

**ELECTRONIC MONITORING IN CORRECTIONS:
A PROPOSED APPLICATION OF SOCIAL BOND THEORY**

by

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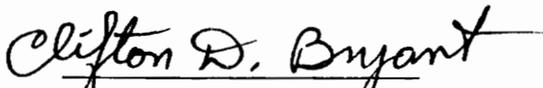
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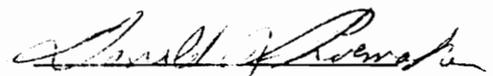
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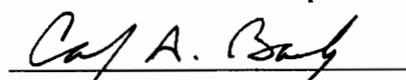
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(ABSTRACT)

In recent years, harsher sentences have been pursued in criminal offenses leading to an increase in the use of incarceration. Prisons, largely unable to keep up with this demand, have become overcrowded in most areas. In response to prison overcrowding, some jurisdictions have begun to experiment with electronically monitored house arrest.

This thesis is composed of a literature review and proposed study of recidivism in electronic monitoring (EM) programs. The literature review is composed of a general review of the history of corrections, a review of literature on electronic monitoring programs and social bond theory.

The history of corrections serves to partially explain the emergence of electronic monitoring programs as an outcome of the adoption and failure of other forms of intermediate sanctions. The present state of electronic monitoring, including a

description of the technology incorporated in these programs, the extent to which EM programs are implemented, and their cost effectiveness are discussed. In addition, some legal implications of its use are discussed.

A review of previous research indicates numerous gaps in the existing evaluation of electronic monitoring programs. Because of these gaps many research questions are not sufficiently answered by the literature review. The rate of recidivism for EM programs compared to that of other correctional programs remains unclear. The underlying factors that affect the recidivism rate for EM programs also remains unclear. In addition, the effects on the offender, the offender's family, peer group, and employment are not identified. The two reasons responsible for the inability of previous studies to adequately assess the rate of recidivism for EM programs compared to standard probation or parole and the underlying factors predicting recidivism are the exclusion of variables pertaining to the effects of electronic monitoring on the offender as well as the lack of theory needed to understand the relationships of recidivism, and type of correctional program.

Literature on social bond theory is reviewed in order to provide theory to the examination of recidivism in electronic monitoring programs. Beginning with an explanation of Hirschi's original work (1969), the review extends to empirical literature on the social bond. Finding this literature to be strongly supportive of social bond theory, it is adopted as a structure to examine recidivism. Primarily used in the study

of delinquency, social bond theory is adapted to apply to the study of adult populations and recidivism, and the possible effects of EM on the social bond is discussed.

A proposed research study is then presented examining the effects of EM on social bond factors and subsequently recidivism. The relevance of control variables, including length of sentence, type of offense, and prior convictions are discussed as well as the measurement of variables related to social bond theory. A structural equation model is developed that incorporates the control variables, bond variables, program variables, and recidivism, allowing for a simultaneous estimation of their relationships, using LISREL 8. It is hypothesized that EM programs, more than standard probation and parole positively effect the social bond of an offender to his or her family, peer group, and employment. In addition, it is believed that a stronger social bond to the institutions of family, peer group, and employment results in a lower incidence of recidivism.

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CHAPTER I. INTRODUCTION

In recent years, harsher sentences have been pursued in criminal offenses leading to an increase in the use of incarceration. Prisons, largely unable to keep up with this demand, have become overcrowded in most areas. Because of the great expense of building new prisons, some jurisdictions have begun to examine alternate means of incapacitation that are more punitive than probation.

These alternate sentences include home confinement or house arrest and intensive supervision probation. The enforcement of these, however, requires great amounts of supervision and offender contact that tax already limited personnel resources. Technology provides the apparent solution to this dilemma in the form of the electronic monitoring (EM) device. EM systems, of various makes and designs, are united in their purpose. They serve to closely monitor the offender without greatly increasing personnel time.

Electronic monitoring programs have rapidly increased in popularity across the United States. The estimated daily population of electronically monitored offenders in 1986 was 95. By 1989 this number had grown to 6,490 (Renzema and Skelton 1990). The state of Virginia is no exception. In 1990 only two districts had implemented electronic monitoring programs; as of January 1994, this number has grown to 36 districts (Virginia Department of Corrections 1994). Despite its widespread

implementation, little is known about electronic monitoring.

Through an organized and critical review of the existing literature this thesis examines what accounts for the emergence of EM in today's correctional setting, as well as, the frequency and manner in which EM programs are being implemented. In addition, this thesis attempts to evaluate the costs of EM compared to other correctional programs, including incarceration and probation and parole without electronic monitoring.

The main purpose of this thesis is to design a study that will determine the success of electronic monitoring programs in comparison to standard probation or parole. Existing research is sparse and plagued by methodological flaws and uncontrolled variables. Additionally, existing research is atheoretical and fails to identify intermediary factors that may affect recidivism. The proposed study will attempt to identify the effects of EM and standard probation or parole on the offender as well as factors that affect the incidence of recidivism in these correctional programs. In addition, possible unintended effects on the offender and the offender's family, peer group, and employment are considered. Social bond theory - a theory used primarily to explain delinquency - is incorporated to provide a framework for understanding the effects of EM and standard probation or parole on the offender and the subsequent frequency of recidivism for offenders enrolled in these programs. The incorporation

of social bond theory into this study of recidivism requires an adaption of the theory to adult criminality.

CHAPTER II. THE PLACE OF ELECTRONIC MONITORING IN THE HISTORY OF CORRECTIONS

History of Corrections

The emergence of electronic monitoring can be explained by examining the current state of corrections in the United States. It is simply a cost reducing alternative to incarceration. There is little doubt of the need to reduce costs in the United States. Conservative estimates indicate expenditures in 1990 to be nearly 25 billion dollars. This cost does not include court costs, legal services, and the amount allocated to the police. Virginia spent almost 560 million dollars of their own, making them the 15th highest state in the nation in per capita correctional expenditures. Much of this cost is, of course, due to the increase in the use of incarceration. The number of prisoners in state and federal institutions in 1992 was roughly 847,000 while the volume of prison capacity occupied was 123 percent (Sourcebook 1993). Despite the vast amount of correctional spending and the escalating use of incarceration, offenders released into the community often commit additional crimes.

An explanation for this current situation may be found by examining the long history of correctional evolution dictated by the changing goals of society for dealing with criminals. Prior to the 1800's, the most common form of punishment was capital

punishment. Citizens seeking retribution witnessed executions and mutilations, as well as other forms of physical torture. The public display of such torture was thought to have a deterrent affect, dissuading other possible offenders. However, there is little support that it succeeded in actual deterrence (Burns 1975). Capital punishment, despite its cruel nature, proceeded unabated in the American colonies until William Penn revised Pennsylvania's criminal code into what is now known as the "Great Law" of 1682. This code eliminated the death penalty in all cases but premeditated murder. While, flogging was still prescribed for such offenses as adultery, arson, and rape, most offenses were punishable only by fines and imprisonment. In 1718 this "Great Law" was replaced by the much harsher Anglican Code which advocated the frequent use of capital punishment, and it was only in Post Revolutionary Pennsylvania that the "Great Law" was again adopted (Burns 1975).

While incarceration was generally adopted as a more humane alternative punishment, it provided an attractive side effect. Incapacitation, or the protecting of society from criminals by physical containment, was assured when an offender was incarcerated. While detained the possibility for the commission of further crimes was virtually eliminated. In the United States, incarceration has traditionally been applied through the local jail or the federal or state prison.

The first of these to appear in America was the jail. Virginia, in the settlement

of Jamestown, utilized a jail as early as 1608 (Burns 1975). However, the most progress in jail construction and reform occurred in Pennsylvania as a result of the aforementioned "Great Law." Under Pressure from the Quakers to improve Pennsylvania jails the state enacted legislature to renovate these facilities.

The result was the Walnut Street Prison where, unlike previous jails, only one inmate was housed in each cell. However, overcrowding quickly resulted, leading to a rethinking of prison design. In 1816, the state of New York constructed a new prison in Auburn to relieve overcrowding at Newgate prison. This new prison would become the model for facilities across the nation. It featured three security levels that utilized differing degrees of solitary confinement. The majority of inmates were allowed to work together during the days and were only isolated by night (Ives 1970). This prison design, apart from the near elimination of required work, has changed little to become what is the present day prison.

Despite their apparent benefits, prisons proved to be deficient in the rehabilitation of offenders. Indeed, it is often believed that prison possesses more of a corrupting influence than a correcting one (Burns 1975). This belief led to a diversion tactic known today as probation.

Around 1850, John Augustus bailed out a drunkard and by permission of the Boston court began to rehabilitate the offender. It became a regular practice for

Augustus and eventually he assisted 2,000 offenders with finding employment or residence. His work led Massachusetts to adopt the first probation program in the United States. In 1891, all Massachusetts lower courts were required to employ a probation officer. Following their lead, other states in the U.S. incorporated probation as a regular part of their correctional program.

Parole originally developed as a means of maintaining peace in prison. In 1840 Alexander Maconochie instituted programs of intermediate sentencing, merit based release, and parole in the penal colony of Norfolk Island. It was soon adopted in Ireland in 1853 and England soon after. It appeared in the U.S. in 1876 at Elmira reformatory which at this time was under the direction of Zebulon F. Brockway (Burns 1975).

The benefits of the parole system quickly became evident. It allowed the conditional release, a trial period, where the offender could be extensively observed while integrated into the population. In addition, parole acted as an incentive for good behavior while the offender was incarcerated. The great catalyst for the use of parole, however, came from economic circumstances. The Great Depression, beginning in 1929, resulted in high unemployment which in turn, sparked legislature that abolished the use of convict labor. Together with other economic difficulties, the elimination of convict labor resulted in an overwhelmingly high price of incarceration and an

unparalleled attraction to parole (Calahan 1986).

During the 1950's and 1960's the medical model of corrections was predominant (Burns 1975). A faith in scientific understanding led to the general belief that criminals were sick and required treatment. Prison programs adopted during this time focused on both individual and sociological aspects of the offender. They included professional counseling, therapeutic communities, drug and alcohol programs, vocational training, and educational programs. Results of these correctional programs remain inconclusive and are still disputed today. This time period, between 1950 and 1965, is one of few time periods in the U.S. in which the rehabilitation of the offender was the predominant philosophy in corrections.

Due to the drastic escalation in the public's fear of crime, current correctional philosophy is centered around the goals of retribution, deterrence, and incapacitation and ignores any hope at rehabilitation. Although crime rates have not substantially increased in the past ten years, the 1994 Gallup Poll indicates that 37 percent of the population believe that the most important problem facing this country is crime. Politicians, riding this wave of public fear, have proposed ultra conservative legislation such as the "three strikes rule" and the suggested abolition of parole in Virginia. Crackdowns and severe sentencing has lead to a jump in the rate of prisoners in state and federal institutions from 139 per 100,000 in 1980 to 330 in 1992. This was

accompanied by a 313.3% increase in correctional spending from 1979 to 1990.

Despite this exhaustive effort the actual accomplishment of the correctional goals are questionable. While no one can argue that more criminals than ever are being incapacitated, the nation's quest for retribution is insatiable and there has been no indication of either a specific or general deterrent affect. It appears that "getting tough on crime" is actually only making it tough on the penal system.

The traumatized system has explored alternatives to incarceration in order to relieve some of the economic burden. Programs that have been attempted on a modest scale include: intensive supervision probation, halfway houses, shock incarceration and boot camps, as well as home confinement. The latter is often accompanied by electronic surveillance.

Electronic Monitoring - Technology Description

The design goal of electronic monitoring systems is usually to confine an offender, or in a few cases, an individual on pre-trial release, to a specific location other than a prison cell. This location is usually the offender's home, or in some occurrences a pre-release center. Given this goal, recent technological innovation is able to provide a variety of options for use in correctional settings. These options may be divided into telemetry devices, or systems that use existing telephone lines to convey

information, and non-telemetry devices. These systems may further be categorized as either passive, sometimes referred to as programmed contact, or continuous.

Continuous, telemetric, monitoring systems constantly monitor the offender. If the offender violates the confinement at any time, the supervision office is alerted. There are three major components of this system: the central computer located at the supervision office, a radio receiver that is connected to the offender's phone, and a radio transmitter usually attached to the offender's ankle.¹ This transmitter sends a continuous signal to the receiver and in turn a continuous signal is sent from the radio receiver to the central computer via phone line. If the transmitter exceeds the range limit of about 100 to 150 feet (Lilly et al. 1992), the central computer is instantly aware and alerts the supervising authority. The transmitter is also equipped with a device that will alert the supervision computer if tampering is detected.

Utilizing much of the same technology that is found in cellular phones, a different type of telemetry device was attempted in Great Britain. Often referred to as "mobility tagging," this form of EMS involves the constant tracking of the offender from a continuous emission of signals straight into the telephone line. It allows the correctional agency to know (within a small area) where the offender is located at all

¹Other forms of transmitters include: bracelets, neck collars, and those that can be worn on the waist.

times (Nellis 1991).

Unlike the continuous form of electronic monitoring, the passive form does not maintain constant surveillance. Instead, it randomly calls on the offender at their residence during hours of home confinement. In this way it is feasible, although risky, for an offender to leave the home and return undetected. However, this system utilizes less expensive technology. The major components are the central computer, the verifier that is attached to the offender's phone, and a tamper resistant, coded ID bracelet. Upon receiving a random phone call from the central computer, the offender inserts the ID bracelet into the verifier box indicating that he or she is home. If this is not done, the central computer notifies the supervising authorities. Voice identification has also been suggested in this area, taking the place of the identification bracelet.

Numerous problems with current technology have occurred. Among the most common are false positive reports due to "sleep errors," which occur when an offender shields the transmitter's radio signal with his or her body, or when other environmental obstacles shield the signal. In addition, software problems and some problems with telephone transmission are frequently encountered.

Not all electronic monitoring devices require the use of existing telephone lines. Some proposed systems involve the signal transmitted by an offender's bracelet or anklet radio to be acknowledged by a radio receiver/transmitter that is located in the

offender's home. This receiver/transmitter then amplifies and sends this signal to the supervision office. Another option suggests the use of an already in place, nautical navigation system. This system utilizes satellite guidance that can discern an offender's location within 50 feet (Bryant 1994).

History and Present Implementation

The proposed applications of electronic monitoring systems are numerous and varied. In addition to probation and parole, they are frequently proposed as a "halfway back" option for violators of parole of probation and pre-trial release. Electronic monitoring in corrections began as a humble experiment with one offender in Albuquerque, New Mexico, in 1983. The judge responsible for its early implementation reportedly got the idea from a Spiderman comic (Ball, Huff, Lilly 1988). The first implementation of EM as a correctional program occurred in Palm Beach County, Florida, in 1984 (Lilly, Ball, Curry, and Smith 1992). Since that time these programs have greatly increased in popularity. According to the Department of Justice, as of February, 1989, 6490 persons were engaged in electronic monitoring programs in 37 states. The most common offenses in 1989 to which EMS was applied were property offenses, followed by drug offenses, major traffic offenses and crimes against persons (Gowdy 1987).

The state of Virginia began its use of the electronic monitor with two districts, in 1990. As of January, 1994, 36 districts had adopted electronic monitoring programs (Moser and Springborn 1994). Most of these programs have been designated for use in parole, although a few enroll probationers as well.

Legal Implications

Because electronic monitoring can be seen as an invasion of privacy, certain legal concerns have been raised. However, enrollment in these programs as a condition of release or sentence is seen as voluntary and in this way the offender waives the right to privacy and the protection of unreasonable search and seizure. Forms of intrusion, such as wire tapping, have been supported in numerous cases where there was evidence of probable cause or if the plaintiff has been convicted.² Guidelines, of course, still exist as to the legitimate implementation of electronic monitoring. The conditions that are imposed upon the offender must be pertinent to the protection of society or the rehabilitation of the offender, the terms must be clear and reasonable to the offender, and they must be Constitutional.³

²See *Olmstead v. United States*, *Goldman v. United States*, and *Katz v. United States* (Del Carmen and Vaughn 1986).

³Landmark cases on these guidelines include: *Port v. Templar*, for the decision on the pertinency to rehabilitation and societal protection; *Panko v. McCauley*, on the clarity of

The constitutionality of electronic monitoring has not been formerly questioned. However, informal arguments are occasionally raised as to possible violations of the aforementioned, Fourth Amendment, concerning unreasonable searches and seizures, the Fifth Amendment, concerning the right against self-incrimination, and even the Eighth Amendment, concerning cruel and unusual punishment (Del Carmen and Vaughn 1986). In the case of the Fourth Amendment, authorities are usually allowed a great deal of discretion. However, if no argument can be made that the offender is a risk to society, the courts may rule in favor of the offender.

The Fifth Amendment is usually not a seriously considered factor, in that only the location of the offender is known to the authorities and that this is not usually sufficient to attain a criminal conviction. The argument that incarceration is more cruel and unusual than home confinement is generally enough to undermine any question of the adherence of electronic monitoring to the Eighth Amendment.

Cost-Effectiveness

The increasing popularity of EM programs can be attributed to the perception that electronic monitoring is more cost-effective than incarceration. However,

conditions; *State v. Smith*, on the reasonable nature of the conditions; *Sobell v. Reed* regarding the constitutionality of the conditions (Del Carmen and Vaughn 1986).

effectiveness can be assessed in a number of different ways and is highly dependent upon correctional goals. The goal that currently predominates correctional philosophy is retribution. The public's demand for "just deserts" encourages the correctional system to employ sanctions that are more punitive than regular probation or parole. Thus one measure of cost-effectiveness, is the punitiveness, or severity, of the sanction per dollar.

Spelman (1995) uses severity and cost to evaluate the use of community corrections, including EM. Spelman finds that roughly 72% of offenders in a variety of correctional programs (from probation to prison) believe that two years of Intensive Supervision Probation (ISP) is more severe than three months in jail. In addition, it is discovered that these offenders rate one year of electronically monitored house arrest as roughly equivalent to two years in an ISP. Therefore, it can be assumed that roughly 70% prefer a three month jail term to a year of EM. The reason for this closeness in severity may have to do with the perception of offenders of community corrections as a "trap." According to an inmate quoted in Spelman, many offenders prefer to, "...do the time and get over it. (p. 124)."

While the perceived severity of community corrections and the perceived severity of incarceration are similar, the cost of incarceration relative to the alternatives of community corrections is not. According to Spelman, the benefit/cost ratio is much

higher for all community corrections than jail or prison terms.⁴ In addition, the benefit/cost ratio becomes increasingly smaller as the level of perceived severity of the sanction increases. Therefore, there appears to be diminishing returns to increasingly severe measures of punishment.

The increase in the severity of sanctions requires that a larger number of offenders be incapacitated for longer periods of time. This incapacitation requires a minimum level of supervision. Assuming that the necessary level of supervision is met through the use of EM, the measure of effectiveness becomes simply the handling of the most cases per cost.

It has been estimated that the operating costs of a prison per inmate, per day is roughly \$15 to \$50. This does not include the construction cost that varies by security level from \$25,000 to \$75,000 per bed (Funke 1985). With these extremely high costs, the recent popularity of electronic monitoring as an alternative to incarceration should not be surprising. Cost/benefit analysis of incarceration in comparison with electronic monitoring has yielded various amounts of savings gained through EMS programs. Discrepancies in the amount saved are possibly due to some studies including the cost of prison construction while others do not.

⁴Cost/benefit ratios are calculated for a number of prison and jail term combinations. The terms vary from 3 months in jail to 6 months in jail and 4.5 years in prison.

According to the Department of Justice, the Oklahoma Department of Corrections saved \$9,295 per offender per year by adopting an EMS program (Gowdy 1987). Other research indicates similar savings. Lilly, Ball, Curry, and Smith (1992) calculate a conservative estimate of the amount that the Pride Inc. program saved as an alternative to incarceration. They estimate that for 415 offenders with prison sentences of roughly 24 days the equivalent EMS sentence was about 72 days. Given this sentence, the authors calculated that the savings generated from the use of EMS amounted to \$209,828. This value does not include prison construction cost. In other research, the Department of Justice found in 1989 that non-electronic supervision in comparison to electronic supervision was slightly less costly (\$776 as compared to \$838 per year).

Often not taken into consideration is the added cost of staff that occurs when electronic monitoring becomes a common sentence. Previous programs have been small and not required large personnel increases to handle the caseload. Thus estimates that compare incarceration with EMS programs to standard probation are often less than what they should be.

The cost and effectiveness of EM programs relative to other correctional options can only be evaluated in terms of the goal of corrections. If severity of punishment is the goal, than electronic monitoring is shown to be more cost effective than

incarceration but less effective than other forms of community corrections. If the goal is simply to manage the large number of offenders in the penal system than EM appears, once again, to occupy a position between probation and incarceration.

However, imbedded in nearly all correctional strategies is the attempt to "correct" the offender - to encourage desistance in criminal activity. The demand for retribution is largely justified with the doctrine of deterrence. Many persons in corrections, criminology, and the general public believe that harsh penalties deter offenders from committing further crimes and deter would-be criminals from initially engaging in crime. The ability of EM to deter offenders from committing further crimes (recidivism) is the focus of this thesis.

CHAPTER III. RECIDIVISM AND CRIMINALITY

The current philosophy regarding criminal offenders is centered around retribution and the deterrence of repeated criminal offenses, or recidivism. The majority of research that attempts to evaluate correctional programs utilizes recidivism as its primary measure of effectiveness.

General Models of Recidivism

Most recent research in the area of recidivism focuses on the temporal aspects of the onset and persistence of criminal careers (Gottfredson and Hirschi 1986 1990; Barnett Blumstein, and Farrington 1989; Greenberg 1991 1992; Nagin and Farrington 1992; Nagin and Land 1993). Other variables that have been introduced vary considerably. Research by Nagin and Farrington (1992) include measures of IQ, child-rearing behavior, propensity to be risk-taking, and separation from parents as predictors of recidivism. Most of these studies however, include only demographic variables, such as gender and race in addition to the time of event, in the prediction of recidivism. The focus continues to be on converging on the mathematical, temporal model that best fits the data. This manner of modeling, using only demographic variables, is unsatisfactory for the exploration of the numerous possible influences of electronic monitoring programs on recidivism.

Despite the lack of a comprehensive theory of recidivism, some research succeeds

in identifying factors that contribute to recidivism. While these studies far from constitute a theoretical framework, they do indicate possible directions. In a summary of existing studies, Pritchard (1979) identifies a number of "stable predictors" of recidivism. These predictors consist of variables that are found to be significant in 177 independent samples analyzed in 71 different studies. Pritchard finds that the most common predictor of recidivism is the type of offense, followed by prior convictions, stability of employment, age, marital status, and living conditions. Also indicated as "stable predictors" are education, type of employment, number of dependents, and the number of associates engaged in the offense.

In other research, Meisenhelder (1977) interviews twenty property offenders. This research indicates that the threat of further punishment and the offender's desire for a "normal" life are strong predictors of desistance in criminal careers. In addition, Meisenhelder identifies the procurement of employment and marriage as important situational factors in the desistance of criminal activity.

Lattimore et al. (1995) support these earlier findings with an examination of delinquent youths. The authors sampled nearly 2,000 paroled youths in California. The research indicates that family and school environments are strong predictors of the likelihood of recidivism. Specifically, dropping out of high school, as well as neglect, abuse, or lack of parental supervision at home are strong predictors of further delinquency. The results of Pritchard, Meisenhelder and Lattimore et al. support the adoption of social bond theory for the explanation of recidivism. The application of social

bond theory to the evaluation of EM programs is presented in the following chapter.

Measurement of Recidivism in EM

Recidivism, a problem that plagues all correctional options, symbolizes a failure in corrections to reform, rehabilitate, or deter the offender. Research on recidivism in electronic monitoring programs remain inconclusive due to the presence of uncontrolled variables. In its application and therefore evaluation, EM program size, location, duration, and function (e.g. probation, parole, or pretrial release), as well as the risk level of the offender vary, making it difficult to determine the direct relationship between electronic monitoring and recidivism. However, through a review of the research on recidivism and electronic monitoring in its entirety, some tentative conclusions can be drawn about recidivism of programs.

An additional difficulty in determining the relationship between EM programs and recidivism from the literature is that the measures of recidivism varies across studies. While rearrest is the most frequently employed measure, others, such as program term completion, failure to appear rates, and reconviction rates, are used. In addition, recidivism is dependent upon time. Of course, the probability of reconviction or rearrest increases with time. In the same way, duration of sentence is positively related to the incidence of a technical violation or an unsuccessful program termination. Further, inconsistency exists in the classification of the offender. The offender type, which is found to be a significant intervening variable, is classified by type of offense committed,

perceived risk of flight, and risk to the community. Of these, the most frequently utilized is the type of offense.

Some research has shown EMS recidivism rates to be significantly higher than that of other programs. For example, Cadigan, by observing defendants in the federal pretrial release program, finds that those defendants who are electronically monitored have a slightly higher failure to appear rate than the national average (5.4% as compared to 2.8%). This remains true when controlling for type of offense classified as either a misdemeanor or felony. Where the national rate is observed to be 1.9 percent for felonies and 1.0 percent for misdemeanors, the failure to appear rates for EMS defendants are 3.6 percent and 2.4 percent respectively. However, Cadigan is hesitant to form any steadfast conclusions due to the observation that federal pretrial EMS programs tend to receive defendants with a higher risk of flight than non-EMS pretrial programs (1991).

In other research, Beck, Klein-Saffran, and Wooten (1990), evaluate the Community Control Project. This federal program was implemented by the Parole Commission, and at any one time approximately 150 offenders were on curfew parole. Three hundred and fifty seven parolees enrolled in the program in 1988 and 1989 were included in this study. Despite the seriousness of their offenses (11 percent of the parolees had committed robbery or assault and 37 percent were convicted of distributing drugs other than marijuana), about two-thirds of these were classified as "very good" risks.

The authors find that 54 parolees (about 15%) violated their parole and were thus

program failures. Forty six of the 357 offenders were returned to prison for unspecified reasons. While the authors report the data to be inconclusive, they do indicate that the program was judged as a success by those agencies involved (Beck et al. 1990). While no control group is examined, recidivism rates are comparable to those of a half-way house.

While these two studies indicate a slightly higher rate of recidivism for electronic monitoring programs, the findings are likely to be the result of differences in the type of offender assigned to the programs or the measure of recidivism used in their evaluation.

Most of the more comprehensive research indicates lower recidivism rates for EMS programs than non-EMS programs (Cooprider and Kerby 1990; Jolin and Stipak 1992; Lilly et al. 1992). In one of these studies Lilly, Ball, Curry, and Smith (1992) conduct research evaluating the Pride Inc. Program of West Palm Beach, Florida. The research covers the last five years in which the program was operating (from October 1984 to November 1989). The vast majority of these were convicted of DWI, DUS, and traffic violations. Of these 87 percent had a previous record, 60 percent had more than one prior arrest, and 34 percent had been in alcohol or drug treatment programs.

Lilly et al. reported that 97 percent of the offenders completed the program. As the authors admit, "The 97 percent success rate of the Pride, Inc., program probably cannot be expected as EM is expanded (Lilly et al. 1992)..." This expectation is due to the belief that as this type of program becomes larger, the offenders receive less supervision. In addition, no control group was offered for comparison and the type of electronic

monitoring device utilized by Pride In. was not mentioned.

Research conducted by Jolin and Stipak (1992) focuses on a drug treatment program in Clackamas County, Oregon. Controlling for risk of offender, they report that the percentage of rearrests is lowest for electronically monitored offenders (32%) when compared to that of a work release program and an ISP program. However, this is not significantly different from the percentage of rearrests for the work release program (33%). Forty seven percent of the intensively supervised probationers were rearrested.

In contrast to rearrest, the success rate for completion of the program was highest for those in intensive supervision probation (32%). Although this is not significantly different from the success rate of the electronically monitored offenders (33%) or those in the work release program (33%), it does raise doubt as to the validity of program completion as a measure of recidivism. Indeed it is more likely measuring the incidence of technical violations due to the more stringent supervision of the program rather than actual criminal recidivism.

There exists a small amount of recent research that controls for the manner of program completion and the type of offense when comparing EMS and non-EMS programs. Studies conducted by Coopriider and Kerby (1990) and Coopriider (1992) examine a pretrial bond supervision program in Lake County, Illinois for the years 1986 to 1990. Coopriider finds that the percentage of defendants unsuccessfully completing the program due to technical violations is higher for EMS programs regardless of type of offense charged to the defendant. However, the percentage of program completions that

were terminated by rearrest are inconclusive, yielding the same result (4%) for both EMS programs and non-EMS programs. In addition, the failure to appear percentage is consistently higher, regardless of offense, for the non-electronically monitored defendants.

Research in electronic monitoring of juvenile offenders yields similar inconclusive results. Very few juvenile EM programs exist and most that are currently operating are in their trial stages. Consequently, juveniles chosen to participate are selected with strict criteria. Charles (1989) emphasizes the difficulty in evaluating such a program in Allen County, Indiana: "The great care taken in selecting candidates for the pilot project increased the probability of success. The obvious problem [was] that the system was not tested on less stable juvenile offenders. (p.11)" Indeed, the criteria of Allen County is strict but not unusual for such programs. The juvenile could have no prior commitments and could not have committed a violent offense. The youth also had to be enrolled in an educational program, be employed, or receive vocational training.

Despite their use of only "safe" risk offenders, there were numerous technical violations and two of the juveniles fled, removing their bracelets and leaving them at home. Some problems in implementing this program seemed to be specific to juveniles. Charles indicates that often the juvenile, "did not wake up when called early in the morning, or he was somnolent and [could not] respond properly to the call." Surveillance officers were frustrated because they felt that some of the violations were a result of the offender's carelessness and lack of responsibility and despite the officers' feeling that sanctions should be imposed for these violations they were not (Charles 1989).

Recidivism in Virginia, as measured by program completion, receives little attention in research. An exception is research by Kuplinski (1990). Kuplinski evaluates the six largest electronic monitoring programs in Virginia. The author reports a ten percent failure rate for these programs. This is well below the national average for probation programs (25 percent). Of the 37 program failures, only two were a result of the commission of a new offense. According to Kuplinski, however, the success of the EM programs are again due to the programs enrollment of relatively low risk offenders.

In conclusion, the empirical evaluations of electronic monitoring programs in corrections yield inconclusive results. Some evidence indicates that recidivism is lower for electronic monitoring programs. However, this is far from uniformly supported. While the impact of variables such as program design, type of offense, and duration of sentence may be partially determined by examining many different programs, the impact of other intervening variables remain unexplored. These variables are perhaps the most interesting and important for the explanation of recidivism. In addition, the application of a theoretical structure is absent in EM research. Indeed, none of these studies offer any *explanation* of recidivism, rather the observed recidivism is merely documented.

Research in home incarceration without electronic monitoring yields similar inconclusive results. Sandhu, Dodder and Mathur (1993) find that of 120 offenders sentenced to home confinement in a Southwestern city, 110 completed the program successfully. In addition, the authors observed the number of these offenders re-arrested within the following year and found that 91 percent of those sentenced to home

confinement had no record of rearrest. Such high success rates without the use of electronic monitoring raises into question of the need of the added expense of the electronic device. However, it is difficult to compare across programs due to the relative severity of the offenders assigned to these programs. In addition, cost effectiveness is not the only issue under consideration. Protection of the community is also a serious consideration of correctional personnel.

Examination of recidivism in other forms of community corrections yield similar inconclusive results. Next to house arrest, intensive supervision probation is commonly seen as the most severe form of community correction. Intensive supervision probation (ISP) involves numerous contacts with probation officers, largely exceeding that of normal probation, and often a condition of curfew. These programs have become increasingly popular in recent years.

In recent research Pearson, (1985 1988) examines New Jersey's intensive supervision program. Pearson observes that the recidivism rates for offenders on ISP were 10 percent lower after six months than offenders on ordinary probation. This difference increases over time. At two years, only 12.3 percent of offenders of ISP were reconvicted verses 23.1 percent of offenders in the control group. Of course, difficulties common to evaluation of EM programs plague this study as well. While some "high risk" offenders (based on type of offense) were selected to participate in ISP, these offenders typically had far fewer prior convictions than there ordinary probation counterparts and the most severe offenders (e.g. sex and violent criminals) were excluded from ISP.

Research in England examining young adult offenders in ISP programs show similar findings (Brownlee 1995). Brownlee evaluates the effectiveness on the English version of intensive supervision probation, termed the "Edge." This program shows slightly smaller percentages of reconviction than other community correction programs. However, the research failed to control for the severity of offense of those assigned to each program, as well as the number of prior offenses.

Turner, Petersilia, and Deschenes (1992), examine recidivism of ISP for drug-involved offenders. The authors include five programs in their sample from California, Washington, Iowa, New Mexico and Virginia. The offenders involved in the ISP program were subjected to more drug testing and counseling than those in standard probation programs. Research indicates that the participants in ISP were more likely than the participants in standard probation to have technical violations related to probation and drug use after one year than those offenders enrolled in routine supervision. This, of course, is expected due to an increase in testing and supervision. There was no difference in new criminal arrests between these two groups, indicating that the increased supervision of the ISP program over standard probation has no deterrent effect. However, because these ISP programs were implemented specifically to handle drug-involved offenders, the more serious cases of drug-involvement were allocated to the ISP programs.

Research by Turner and Petersilia (1992) indicates similar results using ISP programs located in Dallas and Houston. Offenders are randomly assigned to either the ISP or the routine supervision program limiting the influence of the type of initial offense

and the number of prior convictions. The authors find that offenders in the ISP program are no more likely than offenders on routine probation to be arrested or convicted on new charges than those offenders in routine supervision, once again, indicating that there is little increase in the deterrent effects with the increased supervision of the ISP program. Consistent with previous findings, the offenders of the ISP program were somewhat more likely to have technical violations.

The finding that there seems to be little deterrent effect of increased supervision is not surprising in light of research on parole by Jackson (1983). This study randomly assigned 296 youth offenders to continuation of parole or to be discharged from parole. Jackson finds that the offenders assigned to parole were no less likely to be arrested over a 26 month period than those that were discharged from parole.

Other research however, does indicate a deterrent effect of correctional supervision in parole. Kelly and Ekland-Olson (1991) find that with the increase in dependency upon parole in Texas, due to the overcrowding of correctional facilities, there appears to be a loss in the deterrent effects of parole programs. Examining cohorts for the years 1984, 1985, 1986, and 1987, the authors find the cohorts of 1986 and 1987 were significantly more likely to return to prison than the cohorts of the two previous years. This remains true when controlling for the composition of the cohort by type of offense. However, because no variables on the increase in burden of correctional personnel are examined, the explanation of these increases in recidivism as a result of a loss of correctional supervision remains speculative.

Research on recidivism of electronic monitoring programs and other forms of community corrections focuses exclusively on the type of correctional program and the rate of recidivism. The effects of electronic monitoring on the offender and his or her household and community environment are essentially absent. In addition, the research is devoid of any theoretical underpinning. This is primarily the result of the proclivity toward program evaluation rather than sociological examination.⁵

⁵With the effectiveness of any form of community correction still undetermined, one must question the enthusiastic response of the correctional community to new programs such as ISP and EM. These programs are being implemented as because they offer an intermediate punishment, regardless of how effective that punishment is in deterring subsequent criminal activity. In a recent article Tonroy (1990) asserts that these programs, despite their failure to reduce cost or recidivism, are gaining popularity because they fulfill bureaucratic and professional goals. These include lending legitimacy to probation as an alternative to incarceration, providing a feeling of importance to probation officials, and curbing political pressure for stiffer sentencing of criminals.

CHAPTER IV. PROPOSED RESEARCH: THEORY

A review of previous research indicates numerous gaps in the evaluation of electronic monitoring programs. The rate of recidivism for EM programs compared to that of other correctional programs remains unclear. The underlying factors that affect the recidivism rate for EM programs also remains unclear. In addition, the effects on the offender, the offender's family, peer group, and employment are not identified. The two underlying factors responsible for the inability of previous studies to adequately answer these questions are the exclusion of variables pertaining to the effects of electronic monitoring on the offender and the lack of theory needed to understand the relationships of these variables. This proposed study argues for the inclusion and systematic control of variables that are previously ignored. In addition, it provides explanation for recidivism within the framework of social bond theory.

Social Control Theory

As previously mentioned, EM research is devoid of the theoretical underpinning that is necessary in order to understand the causes of recidivism in EM programs. The two most prominent reasons cited for the use of community corrections, including EM programs, are to minimize cost to correctional agencies and to "re-integrate" the offender into the community. The objective of the Kentucky Department of Corrections explicitly indicates as one of their objectives, "[to] assist the offenders in accepting their

responsibilities to their families and the community...(Ball et al. 1988)." It is believed that re-integration, or a lack of social isolation, is important in reducing recidivism. Although there is no explicit theoretical basis for community and family integration, social bond theory, as proposed by Hirschi (1969), can readily incorporate this objective. In this way, it is useful in the examination of recidivism in EM programs.

Social control theory offers an attractive model for understanding recidivism. This group of theories differ from other theories of criminality in its basic premise. Instead of asking why some people commit crimes, it asks why most people refrain from the commission of crime. It assumes that all people have the propensity to commit crime and proposes that this propensity is somehow controlled by an individual's integration into society. This different orientation is especially relevant to the explanation of delinquency due to its ability to explain the widespread occurrence of delinquency among youth and the widespread desistence in criminality of youth in later years (commonly referred to as the "aging out" process). However, social control theory can be successfully applied to adult criminality and is especially useful in this examination of home incarceration.

The most tested and familiar of the control theories is social bond theory. Social bond theory was first proposed and tested by Travis Hirschi in 1969. It seeks to explain criminality as a result of an inadequate bond between the individual and society. This social bond is composed of four elements. They are attachment, commitment, involvement, and belief.

Attachment is that aspect of the social bond that pertains to the sensitivity that an

individual possesses for the opinions or expectations of other members of society.

Attachment is seen as a necessary condition for the internalization of norms and in this way is related to F. Ivan Nye's "internal" and "indirect" control and is an integral part of Albert Reiss's "personal controls (Hirschi 1969)." Its advantage over the concept of internalization is apparent in its ability to capture variation in a single criminal career. The emergence of an individual's criminality can be explained without assuming a change in conscience but rather by the weakening of attachment of that individual to family or other social unit. Of the four elements this is the most frequently tested and the strongest predictor of criminality.

Commitment pertains to the "rational component of conformity (Hirschi 1969 p.20)." It is proposed by Hirschi that as an individual invests more time and effort into his or herself through education, job stability, or the building of a good reputation in the community, the individual has more to lose by committing a criminal act. Therefore, that individual becomes more committed to society. This concept is closely related to Jackson Toby's stake in conformity.

Involvement is a structural component that is related to an individual's opportunity to commit crime. If most of an individual's time and effort is consumed in legitimate activity, there is little time to engage in illegal activity. In short, involvement is the theoretical expression of, "idle hands are the devil's workshop."

The final component of the social bond is belief. Many theories address the impact of the belief in the rules of society on criminality. Donald Cressy (1969) argues that

rationalizations make an individual able to both violate a rule and believe in it. Sykes and Matza (1957) explain criminality through a weakened belief in the rules of society by techniques of neutralization. Hirschi undertakes a slightly different approach to belief, stating that there is a "variation in the extent that people believe they should obey the rules of society, and, furthermore, that the less a person believes he should obey the rules, the more likely he is to violate them (Hirschi 1969 p. 26)."

Empirical Research in Social Bond Theory

Hirschi originally designed social bond theory to be empirically testable. Because of this, it is one of the most tested theories in criminology and juvenile delinquency. Most empirical research has shown modest support for at least some part of the social bond (Hirschi 1969; Krohn and Massey 1980; Waitrowski, Griswold, and Roberts 1981; LaGrange 1985; Agnew 1991; Empey and Stafford 1991; Mak 1991; Jensen and Rojek 1992; Jungar-Tas 1992; Shoemaker 1992 1994).

The least supported of these elements is involvement. Even in Hirschi's original work, there was no significant relationship between involvement in conventional activities and delinquency. Since that time only a handful of research has found support for this relationship (Waitrowski, Griswold, and Roberts 1981; Shoemaker and Gardner 1988). In fact, some research examining dating as a measurement of involvement in the peer group, has found a positive relationship between dating, involvement and delinquency

(Waitrowski, Griswold, and Roberts 1981).

Belief in conventional activities are shown to have mixed affects on delinquency (Kandel et al. 1978; Paternoster et al. 1983; Bishop 1984; Agnew 1985 1991; Elliot, Huzinga, and Ageton 1985; Massey and Krohn 1986; Paternoster and Iovanni 1986; Burkett and Warren 1987; Paternoster 1988; Jungar-Tas 1992). This may be due to the manner in which it is measured. Belief is usually not measured by its connection with a single institution, such as parents or school, but is more commonly applied to all conventional activities. Therefore, the variable is a combination of belief in school, church, and other community activities. Thus, the impact of belief on criminality remains imprecise.

Empirical research shows mixed results for the influence of the element of commitment on delinquency (LaGrange 1985; Massey and Krohn 1986; Paternoster and Iovanni 1986; Paternoster and Triplett 1988; Agnew 1991; Mak 1991; Shoemaker 1992 1994). School is the most commonly tested institution when examining commitment. However, a composite variable reflecting a commitment to conventional means of educational attainment and employment is also often used.

The element of attachment has been strongly supported in the empirical literature. Most commonly examined is a juvenile's attachment to family, peers, or school. Parental attachment has continued to show significant and strong results as a cause of delinquent behavior (Hirschi 1969; Waitrowski, Griswold, Roberts 1981; LaGrange 1985; Waitrowski and Anderson 1987; Mak 1991; Shoemaker 1992). Although to a lesser

degree, most of these studies also find a significant negative relationship between attachment to school and delinquency. Of the most debated of the attachments is the attachment to peers. This variable is most often found to have be *positively* related to deviance, even when controlling for the delinquency of the peers (Waitrowski et al. 1981; LaGrange 1985; Agnew 1991; Shoemaker 1994).

This positive relationship between attachment to peers and delinquency has prompted some researchers to incorporate Sutherland's theory of differential association with social bond theory. Differential association suggests that delinquency is learned in intimate social groups. In this case the parents become less of an influence on the delinquent's behavior. Norms and techniques for delinquency are then taught by peers. This integrated theory is often termed differential control theory and has some empirical support. However, many of these works are unable to reconcile conflicts in the underlying assumptions of these theories. In a recent work Heimer and Matsueda (1994) meet with some success in incorporating symbolic interactionism as a substructure for differential social control.

In addition to explaining the influence of peers on delinquency, such integrated theories provide a solution to a common critique of control theory. The assumed proclivity that all individuals have towards delinquency has often come under criticism, even by those researchers that generally support the theory. The emergence of "intervening mechanisms (Jungar-Tas 1992; Agnew 1993)" and psychosocial controls (Mak 1991) has served to reinforce the explanatory power of social bond theory in this

way.

Although many points are currently under debate, social bond theory remains one of the most empirically supported in the area of juvenile delinquency. In this particular work, however, social bond theory is applied to adult criminality. There is almost no prior research applying social bond theory to adult criminality. This is due, in part, to the relative ease of extracting data from the juvenile population as opposed to the adult population. High schools are easy targets for the self-reported delinquency questionnaires. In addition, the application of social bond theory to adults necessitates a reevaluation of the institutions to which an individual may be bonded. Parents and school, for example, become somewhat less important to adults. However, there are at least three institutions that are believed to be a major part of the adult life. These are the family (spouse and children), the peer group, and employment.

Proposed Research

This work proposes a research design that attempts to explain recidivism of electronic monitoring programs. The focus of is on filling the void of existing research in recidivism. This requires an exploration and identification of the effects of electronic monitoring on the offender, the offender's family, peer group, and employment and an attempt to analyze these within the framework of the social bond. The family, peer group, and employment, are frequently shown to have a strong connection with criminality.

Hypotheses

Two hypotheses emerge from the application of social bond theory to recidivism in EM:

1. The social bond between the offender and the offender's family, employment, and peers will be positively affected by electronically monitored home confinement more so than standard probation.
2. The recidivism of an offender will be negatively affected (reducing recidivism) by a strong social bond of the offender to their family, peer group, and employment.

Variables

The central variables to these hypotheses are the bond variables, the program type and duration, and the recidivism of the offender. Because the hypothesis proposes a change in the social bond of an offender to his or her family, peer group, and employment, the bond must be assessed prior to enrollment in EM or standard probation/parole and after program completion. Bond variables are a latent construct composed of the offenders attachment, commitment, involvement, and belief in each of the family, peer group, and employment. While this deviates slightly from previous research in the social bond, it enables an examination of the bond by social institution (family, peer group, employment) rather than by selected pieces of the social bond. As the first hypothesis suggests the social bond of an offender to all institutions is influenced by the type of

program in which the offender is involved. In addition, the offender's social bond is influenced by the duration of the correctional program. While some elements of the social bond to the institutions of the family, peer group, and employment are likely to remain unaffected by electronic monitoring, others are likely to be greatly affected.

The element of the social bond that is most likely to be affected by electronic monitoring is involvement. The electronic monitor vastly decreases the opportunity to participate in illegal activity. However, participation in illegal activity may still occur. In addition, involvement with peers, whether they be engaging in legitimate or illegitimate activities is likely to decrease.

Involvement with the family, of course, should increase greatly due to the confinement of the offender to his or her home. Involvement with employment is also likely to increase because employment is often a condition of probation and parole and therefore participation is necessary in order to avoid revocation. While an increase in involvement with employment, may result in a substantial increase in the total bond of the offender to employment, an increase in involvement is less likely to have substantial effects on the total bond of the offender to his or her family. Due to the expected strength of other elements of the social bond of the offender to the family (attachment, commitment, and belief) a change in involvement is likely to be proportionally less. Indeed, the relationship of the offender to his or her family is more complex.

A recent study examined the relationship between intrafamilial conflict and electronically monitored home confinement (Quinn and Holman 1991). Although

methodological questions are raised by the authors, findings are strong enough to indicate that electronic monitoring has some effect on the family unit. The exact nature of the effect of electronic monitoring on family relationships was unable to be determined by the relatively small number of interviews. The researchers noted that EM had some positive effects on some families but negative effects on others. In light of recent findings, the Department of Justice has incorporated prescriptions pertaining to significant others, stating that, "Careful consideration should be given to the stability of the living arrangement and the impact of others within the home... (U.S. Department of Justice 1994: 7)."

In subsequent research by Quinn and Holman (1992), EM's effect on family control of the offender is explored. Quinn and Holman report that there exists no difference in the offender's perceived family control before and after enrollment in the electronic monitoring program exists. While control may at first appear to be related to social bond, the tool of measurement was actually a *psychological* test of family environment.⁶ In addition, the post test was given immediately following program completion. This does not give the offender time to discern familial control from that of the electronic monitor. In short, the perception may be that the electronic monitor provided all control when in fact longer lasting and more important control may be a result of family or peer group.

⁶The measurement used for family control is the Moos & Moos Family Environment Scale developed in 1986.

Electronic monitoring may affect the bond an offender has with his or her family in a number of ways. Providing that an offender has a family (spouse, children, or some other relative) that occupies the same residence, we can expect the introduction of electronic monitoring to alter attachment, commitment and involvement to the family. Attachment, as measured by Hirschi, can be affected due to a change in the level of supervision by family members, and an increase in interaction may have positive or negative affects on emotional investment and communication between family members. Indeed, almost all of the original questions proposed by Hirschi to measure attachment are expected to be affected by the introduction of electronic monitoring. In addition, time spent with the family while on electronic monitoring may become a type of investment that would affect the offender's commitment to their family.

Electronically monitored house arrest may change the bond of an offender to an offender's peer group by both altering the type of interaction with the same group of friends or it may alter the actual members of the offender's peer group. In either case, attachment may be affected. The peer group may be less sensitive to the offenders "thoughts and feelings" due to a drop in interaction or as a result of stigma. However, friendships may be solidified due to a new dependency upon them. Studies examining this tend to indicate a marked increase in dependency upon friends that, according to the U.S. Department of Justice, seems to have several positive emotional benefits (1987). In this case attachment, and therefore the social bond, should become stronger.

Commitment to peers may also be affected by electronic monitoring. The

offender's forced enrollment may have a deterrent effect, thus increasing the peer group's overall respect for law enforcement and decreasing the peer group's illegal activity. If the offender develops a new peer group due to electronic monitoring, it is very possible for this new group to have more respect for law enforcement and engage in less illegal activity. In fact, due to the precarious position of the offender, (facing the threat of revocation of parole or probation), new friends may be chosen on this basis.

Employment is believed to be affected both positively and negatively by EM. While time constraints imposed by the monitors have led to prompt arrival at the work place, it is not flexible enough to incorporate many difficulties that may arise, including unforeseen transportation difficulties and the possibility of working overtime. Much of the existing research on probation outcome indicate employment to be a significant variable influencing recidivism (Renner 1978, Scott and Carey 1983, Cuniff 1986, Morgan 1993). Once again, however, results remain for the most part inconclusive. As mentioned before, the element of involvement with respect to employment is likely to increase by electronically monitored home confinement.

The offender's attachment to employment is not likely to change as a result of electronic monitoring. If the offender is currently employed and was employed prior to arrest there is no foreseen change in either the attachment to the actual job or the attachment to those with whom the offender works. However, at least some aspect of commitment to employment is likely to be affected by electronically monitored home confinement. Because it is often a condition of probation and parole, we can expect its

importance to the offender to increase.

The element of the social bond that is least likely to change as a result of electronic monitoring is belief. The offender's belief in conventional action, as proposed by Hirschi (1969), will not be used in this study. Instead, belief in conventional action becomes specific to the institution in question (i.e. peer group, family, employment). This allows belief to be included in the analysis of an offender's total bond, including all bond elements, to the peer group, family, and employment.

In general, across all elements of the social bond, the use of EM in community corrections is hypothesized to be positively related to the bond of an offender to his or her peer group, family, and employment. The duration of the program is also hypothesized to be positively related to the social bond of the offender, regardless of the type of correctional program (EM or regular probation/parole).

In turn, the social bond of the offender to all institutions (family, peer group, and employment) is hypothesized to be negatively related to recidivism (future criminality). The stronger the social bond of the offender to his or her family, peer group, and employment, the less likely that offender will commit further crime. Although not a central tenet of the hypotheses, the duration of the program and the type of correctional program in which the offender is enrolled may *directly* influence recidivism independent of the social bond. The direction of this possible relationship is positive indicating that the more extensive the correctional supervision (longer duration/EM vs. standard probation). A brief description and summary of the social bond variables as well as its their proposed

relationship with other variables is presented in Table 1. Other variables directly related to the hypotheses are summarized in Table 2.

Table 1. Bond Variables				
Bond Variable	Description	Correlated with:	Influenced by:	Influences:
FamBnd1	Social bond of the offender to family prior to conviction of offense.	Age Gender		FamBnd2
FamBnd2	Social bond of offender to family after program completion		FamBnd1 Progtype Progdur	Recidivism
PeerBnd1	Social bond of offender to peers prior to conviction.			PeerBnd2
PeerBnd2	Social bond of offender to peers after program completion		PeerBnd1 Progdur Progtype	Recidivism
EmpBnd1	Social bond of offender to employment prior to conviction	Income Educ		EmpBnd2
EmpBnd2	Social bond of offender to employment after program completion		EmpBnd1 Progdur Progtype	Recidivism

In order to successfully examine the relationships specified in the hypothesis a number of potentially spurious relationships must be specified. To this end many control variables are proposed. These include, gender, ethnicity, age, income, education, prior offenses and the type of offense of which the offender was convicted.

Table 2. Program Variables				
Variable	Description	Correlated with:	Influenced by:	Influences:
Progtype	Type of correctional program: EM or regular probation or parole	Progdur, Priors, Offtype		Recidivism, FamBnd2, PeerBnd2, EmpBnd2,
Progdur	Duration of the program	Progtype, Priors, Offtype		Recidivism, FamBnd2, PeerBnd2, EmpBnd2
Recidivism	Recidivism of the offender one year after release.		Ethnic, Educ, Income Gender, Priors, Age Offtype, Progtype, Progdur, FamBnd2, PeerBnd2, EmpBnd2	

These variables are consistently shown to influence recidivism in research in the area of criminology (Chilton 1982 Greenberg, Kessler, and Logan 1979 Nagin 1978 Huff and Stahura 1980). In addition, some of the demographic and control variables are believed to be strongly correlated with bond variables and each other. Table 3 contains descriptions of all demographic and control variables and a summary of their relationships with other variables.

Because all of the offenders are adult offenders, age is presumed to be negatively related to recidivism. Thus an increase in age will result in a decrease in the probability of recidivism. Minorities are more likely to engage in criminal activity. Education and income are likely to be negatively related to recidivism. Males are more likely to engage

in criminal activity. Prior convictions is positively related to recidivism given that a high number of prior convictions indicates an active criminal career. In addition, research in criminology shows that the type of offense of which the offender is currently convicted, is likely to be positively related to the conviction of further offenses, especially for those convicted of more serious crimes, particularly violent crimes (Brownlee 1995 Lilly et al. 1992 Nagin 1992. Greenberg 1991 Jackson 1983).

Demographic or Control Variable	Description	Correlated with:	Influences:
Age	Age at time of enrollment in correctional program	Priors, FamBnd1	Recidivism
Ethnic	Ethnicity: White, black, Latino, Asian and Pacific Islander	Income, Educ, Priors, Offtype	Recidivism
Educ	Education of the offender at time of enrollment	Income, Ethnic, Priors, Offtype, EmpBnd1	Recidivism
Income	Household income at time of enrollment	Ethnic, Educ, Priors, Offtype EmpBnd1	Recidivism
Gender	Male or Female	Offtype, FamBnd1	Recidivism
Priors	Number of prior offenses (not including current offense)	Age, Ethnic, Educ, Income, Offtype, Progtype, Progdur	Recidivism
Offtype	Type of offense of which offender presently convicted	Ethnic, Educ, Income, Gender, Priors, Progtype, Progdur	Recidivism

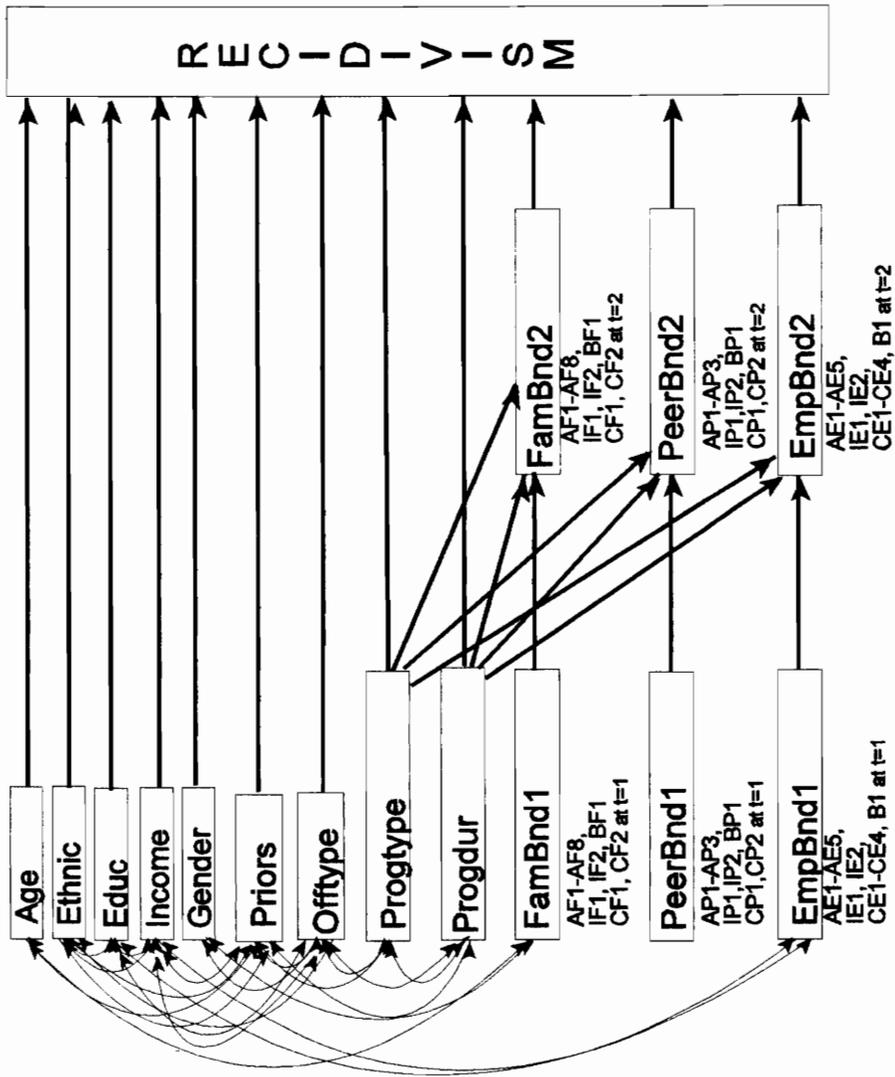


Figure 1 Structural Equation Model

Model

In order to combine the large number of relationships identified in the previous sections a structural equation model is proposed in figure 1. This model includes all variables mentioned in the previous sections and their hypothesized relationships. In addition to the proposed causal influences of these variables, indicated by the straight lines in the direction of the arrow, correlations are indicated by curved lines in the model. The items listed under the latent bond variables (e.g. FamBnd1, EmpBnd2) are their components. These include questions that address an offender's attachment, commitment, involvement, and belief, to each institution. The formation of this type of model allows for a simultaneous estimation of all the proposed relationships.

This model is far more comprehensive than previous models used to assess contributions of correctional programs to recidivism. It includes a number of control variables as well as bond variables that rigorously explore the recidivism of offenders. However, it places a much greater burden on data collection and measures than previous models in correctional evaluation. The result is a complicated program of data collection, measurement, and analysis.

CHAPTER V. PROPOSED RESEARCH: METHODOLOGY

Data Collection

The sample for this study will be composed of 100 selected offenders sentenced to electronic monitoring programs in Virginia. In addition, a control group of the same size will be selected from offenders sentenced to standard probation and parole programs in Virginia. The selection process will begin after obtaining approval from the Virginia Department of Corrections and the Human Subjects Review Board of Virginia Polytechnic Institute and State University. The appropriate officials will be requested to give a list of all offenders currently being sentenced to EM or standard probation/parole in jurisdictions employing both EM and standard community corrections. Only these jurisdictions will be used to minimize the comparison of offenders across different jurisdictions. This list should be constantly updated. All offenders will be selected from this list, contacted and administered the initial interview in the order in which they are sentenced to probation or parole. This will continue until 100 respondents are successfully contacted in both the EM sample and the standard probation/parole control group. A respondent number will be assigned to each of the offender's names in order to track the offender through the various interviews employed in this study.

Data pertaining to these participants will be obtained through four different mechanisms. The first of these mechanisms is a brief interview (Appendix A) addressing many of the background variables in the proposed model and establishing a connection

with the probation officer. These initial interviews will be conducted by the author. The offender's probation officer will be questioned to obtain the number of prior convictions of the offender, the type of offense of the offender's most recent conviction, the type of correctional program in which the offender is currently enrolled (verification of proper selection), and the duration or length of sentence.

Following this, a meeting with the offender and the interviewer will be arranged at a correctional facility soon after the offender's enrollment in a probation/parole program⁷. After obtaining written consent (Appendix B), interview schedule number 1 (Appendix C) will be administered. Appendix C is designed to obtain demographics and the first tier of bond variables.

After completion of the program, the offender will participate, with the same interviewer (if possible) in a second interview. During the second interview, schedule number 2 will be used (Appendix D). This interview will obtain the second tier of bond variables and the income of the offender. Income is the only demographic variable collected after program completion because it is the only variable that is likely to fluctuate during the course of the study. Other demographics could be collected at the time of program completion but in most cases it is appropriate to obtain that data as soon as possible.

Frequent contact with probation officers must be maintained in order to determine

⁷Interviewers will be hired at a rate of \$10/hour and undergo a 2 hour training and briefing.

program completion, to remain in contact with the offender, and to determine recidivism. Program completion may be successful or unsuccessful, resulting in revocation of probation or parole. One year following the last enrollment of an offender, the appropriate correctional officer will be contacted and briefly interviewed to determine the offender's arrest record. During this time any arrests or technical violations of the terms of probation or parole will be recorded.

Measurement of Variables

A summary of the variables, their measurement, and the mechanism used for their collection is summarized in Table 4. The scaling of the variable pertaining to the type of offense (Offtype) is constructed from the literature on probation and parole recidivism. Some aspects in the scaling (from property less than \$1000 and DUI to violent with injury) is a result of the public and correctional systems view of the seriousness of an offense. Other aspects (e.g. grouping drug abuse with property greater than \$1,000) reflects an increase in expected recidivism based on the review of the literature.

The type of correctional program in which the offender is currently serving his or her sentence (Progtype) is classified both by EM or standard supervision and by parole or probation. While there exists nothing in the literature to indicate that probation supervision and recidivism is significantly different from parole supervision and recidivism, it may prove otherwise here. Therefore, although these categories may be collapsed in the future, Progtype will specify both the type of supervision (EM and non-EM) and the type

of correctional program.

Bond variables are latent variables determined by a factor analysis of a number of questions adapted from research testing social bond theory (Agnew 1991 Gardner and Shoemaker 1989 Krohn and Massey 1980 Matsueda 1982 Shoemaker 1992). These are summarized in Table 4. The proposed test differs from other research in social bond theory by the manner in which the social bond variables will be constructed and estimated. Rather than estimating attachment, commitment, involvement, and belief separately, facing problems of multicollinearity, the proposed model estimates all questions related to the social bond together in a single latent variable. While this reduces attachment, commitment, involvement, and belief to organizational tools, it is a more robust method.

Approximately one year following the initial questionnaire any rearrest or unsuccessful termination of parole/probation of an offender in the sample or control group will be obtained with the cooperation of the Virginia Department of Corrections. Obtaining both of these measures of recidivism is essential. It has been observed in the literature that technical violations are more common in EM programs and intensive supervision programs than standard probation and parole. Where both technical violations and re-arrests are used in the evaluation of the correctional programs, they appear to be unrelated, suggesting that merely the increase in supervision results in a higher incidence of technical violations. This increase in technical violations surely results in an increase in parole and probation revocations.

Table 4. Measurement of Variables		
Variable	Measurement	Source
Age	Age in years	First Interview w/offender
Ethnic	Ethnicity (Black; White; Other)	First Interview w/offender
Educ	(some high school; high school degree; some college; associate/technical/vocational degree; 4yr college)	First Interview w/offender
Income	Household income (less than \$10,000; 10,000-20,000; 20,000-30,000; 30,000-40,000; 40,000-50,000+)	Second Interview w/offender
Gender	(Female; Male)	First Interview w/offender
Priors	Number of Prior convictions	Probation officer
Offtype	Type of offense of present conviction (DUI/property <\$1,000; property >\$1,000/drug abuse; violent [no injury]; other drug offenses; violent[injury])	Probation officer
Progtype	Type of program (regular probation ; regular parole; EM probation; EM parole)	Probation officer
Progdur	Duration of program in months	Probation Officer
FamBnd1	Latent variable: Attachment: Would you like to be the kind of person your family members are? (in every way, in most ways, in some ways, not at all) My family knows where I am when I am away from home. My family knows who I am with when I am away from home. My family wants to help me when I have problems. My family knows what is best for me. My family explains why they feel the way they do. I can share my thoughts and feelings with my family. (never, sometimes, usually, always) Involvement: How many hours per week do you spend engaging in planned activities with your family? What percentage of an average day is spent doing things with your family? Commitment: Spending time with my family is important to me. Pleasing my family is important to me. (strongly disagree, disagree, agree, strongly disagree) Belief: It is important to be an active member of one's family. (strongly disagree, disagree, agree, strongly disagree)	First Interview w/offender
FamBnd2	Same as above	Second interview w/offender

PeerBnd1	<p>Latent Variable:</p> <p>Attachment: Would you like to be the kind of person that your friends are? (in every way, in most ways, in some ways, not at all) I can share my thoughts and feelings with my friends. My friends want to help when I have a problem. (never, sometimes, usually, always)</p> <p>Involvement: How many hours per week do you spend doing planned activities with your friends? What percentage of an average day is spent doing things with your friends?</p> <p>Commitment: Spending time with my friends is important to me. Pleasing my friends is important to me. (strongly disagree, disagree, agree, strongly disagree)</p> <p>Belief: Friends offer valuable support and guidance in life. (strongly disagree, disagree, agree, strongly disagree)</p>	First interview w/offender
PeerBnd2	Same as above.	Second interview w/offender
EmpBnd1	<p>Latent Variable:</p> <p>Attachment: Would like to be the kind of person that your fellow employees are? (in every way, in most ways, in some ways, not at all) I care what my fellow employees think of me. My employer know s what is best for me. I share my thoughts and feelings with my fellow workers. My fellow workers want to help me when I have problems. (never, sometimes, usually, always)</p> <p>Involvement: How many hours do you work per week? How often do you attend work related activities (meetings, recreation) outside of normal working hours?</p> <p>Commitment: I try hard at work. (never, sometimes, usually, always) The things I do at work seem important and worthwhile to me. Doing well at work is important to me. (strongly disagree, disagree, agree, strongly disagree) I miss work or am late for work. (never, less than once a month, once a month, twice or three times a month, once a week or more)</p> <p>Belief: You must work hard to be successful. (strongly disagree, disagree, agree, strongly agree)</p>	First interview w/offender
EmpBnd2	Same as above.	Second interview w/offender
Recidivism	Rearrest and/or technical violations after 1 yr (none; yes)	Follow-up w/ correctional supervising officer

Analysis

The analysis of the model in figure 1 will be conducted using LISREL 8 with the SIMPLIS command language. This allows for the simultaneous estimation of all hypothesized relationships including a factor analysis of the items comprising the latent social bond variables. Cases with missing values will be dropped from the analysis.

Two separate analyses are proposed. The first analysis will include both re-arrests and revocations due to technical violations as measures of recidivism. The second analysis will include only re-arrests (including those that resulted in revocation). This will indicate the contribution of revocations due to technical violations to incidences of recidivism. Based on the result of this analysis technical violation revocations may be dropped from the measure of recidivism. It is hypothesized that these data will show a strong, statistically significant, and positive relationship between the use of electronic monitoring in supervising offenders and the offenders social bond to family, peers, and education. In addition, a strong, statistically significant, negative relationship between the social bond of an offender to family, peers, and employment and recidivism is hypothesized.

CHAPTER VI: DISCUSSION AND CONCLUSION

The proposed study is an advancement over current research in both the areas of correctional evaluation and criminology. It attempts to better understand, and therefore explain, recidivism in correctional programs through the adaptation of social bond theory. Thus it applies a criminological understanding to what is currently a policy driven line of inquiry. In addition, the study attempts to identify the influence of correctional programs on offenders' relationships with their families, peer groups, and employment.

If the first hypothesis of this study, that probation or parole when accompanied by EM strengthens an offenders social bond to society, is not supported the use of EM over other less expensive community sanctions should be called into question. Indeed, the use of EM may have negative effects on some aspects of the social bond. Increased proximity due to the use of EM may increase conflict between the offender and his or her family. Increased dependency on peers, during electronic monitoring may also increase conflict with peers. In addition, the inflexibility of EM house arrest may cause employment difficulties. An offender on EM is unable to leave for work early or stay late. Thus transportation to and from work and overtime hours must be coordinated well ahead of time and remain consistent. In some cases this is not possible. These types of employment difficulties may weaken the bond of an offender to employment.

In addition, if the influence of the type of correctional program (EM or non-EM) directly on recidivism is much weaker than the influence of EM on recidivism through the

bond variables, than it implies that such bond variables are a necessary consideration if a reduction in recidivism is desired.

The proposed study is a unique application of social bond theory in three different ways. Despite the strong empirical support of social bond theory in delinquency research, this theory has not been applied to adult criminality. In addition, research in criminology has not incorporated the influences of correctional treatment, tending to leave the examination of recidivism to less theoretical approaches. This study would apply social bond theory to both adults and recidivism, exploring the influence of correctional programs on the social bond. If the social bond variables identified in this model are shown to be significantly related to recidivism and correctional treatment, future criminological studies may apply social bond theory to adult criminality and recidivism. In addition, the unique operationalization of the social bond allows for the examination of the effects of the entire bond on each social institution. In this way the relative importance of these institutions on the recidivism of the offender can be assessed.

Four difficulties can be identified in the proposed research. The short time period of one year is not sufficiently long enough to completely evaluate recidivism in correctional programs. In addition, measuring recidivism at one point in time is imprecise. The elapsed time between the events of enrollment in program and re-arrest is far more precise. Future research may alleviate these problems in measuring recidivism by using an event history analysis over a longer period of time.

A second weakness in this study is the predicted lack of variation in the number of

prior offenses and the type of offense in participants of EM programs. These two variables often inform correctional officers in the decision to enroll the offender in EM programs. Therefore statistical control of the influence of these variables on recidivism may be difficult. In future research the use of a larger sample can alleviate this problem. Other states use EM more heavily and with more serious offenders.

Thirdly, the use of a nonrandom sample is necessary given constraints on time and the modest amount of offenders sentenced to electronically monitored home confinement in Virginia. This may lead to sampling bias in both the control groups and the sample. Although not anticipated, fluctuations in correctional policy may result in a correctional supervision practices that are particular to the sample and control group.

Lastly, the reliance upon the recollection of the offender for the evaluation of his or her social bond prior to conviction is problematic. Many aspects of the relationship of the offender to his or her family, peer group, and employment as well as the behaviors of the offender prior to conviction will be forgotten making accurate determination of the bond difficult. This problem may only be alleviated by measuring the social bond of an offender to society immediately after conviction. This requires extensive foresight and tracking of the offender through the correctional system. In addition, it requires a long period of time (waiting for an offender to finish a jail or prison term) and extensive cooperation from correctional personnel.

APPENDIX A: INITIAL INTERVIEW

(to be administered to the offender's probation officer)

Subject number _____

Date _____

1. How many prior offenses has the offender been convicted of?

PRIORS: _____

2. For what offense has the offender been convicted?

offense _____

- OFFTYPE:**
- 1) DUI/property offense<\$1,000
 - 2) Property>\$1,000/abuse of controlled substance
 - 3) Violent offense (no injury)
 - 4) Other drug offenses
 - 5) Violent (injury)

3. To what type of community correctional program is the offender sentenced?

PROGTYPE: 1) Standard Probation

2) Standard Parole

3) Probation with EM

4) Parole with EM

4. What is the length or duration of the offender's sentence to probation or parole?

PROGDUR: _____ months

5. Other information:

FOLLOWUP (One Year Following Initial Interview)

Date: _____

RECIDIVISM: (Check those that apply)

_____ Unsuccessful termination of program.

_____ Rearrest.

_____ Technical Violation of Probation or Parole Conditions.

APPENDIX B: VOLUNTARY INFORMED CONSENT FORM

VOLUNTARY INFORMED CONSENT

This study, entitled "Electronic Monitoring in Corrections: An Application of Social Control Theory," is being conducted by Brian J. Meekins, graduate student of sociology at Virginia Polytechnic and State University under the direction of Carol A. Bailey, Associate Professor of Sociology at Virginia Tech. The purpose of this study is to examine the effect of electronic monitoring on employment, peer group and family relations. Information obtained in this study will be used to identify possible factors that may lead to recidivism.

Participants in this study will be asked questions and participate in discussion that will focus on any changes in lifestyle that have occurred while placed on electronic monitoring. These interviews will require about an hour to an hour and a half to complete and participants will be taped. Answers and tapes will be made available only to the researchers, retained in their files, and will be given a code in place of names. Your participation is voluntary and you may refuse to be taped. You may withdraw at any time without prejudice. No risk to the subject is anticipated.

The researcher will be available to discuss the project's objectives or procedures during or after completion of the questionnaire.

I AGREE to participate in this study

I DO NOT WISH to participate in this study.

Signature of Participant

Date

Witness

Date

APPENDIX C: INTERVIEW SCHEDULE NUMBER 1
(to be administered to the offender)

Subject Number _____ **Date** _____

Have you read, understood, and signed the informed consent form?

- 1) Yes
- 2) No

Do you understand that you are free to withdraw from this interview or study at any time?

Please answer the following questions as best as you can.

For these questions I need you to think back to before your conviction. I understand that some of these may be difficult to remember so just do the best you can.

1) How many family members were residing in your home?

_____ members

2) What relation were those family members to you?

- (circle all that apply)
- 1) Parents
 - 2) Spouse
 - 3) Child(ren)
 - 4) Others

Roughly how many hours per week did you spend in planned activities with your family?

IF1: _____ hours

What percentage of an average day was spent doing things with your family?

- IF2:
- 1) less than 20
 - 2) between 20 and 40
 - 3) between 40 and 60
 - 4) more than 60

Again, thinking back to before your conviction, please indicate whether you, strongly disagree, disagree, agree, or strongly agree with the following statements.

Spending time with my family was important to me.

- CF1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

Pleasing my family was important to me?

- CF2:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

It is important to be an active member of one's family.

- BF1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

Still thinking back to prior to your conviction please indicate if the following statements are never true, sometimes true, usually true, or always true.

My family knew where I was when I was away from home.

- AF1:** 1) Never
2) Sometimes
3) Usually
4) Always

My family knew who I was with when I was away from home.

- AF2:** 1) Never
2) Sometimes
3) Usually
4) Always

My family wanted to help me when I had a problem.

- AF3:** 1) Never
2) Sometimes
3) Usually
4) Always

My family knew what was best for me.

- AF4:** 1) Never
2) Sometimes
3) Usually
4) Always

My family used to explain why they felt the way they did.

- AF5:** 1) Never
2) Sometimes
3) Usually
4) Always

I could share my thoughts and feelings with my family.

- AF6:** 1) Never
2) Sometimes
3) Usually
4) Always

Prior to your conviction, did you want to be the kind of person that your family members are?

- AF7:** 1) In every way
2) In most ways
3) In some ways
4) Not at all

The following questions apply to your friends prior to your conviction. Please indicate whether you strongly disagree, disagree, agree, or strongly agree with the following statements.

Spending time with my friends was important to me.

- CP1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

Pleasing my friends was important to me.

- CP2:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

Friends offer valuable support and guidance in life.

- BP1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

Roughly, how many hours per week did you spend doing planned activities with your friends?

IP1: _____ hours

What percentage of an average day was spent doing things with your friends?

- IP2:** 1) less than 20
2) between 20 and 40
3) between 40 and 60
4) more than 60

Please indicate whether the following statements were true prior to your conviction, never, sometimes, usually, or always.

I could share my thoughts and feelings with my friends.

- AP1:** 1) Never
2) Sometimes
3) Usually
4) Always

My friends wanted to help when I had problems.

- AP2:** 1) Never
2) Sometimes
3) Usually
4) Always

Prior to your conviction, would you have liked to have been the kind of person that your best friend was?

- AP3:** 1) In every way
2) In most ways
3) In some ways
4) Not at all

The following questions apply to your employment prior to your conviction.

Please indicate whether the following statements are never, sometimes, usually, or always true.

I cared what my fellow employees thought of me.

- AE1:** 1) Never
2) Sometimes
3) Usually
4) Always

My employer knew what was best for me.

- AE2:** 1) Never
2) Sometimes
3) Usually
4) Always

I used to share my thoughts and feelings with my fellow workers.

- AE3:** 1) Never
2) Sometimes
3) Usually
4) Always

My fellow workers wanted to help me when I had a problem.

- AE4:** 1) Never
2) Sometimes
3) Usually
4) Always

Prior to your conviction would you like to have been the kind of person that your fellow employees were?

- AE5:** 1) In every way
2) In most ways
3) In some ways
4) Not at all

Please tell me whether you strongly disagree, disagree, agree, or strongly agree with the following statements.

Doing well at work is important to me.

- CE1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

The things I did at work seemed important to me.

- CE2:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

You must work hard to be successful.

- BE1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

How many hour per week did you usually work?

IE1: _____ hours

How often did you attend work related meetings and recreational activities outside of work?

- IE2:** 1) Never
2) Less than once a month
3) Once a month
4) Twice of three times a month
5) More than once a week

Prior to your conviction you missed work or were late to work

- CE3:** 1) Never
2) Less than once a month
3) Once a month
4) Twice of three times a month
5) More than once a week

Did you try hard at work?

- CE4:** 1) Never
2) Sometimes
3) Usually
4) Always

AGE: What is your age in years? _____ years

ETHNIC: To be determined by the interviewer.

0) White

1) Black

2) Other

GENDER: To be determined by the interviewer.

0) Female

1) Male

Thank you for coming. I appreciate your investment of time in this study.

APPENDIX D: INTERVIEW SCHEDULE NUMBER 2

(to be administered to the offender)

Subject Number _____

Date _____

Have you read, understood, and signed the informed consent form?

- 1) Yes
- 2) No

Do you understand that you are free to withdraw from this interview or study at any time?

Please answer the following questions as best as you can.

1) How many family members are residing in your home?

_____ members

2) What relation are these family members to you?

- (circle all that apply)
- 1) Parents
 - 2) Spouse
 - 3) Child(ren)
 - 4) Others

Roughly how many hours per week do you spend in planned activities with your family?

IF1: _____ hours

What percentage of an average day is spent doing things with your family?

- IF2:
- 1) less than 20
 - 2) between 20 and 40
 - 3) between 40 and 60
 - 4) more than 60

Please indicate whether you strongly disagree, disagree, agree or strongly agree to the following statements.

Spending time with my family is important to me.

- CF1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

Pleasing my family is important to me?

- CF2:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

It is important to be an active member of one's family.

- BF1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

Please indicate if the following statements are never true, sometimes true, usually true, or always true.

My family knows where I was when I am away from home.

- AF1:** 1) Never
2) Sometimes
3) Usually
4) Always

My family knows who I am with when I am away from home.

- AF2:** 1) Never
2) Sometimes
3) Usually
4) Always

My family wants to help me when I have a problem.

- AF3:** 1) Never
2) Sometimes
3) Usually
4) Always

My family knows what is best for me.

- AF4:** 1) Never
2) Sometimes
3) Usually
4) Always

My family explains why they feel the way they do.

- AF5:** 1) Never
2) Sometimes
3) Usually
4) Always

I can share my thoughts and feelings with my family.

- AF6:** 1) Never
2) Sometimes
3) Usually
4) Always

Do you want to be the kind of person that your family members are?

- AF7:** 1) In every way
2) In most ways
3) In some ways
4) Not at all

The following questions apply to your friends. Please indicate whether you strongly disagree, disagree, agree, or strongly agree with the following statements.

Spending time with my friends is important to me.

- CP1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

Pleasing my friends is important to me.

- CP2:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

Friends offer valuable support and guidance in life.

- BP1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

Roughly, how many hours per week do you spend doing planned activities with your friends?

IP1: _____ hours

What percentage of an average day is spent doing things with your friends?

- IP2:** 1) less than 20
2) between 20 and 40
3) between 40 and 60
4) more than 60

Please indicate whether the following statements are true, never, sometimes, usually, or always.

I can share my thoughts and feelings with my friends.

- AP1:** 1) Never
2) Sometimes
3) Usually
4) Always

My friends want to help me when I have problems.

- AP2:** 1) Never
2) Sometimes
3) Usually
4) Always

Would you have like to be the kind of person that your best friend is?

- AP3:** 1) In every way
2) In most ways
3) In some ways
4) Not at all

The following questions apply to your employment.

Please indicate whether the following statements are never, sometimes, usually, or always true.

I care what my fellow employees think of me.

- AE1:** 1) Never
2) Sometimes
3) Usually
4) Always

My employer knows what is best for me.

- AE2:** 1) Never
2) Sometimes
3) Usually
4) Always

I share my thoughts and feelings with my fellow workers.

- AE3:** 1) Never
2) Sometimes
3) Usually
4) Always

My fellow workers want to help me when I have a problem.

- AE4:** 1) Never
2) Sometimes
3) Usually
4) Always

Would you like to be the kind of person that your fellow employees are?

- AE5:** 1) In every way
2) In most ways
3) In some ways
4) Not at all

Please tell me whether you strongly disagree, disagree, agree, or strongly agree with the following statements.

Doing well at work is important to me.

- CE1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

The things I do at work seem important to me.

- CE2:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

You must work hard to be successful.

- BE1:** 1) Strongly disagree
2) Disagree
3) Agree
4) Strongly agree

How many hour per week do you usually work?

IE1: _____ hours

How often do you attend work related meetings and recreational activites outside of work?

- IE2:**
- 1) Never
 - 2) Less than once a month
 - 3) Once a month
 - 4) Twice of three times a month
 - 5) More than once a week

You miss work or are late to work

- CE3:**
- 1) Never
 - 2) Less than once a month
 - 3) Once a month
 - 4) Twice of three times a month
 - 5) More than once a week

Do you try hard at work?

- CE4:**
- 1) Never
 - 2) Sometimes
 - 3) Usually
 - 4) Always

Thank you for your time and cooperation.

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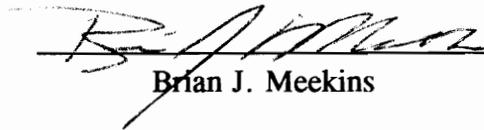
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