Cognitive restructuring counselors believe the conscious mind, which makes up one's cognition, influences bond to society barriers, which in turn, influences a youth's socially acceptable decision-making (Kuhn and Antonelli, 1990). In the view of cognitive restructuring, a maladaptive cognition is a factor that will influence decision-making by youth experiencing such cognition. The maladaptive cognition will impact bond factors or barriers identified in this study that are thought to influence delinquency (Kuhn and Antonelli, 1990). The factors again include the self-concept, drug and alcohol experimentation, anger management, the youth's future and goal orientation (Kuhn & Antonelli, 1990).

Further, youth need to be trained to identify cognitive patterns that may be operating to arouse delinquent tendencies through learning. Throughout a learning process youth must pay attention to what Wells (1994) mentioned as "cognitive

obstacles” to more assertive non-delinquent behavior. Once youth are capable of overcoming these obstacles, delinquent activities should be less appetizing (Wells, 1994), thus positively influencing “bond to society”. Cognitive restructuring is thought to be helpful in this area (Kuhn and Antonelli, 1990).

Cognitive restructuring is based on theoretical perspectives that focus on understanding human perception, thought and behavior as well. According to Brunning, Schraw and Ronning (1999) cognitive restructuring, from a psychological perspective portrays learners as active processors of information. The process is a metaphor borrowed from the computer world that characterizes societal bonds to knowledge and behavior that delinquent youth learn through cognitive restructuring (Brunning Achaw and Ronning, (1999). Knowledge of behavior and socially acceptable bonds to society by delinquents, in the view of cognitive restructuring, determines the level of understanding they ultimately achieve pertaining to non-delinquent behavior with bonds to society (Brunning, Schraw & Ronning, 1999).

Social learning theory, as characterized by Bandura (1977) emphasizes the influence of what he calls the central mediating process (CMP) as a factor with societal bonds against delinquent behavior. Bandera claims that the CMP is a cognitive process through which juveniles organize, codify, and symbolically store their learning experiences. Over time, these symbolic experiences become stabilized as attitudes, beliefs, and values and consequently play a critical role in governing behavior (Well, 1994). These symbolic experiences will impact “bond to society”, influencing decision-making and delinquent barriers.



The notion that cognition, or in other words our thoughts, beliefs, attitudes, and values can affect youth's behavioral bond and actions is scarcely new (Kuhn and Antonelli, 1990). Wells (1994) mentioned that both common knowledge and a variety of psychological theories have stressed this relationship. The development of a number of cognitive restructuring programs over the past decade has materially altered this picture.

#### An Overview of Keys to Innervisions

Keys to Innervisions (Keys) is a modern intervention program designed to use cognitive restructuring to influence cognitive thinking and decision making with troubled youth. As was the intention with the ADP, Keys intends to influence learned delinquent history and attempts to accomplish cognitive modification and divert youth involvement with the juvenile justice system. One way in which Keys to Innervisions proceeds in this manner is by helping youth to become more responsible for their own actions and help youth develop barriers against delinquent behavior (Kuhn and Antonelli, 1990).

The basic objective of Keys is to intervene in the lives of youth that are experiencing failure in school, the family setting, the community, and who find their way into the juvenile justice system. Keys' intentions are to decrease or replace risk factors and increase protective factors that may influence delinquency (Kuhn & Antonelli, 1990).

Keys consists of an effective core team of professionals, from various disciplines, who model and regularly use cognitive restructuring intervention as a possibility to provide juveniles with practice and support in thinking skills that result in a change of behavior (Kuhn & Antonelli, 1990). Keys to Innervisions is a cognitive restructuring program designed by Ronald Kuhn and Phyllis R. Antonelli. Keys to Innervisions instructors are educated in disciplines including psychology, sociology, criminal justice

and social work. Each of the Keys to Innervisions instructors are trained to use the same methods of cognitive restructuring designed by Kuhn and Antonelli.

Keys to Innervisions targets delinquent youth who are assigned to Keys by the juvenile court. Delinquent youth are assigned Keys as a condition of probation at the juvenile court. Delinquent youth assigned Keys by the juvenile court, as well as those not assigned to Keys are addressed in this thesis.

Keys is seen by the juvenile court as “the most current thinking, information, and research in the fields of cognitive restructuring, chemical dependency, self-concept principals, goal achievement process and family issues; the result is a most powerful change program” (Kuhn and Antonelli, 1990, p.1). The “Keys philosophy evolves around an educational curriculum about change, specifically influencing barriers, bonds, beliefs and behaviors that lead to violence, drug abuse/ dependency, school failure, and criminal behavior” (Kuhn and Antonelli, 1990, p.2).

When youth have an understanding of the self, their behavior, and take responsibility for their actions, delinquent behavior is less likely to come into play. Through cognitive restructuring, Keys to Innervisions instructors seek to help each youth “empower him or herself. Empowerment comes about by building a solid barrier upon which to make choices and increase the possibilities to avoid participation in criminal or delinquent activities” (Kuhn & Antonelli, 1990, p2).

A problem in working with troubled youth and most youth alike is getting them to listen, participate, and learn. Keys instructors use methods of positive reinforcement as a tool for rewarding appropriate behavior and participation by the youth. Social learning theory (Akers, 1997) contends that “as positive reinforcement increases, the probability



of an act is being committed or repeated is increased by rewarding outcomes or reactions to it, such as obtaining food or pleasant feelings” (Akers, 1997, p.66). Once the youth participate in the learning curriculum, Keys instructors proceed to influence learned delinquent history with a cognitive restructuring approach.

Throughout the rest of this chapter, a more detailed discussion of the four factors that influence delinquency that are analyzed in this study will be presented. These factors include self-concept, drug and alcohol use, anger management, and goal orientation. Keys to Innervisions influences behavior and decision-making by presenting knowledge to youth to help them develop an understanding of each factor. The discussion will involve familiarization with each factor, theoretical ideas, and Key’s perception pertaining to why these factors influence delinquency and societal bonds.

#### Self Concept

A negative self-concept influences delinquent behavior, assessment and intervention has been said to be effective (Kuhn and Antonelli, 1990). When attempting to improve a juveniles' self-concept, in general, cognitive restructuring intervention programs are extremely helpful in treating neurotic or learned problems that are caused or worsened by the lack of delinquent barriers to behavior (McMullin, 1954). For example, a youth who not has successfully learned to manager their anger, the individual may result to violence in a confrontation with another youth. The youth who can control their behavior has a barrier against violence, thus highly less likely to result to violence.

The general concept associated with Keys to Innervisions and virtually all cognitive restructuring programs is that behavior is learned, as characterized by Bandura (1977) and Wells (1994) earlier in the chapter. The learned behavior influences the self-

concept thereby responsible for actions carried out by individuals. If the learned behavior is negative, as defined by the social norm, the actions may also be negative. The learned history must be understood and altered in order to influence delinquency.

“Social Learning Theory”, (SLT) as explained by Akers (1979), contends that behavior is learned from association with significant others. As well, the idea that people will participate in delinquent activity depends on the consequences of an act. Followers of the SLT have supported this idea for some time. However, a juvenile with a maladaptive cognition may be less capable of rational thought. Under those circumstances, the learned history, dwelling in the sub-conscious and defining the self-concept, may influence societal bonds thereby controlling thought and actions. In this case, the juvenile must learn new ways of dealing with potential delinquent situations (Kuhn and Antonelli, 1990). Cognitive restructuring specializes in learning and dealing with socially unacceptable behavior with youth experiencing such behavior (Kuhn and Antoneli, 1990).

Weiner, (1975), acknowledges the existence of a cognitive unconscious, contending that almost all the structural operations characterizing what a person can do, exist and individuals are not necessarily aware of the functions of the conscious. In general, when a person solves a problem, he is aware of the goal as well as whether he or she succeeds or fails, and to what degree, but it is difficult for her to become aware of the mechanisms of her thought (Weiner, 1975). Binet also believes thinking is an unconscious act of the mind. According to Binet the unconscious-sub-conscious mind makes up the self, which in turn, defines ones self-concept (Binet, and Simon 1903).



The term "self-concept" has many definitions, sometimes conflicting. We shall look at the self-concept as an individual attitude towards one's self and behavior (Johnson & Medinnus, 1969). Cooley, (1902) inspired by the work of sociologists such as Durkheim and Tonnies, originated the notion of the looking glass self. Cooley claimed that what a person views him or herself as was a reflection on how others perceive them. Awareness of the physical self and its separation from the non-self comes about, in part, from internal changes in cognition (Schilder, 1935). The self-concept also comes from observing the effects of one's behavior on the external world (Piaget, 1954).

Cognitive restructuring plays a vital role in adjustment (Rogers, 1951). To the juvenile that has developed a negative self-image, positive adjustment is not possible until the individual has accepted him or herself. In general, moreover, those individuals that are self-accepting seem to be accepting of others (Wylie, 1961). "A juvenile with a positive self-concept need not develop neurotic defenses or take out hostility on others" (Johnson & Medinnus, 1969: 565).

The "self-concept is the sum of your self-images (pictures of yourself) and self-esteem (feelings about yourself)" (Kuhn and Antonelli, 1990, p10). Keys philosophy is that the subconscious mind has an influence on the self-concept. In other words, the subconscious mind is the "dominant belief system" that makes one act like himself, whether or not it is good for him (Kuhn and Antonelli, 1990). Therefore, the subconscious, as explained by Keys, represents a huge barrier to change. If one's stored beliefs about his abilities are negative, "it is hard to change those beliefs, because your sub-conscious keeps making you act them out" (Kuhn and Antonelli, 1990 p.10).

When explaining a “negative self-concept”, labeling theory does so with its focus on the informal and formal application of stigmatizing deviant labels or tags by society on some of its members (Regoli and Hewitt, 2000). This theory treats such labels as both the dependent variable (effect) and the independent variable (cause). The theory views labels as the dependent variable when it attempts to explain why certain behavior is socially defined as wrong and certain persons are selected for stigmatization and criminalization. Labeling theory views labels as the independent variable when it hypothesizes that discredited labels cause continuation of the delinquent behavior. As mentioned below:

Social groups create deviance by making the rules whose infraction constitutes deviance, and by applying those rules to particular people and labeling them outsiders. From this point of view, deviance is not a quality of the act the person commits, but rather a consequence of the application by others of rules and sanctions to an “offender.” The deviant is one to whom the label has successfully been applied; delinquent behavior is behavior that people so label (Becker, 1963:9; Akers, 1997:99).

#### Anger Management

Anger is an emotional state that varies in intensity from mild irritation to intense fury and rage (Spielberger, 1966). People use a variety of both conscious and unconscious processes to deal with their angry feelings (Kuhn and Antonelli, 1990). Anger can be suppressed, and then converted or redirected with cognitive restructuring. According to Keys, this happens when one holds in his/her anger, stops thinking about it, and focuses on something positive (Kuhn and Antonelli, 1990).

Anger is a common factor associated with delinquency. Often, youth respond to a stressful situation with acts of frustration and impulsivity. Anger and delinquency are considered to be related to a form of angry/anti-social behavior that includes



impulsiveness (Rutter, Giller, and Hagell, 1998). Impulsive anger reaction has an impact on decision-making, in turn influencing behavior. The display of behavior is often violent, leading to assault, expulsion, and in some cases murder (US Department of Justice, 1996). Anger and delinquency are also considered to be related to a manifestation of behavior abnormality (Wolfgang, Savitz and Johnston, 1962). As mentioned by White et al. (1994), behavior impulsivity, in other words doing things without planning or thinking, was a strong predictor of delinquency.

Keys considers anger to be a "healthy emotion, that it is ok to feel angry, but it is not ok to harm yourself or others when you are angry" (Kuhn and Antonelli, 1990 p.20). With cognitive restructuring, Keys to Innervisions helps youth learn to manage their anger. The goal of anger management is to reduce both the emotional feelings and the psychological arousal that anger causes. You can't get rid of, or avoid things or people that enrage you, but you can learn to control your actions; anger management is important since youth experiencing the inability to control anger are more likely to engage in delinquent behavior (Kuhn and Antonelli, 1990).

Control theory (as mentioned earlier) assumes that human beings must be held in check, or some how controlled, if delinquent behavior is to be repressed (Shoemaker, 1984). As mentioned by Hirschi (1969), the social bond "belief" in your-self and others will influence behavior. Youth that believe in themselves and others may control their anger thus may be less likely to become involved in delinquent behavior.

In the case of anger management, Keys to Innervisions uses steps to present knowledge to each youth about anger. These steps include "identifying what, where, and how you are feeling, owning your internal point of control; disarming your reactor

button; and programming yourself for smart responses. And in the learned phrase of "self-talk," youth will be in control of their anger by stopping, thinking and finding new ways to react in a stressful situation" (Kuhn and Antonelli, 1990, p. 20.).

### Drugs and Alcohol

Drugs and alcohol are also factors that can influence decision-making by breaking societal bonds. For juveniles to be associating with alcohol, use of street drugs or prescription drugs without the direction of a physician is illegal. Additionally, youth that are under the influence are also at greater risk of being involved in other forms of delinquent activity (US Department of Justice, 1996).

After juveniles start experiencing social, family, and school failures that accompany usage, drugs and alcohol become an excuse to cope with their problems. It becomes easier to use drugs and alcohol than to develop good problem-solving and anger management skills. When juveniles choose to participate in the use of drugs or alcohol, the risks for delinquency increase dramatically (Kuhn and Antonelli, 1990). Youth start using drugs and alcohol to relieve stress, or as a maladaptive social process, and they continue use to avoid withdrawal symptoms; drugs bring short-term pleasure and long-term loss (Munsinger, 1972).

"Studies indicate that about half the variance in alcohol and illicit drug use derives from an underlying general deviance liability that includes delinquency" (Osgood, 1980 p. 20). One key issue is whether the use of drugs and alcohol plays a role in the perpetuation of delinquency. According to Rutter, Gillcr and Hagell (1998), delinquent participation in the use of drugs and alcohol did make the continuation in crime more likely, and did predispose the delinquent to broader patterns of social difficulties, because



alcohol negatively influences decision making (Munsinger, 1972). The earlier a youth starts using drugs and alcohol, the more likely he/she is to develop problems associated with such use (US Department of Justice, 1996).

Various explanations of juvenile drug and alcohol use exist in our society. One aspect of social control theory contends that it is the "social bond" that is a factor involved with delinquency. According to Hirschi (1969) the argument posits that the major impediments to juvenile misbehavior rest with "attachments" and "commitments" to basic institutions of socialization in society, and therefore the theory encompasses the relationship between delinquency and family, school, religious, and peer variables. Research into these factors has consistently indicated relatively strong connections with delinquent behavior (Shoemaker, 1984). Drugs and underage alcohol consumption violate social norms. Violation of this bond is a delinquent act that will end up in a visit to the juvenile court. Thus, a juvenile with bonds to these institutions and norms would be less likely to be caught engaging in drugging activities.

Social control theory contends that participation in alcohol use is a consequence of not delaying gratification. As Hirschi (1969) mentions, this derives from the lack a social bond: lack of attachment, commitment, involvement and belief. The aspect of "belief" symbolizes that one must believe in one's self and in the cultural belief. A juvenile that can realize alcohol use will only interfere with his or her life at an early age may decide to delay the gratification derived from not drinking alcohol. Thus delinquent tendencies may be influenced.

Once juveniles believe in themselves in a socially acceptable positive manner, a positive change is possible. Keys to Innervations acknowledges that often people try to



change, by only changing their "behavior habits". "This can lead to failure, because we are much bigger than our behaviors" (Kuhn and Antonelli, 1990, p.25). The most basic barriers to successful change are one's "belief systems". The "belief system is the relationship of one's habits, attitudes, beliefs and comfort zones" (Kuhn and Antonelli, 1990 p.23).

### Goal Orientation

"Goal-setting is the process of setting yourself up to get to where it is you want to be" (Kuhn and Antenelli, 1990, p.91). You seek to improve and change in many areas in your life. Therefore, there are many different types of goals. An organizational problem faced by many youth is goal displacement, which occurs when participants lose sight of their future and become more concerned with living in the present (Ash, 1972). Goal displacement presents reoccurring problems for many youth, and is harmful to the achievement of any goal (Schwartz, Rosenthal, & Schwartz, 1981). Going back to Hirschi's social control theory, the strength of the youths "bond to society" determines the likelihood that youth will participate in delinquent activities. In the case of goal orientation, it is the lack of commitment to conventional goals consistent with conventional values. Youth with the inability to set acceptable goals will more than likely participate in delinquent activity (Kuhn and Antonelli, 1990).

Keys to Innervisions maintains that there are many different types of goals that youth encounter. Most of these goals fall into four basic categories:

1. Problems or challenges to solve: peer pressure, communication with parents, drug and alcohol use, and staying out of trouble.
2. Things you want to have or own: a stereo, a car, better grades, a job, good health, friends who help you stay straight.

3. "Internal" or personality changes: being outgoing, courage to change, being calm instead of nervous or angry, expressing you emotions safely.
4. Something you want to do: stop your negative "self-talk", get off of probation, and finish school (Kuhn and Antonelli, 1990:91).

Youth with awareness of these goals and techniques to achieve them by abiding by social norms will form a bond to society. Youth with such a bond should be less likely to participate in delinquent activity. Thus the continuation of involvement in the juvenile justice system should be less likely. In the view of cognitive restructuring, presenting knowledge to youth that provides awareness allows youth to process information with non-delinquent intentions.

#### Summary

Juveniles use a variety of information processing strategies to move new information from short-term to long-term memory. This process according to Bruning, Schraw and Ronning (1999) is known as the "encoding" process. Similarly, the process used to access information in long-term memory for use in short-term memory is known as the retrieval process (Bruning, Schraw, and Ronning, 1999). When a delinquent has successfully completed a cognitive restructuring program, acceptable ways to behave should be installed in their minds and accessible by each youth, much like software for a computer being installed onto a hard drive (Bruning, et al., 1999). If cognitive restructuring is successful, the learned delinquent history should be replaced with a barrier to socially unacceptable decision-making, with problem solving, anger management, and goal orientation influence by social bonds. A youth with such a barrier should be less likely to participate in delinquent activity, as opposed to a youth that does not possess this ability (Kuhn and Antonelli, 1990).



This chapter has provided several perspectives on causes of juvenile delinquency, intervention strategies, and cognitive restructuring processes. When the concept “juvenile delinquent” was first coined in the 1800’s, the methods used for coping with delinquency varied and were very limited. As displayed in the review of the literature, intervention and cognitive restructuring can play an important role in understanding and dealing with delinquent behavior today.

Chapter III presents the methodology for an examination of Keys to Innervisions. The presentation begins at the start of the study, which includes research, various interviews, design, data collection and analysis. The end of Chapter III will include a description of the particular analysis used in this study.



## CHAPTER III

### METHODOLOGY

Chapter III discusses this study and elements for methods and analysis embodied in this thesis. Included are the sociological instruments and tools used for the analysis. To measure the experimental and control group, tests of significance (Tukey's) are conducted after ANOVA analysis of the data. I will familiarize readers of this thesis with a theoretical proposition, the design of the study, four hypotheses tested, and explain ANOVA and Tukey's test of significance.

The purpose of this thesis is to develop evidence to examine the causal relation between an experimental and control group consisting of delinquent juveniles. The basis for the study of the causal relation derived from a theoretical proposition, as explained below. The components of this particular study is discussed and explained. Methods and procedures are also displayed later in this chapter, which lead to the testing of null and research hypotheses formed in this study. Elements of this study are broken down in terms of an independent and dependent variable to examine cause and effect relations between two groups of juvenile delinquents. The independent variable is the cause and the dependent variable is the effect (Williamson et al., 1982).

In this thesis, a theoretical proposition was developed from theories examined in chapter II. The proposition of this thesis is: cognitive restructuring intervention has an influence on delinquent recidivism rates. Cognitive restructuring intervention is viewed

as independent variable and delinquent recidivism rates as the dependent variable influencing recidivism.

Recidivism rates are measured by possible differences between an experimental and control group. A cognitive restructuring program was used as the experimental group and independent variable. The control group is a similarly situated group of delinquent juveniles.

There is an important difference between the experimental and the control group. Both groups were assigned to the same juvenile court, for similar and relevant purposes, however the control group did not participate in the cognitive restructuring program identified in this study. When determining the control group, careful consideration was taken to avoid comparing apples to oranges. In other words, the two groups are as close to being identical as possible. The latter portion of this chapter will explain four comparisons in detail. First, I would like to familiarize readers of this thesis with the steps taken by this researcher.

#### Design of Study

As was the interest of the ADP, this researcher explores the impact intervention has on delinquency recidivism, in terms of cognitive restructuring. This study measures recidivism rates of juveniles who had official contact with the juvenile court in Grand Forks, North Dakota.

The foundation for the study was developed with critical thinking, in-depth interviews, hours of research, and various observations. One of the first steps taken with the origin of this study's design was to contact officials at the Northeast Judicial District



Juvenile Court in Grand Forks, North Dakota. Once contact was established, officials agreed to set aside time from their schedules for interviewing by this researcher.

The interview process consisted of setting appointments. The appointments involved in-depth interviews with directors from various intervention programs at the juvenile court in Grand Forks. Every individual program's method differed from the others in terms of addressing delinquency. It was extremely imperative to find a program relevant to the specific interest of this thesis. This was done so by observing, recording and evaluating information from each interview with a sufficient amount of information pertaining to the structure and function of each program. As well, the intervention techniques of each program were also observed by this researcher. Based on relevant characteristics of this study (Keys restructuring youth with four factors listed in this thesis), Keys to Innervisions was seen to be the appropriate program for this study; determined by methods designed to influence delinquent barriers and societal bonds. The final decision was based on the of this researcher and thesis committee members.

One key issue was to find an appropriate way to measure cognitive restructuring and influential connections. A collaborative approach as resulted from advice from my thesis chair, committee members, juvenile court and Keys personnel. Procedures and steps are as follows.

Another step taken was to meet the standards of the University of North Dakota and the juvenile court in Grand Forks, North Dakota. The main concern brought about by officials at UND and the court was the issue of confidentiality. To ensure confidentiality of the identities of each juvenile, permission was sought and granted after



careful review from the Institution Review Board at UND, as well as at the juvenile court.

The review conducted by officials included inspection of the procedures and precautions taken by this investigator. Identities were strictly held in confidentiality. The files were reviewed in a secured government building, and file-nametags were disregarded.

#### Data Collection

Data were obtained from preexisting juvenile files from the juvenile court at the Northeast Judicial District of North Dakota pertaining to juveniles referred to the court as delinquent. All Juveniles who were referred to and appeared in front of the juvenile court in Grand Forks, ND and received Keys and/or probation during 1998 were the targeted population for the study. All juveniles filed in the juvenile court during this time frame had an equal opportunity to be involved. The time frame for data gathering includes recidivism rates from 1998 through 2000.

Sixty-five files from the Northeast Judicial District Juvenile Court is the sample and data in the study. Thirty-five are files of youth that participated in the Keys to Innervisions program, and 30 files were of youth that were referred to the court and did not participate in Keys to Innervisions. The latter functioned as the comparison group.

Systematic random sampling was used to gather the data to increase the probability that the two groups would be equivalent based on relevant characteristics, such as all having an equal chance to be chosen for the study; however, it doesn't ensure this outcome (Thompson, 1999). The random sample also helps to control for bias with

the sample as a control instrument. The sample size was influenced by previous studies of this nature, such as Thompson's (1999) study.

Keys participants received probation and participated in Keys to Innervisions in 1998. The non-participants were referred to the court and received probation by 1998. The recidivism rates are measured in terms of new offenses between 1998 and 2001. The new offenses include re-offending and appearing (recidivism) again in front of the juvenile court for offenses other than violation of probation conditions after juvenile court intervention. The offenses include unruly, violent, property, public order, and substance use (drugs and/or alcohol) offenses.

Both groups receiving probation at the first referral at the first visit to the juvenile court helps to ensure both groups are equivalent for the basis of comparison. The intervention non-participants received included anger management, or drug and alcohol awareness, but not both. Key received intervention as explained in chapter II.

The main objective is to examine the difference between Keys participants compared to non-participants in terms of recidivism, based on the number of times both groups reappeared in juvenile court. The difference between the two is that one group participated in Keys to Innervisions, and the other did not participate. Funds and a shortage of staff do not allow all juveniles to participate in Keys as assigned to the court. They all were arrested for similar offenses. The difference in the specific intervention received between the two lies in the structure of each program. For example, a youth that did not participate in Keys and received a condition such as drug and alcohol awareness may be at a disadvantage. The disadvantage is that the Keys participant received drug and alcohol awareness too, but also received anger management, self-concept issues, and



goal awareness techniques as well. Consequently not all Keys or non-Keys participants received the same dispositions, nor were all youth assigned to Keys at the first referral. Statistical controls were used to avoid any bias throughout the analysis including control for four separate time youth entered Keys.

### Analysis

Analysis began with the adjusted means, and the means squared allowing for comparisons of means between two groups by way of tests of significance. Analysis of variance (ANOVA) is the particular analysis used to allow an appropriate comparison of means. "The mean is simply the arithmetic average-the sum of all observations divided by the total number of observations" (Williamson et. al. 1982, p.381). Tukey's test of significance is used for the analysis of the hypotheses, because of the test's effectiveness in examining all possible multiple comparisons of means between groups. The comparisons are observable four separate times youth entered Keys compared to an equivalent control group. In other words, there will be a total of four comparisons between the two groups, because youth entered Keys at four separate times.

To better understand the process, it is important to explain how and when youth entered Keys. There were four separate possible times of entry for Keys participants into the Keys program as recommended by the juvenile court. Juveniles either entered the program at time one (after the first offense and first visit to the court) two, three or time four (after the fourth offense and fourth visit to the court). Multiple comparisons are constructed by analysis of variance (ANOVA). The test of significance compares means between the experimental and control group.



The comparisons include, Keys compared with non-Keys participants at four separate levels of entry for Keys participants. For example, the first comparison includes juveniles who participated at the first referral to the juvenile court (time one) compared to those that did not participate in Keys. The second comparison examines those who participated at time two to those who did not participate. Time three and four were also separately compared to non-participants. Multiple comparisons are created in the manner of four possible comparisons in the study. An example of the ANOVA analysis, as well as recommended readings may help understand the complicated function of the analysis.

#### ANOVA Comparisons

Several explanations of multiple comparisons are available for the usual one-way ANOVA situation; Miller's (1966) text might be the most definitive. Most standards on statistical analysis typically present one or more methods for the one-way ANOVA situation. A presentation of multiple comparisons in a regression framework was made by Williams (1976), wherein most of the more common multiple comparisons procedures are considered. The ANOVA is a statistical process that allows for a test of significance among means after adjusting them to establish difference beyond chance alone (Williams, 1976).

For research situations more complex than the simple one-way ANOVA, most texts are silent. The silence is understandable; the issues, equations and other considerations become much more complex. Further, if the uncertainties of the two or more issues are compound, the morass of detail can be more than most authors wish to attempt as a resolution for general readership (Williams, 1976).

Winer (1971) presents some detail for more complex research situations that might shed light on the reluctance of traditional researchers to address the issue. The computations are often sufficient enough to ward all but the most hardy (Williams, 1976). Perhaps the lack of writing regarding multiple comparisons in more complex situations than one-way ANOVA serve as a warning, but “fools rush in where angels fear to tread; lacking wings we’ll rush right in” (Williams, 1976, p.1). In this thesis, Tukey’s test of significance is conducted after the ANOVA.

#### Tukey's Test of Significance

Tests of significance, including Tukey’s “are widely used in both descriptive and explanatory research. One of their most common uses is as an aid in deciding whether to infer, on the basis of the relationship between two variables in a sample, that there is a relationship between these two variables in the population from which the sample was drawn” (Williamson et al., 1982:410). In this study, the intention is to infer a difference of recidivism rates between delinquent juveniles who participated in Keys to Innervisions and non-Keys juveniles.

To better understand Tukey’s test, some prior exposure to multiple comparisons would be best, though no specific exposure is mandated. An important issue relates to the test of significance observable in a regression format by Williams (1976), which is familiarization with Tukey’s test used in this thesis. One important factor that need be known, for the purpose of this study, is that Tukey’s test is an appropriate multiple comparison procedure that evaluates the differences in means between two or more groups in ANOVA.



Another is that Tukey's test is one of several multiple comparison procedures that can be employed in ANOVA situations. Tukey's test is an a-posterior test that allows all simple comparisons among means after adjusting them and retains an experimentitive error rate. It is considered to be a relatively conservative test.

More generally, when you conduct a test of significance, the intention is to test a hypothesis, or hypotheses. "Whenever you want to test the hypothesis, that one group is different than the other, the way to go about it is to ask whether the difference found in a sample could be expected on the basis of chance alone" in the relationship between variables, based on the alpha level. An alpha level of .05 would indicate the difference is 95% certain chance is not a factor with difference in recidivism in this study (Williamson, et al., 1982:410).

Tests of significance call for the formulation of a null hypothesis ( $H_0$ ). The null states that there is no relationship in the population between the variables of interest. Along with the  $H_0$ , a test of significance must have a research hypothesis formed as well (Williamson et al., 1982). The hypotheses may be considered a directional (meaning recidivism rates are higher for non-Keys participants than with the Keys participants, or vice versa) or non-directional research hypotheses (recidivism for rates Keys participants are not equal to non Keys participants).

The directional is considered a one-tail test, and the non-directional is two-tailed. Further, when significance testing one must select the significance level or alpha (.05, .01, .001), which is the degree to which chance is a factor in the relationship (Williamson, et al. 1982). The appropriate test, direction and level of significance for this study are discussed later in this chapter.

### Significance Testing with Five Steps

Before testing for significance, I used a particular process relevant to significance testing which included five steps. The steps included determine research characteristics, state hypotheses, determine unlikely sample outcomes, calculate test statistic, and make decisions. An example of the work sheet for significance testing used for Tukey's test in this study can be observed in appendix A (p.60). Procedures and methods for the five steps can be observed as administered and defined in this study.

When significance testing, one wants to test the research and null hypothesis. The research hypothesis is the expected relationship, and the null hypothesis is a statement of no difference (Monette, Sullivan & DeJong, 1998). There are four hypotheses in this study. I will display the hypotheses later as presenting the five steps.

The five steps conducted in this study will familiarize readers with significance testing. The steps were designed originally to make significance testing possible for me to conduct and explain my graduate research methods exams. As mentioned, the sheet is displayed in the appendix. Again, the steps attempt to refute chance as a reason that a sample outcome differs from its population.

The first step is identifying the characteristics of the data so that the proper statistic can be selected. For this study this included using independent random samples, (35 Keys, and 30 non-Keys) the independent variable (time delinquent youth entered Keys, as well as non-Keys) is dichotomous (recidivism/non-recidivism), the dependent variable (recidivism rates) was measured at the interval level, the population variances are nearly equal (age, gender, family and offenses), and the sampling distribution is normal. The proper statistic, for this study is Tukey's test (T), after ANOVA analysis.



The second step includes stating the research (Hr), (H1, H2, H3 or H4 in this study) and null hypothesis (Ho). We will have two possible outcomes for each hypothesis tested. Tukey's test will indicate either indicate M1 (mean of population 1, Keys participants) is equal to (=) or not equal to (/=) to M2 (mean of population 2, non-Keys) in terms of recidivism rates. In this study the main hypothesis is that  $M1 \neq M2$ . As appropriate for the hypotheses in the study, this is a 2-tail test. The research and null hypotheses are:

1. Ho: youth who entered Keys to Innervisions after the first offense have an equal amount of recidivism rates as non-participants.  
H1: Keys to Innervisions youth who enter after the first offense have difference in recidivism rates than non-Keys participants.
2. Ho: youth that entered Keys to Innervisions after the second offense have an equal amount of recidivism rates as non-participants.  
H2: Keys to Innervisions youth who entered after the second offense have difference in recidivism rates than non-Keys participants.
3. Ho: youth who entered Keys to Innervisions after the third offense have an equal amount of recidivism rates as non-participants.  
H3: Keys to Innervisions youth who entered after the third offense have difference in recidivism rates than non-Keys participants.
4. Ho: youth who entered Keys to Innervisions after the fourth offense have an equal amount of recidivism rates as non-participants.  
H4: Keys to Innervisions youth who entered after the fourth offense have difference in recidivism rates than non-Keys participants.

Step three involves determining the unlikely sample outcomes when Ho is really true. At this point, one must determine the appropriate distribution, which is T in this thesis. The second is to determine if the test is one or 2-tailed (two tailed in this study).

Thirdly, select the alpha level (.05). Fourth determine the (T) critical, which represents the cut-off level for determining significance.

The cut off level is located within the critical region within the normal distribution. Significance will be determined by whether or not Tukey's test results fall into the critical area of the curve. The curves and area that the four hypotheses fall into are discussed in chapter IV.

Step four is to calculate the test statistic. This was done by properly calculating the mathematical equation of Tukey's test. The numerals for the equation were provided by the ANOVA analysis and Tukey's test was calculated by hand. Tukey's test was tested and retested by the researcher. As well, Tukey's test was calculated and re-calculated by colleagues at the University of North Dakota. Results can also be observed in chapter IV.

The fifth and final step includes making decisions. The first decision is to accept or reject the  $H_0$ , which will influence the decision with the research hypotheses. The second decision one must make is whether or not statistical significance is apparent, if falling into the critical region of the curve, as displayed in the following chapter. Finally, draw your conclusions, which are done so later in this thesis as well.

The methodology, proposition and hypotheses of the study have been presented in this chapter. A summary of the design with its sample has also been provided. Instrumentation analysis procedures were outlined and are revisited in the following chapter. In chapter IV, a discussion of the results is provided. Chapter V will include a summary of findings, and recommendations.



## CHAPTER IV

### RESULTS

This chapter begins with descriptive statistical information on the entire juvenile population in this study. Several different aspects of data are presented in relation to the subsequent analysis. Data for the entire sample (n=65) includes 35 youth that participated in the Keys to Innervisions program and 30 youth which did not participate.

The descriptive statistics for the study in tables one, two, three and four represent the combined population of both Keys and the control group. This study was not created with the intentions of comparing the differences between gender, family living arrangements and types of offenses between the two groups, because there isn't much. The reason these are displayed is to show a description of the juveniles and their family living arrangements and to compare the results with an earlier study.

Table One displays the percentage of Keys and non-Keys youth along with the percentage of the sample on probation. Overall 53.8 percent participated in Keys, 46.2 percent were not in Keys. The average age of both groups was 16 at the time of data collection.

Table 1. Participation or Non-participation in Keys.

Key's	Frequency	Percent
No	30	46.2
Yes	35	53.8
Total	<u>65</u>	<u>100</u>

Table Two displays the gender of the juveniles in the study. Overall, 23.1 percent of all youth in the sample are female and 76.9 percent are male. There was no statistical significance between the number of male and females in the Keys and non-Keys groups. Both groups are represented with an approximately equal number of males and females.

Table 2. Gender Breakdown of Sample.

Gender	Frequency	Percent
Female	15	23.1
Male	50	76.9
Total	<u>65</u>	<u>100</u>

The data in Table Three includes youth in the study and indicates whether they live with one or both parents. Overall, 38.5 percent (25) of the entire population lived with either the father or their mother only, and 61.5 percent (40) lived with both parents. As indicated in the table below, 25 juveniles lived with their father or mother only, and 40 lived with parents including both the father and the mother in the household.



Table 3. Marital Status of Juvenile's Parents.

Family	Frequency	Percent
Single Parent	25	38.5
Both Parents	<u>40</u>	<u>61.5</u>
Total	65	100%

Table Four includes the descriptive statistics for offenses committed in the study. These include new offenses resulting in an official visit to the juvenile court for those other than characterized as a violation of probation. Included offenses are unruly, violent, property, public order and substance abuse (drugs and/or alcohol).

Table 4. Type of Offenses.

Type of Offense for Keys and Non Keys	Number Reported
Unruly	57
Violence	29
Property	45
Public Order	26
Substance Abuse (Drugs and/or Alcohol)	<u>27</u>
Total	184

The following statistics represent multiple comparisons of youth that participated in Keys to Innervisions and the control group. As aforementioned, Keys participants

entered the program at one of four possible times. The alpha level is set at .05 ensuring that the results are 95% accurate beyond chance alone. Because of the fact that participants entered Key's at four separate possible times, Tukey's test provides four separate cut-off levels for the basis of determining significance. Tukeys' cut-off levels will determine statistical significance by accepting or rejecting the null hypothesis.

A normal bell curve is displayed after the test of each hypothesis. In the middle of each curve, the null hypothesis ( $H_0$ ) will be retained if the cut-off level falls into the non- critical/shaded area. The  $H_0$  is equal to zero at the center of the curve moving towards the shaded critical region, which represents the area to retain the null hypothesis. Inside of each curve, a critical region is displayed by shading the area blue. The normal distribution is the basis of certain powerful statistical techniques. Statistical techniques based upon the normal distribution are known as parametric techniques, and include Pearson's  $r$ , the family of  $t$ -tests and Tukey's test as well (Williamson et al. 1982).

Tukey's test determines the cut-off levels based on number of events being compared ( $n$ ). For example, if the participants had an opportunity to enter Keys at 7 separate possible times, Tukey's test would provide 7 cut-off levels. In this thesis, there are four cut-off levels. Tukey's table (Williams, 76) provides multiple cut-off levels, all of which will differ depending of the number of participants being compared in each test. Significance will influence rejecting or retaining the null hypothesis ( $H_0$ ),



non-critical/shaded area. The  $H_0$  is equal to zero at the center of the curve moving towards the shaded critical region, which represents the area to retain the null hypothesis. Inside of each curve, a critical region is displayed by shading the area blue. The normal distribution is the basis of certain powerful statistical techniques. Statistical techniques based upon the normal distribution are known as parametric techniques, and include Pearson's  $r$ , the family of  $t$ -tests and Tukey's test as well (Williamson et al. 1982).

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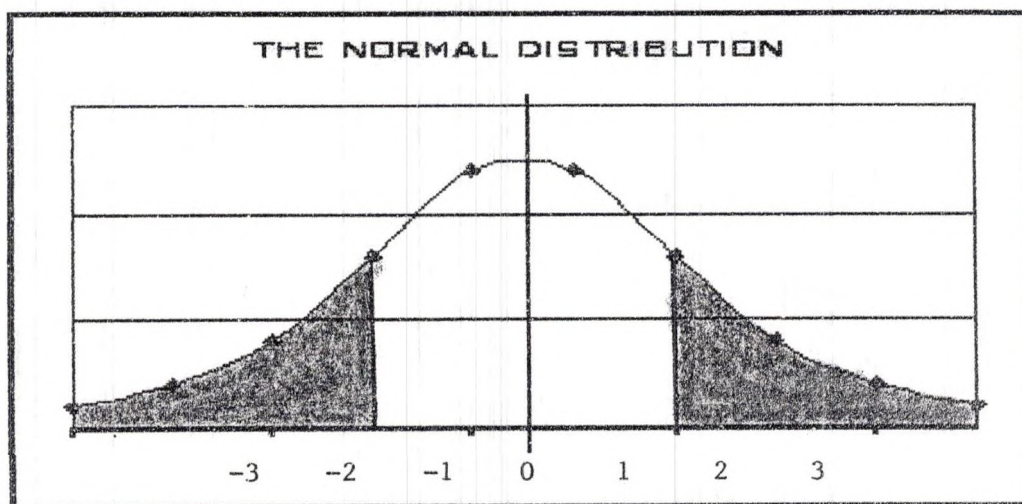


Figure 1. Two-tail test distribution.

Further, as visible in the first comparison, Keys participants who entered at times two, three and four are calculated separately in the same manner as the first when compared.

Table 5. Adjusted Means and Means Squared for Comparison at Times 1-4

Comparisons 1-4	Adjusted Means	Means Squared for Keys and Non-Keys
Keys 1	.0801	3.47
Control	2.2670	
Keys 2	1.2310	.31
Control	1.3580	
Keys 3	1.6190	.30
Control	.9490	
Keys 4	.9330	.15
Control	.3970	

As aforementioned, Tukey's table provided four cut-off levels for the basis of finding statistical significance. The first comparison will find significance at 2.07 (cut-off level for comparison one), the second at 2.40 (comparison two), the third at 2.64 (comparison three) and the fourth comparison will deem either significant or not significant depending whether the number falls into the critical region of the curve (2.81).

For this particular analysis, significance (rejection of the Ho) will indicate Keys participants have lower levels of recidivism and reappearance rates than non-Keys juveniles do. On the other hand, not significant (retaining the Ho) indicates that Keys juveniles have same recidivism and reappearance rates than non-Keys youth do. The results are visible in the following tables.



Table 6. Tukey's Value for Comparison of Key's and the Control Group.

Comparisons at time 1	Tukey's Value	Alpha Level	Cut-off Level
Time 1	*3.56	.05	2.07

\*Indicates statistical significance.

The normal distribution below is used to display the area for the test of hypothesis one (H1). Statistical techniques based upon the normal distribution by parametric techniques and Tukey's test is displayed in the area. The cut-off level, as displayed in the normal distribution curve is 2.07. Any value lower than 2.07, will fall out of the critical region, retaining the Ho, and rejecting H1. Retaining the Ho will indicate that youth who entered Keys to Innervisions after the first offense have an equal amount of recidivism rates as non-participants. Should the value (result of Tukey's test) fall into the critical/shaded area, the Ho is rejected and H1 is accepted indicating statistical significance. The shaded areas are visible below. Tukeys value is 3.56.

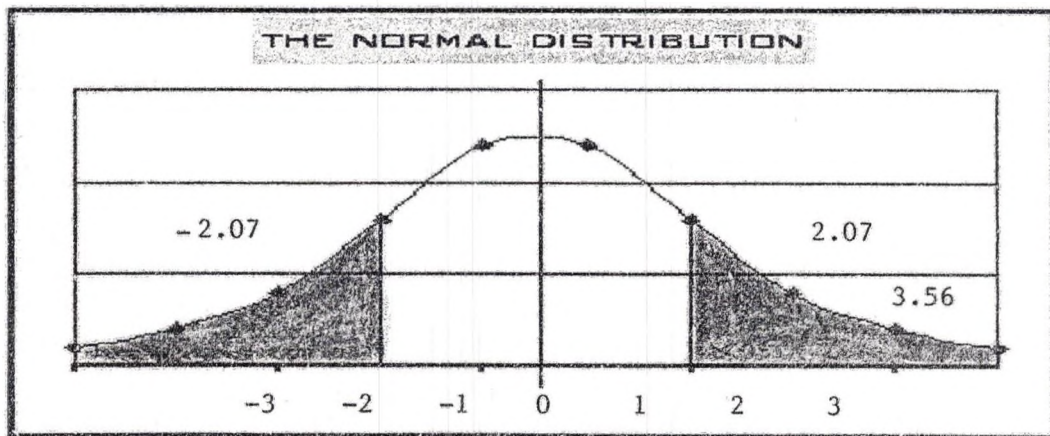


Figure 2. Normal distribution and critical area for comparison one.

Table 7. Tukey's Value for Comparison of Keys and the Control Group.

Comparisons at time 2	Tukey's Value	Alpha Level	Cut-off Level
Time 2	.67	.05	2.40

The normal distribution displayed below is used to display the area for the test of hypothesis two (H2). Statistical techniques based upon the normal distribution by parametric techniques and Tukey's test is displayed in the area. The cut-off level, as displayed in the normal distribution curve is 2.40. Any value lower than 2.40, will fall out of the critical region, retaining the Ho, and rejecting H2. Retaining the Ho will indicate that youth who entered Keys to Innervisions after the second offense have an equal amount of recidivism rates as non-participants. Should the value (result of Tukey's test) fall into the critical/shaded area, the Ho is rejected and H2 is accepted indicating significance. The shaded areas are visible below. Tukey's value is .67.

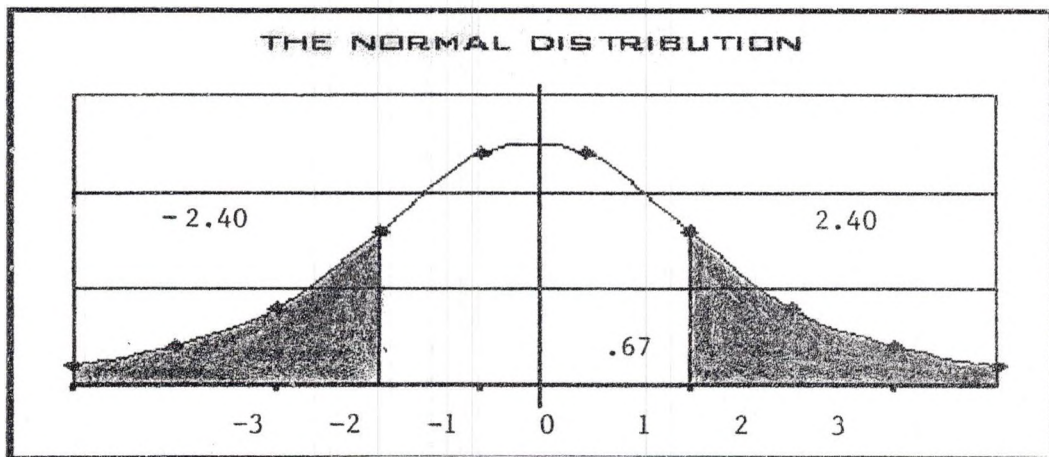


Figure 3. Normal distribution and critical area for comparison two.



Table 8. Tukey's Value for Comparison of Keys and the Control Group.

Comparisons at time 3	Tukey's Value	Alpha Level	Cut-off Level
Time 3	*2.96	.05	2.64

\*Indicates statistical significance.

The normal distribution displayed below is used to display the area for the test of hypothesis three (H3). Statistical techniques based upon the normal distribution by parametric techniques and Tukey's test is displayed in the area. The cut-off level, as displayed in the normal distribution curve is 2.64. Any value lower than 2.64, will fall out of the critical region, retaining the Ho, and rejecting H3. Retaining the Ho will indicate that youth who entered Keys to Innervisions after the third offense have an equal amount of recidivism rates as non-participants. Should the value (result of Tukey's test) fall into the critical/shaded area, the Ho is rejected and H3 is accepted indicating significance. The shaded areas are visible below. Tukey's value is 2.96.

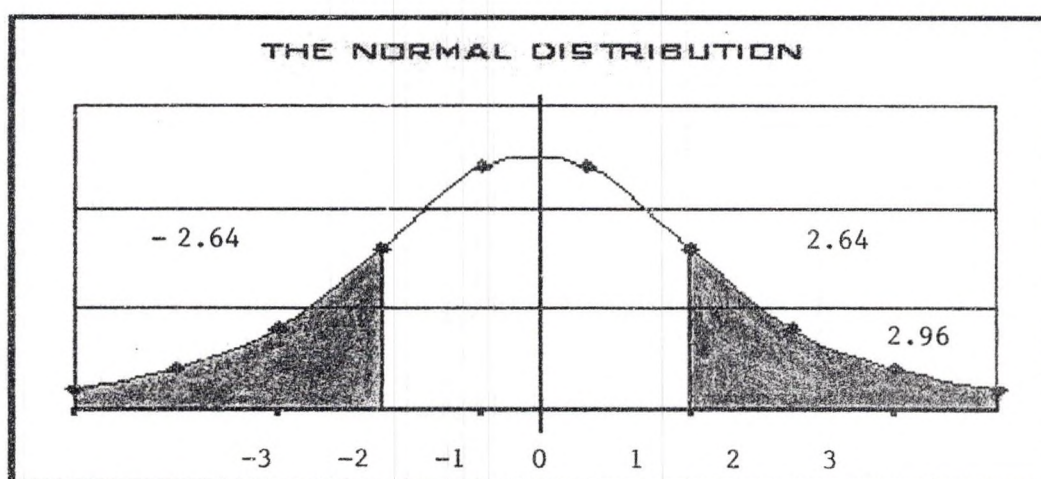


Figure 4. Normal distribution and critical area for comparison three.

Table 9. Tukey's Value for Comparison of Keys and the Control Group.

Comparisons at time 4	Tukey's Value	Alpha Level	Cut-off Level
Time 4	*2.86	.05	2.81

\*Indicates statistical significance.

The normal distribution displayed below is used to display the area for the test of hypothesis four (H4). Statistical techniques based upon the normal distribution by parametric techniques and Tukey's test is displayed in the area. The cut-off level, as displayed in the normal distribution curve is 2.81. Any value lower than 2.81, will fall out of the critical region, retaining the  $H_0$ , and rejecting  $H_4$ . Retaining the  $H_0$  will indicate youth who entered Keys to Innervisions after the fourth offense have an equal amount of recidivism rates as non-participants. Should the value (result of Tukey's test) fall into the critical/shaded area, the  $H_0$  is rejected and  $H_4$  is accepted indicating significance. The shaded areas are visible below. Tukey's value is 2.86.

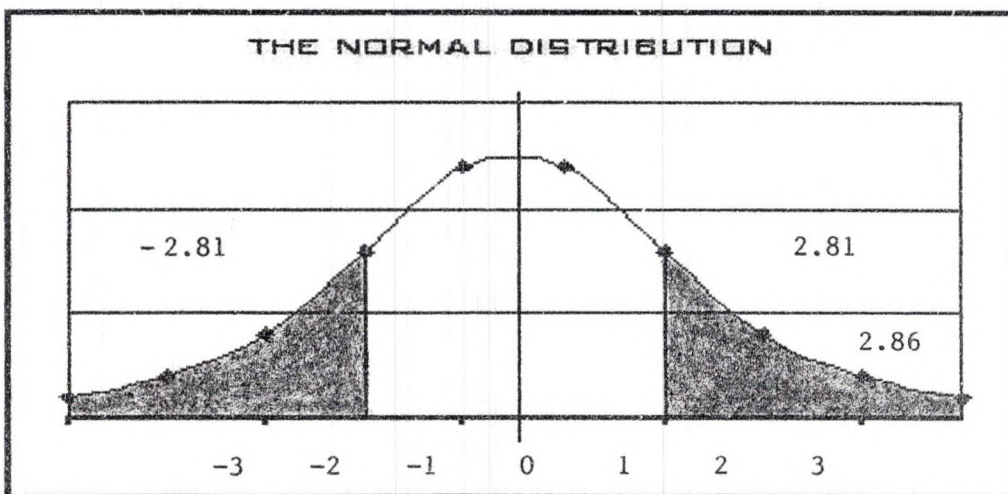


Figure 5. Normal distribution and critical area for comparison four.



## Findings

The first comparison in the study consisted of delinquents who entered Keys to Innervisions (n=12) at the first official contact with the juvenile court in Grand Forks to the control group (n=30). Acceptance of H1, will indicate statistical significance, thus resulting in lower recidivism of the Keys to Innervisions' youth compared to non-participants. Acceptance of Ho, will indicate no difference/statistical significance.

The second comparison in the study consisted of youth who entered Keys to Innervisions (n=8) at the second official contact with the juvenile court in Grand Forks to the control group (n=30). Acceptance of the Ho will indicate no statistical significance, thus resulting in no difference in recidivism of the Keys to Innervisions' participants and non-participants. Acceptance of H2 will indicate statistical significance and lower recidivism.

The third comparison in the study consisted of youth who entered Keys to Innervisions (n=8) at the third official contact with the juvenile court in Grand Forks to the control group (n=30). Acceptance of the H3 will indicate statistical significance, thus resulting in lower recidivism of the Keys to Innervisions' youth. Acceptance of the Ho, will indicate No difference/statistical significance.

The fourth comparison in the study consisted of youth who entered Keys to Innervisions (n=7) at the fourth official contact with the juvenile court in Grand Forks to the control group (n=30). Acceptance of H4 will indicate statistical significance, thus resulting in lower recidivism of the Keys to Innervisions' youth. Acceptance of the Ho will indicate No difference/statistical significance.

## Summary

Overall, statistical significance was factual and observable in three of the four comparisons between Keys and non-Keys participants as displayed in this chapter. Further, the family structure also suggests some significance as well pertaining to youth and delinquency, as explained in the next chapter. In summary, the results primarily substantiated the research hypotheses and implications are discussed in Chapter V.



## CHAPTER V

### DISCUSSION AND RECOMMENDATIONS

The purpose of this study was to investigate the impact intervention/cognitive restructuring has on delinquency recidivism. Specifically, a sample of juvenile delinquents who participated in Keys to Innervisions was compared to a similarly situated control group of non-participants. As mentioned in earlier chapters, both groups were referred to the juvenile court and received probation. One group received cognitive restructuring through the Keys program and the other group did not participate in Keys.

Another finding was determination of whether broken homes and single parents were factors associated with juvenile delinquency in Grand Forks. Though Keys and the control groups' families are similar on the surface, family structure and court appearance differed with youth in Grand Forks were examined. Findings are discussed below.

#### Summary of Findings and Discussion

I would like to point out some interesting characteristics of the youth and their families in this study. The analysis indicates a substantial difference between the gender of juveniles. A distinctive 23.1 percent of the overall youth are female and 76.9 percent are male. These percentages would indicate that males are much more likely to become involved with the juvenile justice system in Grand Forks. Other possibilities are that males are more likely to be monitored, to catch the attention of officials, or to be victims of police discretion and brought into the system by the police or family/school officials

Another finding addresses those of Regoli and Hewitt (2000). Their findings suggest that broken homes and single parents are strong predictors of delinquency. The findings of this study are not as broad and are of a sample size substantially smaller than that of Regoli and Hewitt. However, the youth in Grand Forks contradict their findings. As indicated earlier, 61.5 percent of the youth examined lived with both parents compared to a mere 33.5 percent living with single parents. Youth and their family in Grand Forks would indicate the opposite of their findings. Findings of this study, interesting enough, might indicate youth living with both parents are more likely to visit the juvenile justice system. Or perhaps family structure has little or no predictable influence on delinquency in Grand Forks.

The test of the Keys participants compared at time one to those delinquents who did not participate indicates statistical significance. Tukey's value of 3.56 falls into the critical region rejecting the  $H_0$  and accepting  $H_1$ . The recidivism rates of Keys to Innervisions participants, are lower in terms of new offenses, other than probation violations after participation during the given time period. For time one, 2.07 is the cut-off level and 3.56 was the result of Tukey's test. The significance was determined by the fact that Tukey's value does indeed fall into the critical region. The first comparison indicates statistical significance between the two groups in the study. This particular comparison shows a high level of difference in recidivism between the two. To point out the degree of significant difference of this comparison, imagine if the value of Tukey's test were merely 2.08. The result would still indicate significant difference between recidivism of the two groups. However, the number 2.08 is lower than 3.56 in the actual test. The larger the number after the cut-off level, and the deeper into the critical region,



the greater the difference is in the comparison. As determined by the alpha level, the certainty is 95% that this figure is correct beyond chance alone. Keys participants who entered at time one were highly less likely to recidivate and find their way back into the juvenile justice system opposed to non-participants during the time frame of this study; after participating in the Keys cognitive restructuring program.

The test of the Keys participants compared at time two to those juveniles who did not participate indicates no statistical significance. The Value of Tukey's test (.67) falls out of the critical region retaining the  $H_0$  and rejecting the  $H_2$ . The recidivism rates of Keys to Innervisions participants, for offenses other than probation violations after participation during the given time period are of no difference compared to non-participants. For time one, 2.40 is the cut-off level and .67 was the results of Tukey's test. Non-significance was determined by the fact that Tukey's value falls out of the critical region. The second comparison indicates no statistical significance between Keys to Innervisions participants compared to non-Keys.

Keys participants compared at time three to those juveniles who did not participate indicates statistical significance with Tukey's test. The value of Tukey's test (2.96) falls into the critical region rejecting the  $H_0$  and accepting the  $H_1$ . The recidivism rates of Keys to Innervisions participants are lower in terms of new offenses, other than probation violations, when participating after the third offense during the given time period. For time three, 2.64 is the cut-off level and 2.96 was the results of Tukey's test.

The significance was determined by the fact that Tukey's value falls into the critical region. The third comparison indicates statistical significance between the two groups in the study. This particular comparison shows a moderate level of difference in

recidivism between the two. To point out the degree of significant difference of this comparison, imagine if the value of Tukey's test were again merely 2.64. The result would still indicate significant difference between recidivism of the two groups. However, the number 2.96 is lower than 3.56 in the first test. This indicates group three is more likely than group one to recidivate. However, Key's participants who entered at time three were highly less likely to recidivate and find their way back into the juvenile justice system compared to non-participants during the time frame of this study; after participating in the Keys to Innervisions cognitive restructuring program.

The test of the Keys participants compared at time four to those juveniles who did not participate indicates statistical significance. The value of Tukey's test (2.86) falls into the critical region rejecting the  $H_0$  and accepting  $H_4$ . The recidivism rates of Keys to Innervisions participants, are lower at time four, in terms of new offenses other than probation violations after participation during the given time period. For time four, 2.81 is the cut-off level and 2.86 was the results of Tukey's test.

The significance was determined by the fact that Tukey's value falls into the critical region. The fourth comparison indicates statistical significance between the two groups in the study. This particular comparison shows a moderate level of difference in recidivism between the two. To point out the degree of significant difference of this comparison, imagine if the value of Tukey's test was 2.81. The result would still indicate significant difference between recidivism of the two groups. As in tests one and three, Key's participants who entered at time four were highly less likely to recidivate and find their way back into the juvenile justice system compared to non-participants during the time frame of this study; after participating in the cognitive restructuring program.



However, participants at time four are more likely to recidivate than participants at times one and three.

The results of this study would indicate Keys to Innervisions is successful in reducing recidivism with juveniles delinquents who entered the cognitive restructuring program at times one, three and four. Participants in Keys to Innervisions who entered immediately after coming into contact with the juvenile court benefited substantially. In this case, youth were highly less likely to reappear than other Keys participants as well as compared to the control group.

Youth who entered the Keys program at times other than time two appeared to benefit but not as substantially. Recidivism rates are lower with Key's participants that entered at the third and fourth offenses compared to non-participants. However, Keys participants who entered at the third and fourth offenses are more likely to reappear in court than those who entered at time one. From these findings, I must conclude that the Keys to Innervisions cognitive restructuring program is successful with reducing recidivism. The key finding is the earlier youth participate in Keys, the less likely they are to recidivate. Early detection and treatment is the key to reducing recidivism with Keys to Innervisions cognitive restructuring. This is now empirically true with the program in Grand Forks, North Dakota.

As mentioned in similar studies (Thompson, 1999) it is difficult to know exactly how Keys is successful with recidivism reduction. Whether it was cognitive restructuring or some other factor, such as positive role models that influenced the recidivism reduction is difficult to say for sure. However, some factor or factors inside the structure of the program are helping with recidivism reduction.

My contention is supportive of the control theory, learning theory, the central mediating process, and the encoding process as characterized by Brunning, Schraw and Ronning. For example, a delinquent youth is either in or out of control of the displayed delinquent behavior. No matter how you perceive this situation, the behavior must be controlled, or as put by control theory "put in check."

The learning theory, as characterized by Sutherland, maintains delinquent behavior is learned. Learning theory as stated by Bandera acknowledges delinquent behavior as a malfunction correctable by alteration of the central mediation process and strengthening a delinquent's social bond to society. Further, with modification of the learning process, youth become aware of action and non-delinquent behavior by committing to the social bond. As mentioned in chapter II, Keys to Innervisions, with the cognitive restructuring approach, teaches youth to perform in delinquent situations in a manner similar to these theoretical aspects. Therefore, in a potential delinquent situation, Keys youth have the knowledge and the ability to act responsibly as required by the social norm. Thus, a youth with this knowledge and ability (Keys juveniles) will less likely engage in delinquent activity than one lacking such knowledge and ability (non-Keys juveniles). It is my opinion the lower recidivism rates are in fact a result of the Keys to Innervisions cognitive restructuring by teaching delinquent youth how to apply the delinquent factors identified in this thesis which present barriers to socially acceptable behavior.

#### Recommendations

I have several recommendations for the Keys to Innervision program and the Juvenile Court at the Northeast Judicial District in Grand Forks, ND which are provided



based on this study's findings, and its exploration of issues related to cognitive restructuring and delinquent recidivism. As well recommendations will benefit any persons dealing with youth who have potential to become involved with the juvenile court. This includes families, schools, people starting new cognitive restructuring programs and even adults with the inability to have success with the four factors identified in this study.

First it would be to the courts best advantage to recommend the Keys program to first time offenders who find their way into the juvenile system. Further it may not be as advantageous for the court to recommend the Keys program to all multiple offenders, however it could not hurt matters. The analysis indicates that youth already in the system may be more likely to recidivate. Youth finding their way into the system may be out of reach of cognitive restructuring alone. This may incorporate issues of severe deviant labeling and negative differential association.

Further, additional research regarding cognitive restructuring and its efficiency with delinquency reduction should be investigated following designs of greater magnitude. The future research should be preceded by clear purpose, and representation of cognitive social psychology and sociology. This should include early detection of delinquent behavior as displayed with the delinquent factors in this thesis. Further research should realize, to understand cognitive restructuring and delinquency, sociology and psychology are important disciplines to explain and understand delinquency factors.

It would be most effective and efficient to detect and treat such behavior with Keys to Innervisions before involvement in the juvenile justice system; to anyone involved with juvenile experiencing the lack of barriers to delinquency; as explained by

the four delinquent factors. A method of detecting behavior that may lead towards delinquency needs to be developed and implemented into the American school system. Or perhaps families at risk of their children becoming delinquent could be issued an educational text to guide their parenting style. As the search for ways to prevent juvenile crime exist and persist in the United States, most intervention programs focus on late childhood or adolescence. Such initiatives may be missing an important additional opportunity to intervene earlier in the lives of the children.



APPENDIX A

SIGNIFICANCE TESTING WITH FIVE STEPS

Step #1.      Determine Characteristics      Step # 4.      Calculate Test Statistic

Step # 2.      State Hypotheses      Step # 5.      Make Decisions

Ho:

-Decision on Ho:

reject [ ]      accept [ ]

Hr:

-Decision on Hr

reject [ ]      accept [ ]

Step # 3.      Determine Unlikely  
Sample outcomes

-Is there statistically significant difference?

\_\_\_\_\_ Distribution

yes [ ]      no [ ]

1-tail [ ] or 2-tail [ ]

-Draw conclusions

Means Squared=  
Adjusted Means=

Sample (n)=

Alpha=

\_\_\_\_\_ Critical=

APPENDIX B

CODE SHEET FOR GATHERING DATA

1. Gender      M    F  
Family        SP   BP  
DOB

Type of Offenses

- Unruly
- Violence
- Property
- Public Order
- Substance Abuse

Keys Participants   

Non-Keys           

3. Gender      M    F  
Family        SP   BP  
DOB

Type of offenses

- Unruly
- Violence
- Property
- Public Order
- Substance Abuse

Keys Participants   

Non-Keys           

2. Gender      M    F  
Family        SP   BP  
DOB

Type of Offenses

- Unruly
- Violence
- Property
- Public Order
- Substance Abuse

Keys Participants   

Non-Keys           

4. Gender      M    F  
Family        SP   BP  
DOB

Type of offenses

- Unruly
- Violence
- Property
- Public Order
- Substance Abuse

Keys Participants   

Non-Keys



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