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Validation of a Virginia Work Release Risk Prediction Model: A Methodology For the Improvement of the Reliability of Correctional Decision Makers

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Public Administration at Virginia Commonwealth University.

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Abstract

VALIDATION OF A VIRGINIA WORK RELEASE RISK PREDICTION MODEL: A METHODOLOGY FOR THE IMPROVEMENT OF THE RELIABILITY OF CORRECTIONAL DECISION MAKERS

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This study identifies and validates variables which are significant predictors of work release success on 439 Virginia work release participants. The variables were selected on the basis of whether they would exert internal or external control over the inmate, with a view toward offering empirical support to control theory. A retrospective longitudinal research design was employed by randomly selecting inmates who had participated in either of three work release centers from 1987 to 1991. Two of the programs housed male inmates while the other housed female inmates. Data were collected from inmate files on thirty-one variables over a six month period. Analysis employed

logistic regression using work release success or failure as a dichotomous dependent variable.

A prediction model was developed using a construction sample of 416 cases. The resultant model was then used to predict and classify inmates using a randomly selected validation sample of 226 cases. Of the thirty-one variables under study, four individual factors (previous commitments, age of offense, time on the street, and prior misdemeanor convictions), two program factors (time in work release and year of work release), and one institutional adjustment factor (no institutional drug or alcohol violations), emerged as significant predictors.

The study revealed that the work release staff has been successful in identifying low risk inmates, with a success rate of 86% and a failure rate of 14%. Of the failures, only six had new charges (1.4% of the total population), and three escaped or absconded (0.7% of the total population). The remaining forty-nine failures (11.1% of the total population) failed urine screens or failed due to poor work performance.

The prediction model was able to classify 88% of the validation sample correctly which is a minimal improvement over the department of corrections selection procedures.

CHAPTER ONE

Introduction

Background of the Problem

American corrections continues to be in a state of crisis. With the exception of South Africa, the United States has a higher incarceration rate than any other industrialized nation (Gottfredson and McConville, 1987). The United States is rapidly approaching one million incarcerated inmates nationwide, and this, in turn, has created several problems for the American government to confront. First, there is the problem of prison bed space. Can we continue to build our way out of this crisis, and second is building more prisons the only alternative?

Other problems facing corrections today are recidivism, public risk, and economic resources. The literature clearly shows that there is a greater probability of recidivism for offenders who go to prison than comparable offenders who do not. Scarce state and federal resources cannot continue to fund expensive correctional ideologies which clearly do not work at the

expense of education, transportation, health care, and other vital public services.

Both state and federal leaders must look at alternatives to this correctional dilemma. Typically, what guides correctional decision makers in how these problems are addressed is their philosophy of how correctional goals should be achieved. If they are guided by the rehabilitation model, programs, policies, and practices will be oriented toward treating the offenders' "problems." If they are guided by the reintegration model, programs and policies geared toward making a gradual reentry from prison to the community will be emphasized. If they are guided by the incapacitation model, correctional policies and practices will be focused on keeping the offender away from society. Prisons, then, become a symbolic condom shielding citizens from potentially lethal diseases.

What is the role of work release as it attempts to integrate itself into these sometimes conflicting correctional philosophies and goals? Work release is capable of addressing a variety of goals depending on the goals and objectives which are emphasized. Work release can be rehabilitative, but the literature has failed to convincingly demonstrate that it has achieved this goal (Katz and Decker, 1982). It can be reintegrative, in

that, it provides a "bridge" from straight incarceration to complete freedom, and again, the literature has failed to empirically support that this objective has been achieved. Work release can be incapacitative in that participants are still inmates serving a prison or jail sentence, and, consequently, serves as an intermediate alternative to imprisonment. Finally, work release can be cost effective, even if it is not rehabilitative or reintegrative, because work release inmates can be housed in cheaper, less secure institutions than are required with the current philosophy of incapacitating criminals in maximum security prisons. Although this study does not address the benefit/cost analysis of work release, this is an area which needs additional research.

The problem is paradoxically both simple and complex (Stone, 1988). It is simple if officials merely decide to decarcerate and release more prisoners to the community, but it becomes more complex when they begin to assess the risk that this practice would pose. There are several inmates who pose legitimate risks to society (true positives) and, as such, require incapacitation; however, there is perhaps an even larger number who do not pose this risk (true negatives and false positives). *The problem is this: How do*

decision makers scientifically and objectively make more accurate predictions about where inmates fit on this continuum of societal risk? Lower risk inmates could be assigned to higher risk programs such as work release, furloughs, and parole where efforts at rehabilitation and reintegration are being attempted, while higher risk inmates could be assigned to the more expensive, but less available, maximum security prisons. The issue, however, is not just a problem of work release, but a broader correctional problem of how intelligent decisions are being made about inmates and their potential threat to society.

Relevance to Virginia

Virginia's work release selection process has acquired a very conservative approach and philosophy in the past few years because politicians are extremely sensitive to any programs which may appear soft on criminals. In the attempt to identify low risk applicants, the Department of Corrections has possibly overlooked several inmates who could have successfully participated in work release because selection policies are more concerned with society's perception of risk than what the literature has empirically validated. Also, due to the lack of objectivity and quantification in the selection process, it is not believed that the department

could justify selection choices either from risk management or treatment ideologies. The only risk prediction instrument (Brookhart, Rouark, and Scroven, 1976) validated on Virginia's population was developed 16 years ago. Consequently, there is a lack of validation on today's prison population.

Statement of the Problem

Is the work release selection process in the Virginia Department of Corrections a methodologically sound way of making decisions? If it is, this study will validate it. If it is not, problem areas may be identified with appropriate alternatives and recommendations to follow. A current validated prediction instrument will be developed which has the potential to document the status of Virginia work release participants, as well as, function as a tool for improving this crucial decision making process.

Objectives of the Study

The objectives of this study are: (1) To develop a validated work release risk assessment instrument for the Virginia Department of Corrections. (2) To identify variables which are correlated to the success or failure of work release participants.

Limitations of the Study

The focus of this study will be all Virginia Department of Corrections work release participants assigned to the program from 1987 to 1991 for a total population of 1,259 inmates. Although several studies have identified specific variables as indicative of work release success, it is, perhaps, doubtful that these results can be generalized to other states or jurisdictions which have more heterogeneous populations. Continued validation of the instrument must be performed to maintain its utility, accuracy, and validity.

Operational Definitions

A **work release participant** is defined as a Virginia Department of Corrections inmate who is housed in one of three work release centers and is released each day to participate in full-time employment activities in the community under limited control by the Virginia Department of Corrections. Inmates who are in prerelease centers, drug rehabilitation programs, or educational release programs do not fit this criterion. Inmates who are assigned to the work release center, but are not working in the community, are not included in this definition.

Work release **success** is defined as those inmates who complete their work release assignments without termination due to technical violations or new criminal charges. Ordinarily, the inmate will be released on discretionary parole, mandatory parole, or otherwise complete his or her sentence to qualify as a success (Lebowitz, 1972). Inmates who withdraw from the program for personal reasons or are reassigned for administrative purposes not related to program progress are excluded from the study.

Work release **failure** is defined as those inmates who are terminated from the work release program due to technical violations (rule infractions) or are arrested on any new criminal charges (felony or misdemeanor). Inmates who withdraw from the program for personal reasons or are reassigned for administrative purposes not related to program progress are excluded from the study.

Assumptions

The theoretical framework for this study is grounded in the social process theory of Walter Reckless (1967). Reckless' containment theory of internal pushes and external pressures and pulls is the basis for most of the predictive variables. It is assumed that variables which are correlated to greater internal and external controls will be better predictors of work release success than

those variables which are correlated with less control. For example, institutional adjustment variables such as custody status, the number of institutional infractions, drug or alcohol violations, and participation in institutional programs should be related to internal controls (Rotter, 1966). It is expected that inmates who feel they are in control of their behavior should have better overall institutional adjustments. They should also have better external (work release/parole) adjustments because their controls have been internalized as opposed to merely fearing possible sanctions from program staff. It is assumed that programs which have a strong external control component, such as close supervision by work release staff, random drug testing, and strict revocation policies will have higher success rates than programs which do not. It is expected that inmates who have demonstrated higher degrees of internal control via more favorable institutional adjustments will perform better on work release than those inmates who have not demonstrated higher degrees of internal control.

Although not the focus of this study, it is assumed that inmates who have an internal locus of control would perform better than inmates who have an external locus of control in programs which do not have close supervision of inmates. It is also assumed that inmates who have an

external locus of control could perform as well as inmates who have an internal locus of control in programs where inmate activity is more rigidly controlled. According to Kantola (1977, p. 43) "some studies have found criminals to be more external than members of the general population. Those who felt they controlled their future (internal) were expected to act more in accordance with the rules of work release thus not endangering their forthcoming release from prison."

Significance of the Study

Most predictive research is atheoretical in design. Although the theoretical aspects of this study are secondary to the prediction instrument, there is an attempt to integrate theoretical concepts with its application. Other predictive instruments in the literature have concentrated primarily on demographic data and individual variables over which the offender has little control. This study attempts to demonstrate a relationship among individual, institutional, and program variables. This research lays the groundwork for future research on control theory as it relates to work release success or failure. In order to avoid the recidivism pitfall other researchers have fallen into, this study will not evaluate post release recidivism rates.

The four major objectives are:

1. Validation of the Virginia work release selection process,
2. Offering support to control theory,
3. Integration of prediction research with theoretical constructs, and
4. Assessment of societal risk of work release participants to the community.

Organization of Study

The dissertation is organized around five chapters. Chapter One defines the problem and why it is worthy of study. Chapter Two provides an overview of the literature focusing on work release in general, and prediction models in particular. Chapter Three provides a detailed description of the methodology utilized in the study, which is a retrospective longitudinal design. Chapter Four focuses on the results of the study. Finally, Chapter Five provides the summary, conclusions, and discussion as well as recommendations for future research.

Summary

This chapter has focused on the problem the American government is facing with the current trend of incapacitation as the preferred solution to the nation's crime problem. It has addressed concerns of prison overcrowding and how correctional ideologies can affect both policy and practice. The concept of risk assessment

has been introduced as it pertains to the correctional decision making process in general, and the work release selection process in particular. The theoretical assumptions of control theory have been introduced and how they are related to the work release prediction variables associated with this research. Finally, the problems of work release, prediction models, and the work release decision making process at the Virginia Department of Corrections have all been addressed as integrated problems. It is anticipated that this research can contribute to the prediction literature as well as offer support to control theory.

CHAPTER TWO

Literature Review

Introduction

Criminologists have been trying to determine for over two hundred years the etiology of criminal, delinquent, and/or deviant behavior. Theologians were convinced that criminality was the work of the devil. Classical theorists (Bentham and Mill, 1961) viewed criminality as a rational choice. Positivist theorists viewed criminal behavior as a combination of variables over which the criminal had little or no control, such as low intelligence, low social class, or inadequate socialization. In their attempts to explain the causation of criminal behavior, early criminologists, such as Lombroso (1911) and Goring (1913), tried to classify known criminals into types through a genetically based theoretical framework. Although the methodology employed lacked sophistication and validity by today's standards, their work laid the groundwork for future prediction research by attempting to group criminals into predictable categories based on common characteristics or variables.

In other attempts to explain the causation of criminal behavior, psychologists, sociologists, and criminologists

have analyzed criminality and its onset from a variety of perspectives. Criminality has been explained from the social environment perspective (social structure theory), social interaction perspective (social process theories), Freudian perspective (psychoanalytical theory), and a combination of biological, psychological, and sociological interaction perspectives (integrated theory). None of the theories thus far have developed "one best answer" to the question of what causes criminal behavior. It is generally accepted that there is no "best" theory and there is an attempt to pull several of the better theories together into a so-called "integrated theory." Elliot's Integrated theory, Hagman's Power-Control theory, and Krohn's Network Approach have all attempted to combine the elements of differential association with an adaptation of social control theory (Gibbons and Krohn, 1991). An interesting perspective on criminal causation is Walter Reckless' assertion that attempts to determine the causation of criminal behavior are fruitless because everyone commits a crime sooner or later. He suggests that instead of looking at the cause, criminologists need to look at what controls delinquent behavior, and he offered containment theory as an alternative to the causal question. With Reckless' (1970) containment theory:

> The assumption is that there is a containing external social structure which holds individuals in line and that there is an internal buffer which protects people against deviation of the social and legal norms. The two containments act as a defense against deviating from the legal and social norms, as an insulation against pressures and pulls, as a protection against demoralization and seduction. If there are 'causes' which lead to deviant behavior, they are negated, neutralized, rendered impotent, or are paired by the two containing buffers (pp. 401-402).

It is suggested that Reckless' theoretical model is the best pure theory through which to filter the work release prediction variables, because inmates are constantly in conflict with the external social structure (prison rules, inmate socialization) and the internal pulls and pushes (desire to conform to, or rebel against, prison rules and inmate expectations, as well as the internal strength of high or low self-esteem). It is from this theoretical framework that variables are chosen for inclusion in the prediction model and hypothesis construction.

The literature review will focus first on work release literature in general and then explore theoretically based work release experimental designs. It will then follow with a review of prediction research as it pertains to the current research design and how previous literature has handled both the methodology and

the variables selected for inclusion in the prediction model.

Work Release Literature

Work release literature tends to fall into two primary categories: that which is causal or explanatory, and that which is predictive. The causal or explanatory tends to be more qualitative in nature and is generally theoretically focused toward some rehabilitative aspect of work release and how it impacts recidivism rates. The predictive literature, however, tends to be less theoretical and more quantitative in nature, and focuses more on the identification of variables which are statistically manipulated to ascertain which variables or combination of variables are the best predictors of success or failure on work release and to societal adjustment. Both types of literature suffer from similar methodological restrictions since random assignments are seldom possible in prison settings. Additionally, researchers are typically constrained by data which is routinely available in inmate files or classification records which are not oriented toward answering research questions.

Theoretically Based Designs

Waldo, Chiricos, and Dobrin (1973) provided some of the earliest data in the work release literature which involved random assignment to control and experimental groups in which criminological theory was being empirically tested. Experimental designs are extremely rare in criminal justice research due to both legal and ethical concerns. They compared 87 work release inmates with a matched group of 45 controls in the following:

1. perception of legitimate opportunity,
2. achievement motivation,
3. legal self-concept,
4. self-esteem and self-image, and
5. shifts from lower class concerns.

Pretest/Posttest split-half questionnaires were administered to both groups prior to work release and six months later prior to release to the community.

Results were surprising in that the only area in which a significant difference was observed was in the area of self-esteem, with the work release group's self-esteem decreasing, while the control group's self-esteem increased. These results presented troubling questions for corrections researchers, since it was expected that opportunities for reintegration into society via work release would increase self-esteem.

From Reckless' containment theory, one could explain this phenomenon by suggesting that the inmate had adjusted to the external environment (prison), but involvement in work release pushed the inmate toward having to adapt to a new external environment over which he had little control. Exposure to external pushes and pulls in the civilian community created new threats to the inmate's self-esteem since he must learn to adapt to a new set of values which are in conflict with the values of prisonization. Control inmates who did not participate in work release continued in a stable environment (no values conflict) and were, therefore, better able to concentrate on their reintegration with increased self-esteem.

Jeffrey and Woolpert (1974) provided interesting data on recidivism rates for California work releasees. They hypothesized that an inmate leaving jail or prison with a job and work experience would fare better overall after release in comparison to a homogeneous control group who did not participate in work release. Comparisons were made between 110 work releasees released in 1967 with 94 controls who were released in 1965. Both experimental and control groups were similarly matched on demographics such as marital status, skill, age, prior

record and sentence. They compared arrest data after a four year follow-up with the following results:

1. 19-25 year old work releasees did better than the same age group for controls;
2. Unmarried work release inmates did better than unmarried controls;
3. Unskilled work releasees did better than unskilled controls;
4. Minorities did better on work release than controls; and
5. There were no differences between skilled work releasees and skilled controls.

The significance of Jeffrey and Woolpert's research was that traditionally high-risk work releasees showed significantly lower re-arrest rates than comparable control inmates. This suggested that there were positive effects associated with work release. The greatest criticism of their research, however, was the methodological problem of failing to control for history, as there was a two year time span (1965-1967) between the control and experimental data.

Kantola (1977) attempted to test psychological theory on a group of 32 Western Australian work releasees. He theorized that variables relating to conflict resolution, delay of gratification, and internal locus of control would all be associated with work release success. The only significant predictors of work release success were the variables related to internal containments which measured the ability to resolve

conflicts and to delay gratification. Of particular interest to this study was the lack of a significant difference in locus of control on Rotter's (1966) Internal-External Control Scale. Kantola did not find that the successful work release inmates had a higher internal locus of control as had been expected. Other results were inconclusive primarily because of small samples, lack of random assignment, and questionable validity of the instrumentation for the variable measurement.

Smith (1980) focused on environmental factors as predictors of post prison success. Variables investigated were the Jenkins 16 item E.D.S. (Environmental Deprivation Scale) which included data on employment, income, debt, job status, hobbies, education, residence, church, friends and family, and children (external containments). Follow-up recidivism data was compared for work releasees, work release selectees (not assigned to work release), and nonselectees. He found significantly lower felony arrests for the work release group in comparison to the other two controls. Additionally, twelve month follow-up data on earnings revealed that work releasees earned 60% more in wages than the control groups.

Katz and Decker (1982) conducted literature reviews to determine the effectiveness of work release in meeting goals of providing economic advantages, recidivism reduction, job and family related benefits, and personality and social benefits. None of the four alleged goals of work release received strong empirical support. They questioned why and how work release programs could continue to proliferate in spite of their negative results. Generally, the literature they reviewed showed that sound methodologies failed to yield expected positive results, and poorly designed studies tended to demonstrate success in achieving work release goals.

Overall, the causal explanatory research on work release is inconclusive. Several critics cite the lack of theoretical constructs (Brennan, 1987) being tested in the literature; however, even when work release researchers have conducted theoretically framed research, it still has failed to deliver empirical support (Katz and Decker, 1982).

Prediction Models

The first prediction models applied to criminal justice settings began in 1923 with the work of Sam B. Warner. His initial attempt to isolate variables which were capable of predicting parole success was a failure,

but further analysis of his data by Hornell Hart concluded that Warner had merely applied inappropriate statistical tests to the data which was responsible for his inconclusive results (Dean and Duggan, 1968). Hart was the first to score parolees on variables related to parole success or violations, and this in turn, led to the pioneering work of E. W. Burgess. Burgess's model (1928) was based on an analysis of 22 variables collected on 3,000 Illinois parolees. Variables investigated by Burgess included the nature of the crime, the number of associates, father's nationality, parental and marital status, type of offense, length of sentence, and prior record. "Then by giving one point to each item that had a violation rate lower than the overall rate, he computed a score for each parolee" (Dean and Duggan, 1968, p. 451). Burgess determined violation rates from these scores and essentially validated his prediction tables on the basis of overall scores and associations between success or failure. The lack of statistical sophistication of the Burgess method has drawn considerable criticism primarily because of its tendency to give equal weight to all variables, regardless of their overall contribution to the formula for predicting success or failure.

Brown (1978) criticizes the Burgess method because it fails to account for interrelationships among variables. Some variables, which would appear unimportant when analyzed from a univariate technique, may become highly predictive when analyzed with multivariate techniques (Dean and Duggan, 1968). Most base expectancy tables are constructed using either configural (Burgess method) or multiple regression analysis techniques (Brown, 1978). Several researchers have suggested the configural techniques are superior to linear regression because of their apparent reliability without the need for complicated statistical analysis techniques (Van Alstyne and Gottfredson, 1978). Pritchard (1977) compared prediction strategies utilizing configural methods with linear scales and concluded that linear scales were superior to configural strategies. Van Alstyne and Gottfredson (1978) and Hoffman (1983), disagree and suggest that the more sophisticated technique does not improve the ability to predict parole success beyond that achieved by the simpler method. In fact, Van Alstyne and Gottfredson (1978) said: "Despite the clear trend in the development of statistical prediction toward more theoretically appropriate statistical models, recent evidence indicates that the

more advanced statistical techniques have added little to overall predictive efficiency."

However, approximately ten years later, Gottfredson (1987) mitigates this statement by concluding that a variety of statistical methods and approaches may be used in prediction research with varying degrees of success. Most of the variability in the various methods, however, seems to lie in the fact that criminal justice data are typically of such poor quality that the data do not lend themselves to the more powerful statistical techniques which are currently available to researchers.

Another attempt to improve statistical techniques in the prediction literature is provided by Harris and Moitra (1978). Their model suggests that most prediction techniques do not take into consideration at what point the violations take place and as such treat all violations the same regardless of when the violations occurred. Their research suggests that one must also look at the amount of exposure to the hazardous environment (the community or program) when evaluating the effectiveness of correctional programs. This technique, commonly used in reliability engineering and mortality modeling, determines the failure rate by calculating the number of failures observed during a period of time divided by the total time in which failure

events could have occurred. This technique allows differentiation between two or more programs which have identical annual success or failure rates because weight is given to the point at which violations occurred, not just the aggregate data at the end of the year. This technique permits more precise measurement in program evaluation.

The late 1970's and 1980's have seen prediction models being applied to various criminal justice settings with the majority being applied to probation populations, (Ford and Johnson, 1977; Eaglin and Lombard, 1982) parole, (Brown, D'Agistino, and Craddick, 1978; Brown, 1978; Fisher, 1983) and policy analysis (Jones, 1991). Discriminant analysis tends to be the preferred methodology in prediction research. However, the U.S. Parole Commission still relies on the salient factor score which has been validated by the Burgess methodology (Burgess, 1928).

Clear (1988) summarizes the historical development of correctional prediction models, applies them to a variety of settings, and cautions researchers as to several pitfalls prediction researchers can fall into.

These are

1. "The selection of the criterion is a very important policy decision." As an example, he points out that many common criteria are only marginally correlated. A risk screening instrument which predicts violent recidivism may not predict very well on technical violations.

2. "Different decision points require different risk screening approaches." Instruments which are valid for probation prediction are not necessarily valid for parole prediction, or an instrument developed for use in classification of inmates at entry into the system may not be appropriate in making work release decisions at the end of the inmate's sentence.

3. "Screening for risk will not necessarily correspond to the seriousness of the offender's current offense. A good risk instrument probably will not provide much classification power in terms of crime seriousness." Very little of the literature shows a high relationship between these two variables.

4. "The transferability of risk screening devices across jurisdictions is problematic." What is valid in Virginia will not necessarily transfer to any other state because of differences in criminal codes, sentencing practices, and inmate characteristics.

5. "It is important to know subgroup base rates." Base rates can vary depending on the criterion chosen to assess. Base rates are necessary to provide a frame of reference for the criterion.

6. "The actual distribution of cases in the classes (high, medium, or low risk) is very important." It is important to have as many low risk offenders as possible so that resources can be concentrated on the high risk group.

7. "No matter how good the instrument is, it is important to allow for human judgments in the ultimate classification decision." No instrument is infallible and contingencies must be allowed for unusual events and special

> circumstances. Also there is the need to incorporate some humanistic aspects into the decision making process in order to accommodate 'overrides' of the instrument when warranted.

In summary, prediction techniques have evolved into fairly sophisticated reliable methodologies over the past twenty years. However, they are not without problems. Brennan (1987) suggests that variables be selected within a coherently defined theoretical framework or the results will be confusing and lack focus. Atheoretical research produces spurious findings, which makes it difficult to generalize results from one study to another (perhaps this helps explain the lack of generalization in prediction instruments). Very little of the predictive research reviewed was theoretically framed other than through the use of mathematical statistical theory. Brennan (1987) summarizes the need for "Some theoretical focus and delimitation or a specific purpose is required to select variables and limit boundaries. In this way, theory infuses and guides empirical classification."

Dependent Variable

The methodology proposed in this study is similar to several studies which are illustrative of the parole work release prediction literature (Brookhart, Ruark, & Scoven, 1976; Eaglin & Lombard, 1982; Fair, Isaac, Inc., 1971; Lebowitz 1972). Most of the prediction literature

has used success and failure criteria on work release, parole, or probation as dependent variables. Successful groups are compared with unsuccessful groups on a variety of demographic, programmatic, institutional, and or psychological variables. Through the use of multiple regression techniques, specific characteristics or traits are validated as predictors of outcomes on specific populations.

The remainder of this chapter focuses on literature related to independent variables and prediction research.

Independent Variables

Individual Factors

Sex, race, age.

As stated previously, one of the most often cited criticisms of prediction research is its over-reliance on classification reports and prison generated data as the basis for the independent variables. This practice has resulted in most of the literature focusing on demographic data over which the inmate has little control. Gottfredson (1987) and Clear (1988) both call for innovative approaches in developing new, more "dynamic" variables on which prediction models and decisions are based. Data related to Sex, Race, Prior Record, Education, Employment, and Custody Status at

Sentencing, have all been criticized for their inclusion in prediction models because:

> These characteristics are commonly correlated with social class and ethnicity, and it has been shown that their inclusion (as well as that of other correlates of social class) in classification devices may result in systematic over selection of ethnic minorities and the poor for the less desirable categories (Clear, 1988).

Clear (1988) suggests, nevertheless, that these variables be included in the validation instrument to determine objectively if these variables do in fact contribute discriminant weight to the overall prediction model. If no correlations exist among these undesirable variables and the dependent variables, then they may be safely eliminated from the instrument. Models which rely on the Burgess method (such as the Salient Factor Score) have the most potential for ethnic or social class discrimination, because each variable contributes equal weight to the overall prediction score (Hoffman, 1983).

Farrington (1987) believes that any predictors which cannot be modified in principle--primarily age, gender, and ethnicity--make it virtually impossible to demonstrate unambiguously any causal effects which they might have on offending rates. Therefore, none of these variables will be included in the final prediction model.

Marital status.

Fair, Isaac, Inc. (1971) conducted one of the most comprehensive studies on work release prediction variables from April 1966 to December 1968 on a sample of 879 male District of Columbia work releasees. They tracked participants for an 18 month follow-up period and collected data on approximately 120 variables. Of the 15 highest predictive variables related to in-community success, marital status ranked eighth. Their data suggested that married or widowed participants were most likely to succeed in the community. Theoretically, married inmates would be expected to perform better on work release because there is a presumption of commitment to the spouse and family, and work release would allow the inmate to better realize this commitment through increased earnings and support. However, if the inmate does not have this commitment then this variable is meaningless.

Perhaps a better question would be: How do inmates feel about their spouses and family and what is their attitude toward them? Strong spousal support could provide the inmates with both internal and external containments which should positively affect their adjustment. The mere fact that an inmate is married

should not be a good predictor of work release success. Jeffrey and Woolpert (1974) found that married work release participants did no better than unmarried work releasees.

Educational level.

Farrington (1987) cites considerable research linking low intelligence and school failure to predictions of offending. Similar results have been found in the classic Philadelphia cohort study by Wolfgang, Figlio, and Sellin (1972) with intelligence and attainment measures found in the first six grades as significantly related to official juvenile offending. Additionally, Wolfgang found that their chronic juvenile offenders had much lower intelligence and achievement levels than offenders who were not chronic. Farrington (1987) found that truancy was one of the most important independent predictors of convictions as a young adult and that low academic attainment at age eight to ten not only was one of the best discriminators between convicted and nonconvicted persons but also discriminated between chronic and non-chronic offenders.

In the proposed study education level will be used as an indicator of the inmate's commitment to external social containments such as family and school. Inmates with higher educational levels are expected to have

internalized these values as well and would possess additional internal buffers to delinquency and criminal behavior (Reckless, 1970).

Offense type and crime seriousness.

Fair, Isaac, Inc. (1971) found that work release participants who had committed offenses against property had a negative probability of success in the program. They also found that misdemeanant participants had a positive probability of success, whereas, felons had a negative probability. Of fifteen variables under study, the current offense ranked eighth and type of offense ranked eleventh in predictive power. According to Clear (1988) "One of the most common findings in the literature on prediction is that the *seriousness of the current offense and the probability of a subsequent offense are statistically unrelated* (author's emphasis)." He goes on to say that many studies find that if they are related they are negatively related in that less serious offenses are better predictors of failure than more serious offenses.

Lebowitz (1972) found drug offenders and liquor tax law violators had higher probabilities for success on work release than any offense type.

Brookhart, Ruark, and Scoven (1976) found that offense type contributed very little to their prediction

model on Virginia work release participants. Out of eight variables, offense type ranked seventh in its overall contribution to predictions of success or failure. However, they did find that individuals convicted of less serious offenses correlated more with successful outcomes than more serious offenders.

Elder and Cohen (1978) found that convictions for auto theft were the best predictors of failure for Federal youthful, nonviolent, offenders. These offenders tended to be more impulsive and immature than work releasees convicted of other crimes.

Brown (1978) concluded that the influence of offense types on prediction models can vary considerably depending on whether the researcher is using univariate or multivariate analysis techniques. Offense type, the best univariate discriminator, was sixth using a multivariate technique on the same data.

Moczydlowski (1980) found a positive correlation between crime severity and less conflict in a correctional halfway house. According to his data, the inmate who committed a more serious crime, would be more likely to have a satisfactory adjustment to the program.

Fisher (1983) however, claims that one of his strongest predictors of "serious recidivism" was recent prior arrests and convictions for violent crimes.

Van Alstyne and Gottfredson (1978) constructed prediction tables according to offense type and drug usage and found that parolees who had committed a person offense, with no drug dependency and no prior record, had a 91% probability of success on parole, while a property offender with a drug dependency, and a prior record only had a 71% probability of success on parole. Person offenders consistently had higher probabilities of success over property offenders, even when they were drug users with a prior record. Literature related to this variable tends to suggest a mixed picture, in that, some researchers have found correlations to offense type and severity, and work release success, whereas, others have not.

Prior record.

Levinson (1972) cited several studies which showed a positive correlation between prior felony arrests and recidivism. The literature generally shows that the greater the inmate's prior record the higher the probability of post incarceration failure. Fair, Isaac, Inc. (1971) found in their study of federal work release participants that participants with four or more prior convictions of any type were more likely to recidivate. Moczydlowski (1980) also found that prior record was

significantly related to program success with inmates who did not have prior records performing better.

Multiple offenses.

There is no data in the literature where the variable of multiple offenses is being considered. It is believed that this variable will be correlated to total actual sentence since multiple offenses will result in longer sentences, except where multiple offenses are ordered to run concurrently, or they are run consecutively with a high percentage of their sentences suspended.

Salient factor scores.

The Salient Factor Score is a Burgess-type configural prediction instrument used by the U.S. Parole Commission in making parole risk predictions (Hoffman, 1983). These items were selected in order to cross validate variables using multiple regression techniques to determine their generalization to different populations and predictions. Although they are not from the Salient Factor Score Instrument, Cocaine Use, Marijuana Use, and Alcohol Use are added to the Work Release Instrument to determine if other drug usage patterns could contribute to the model besides heroin/opiate usage. Generally, the Salient Factor Score variables associate fewer commitments and more time on

the street with successful outcomes. Additionally, if the inmate was on probation, parole, or a fugitive, this status was associated with failure. Non use of opiates was a predictor of success, whereby, having used opiates was associated with failure. The best predictive variable of the Salient Factor Score has consistently been the age of the inmate at the time of the offense, with younger offenders being associated with failure.

Five variables are derived from the Salient Factor Score Instrument:

1. Prior commitments of 30 days or more,
2. Length of time on street of 30 days or more.
3. At time of conviction, was inmate on probation, parole, escaped from custody, bond, etc.
4. Heroin or Opiate use, and
5. Age at time of the offense.

Institutional Adjustment Factors

Custody status.

Fair, Isaac, Inc. (1971) reported in their study of District of Columbia work releasees that anyone who did not have a minimum custody status had a significantly lower probability of success than minimum security inmates. They also found a negative association for inmates who had more than one institutional infraction and subsequent success on work release.

Institutional infractions.

Brookhart, Ruark, and Scoven (1976) found a significant relationship between work release success and the number of institutional adjustment reports. Fewer reports were associated with success, while more reports were associated with failure. This variable was the third best predictor of 21 variables under consideration in their study.

Brahen, Capone, and Fitzpatrick (1979) found a positive relationship between satisfactory jail adjustment and work release success. They also reported that a positive work history correlated positively with work release success.

It is hypothesized that inmates who are in minimum custody, who have had no institutional infractions, and who have not been in protective custody, will be associated with work release success.

Institutional substance violations.

None of the literature reviewed has used institutional drug or alcohol violations as a predictive variable. This variable was suggested to the experimenter during an interview with a work release center director. It is theorized that this will be correlated with the variables related to institutional

adjustment and prior drug and alcohol history. It is assumed that if inmates cannot control their desire for alcohol and drugs while in a restrictive punitive environment, that with more freedom and less controls, the drug and alcohol problems will manifest themselves in substance related rule violations. This variable is based on the assumption that the inmate lacks strong internal controls.

Institutional programs.

Two studies (Brown, D'Agistino, and Craddick, 1978; Elder and Cohen, 1978) hypothesized that participation in educational and vocational training while in prison would be significantly correlated with parole and work release success. However, in both studies, their hypotheses were not supported. In spite of previous negative results regarding this variable, it is still hypothesized that there will be a positive relationship between participation in institutional programs and work release success (internal control).

Time served.

Fair, Isaac, Inc. (1971) found that work release failure was positively correlated with the amount of time served in the institution. The more time served, the more likely the inmate would fail. Related to the issue of the amount of time served in the work release program,

Fair, Isaac, Inc. also reported that most failures occurred in less than 20 days into the program. Inmates who served between 90 and 150 days had better chances of success than inmates who served either more or less than this amount.

Lebowitz (1972) found that the amount of time served at the time of work release was a good predictor of in-program success in that it ranked sixth out of nineteen variables under study.

Time left to serve.

Brookhart, Ruark, and Scoven (1976) also found that time remaining at the time of work release placement was a good predictor of program success with this variable ranking fourth out of 21 variables in a Virginia work release program.

Elder and Cohen (1978), on the other hand, did not find any relationship between program success and the amount of time served (prior to work release) in a program designed for youthful, nonviolent, participants.

It is hypothesized that inmates with less time to serve at the time of work release assignment will be positively associated with work release success (internal containment).

Program Factors

Quality of supervision.

None of the literature reviewed has explored the relationship between the inmates' adjustment to work release and the quality of supervision the inmates receive while on work release. It is expected that work release success or failure rates will vary according to the amount and quality of supervision the work releasee receives while in the program. It is hypothesized that inmates who are more closely supervised will have higher success rates than inmates who are not closely supervised (external controls).

Drug testing policy.

History of drug and alcohol usage prior to work release has been cited several times (Moczydlowski, 1980; Hoffman, 1983) as a predictor of work release/parole failure, but none of the work release prediction literature has empirically evaluated the variable of drug testing as a program requirement. It is assumed that since drug and alcohol usage are related to criminal behavior, and since they have been validated as predictors of failure on parole, probation, and work release, work release programs should consider drug testing as a program requirement. It is hypothesized

that work release programs which have drug testing policies as part of their programs will have higher success rates than programs which do not (external controls).

Revocation policy.

The literature has consistently described work release failures as those inmates who are arrested, violate work release rules, or escape from the institution (Lebowitz, 1972). However, none of the literature has identified the revocation policy as a variable. It is assumed that discretion is being utilized by work release staff in the way that minor rule violations are handled. It is hypothesized that programs with stricter revocation policies will have higher success rates than programs which have lenient revocation policies. It is also considered that stricter revocation policies could result in lower success rates because inmates would more likely engage in minor violations, and as such, subject themselves to sanctions more often. However, it is hypothesized that knowledge of this policy will result in greater control being exercised by the inmate (internal and external controls).

Research Hypotheses

1. Inmate race or sex will not be a predictor of work release success.

2. The age of inmates at the time of offense, and at the time of work release will be a predictor of work release success, with older inmates associated with success and younger inmates associated with failure.

3. Marital status will not be a predictor of work release success.

4. The inmate's educational level will be a predictor of work release success, with more education associated with success and less education associated with failure.

5. Offense type will not be a predictor of work release success.

6. Offense severity will not be a predictor of work release success.

7. Prior record and multiple offense categories will be predictors of work release success, with fewer prior convictions associated with success and more prior convictions associated with failure.

8. Previous commitments of 30 days or more will be a predictor of work release success, with fewer commitments associated with success and more commitments associated with failure.

9. The amount of time on the street prior to incarceration will be a predictor of work release success, with more time on the street associated with success and less time associated with failure.

10. Prior drug usage will be a predictor of work release success, with inmates who have no prior drug usage associated with success and inmates who have prior drug usage associated with failure.

11. Custody status will be a predictor of work release success, with minimum custody associated with success and medium custody associated with failure.

12. Institutional drug or alcohol violations will be predictors of work release success, with inmates who have not had substance violations associated with success and inmates who have had substance violations associated with failure.

13. Participation in institutional programs will be a predictor of work release success, and non participation associated with failure.

14. The amount of time left on an inmate's sentence at the time of work release will be a predictor of success with less time associated with success and more time associated with failure.

15. The amount of time served prior to work release assignment will be a predictor of success with less time served associated with success and more time served associated with failure.

16. The total sentence received will be a predictor of work release success with shorter sentences associated with success and longer sentences associated with failure.

17. Work release policies related to the amount of supervision, drug testing, and revocation will be predictors of work release success, with more stringent policies associated with success and more lenient policies associated with failure.

Summary and Conclusions

Considerable research has been conducted on work release prediction models in the past twenty years; however, very little research has been conducted since the late 1970's. Since data generated on one population do not generalize well to others, and since data generated on specific populations change over time,

continued validation of work release models is needed. Although work release has been in existence for 80 years, it has failed to realize its full potential as a correctional program. This has happened, perhaps, for a variety of reasons. Empirical research has failed to confirm its rehabilitative and cost efficiency benefits, even though prediction research has been quite successful in identifying variables which are predictive of work release performance. It is suggested that the current study will be a significant contribution to the work release prediction literature by providing corrections officials with a valid work release prediction instrument which will allow for greater utilization of work release as an innovative correctional alternative, while at the same time, enhancing reliability in the decision making process.

CHAPTER THREE

Methods and Procedures

Population and Sample

The work release population was identified by the Virginia Department of Corrections Research and Evaluation Unit staff who wrote a computer program which identified inmates by prison assignment codes from 1987 through 1991. Any inmate who had been assigned to the Chesterfield Work Release Center, Southampton Work Release Center, or Spring Street (women's farm) Work Release Center during those years was listed on a computer printout by his or her inmate classification number. Three printouts were received, with 902 cases from Chesterfield, 306 cases from Southampton, and 49 cases from Spring Street for a total population of 1,257 cases for the five year period under study.

Inmates were assigned consecutive numbers in each group so that these numbers could be used as the basis for random selection through a computer generated list of random numbers. Random samples were taken from each group using a 10 percent sequential sampling technique until at least 50% of the population had been sampled. This approach was utilized so that random samples would exist in the event data collection procedures were

interrupted prematurely. These samples resulted in 473 cases selected from Chesterfield, 155 cases selected from Southampton, and 27 cases selected from Spring Street, with a total sample of 655 cases. These cases were then randomly split into two groups with even numbered inmates being assigned to the construction sample (N=321) and odd numbered inmates being assigned to the validation sample (N=334).

Lists of inmate numbers for each group were prepared for the Virginia Department of Corrections File Maintenance and Records Department for use in file retrieval. When coding of cases began, it was discovered that 178 cases were assigned to work release during the years of 1992 and 1993. These cases were eliminated from the sample so that only cases who had completed work release in the specified years (1987-1991) would be included in the sample. Eight cases were rejected due to technical reasons, such as no presentence report, being administratively reassigned, or other reasons not related to work release adjustment. Approximately thirty files were unavailable due to repairs and microfilming.

The final sample which was available for coding was comprised of 315 cases from Chesterfield, 98 cases from Southampton, and 26 cases from Spring Street for a total sample of 439 cases.

Data were collected utilizing Virginia Department of Corrections records of inmate files for the majority of the data related to individual and institutional adjustment factors. Some cases were not available in file folder format, and data were collected by viewing microfilm records of the inmates' files.

As cases were coded in both samples, they were coded as either successful or failures, depending on the inmates' adjustment to the program. Cases were coded as **successful** if the inmates were discretionarily paroled, mandatorily paroled, or otherwise completed their prison sentence (Lebowitz, 1972). Inmates were coded as **failures** if they were removed from the program due to technical program rule violations, or if they were arrested or charged with new criminal violations. Any arrest (felony or misdemeanor) resulted in the inmate being classified as a failure. If inmates were restored to the program after due process hearings, the cases were rejected from the analysis. Inmates who were removed from the program for any reason other than technical rule violations or new criminal charges were also rejected from the sample.

Design

The basic design of this study was a retrospective longitudinal study, whereby records of inmates who had completed the work release program were analyzed. A proportionate stratified sample was obtained by randomly selecting cases who had been assigned to work release during the time period from 1987 to 1991 at three different work release locations.

Instrumentation

A Work Release Risk Assessment instrument (WRRA) was developed incorporating a variety of variables which had been identified in the literature as possible predictors of work release success or failure (Appendix A). There were 31 total variables consisting of 21 Individual Factors, 7 Institutional Adjustment Factors, and 3 Program Factors. The instrument was revised (Appendix B) after coding 70 cases, so that the variables would coincide with the sequential order in which the data was stored in inmate files. This was necessary to streamline the data collection process. Additionally, time variables were reformatted on the revised instrument to facilitate computerized computations of time variables. The crime seriousness variable was revised since the actual prison sentences received fell into eleven

sentencing categories instead of the six classes of the Virginia Code (See Appendix B, Item 27). Two new variables were added to the revised instrument relative to parole violations after work release; however, these data were not used in the prediction model.

Reliability of the data collection instrument was established through the use of an alternate scorer of the data on 23 randomly selected cases. A Parole Examiner with over 15 years corrections' experience served as the alternate rater. T-tests for paired samples were performed on the continuous variables with reliability correlations computed for each variable. A new variable was created to determine whether categorical variables were either in "agreement" or "disagreement" between the two raters. For example, if both raters agreed on the variable for sex in all the cases, the variable would receive a reliability score of 100%. This procedure was applied to all of the variables except crime seriousness. The alternate rater did not have access to the crime seriousness scale at the time of coding since the scale was in the process of revision. This resulted in no reliability coefficients for this variable only.

Data Gathering

Data were collected from Virginia Department of Corrections files on inmates who had completed work release assignments. There was no contact with the inmates or work release staff during the data collection phase, and the only possible contamination of the data was through files which were incomplete or through errors made by the experimenter in the actual collection of data. This was controlled through the use of extensive randomization of cases, and by using an alternate scorer of the data to determine the reliability of the data collected.

Data were collected on the construction sample first and the validation sample last. Data were collected in one week intervals by the experimenter, with the first week taking place in November. Data collection resumed for two weeks in the following May, and concluded in the last three weeks of July, the same year. Only one experimenter collected all of the data with the exception of 23 cases which were randomly selected for coding by the inter-rater control. None of the data from the duplicate cases was included in the analysis other than to determine reliability correlates for the instrument. In order to control for selection and experimenter bias,

as well as to control for history, all of the data were entered into one SPSS file and further randomized into two random samples for the construction and validation groups.

Data Analysis

Since the dependent variable was dichotomous (Success or Failure), logistic regression analysis was the multivariate technique used to analyze the data with the Statistical Package for Social Sciences (SPSS) program. Chi-Square forward stepwise variable selection was used to create the prediction model by removing variables from the model which did not meet the significance level of .05. (Neter, Wassermam and Kutner, 1985).

Summary

Data were collected on 439 Virginia work release inmates on a variety of variables to determine if work release success or failure could be predicted. Inmates represented selection decisions made between 1987 and 1991 in a cross-validated, retrospective, longitudinal design.

CHAPTER FOUR

Results

Data analysis was conducted on a total sample of 439 cases. Twenty-three cases were rejected from the analysis because of missing values which left a total of 416 cases.

Instrument Reliability

Considerable literature has alluded to the unreliability (Goldkamp, 1987; Brennan, 1987; Sechrest, 1987), and poor quality (Gottfredson, 1987) of data used in prediction and classification research, particularly in criminal justice settings. To address this issue, twenty-three files were randomly selected for re-coding by an alternate researcher.

Table 1 reflects the results of the analysis of the data. Twenty-one of the thirty-five variables showed high degrees of reliability from one coder to the other with a reliability range of 91% to 100%. Three of these variables (AGEOFFNS, MISDEME, & SBSTANCE) were also significant predictors of work release success. Variable reliability ranged from a high of 100% on six variables to a low of 52%. Demographic variables such as date of

Table 1

Rank Order of Reliability for Work Release Variables

High (91-100%)		Medium (75-90%)		Low (50-74%)	
DEPVAR	1.00	FELONIES	.89	TIMEINWR	.74*
D.O.B.	1.00	INFRACT	.87	STRETIME	.70*
DRUG#COK	1.00	DRUG#ALC	.83	PROGRAMS	.65
FAILURES	1.00	PCUSTODY	.83	INWR	.61
RACE	1.00	OUTWR	.83	MULOFFNS	.61
SEX	1.00	YEARWR	.83*	TIMELEFT	.56
AGEATWR	.99	YRSEDUC	.83	MPD	.52
AGEINPEN	.99	PREVCOMT	.78*		
AGEOFFNS	.96*				
CONVSTAT	.96				
DRUG#OTH	.96				
MARITAL	.96				
TIMEATWR	.95				
TOTLTIME	.92				
MISDEME	.92*				
CUSTODY	.91				
DRUG#HER	.91				
DRUG#MAR	.91				
SBSTANCE	.91*				
TYPOFFNS	.91				
WRLOC	.91				

Note. * Denotes variables which were significant at $p < .05$.

Overall Mean .87

birth, age, marital status, and race received very stable ratings.

Institutional adjustment variables were fairly reliable in that substance violations (SBSTANCE) was 91% accurate, institutional infractions (INFRACT) was 87% accurate, protective custody or isolation (PCUSTODY) was 83% accurate, and program participation (PROGRAMS) was 65% accurate. The higher degree of reliability for all of the institutional adjustment variables except PROGRAMS is reflected in the fact that the former variables involved institutional infractions which were well documented in inmate files through due process proceedings, whereas participation in institutional programs was not. Records related to inmate participation in educational or vocational programs were more difficult to document or discriminate unless the inmate had acquired a GED which was generally documented in the folder. Much of the data for this variable were taken from institutional progress reports which varied greatly in consistency and quality among prisons and counselors.

Variables with lower degrees of reliability tended to be time variables, such as, time in work release (TIMEINWR), the date assigned to work release (INWR), time left on the inmate's sentence at work release

(TIMELEFT), and the inmate's mandatory parole date (MPD). Time variables were obtained from legal updates in the file which were regularly being updated due to earning of "good time," loss of "good time," or a change in time computation due to behaviors related to isolation or punishment. Therefore, these data would be different depending on which legal update was used to collect the data. However, the time variable, time served prior to work release assignment (TIMEATWR), proved to be very reliable with a reliability rate of 95%. The dates used for this variable were penitentiary admission dates and the date inmates entered work release which were less likely to change.

Overall, the instrument proved fairly reliable with a mean reliability coefficient of 86.63%.

Dependent Variables

Successes

Three hundred eighty (380) cases were identified as successful which yielded an 86% correct classification rate for the Virginia Department of Corrections staff.

Failures

Fifty-nine (59) cases in the sample were classified as failures for a failure rate of 14%. Inter-rater reliability was 100% on the dependent variable.

Of the cases that were classified as Failures, six (6) cases had new charges (10%), three (3) cases escaped or absconded (.05%) and forty-nine (49) cases (83%) were removed from the program for work release rule infractions. The most common rule violations were positive drug screens and work performance deficits.

Independent Variables

Sex/Race

Neither sex nor race was significant as a predictor of work release outcome which was as expected. Four hundred thirteen (413) of the cases were male (94%) and twenty-six (26) were female (6%). The racial mix of the sample consisted of 297 blacks (67%), 141 whites (32%), and 1 Hispanic (.2%). Inter-rater reliability was 100%.

Age

There were three variables related to age in the study which included the inmate's age at the time of work release assignment (AGEATWR), the age of the inmate at the time he or she was received in the penitentiary (AGEINPEN), and the salient factor score variable of the age of the inmate at the time of the offense (AGEOFFNS). Of these three age variables only the salient factor score variable proved significant. The age of the inmate at the time of the offense (26 or older) was the fourth best predictor of work release success of all the

variables under consideration. This variable was significant at the .01 level. The mean age of the inmates at the time of entering the penitentiary (AGEINPEN) was 29 years, while the mean age at the time of work release assignment (AGEATWR) was 32. Sixty-five percent of the inmates were 26 years or older at the time of their offense (AGEOFFNS), with 30% 20 to 25 years, and 5% 19 years or less. These data support earlier research on age as a predictor of work release outcomes with younger offenders more likely to recidivate and older offenders less likely to commit new offenses as they "age out." Age variables proved to be very consistent throughout the study with a .99 reliability rating.

Marital Status

Fifty-six percent of the sample (245 cases) had never been married, with 19% (85 cases) married, 11% (48 cases) separated, 12% (54 cases) divorced, and 2% (7 cases) widowed. As expected, marital status was not a predictor of work release success or failure, with separated inmates performing better than any of the other categories and single inmates performing worse. Inter-rater reliability was .96.

Education

Twenty-four percent (108 cases) of the sample had less than an eighth grade education, while 42% (183 cases) had between 9 and 12 years of education. Between these two groups, 66% of the sample had less than a high school diploma or GED. Twenty-four percent (107 cases) had a high school diploma or GED, while 8% (33 cases) had some college, 0.2% (1 case) had an associate degree, 1% (5 cases) had a bachelor's degree, and 0.2% (1 case) had a master's degree or greater. The number of years of education was not a significant predictor of work release success contrary to hypothesized expectations. Of all the educational levels, inmates with less than an eighth grade education performed best, while high school graduates performed worse. These results did not support previous research that inmates with higher educational levels would perform better than inmates with less education. Inter-rater reliability for this variable was .83.

Offense Type

The work release sample under study included cases from 1987 and 1988 in order that more violent offenders would be included in the population, since selection criteria from 1989 to the present have excluded violent offenders. Previous literature did not find that seriousness of the offenses or type of offenses were good predictors of work release success. The current sample included 220 property offenders which included theft, burglary, and fraud (both check and credit card). This group of offenders made up 50% of the total sample. Crimes against persons, which included robbery and murder, made up 18% of the sample with 80 cases in this category. Drug offenders comprised 27% of the sample with 118 cases, sex offenders represented 1% of the cases (5), and other type offenses made up 3% of the sample (15 cases). Other type offenses were predominantly habitual traffic offenders and license violators. Results of the analysis did not reveal any significant predictors among offense types, supporting the original hypothesis. Although none was significant, the type offenders who performed best were drug offenders, with person offenders having the poorest performance. Inter-rater reliability was .91.

Crime Seriousness Scale

Crime seriousness (see Appendix B, item 27) was determined by the class of crime and sentence the offender could receive for any given offense. The scale ranged from 0 (crimes punishable from 1 to 5 years) to 10 (crimes punishable from 20 years in prison to life). Larceny and burglary offenses were rated as 4's and selling drugs were primarily rated as 7's with some specific drug classes rated as 8's. Robbery and first degree murder were scored as 9's. The mean score for crime seriousness was 4.9. The seriousness of offense scale did not provide any discrimination in predicting success or failure, therefore supporting the hypothesis and previous research. Data were not available for inter-rater reliability scores for this variable.

Multiple Offenses

Twenty-five percent (111 cases) of the sample were serving sentences for one offense only. Twenty-eight percent (123 cases) were incarcerated on two offenses, and 47% of the cases (205) were incarcerated on 3 or more offenses. None of the three categories were significant in predicting work release success. These results reject the hypothesis that offenders incarcerated on multiple offenses will not perform as well as offenders with

single offenses. Inter-rater reliability for this variable was low with a reliability coefficient of .61.

Prior Record

Felonies.

Two variables provided information about the prior criminal records of work release participants. The number of prior felony convictions and criminal misdemeanors was recorded for each case. Twenty-seven percent (119) of the sample had no prior felonies. Prior felonies ranged from 0 to 34 with a mean prior felony conviction rate of 3.3. The number of prior felonies was not significant in predicting work release success. Inter-rater reliability was moderately high with an .89 reliability coefficient.

Misdemeanors.

Twenty-four percent of the sample had no prior misdemeanor convictions and the number ranged from 0 (106 cases) to 29. Seventy-eight percent of the cases had less than seven prior misdemeanor convictions with a mean of 4.4 misdemeanor convictions per case. Prior misdemeanor convictions were significant at the .05 level in predicting work release success with more convictions being positively associated with success while fewer convictions were associated with failure. Inter-rater

reliability was moderately high with a reliability coefficient of .92.

Salient Factor Score

Previous commitments.

The salient factor score variables proved to be very good predictors of success for this particular work release sample. The best predictor of success of all the variables was the variable related to the number of previous commitments of 30 days or more. Surprisingly, however, the category which provided the best discrimination was for cases who had completed 1 or 2 prior incarcerations versus cases who were completing their first prison sentence. It is believed that inmates learned to adapt to the work release rules and that first time offenders were less likely to appreciate the freedom which work release afforded and perhaps took risks that more experienced inmates would not have taken. However, inmates who had completed three or more previous commitments were not significant in predicting either success or failure, and this suggested that they were incapable of conforming to the rules as readily as inmates who had fewer periods of incarceration.

Street time.

Another salient factor variable proved significant in predicting work release success, and it was the length of time on the street (STRETIME) without an incarceration of 30 days or more. Again, the findings were contrary to what was expected, as inmates who had been on the street less than one year were better predictors of work release success than either of the two other categories. STRETIME (less than one year) was the fifth best predictor of success of all the variables and was significant at the .01 level. STRETIME (1 to 3 years) was the eleventh best predictor of success and was significant at the .04 level. STRETIME (3 years or more) was not significant and represented 42% of the sample with 185 cases, while STRETIME (1 to 3) represented 30% (130 cases), and STRETIME (less than one year) represented 28% (123 cases) of the sample. Inter-rater reliability for this variable was low with a .70 reliability coefficient.

Drug usage.

None of the variables related to prior drug usage was significant in predicting work release success. Reported usage of alcohol was present in 80% of the cases, with 44% using cocaine, and 25% using heroin.

Sixty-five percent reported using marijuana and 24% were coded as using other drugs which included hallucinogens, amphetamines, and barbiturates. Although there was a very heterogenous sample of drug usage types, no discernable pattern was discovered. Inter-rater reliability for drug usage variables was consistently high. Cocaine usage was 100% in agreement, miscellaneous drug usage (DRUG#OTH) was 96% in agreement, both heroin and marijuana usage were 91% in agreement, and alcohol usage was the lowest with 83% in agreement.

Custody Status

All of the inmates were either minimum (A) or medium (B) custody with 99% in A custody. Only 6 out of 439 cases were in B custody at the time of work release assignment. All of the inmates were eventually assigned A custody by the time they went into the work release program. Custody status was not a significant predictor of work release success, perhaps, due to the small sample of B custody cases. Inter-rater reliability was .91.

Institutional Infractions

Three hundred and three cases (69%) had no institutional infractions recorded in their files at the time of work release assignment. Twenty-six percent (113 cases) had 1 to 3 infractions, while three percent (12 cases) had 4-6, and two percent (11 cases) had 7 or more.

Although the inmates with no infractions scored better than the inmates with infractions, none of the categories for this variable were significant as predictors of work release success. The hypothesis that inmates who had not committed any institutional infractions would perform better than other inmates who did was rejected. Inter-rater reliability was .87.

Protective Custody or Isolation

Fourteen percent (60 cases) of the sample had either been assigned protective custody or isolation during their period of incarceration prior to work release assignment. Eighty-six percent (378 cases) had not been in any type of isolation or protective custody. Neither category (yes or no) proved significant as a predictor of work release success. This rejects the hypothesis that inmates who had not been in protective custody or isolation would perform better than inmates who had been in protective custody or isolation. There is some overlap on this variable with Institutional Infractions (INFRACT) since violations which would warrant isolation, would also be considered institutional infractions. However, not all infractions would lead to protective custody or isolation. Inter-rater reliability was .83.

Substance Violations

The only institutional adjustment variable which was a significant predictor of work release success was the variable related to institutional violations involving either alcohol or drugs. Ninety percent (393 cases) of the sample had no drug or alcohol related violations while incarcerated, while ten percent (46 cases) did. This variable (SBSTANCE) was the eighth best predictor of work release success if the inmate had not had a substance related infraction. SBSTANCE was significant at the .05 level and fails to reject the hypothesis that inmates who do not have substance violations while incarcerated will perform better on work release than those inmates who do have institutional substance violations. Inter-rater reliability for this variable was .91.

Institutional Programs

There was a fairly even distribution of inmates who had received GED's while incarcerated (116 cases), those taking part in some vocational or educational programs (166 cases), and those inmates who did not participate in any type of educational or vocational programs (157 cases). The percentages were 26%, 38%, and 36% respectively. None of these variables was significant as

a predictor of work release success. The hypothesis that institutional participation in vocational or educational programs would predict work release success was rejected. Inter-rater reliability for this variable was low with a reliability coefficient of .65.

Time in Work Release

There were four time variables included in the prediction model and only one proved significant. The amount of time served in work release (TIMEINWR) was significant at the .01 level with more time in the program associated with success. The mean time served in work release was eight (8) months. Inter-rater reliability on this variable was low with a reliability coefficient of .74.

Time at Work Release

Time served prior to work release assignment (TIMEATWR) was another variable under consideration. The hypothesis was that inmates who had served more time would be less likely to succeed. This variable was not a significant predictor of work release success and the hypothesis is rejected. The mean time served for the work release sample was 41 months or 3.4 years. Inter-rater reliability for this variable was high at .95.

Time Left

The amount of time left on the inmate's sentence (TIMELEFT) was another variable which was used to predict work release success, with the mean time left for all cases at 54 months. It was hypothesized that inmates with less time remaining on their sentences at the time of work release assignment would be better predictors of work release success than inmates who had more time left. The hypothesis was rejected as TIMELEFT was not a predictor of work release success in either direction. The reliability coefficient for this variable, however, was very low with agreement in only 56% of the cases.

Total Time

Inmates in the sample had an average of 15 years to serve and the length of sentence was not a significant predictor of work release success. Inter-rater reliability for this variable was high with a reliability coefficient of .92.

Work Release Location

It was expected that three different work release centers operated by three different staffs would show significant differences in the outcome of program participants. It was anticipated that variables related to degrees of supervision, drug testing policies, and

revocation policies would be reflected in a variation of program outcomes. However, none of the three work release centers varied as predictors of work release success. During the data collection stage, it was apparent that each program provided close supervision, administered stringent drug testing procedures, and provided strict supervision of cases. Since the variable (WRLOC) did not reveal any significant differences in the programs, surveys of former work release staff, which were designed to elicit differences in program policies, were not conducted. Inter-rater reliability was .91.

Year in Work Release

Four of the twelve significant predictors of work release success were the years assigned to work release. Inmates assigned to work release in 1987, 1988, 1989, and 1990 were significantly more likely to succeed than inmates assigned in 1991, although these inmates would be considered "better" risks, since there were no person or sex offenders in the sample after 1990. The most marked difference in 1991 inmates compared to the other four years was in the area of offense type. Property, drug, and other offenders were significantly more prevalent in 1991 versus earlier years. Since offense type was not a significant predictor of work release success, it is not believed that offense type is the reason for the

difference. Another possible explanation is that 1991 makes up almost 30 percent of the total sample which could skew the results for that year. Inter-rater reliability for this variable was .83.

Summary of Predictor Variables

Of the thirty-one variables under consideration in this study, only twelve proved significant as predictive variables (See Table 2). When the multiple categories were taken into account for previous commitments, year of work release, and street time, only seven variables were significant. In terms of the classes of variables which were predictive, the individual factors provided the best discrimination, with four of the seven variables in this class (PREVCOMT, AGEOFFNS, STRETIME, and MISDME). Two program related variables were significant (TIMEINWR and YEARWR), and one institutional adjustment variable (SBSTANCE) was significant. Results of all the variables and their significance levels can be found in Appendix C.

Model Selection

Table 3 contains a summary of the variables which were used in the model construction process. Originally, the construction sample was applied to a random sample of 205 cases which is designated as Sample A. Fifteen variables were significant in the prediction of work release success on the construction sample. However,

Table 2

Rank Ordered Predictors of Work Release Success (N=416)

Variables	Rank	Score	Sig	Reliability
PREVCOMT(2) 1 or 2	1	12.00	<.01	.78
TIMEINWR	2	7.01	.01	.74
YEARWR(2) 1988	3	7.00	.01	.83
AGEOFFNS(1) 26 or older	4	6.70	.01	.96
STRETIME(3) < 1 year	5	6.50	.01	.70
YEARWR(4) 1990	6	5.10	.02	.83
YEARWR(3) 1989	7	4.94	.03	.83
SBSTANCE(1) No	8	4.84	.03	.91
YEARWR(1) 1987	9	4.42	.03	.83
PREVCOMT(1) None	10	4.27	.04	.78
STRETIME(2) 1 to 3 yrs	11	4.22	.04	.70
MISDEME	12	3.97	.05	.92

Table 3

Summary of Work Release Construction & Validation Samples

Variables	Sample A (N=205)*	Sample B (N=214)*	Sample C (n=416)*
AGEINPEN	.03	* *	* *
AGEOFFNS			
26 or Older	* *	.02	.01
AGEATWR	.02	* *	* *
CONVSTAT (NONE)	* *	.02	* *
DRUG#HER (NO)	* *	.01	* *
INFRACT (ZERO)	.03	* *	* *
MISDEME	* *	* *	.05
PCUSTODY (NO)	.01	* *	* *
PREVCOMT (NONE)	.01	* *	.04
PREVCOMT***			
1 or 2	.01	.01	.01
PROGRAMS			
Taking voc/ed.	.02	* *	* *
SEROFFNS	.01	* *	* *
STRETIME			
3 years or more	* *	.01	* *
1 to 3 years	* *	.03	.04
less than 1 year	* *	* *	.02
SBSTANCE (NO)	* *	.01	.03
TIMEATWR	.01	* *	* *
TIMEINWR***	.02	.01	.01
TIMELEFT	.04	.02	* *
WRLOC			
Chesterfield	.02	* *	* *
YEARWR 1987	.04	* *	.01
YEARWR 1988	* *	.01	.05
YEARWR 1989	* *	.04	.01
YEARWR 1990***	.01	.01	.01
YRSEDUC			
Some College	.02	* *	* *
Associate Degree	* *	.02	* *

Note. * Samples do not equal 416 due to randomized cases with missing values.
* * Denotes non-significant values, p > .05
*** Denotes significant values in all samples.

when the model was applied to 214 randomly selected cases in the validation sample (Table 3; Sample B), thirteen variables emerged as predictive of work release success. Of the fifteen variables in Sample A and the thirteen variables in Sample B, only four variables matched as predictors:

1. One or two previous commitments (PREVCOMT 1 or 2),
2. Time left at time of work release (TIMELEFT),
3. Time in work release (TIMEINWR), and
4. Year of work release (YEARWR 1990).

It was assumed that "sample fractionation" (Gottfredson, 1987) was responsible for these discrepancies, since the sample size had been reduced by one half. As a control for sample fractionation, Sample C (Table 3) was created using the total sample of 416 cases which had complete data available for analysis. Table 3 shows the results of Sample C with twelve significant variables, which only matched the two previous models on three variables (PREVCOMT 1 or 2, TIMEINWR, and YEARWR 1990) as predictive of work release success.

To further show the effect of sample size on the results, random samples of 90%, 80%, 70%, and 60% were taken from the 416 cases which were analyzed in Sample C, and compared with the two previous 50% samples (See Table 4). Table 4 shows the instability of the data when less

Table 4

Effects of Sample Size on Work Release Prediction Variables

Variables	100%	90%	80%	70%	60%	50%	50%
N=	416	379	333	306	266	214	205
AGEINPEN	*	.02	.01	*	.01	*	.03
AGEOFFNS							
>26	.01	.02	.01	*	.01	.02	*
AGEATWR	*	*	*	*	*	*	.02
CONVSTAT							
None	*	.04	*	*	*	.02	*
DRUG#HER (No)	*	.04	*	*	*	.01	*
INFRACT (Zero)	*	*	*	*	.02	*	.03
MARITAL							
Seperated	*	*	.03	*	*	*	*
MISDEME	.05	*	.04	*	.03	*	*
PCUSTODY (No)	*	*	.01	.05	*	*	.01
PREVCOMT (No)	.04	.04	.01	*	.01	*	.01
PREVCOMT							
1 OR 2	.01	.01	.01	.01	*	.01	.01
PROGRAMS							
H.S./GED	*	*	*	*	.02	*	*
TAKING PRGMS	*	*	*	*	.02	*	.02
SBSTANCE (No)	.03	.02	*	.01	.01	.01	*
SEROFFNS	*	*	*	*	*	*	.01
SEX (MALE)	*	*	*	*	.02	*	*
STRETIME							
> 3 Years	*	*	.02	*	.01	.01	*
1 to 3 yrs	.04	.02	.01	*	*	.03	*
< 1 Year	.02	.02	*	*	.04	*	*
TIMEATWR	*	*	*	*	*	*	.01
TIMEINWR	.01	.01	.02	.05	.03	.01	.02
TIMELEFT	*	*	*	*	*	.02	.04
TYPOFFNS							
Drug	*	*	*	*	.03	*	*
WRLOC							
Chesterfield	*	*	*	*	*	*	.02
YEARWR 1987	.01	*	.03	*	.01	*	.04
YEARWR 1988	.05	.01	.01	.03	*	.01	*
YEARWR 1989	.01	.03	*	*	*	.04	*
YEARWR 1990	.01	.02	*	.03	*	.01	.01
YRSEDUC							
Some College	*	*	*	*	*	*	.02
Asst. Degree	*	*	.05	*	*	.02	*

Note. * Denotes non-significant values, $p > .05$

than all of the cases were used for analysis. Of seven runs of the data, only one variable, Time in Work Release, (TIMEINWR) was a consistent predictor of work release success from 100% to 50% of the cases. Results were fairly stable at 416 (100%) cases and 379 (90%) cases with discrepancies in the data on AGEINPEN, MISDEME, and YEARWR 1987, and matches in predictors on ten variables. These data suggest that analysis of less than 400 cases produced spurious results, which could result in the misclassification of cases. Consequently, the entire sample of 416 cases was used for the construction sample, and a random sample of 50% of these cases was selected for the validation sample. Clear (1988) cautions against using cases from the construction sample in the validation sample due to "chance correlations" of the data, but as can be seen in Table 4, there appeared to be little correlation in the data from sample to sample, especially at the 50% sample size. Additionally, the data strongly suggest that sample fractionation did occur when less than 80% of the sample was used for analysis.

Model Performance

Seven variables were selected to test their performance in predicting work release success. The variables chosen were the significant variables which had been selected based on the construction sample of 416 cases, which included: Age of Offense, (AGEOFFNS) the number of Misdemeanor Convictions, (MISDEME) Previous Commitments, (PREVCOMT) Institutional Substance Violations, (SBSTANCE) Time on the Street without an Incarceration, (STRETIME) Time in Work Release, (TIMEINWR) and the Year the Inmate Participated in Work Release (YEARWR). Since work release staff would be making predictions on inmates prior to work release assignment, and would not have access to futuristic data, TIMEINWR and YEARWR were removed from the model. The final model included the variables of AGEOFFNS, MISDEME, PREVCOMT, SBSTANCE, and STRETIME which were used as predictors on a randomly selected sample of 226 cases. Table 5 displays the classification table generated for this sample, which included 195 cases correctly classified as successful (true positives), 4 cases correctly classified as failures (true negatives), 2 cases incorrectly classified as failures (false negatives), and 25 cases incorrectly classified as

successful (false positives) for an overall correct classification rate of 88.05%.

The difficulty in discriminating high, medium, and low risk inmates was that the sample was essentially a low risk population. All of the inmates who were incorrectly identified as successful, had probability of success scores of 87% or higher. Inmates who had probability of success scores of 50% or less were predicted to fail.

Table 5

Results of Validation Sample N=226

		Predicted Outcome			**Percent Correct**
		Failures	Successful		
Observed Outcome	Failures	4	25	29	**13.79%**
	Successful	2	195	197	**98.98%**
		6	220	226	
			Overall		**88.05%**

	Chi-Square	df	Significance
Model Chi-Square	17.268	3	.0006
Improvement	6.879	2	.0321

CHAPTER FIVE

Summary, Conclusions, and Recommendations

Summary

This study was an attempt to identify and validate variables which were significant predictors of work release success on 439 Virginia work release participants. The variables were selected on the basis of whether they would exert internal or external control over the inmate, with a view toward offering empirical support to control theory. A retrospective longitudinal research design was employed by randomly selecting inmates who had participated in either of three work release centers from 1987 to 1991. Two of the programs housed male inmates while the other housed females. Data were collected from inmate files on thirty-one variables over a six month period. Data analysis was through logistic regression using work release success or failure as a dichotomous dependent variable.

A prediction model was developed on a construction sample of 416 cases with the emerging model being used to predict and classify inmates on a randomly selected validation sample of 226 cases. Of the thirty-one variables under study, four individual factors, two

program factors, and one institutional adjustment factor emerged as significant predictors.

The study revealed that the work release staff has been successful in identifying low risk inmates, with a success rate of 86% and a failure rate of 14% thereby minimizing risk to the community. Of the failures, only six had new charges (1.4% of the total population), and three escaped or absconded (0.7% of the total population). The remaining forty-nine failures (11.1% of the total population) failed drug or urine screens or refused to work. The prediction model was able to classify 88% of the validation sample correctly which was a slight improvement over the Department of Corrections selection procedures.

Conclusions

Perhaps more important than the variables which proved significant were the variables which did not achieve statistical significance (See Table 6). The data confirmed that violent offenders were as likely to succeed as non-violent offenders. Offenders who had committed multiple offenses were as likely to succeed as inmates who were incarcerated on single offenses. Inmates with four prior felony convictions were as likely to succeed as inmates who had no prior felonies. Inmates who had twenty years to serve were as likely to succeed

Table 6

Non-Significant Variables Regardless of Sample Size

Variables	100% N= 416	90% 379	80% 333	70% 306	60% 266	50% 214	50% 205
CUSTODY	*	*	*	*	*	*	*
DRUG#ALC	*	*	*	*	*	*	*
DRUG#COK	*	*	*	*	*	*	*
DRUG#MAR	*	*	*	*	*	*	*
DRUG#OTH	*	*	*	*	*	*	*
FELONIES	*	*	*	*	*	*	*
MARITAL							
Never Married	*	*	*	*	*	*	*
Married	*	*	*	*	*	*	*
Divorced	*	*	*	*	*	*	*
Widowed	*	*	*	*	*	*	*
MULOFFNS							
No	*	*	*	*	*	*	*
2	*	*	*	*	*	*	*
3 Or More	*	*	*	*	*	*	*
RACE							
White	*	*	*	*	*	*	*
Black	*	*	*	*	*	*	*
Hispanic	*	*	*	*	*	*	*
TOTLTIME	*	*	*	*	*	*	*
TYPOFFNS							
Property	*	*	*	*	*	*	*
Person	*	*	*	*	*	*	*
Sex	*	*	*	*	*	*	*
Other	*	*	*	*	*	*	*
WRLOC							
Southampton	*	*	*	*	*	*	*
Spring Street	*	*	*	*	*	*	*
YEARWR							
1991	*	*	*	*	*	*	*
YRSEDUC							
0-08 YRS	*	*	*	*	*	*	*
9-12 YRS	*	*	*	*	*	*	*
H.S./GED	*	*	*	*	*	*	*
B.S.	*	*	*	*	*	*	*
M.S. OR Greater	*	*	*	*	*	*	*

Note. * Denotes non-significant values, $p > .05$

as inmates who were serving a five year sentence. Inmates who did not take part in institutional programs were as likely to succeed as those who had completed a GED. Inmates who had served one or two prison sentences performed significantly better than inmates who were first time offenders. Inmates with less than a high school diploma were as likely to succeed as high school graduates.

What emerged from these data was a new profile of the low risk inmate. Policies which exclude inmates on the basis of offense types, time left to serve, and lack of prior records could all be challenged as arbitrary decisions. These policies appear to persist due to the political climate present in the Department of Corrections which tries to "protect" the citizens of the Commonwealth through more conservative, "get tough," crime control policies. The data from this study do not support these policies, and they challenge conventional wisdom as to what constitutes "high-risk" inmates. It is possible that arbitrary restrictions on participants in the program could unwittingly create more risk to the community (in terms of violations) than was present before "get tough" regulations were instituted.

The consistency of the data over a five year period among three different programs indicated consistency of

policies and procedures among all the programs. It was expected that program variations would emerge, especially in the area of program control over inmates. It appeared from the data, that all of the programs were equally rigorous in the implementation of the work release program policies. All had close contact with inmates and work supervisors, and all had regular drug testing programs. Most of the work release violations resulted from drug testing policies. Due process procedures were apparent in all of the programs even though minor violations resulted in removal. There were instances where inmates were restored to the program when due process procedures revealed that some violations had been founded on insufficient evidence.

Empirical support for control theory could be found relative to two variables (PREVCOMT and SBSTNCE). The most reliable predictor of work release success was one or two previous commitments. This was contrary to hypothesized expectations, since it was not expected that inmates who were recidivists would be predictive of success. It was believed that failure to stay out of prison would indicate a lack of control on the inmate's part. Control theory was supported by virtue of the fact that inmates, who had been incarcerated previously, performed significantly better than inmates who had no

prior commitments. There appeared to be a form of prisonization (Clemmer, 1977) taking place, since inmates with prior prison experience had learned to adapt to a controlled, structured experience. The fact that all inmates had demonstrated adaptability to their respective institutions was supported by the fact that 99% of the sample was in minimum custody.

Another predictor of work release success consistent with control theory was the variable indicating no institutional substance violations (SBSTANCE). The ability to refrain from drug and alcohol violations directly related to work release performance, since inmates, presumably, had access to drugs and alcohol while in the community. Additionally, violations of this nature were detected through random urinalysis. Knowledge of drug testing procedures, coupled with the individual's ability to resist using drugs in the institution, provided the inmates with both internal and external controls to resist illegal drug usage.

Another difficulty in interpreting the data was the fact that only four inmates were predicted to fail out of 439 inmates in the construction sample even though 80 cases were classified as violent offenders. This provided clear support that the work release population was essentially "low risk" overall. The inmates who

failed were not predicted as failures by the work release staff and only four were predicted to fail by the statistical model.

The objective of this study was to validate the work release selection process which was being used in Virginia. Empirical research confirmed a reliable selection process which resulted in a consistently high success rate for work release participants over a five year period. Inmates in the program constituted little risk to the community in terms of new crimes, escapes, or major rule violations, even though violent offenders and other "so called" high risk inmates were included in the study.

Recommendations

Work release staff need to systematically collect data on inmates for research purposes. There were no files kept on work release cases per se. In this study, cases were identified from department computer records showing a work release location code. From there, data were collected from inmate files. A short variable check list could be developed for insertion in the inmate file, which would be invaluable in future research attempts. In this study the data base was constructed from existing records.

Researchers should work closely with program staff to determine current practices and to determine how the research could be helpful to them. One variable which was one of the best predictors of success would not have been included without a program director's input. More interviews with program staff could have sharpened the focus of the research. For example, since very few of the inmates were in custody status B, a better variable may have been, time in A custody, as opposed to custody status in general.

Further research needs to be conducted from the control theoretical framework. Rotter's internal/external locus of control would be a good starting point. Random assignment of inmates to programs which have varying degrees of control and supervision could further clarify control theory elements. Since this study was not designed to empirically test this question, additional studies are needed to further explore the relationship between the inmate's locus of control and program outcomes.

Retrospective longitudinal studies are limited in that there is no control over what data are collected while inmates are in programs. More research on inmates while they are in programs would provide more insight into the relationship between inmate dynamics and program

outcomes. Utilization of prediction models in the actual selection process could validate the true utility of prediction instruments. Random assignment to treatment and control groups would assist in identifying program effects.

Finally, work release is not a program to which many researchers are attracted at this time. The program is not perceived as new or innovative (such as boot camps), and therefore many researchers are ignoring it as a field of inquiry for empirical research. Historically, work release has suffered from poorly designed studies which have failed to effectively demonstrate its impact on rehabilitation, reintegration, or cost effectiveness goals.

Researchers should not abandon attempting to answer these questions, because they are critical to the better understanding of the effects of imprisonment on inmates' personalities, behaviors, and eventual reintegration into the community. The current trend of life long incapacitation only ignores the inevitable reality that most inmates will eventually return to society less equipped to adapt to their environment than they were when they were removed from it. Instead of abandoning programs geared toward rehabilitation and reintegration, policy makers and correctional decision makers must look

at empirical data to assist them in making more rational informed decisions about inmate treatment and placement alternatives. To do otherwise, is to waste valuable human, societal, and governmental resources.

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Appendix A

WORK RELEASE RISK ASSESSMENT SCALE

DEMOGRAPHIC FACTORS

1. CASE NUMBER __ __ __

2. INMATE ID#__ __ __ __ __ __

3. CODER ID# __ __

4. SAMPLE
   1. CONSTRUCTION
   2. VALIDATION

5. WR ADJUSTMENT
   1. SUCCESSFUL
   2. FAILURES
   9. N/A

6. FAILURES
   1. NEW CHARGES
   2. ESCAPE/ABSCOND
   3. WR RULE VIOLATION
   9. N/A

7. WR LOCATION
   1. CHESTERFIELD
   2. SOUTHAMPTON
   3. SPRING STREET
   9. N/A

8. YEAR ENTERED WR
   1. 1987
   2. 1988
   3. 1989
   4. 1990
   5. 1991
   9. N/A

9. SEX
   1. FEMALE
   2. MALE

10. RACE
   1. WHITE
   2. BLACK
   3. HISPANIC
   4. OTHER
   9. N/A

INDIVIDUAL FACTORS

11. MARITAL STATUS
   1. SINGLE
   2. MARRIED
   3. SEPARATED
   4. DIVORCED
   5. WIDOWED
   9. N/A

12. DATE OF BIRTH

   ____ ___ ____
   MONTH DAY YEAR

13. EDUCATION (HIGHEST GRADE COMPLETED IN YEARS)
   (GED=12 YEARS)

14. OFFENSE CODE:__ __ __ __

15. OFFENSE TYPE:
   1. PROPERTY
   2. PERSON
   3. DRUG
   4. SEX OFFENSE
   5. OTHER
   9. N/A

16. CRIME SERIOUSNESS SCALE
   1. CLASS 6 FELONY
   2. CLASS 5 FELONY
   3. CLASS 4 FELONY
   4. CLASS 3 FELONY
   5. CLASS 2 FELONY
   6. CLASS 1 FELONY
   9. N/A

17. CURRENTLY INCARCERATED ON MULTIPLE OFFENSES
    1. NO
    2. 2
    3. 3 OR MORE
    9. N/A

18. TOTAL ACTUAL SENTENCE RECEIVED (MONTHS)
    ___ ___ ___ MONTHS

19. PRIOR CONVICTIONS (ADULT RECORD ONLY)
    1. NONE
    2. 1
    3. 2
    4. 3 OR MORE
    9. N/A

20. PRIOR COMMITMENTS OF 30 DAYS OR MORE (ADULT RECORD ONLY)
    1. NONE
    2. 1 OR 2
    3. 3 OR MORE
    9. N/A

21. AGE AT CURRENT OFFENSE
    1. 26 OR OLDER
    2. 20-25
    3. 19 OR LESS
    9. N/A

22. LENGTH OF TIME ON STREET WITHOUT PRIOR INCARCERATION OF 30 DAYS OR MORE
    1. 3 YEARS OR MORE
    2. 1 TO 3 YEARS
    3. LESS THAN 1 YEAR

23. AT TIME OF CONVICTION FOR PRESENT OFFENSE: WAS INMATE ON PROBATION, PAROLE, IN CONFINEMENT, AN ESCAPEE OR PROBATION/PAROLE VIOLATOR?
    1. NONE OF THE ABOVE
    2. YES (ONE OR MORE OF ABOVE)
    9. N/A

TO ANSWER THE FOLLOWING QUESTIONS RELATED TO SUBSTANCE USE; REFER TO VERIFIED DATA IN THE PSI. IF THE PSI INDICATES ANY SUBSTANCE USAGE, CODE AS YES FOR THAT SUBSTANCE.

24. HEROIN/OPIATE USE
    1. NO
    2. YES
    9. NOT ASCERTAINED

25. COCAINE USE
    1. NO
    2. YES
    9. N/A

26. MARIJUANA USE
    1. NO
    2. YES
    9. N/A

27. ALCOHOL USE
    1. NO
    2. YES
    9. N/A

28. OTHER DRUG USE
    1. NO
    2. YES
    9. N/A

INSTITUTIONAL ADJUSTMENT FACTORS

29. CUSTODY STATUS AT TIME OF WORK RELEASE ASSIGNMENT
    1. A
    2. B
    3. C
    9. N/A

30. NUMBER OF INSTITUTIONAL INFRACTIONS OR REPORTS IN PAST 12 MONTHS
    1. 0
    2. 1-3
    3. 4-6
    4. 7 OR MORE
    9. N/A

31. HAS INMATE HAD AN INSTITUTIONAL DRUG OR ALCOHOL VIOLATION?
    1. NO
    2. YES
    9. N/A

32. HAS INMATE BEEN IN PROTECTIVE CUSTODY OR ISOLATION IN THE PAST 12 MONTHS?
    1. NO
    2. YES
    9. N/A

33. PARTICIPATION IN INSTITUTIONAL PROGRAMS
    1. ACQUIRED H.S. DIPLOMA OR GED
    2. TAKING OR TAKEN COLLEGE, CORRESPONDENCE, GED, OR VOCATIONAL COURSES IN LAST 12 MONTHS
    3. NONE
    9. N/A

34. LENGTH OF TIME SERVED PRIOR TO WORK RELEASE ASSIGNMENT
    ___ ___ ___ (MONTHS)

35. TIME LEFT TO SERVE AT TIME OF WORK RELEASE

    ___ ___ ___ (MONTHS)

PROGRAM FACTORS

36. TIME SERVED ON WORK RELEASE

    ___ ___ ___ (DAYS)

37. SUPERVISION BY WORK RELEASE CENTER STAFF: JOB SITE VERIFICATION OF WHEREABOUTS DURING WORK HOURS
    1. AT LEAST 1 CONTACT PER WEEK
    2. AT LEAST 1 CONTACT EVERY TWO WEEKS
    3. AT LEAST 1 CONTACT EVERY THREE WEEKS
    4. AT LEAST 1 CONTACT EVERY FOUR WEEKS
    5. LESS THAN ONE CONTACT PER MONTH
    9. N/A

38. DRUG TESTING POLICY
    1. RANDOM DRUG TESTING (WEEKLY)
    2. RANDOM DRUG TESTING (EVERY TWO WEEKS)
    3. RANDOM DRUG TESTING (MONTHLY)
    4. NO DRUG TESTING
    9. NOT ASCERTAINED

39. REVOCATION POLICY
    1. STRICT: NO RULE VIOLATIONS TOLERATED
    2. MODERATE: 1 TO 3 RULE VIOLATIONS
    3. LENIENT: 4 OR MORE RULE VIOLATIONS
    9. N/A

Appendix B

WORK RELEASE RISK ASSESSMENT SCALE

(REVISED 11-29-93)

0. SPSS LINE #__ __ __

1. CASE #__ __ __ (I.D.NUM)

2. INMATE #__ __ __ __ __ __ (INMNUM)

3. CODER ID #__ __ (CODERID)

4. SAMPLE
   1. CONSTRUCTION (SAMPLE)
   2. VALIDATION

5. WR ADJUSTMENT (DEPVAR)
   1. SUCCESSFUL
   2. FAILURES

6. FAILURES (FAILURES)
   0. SUCCESS
   1. NEW CHARGES
   2. ESCAPE/ABSCOND
   3. WR RULE VIOLATIONS
   9. DATA MISSING

7. DATE RECEIVED AT DEPT. OF CORRECTIONS

   __ - __ - __

   1. MO DA YR (INPEN)

8. DATE APPROVED FOR WORK RELEASE

   __ - __ - __

   1. MO DA YR (INWR)

9. DATE PAROLED OR TERMINATED FROM WORK RELEASE

__ - __ - __

1. MO DA YR (OUTWR)

10. MANDATORY PAROLE OR MINIMUM DISCHARGE DATE

__ - __ - __

1. MO DA YR (MPD)

11. PAROLE VIOLATOR AFTER WORK RELEASE?
    1. NO
    2. YES (VIOLATOR)
    9. DATA MISSING

12. IF YES TO NUMBER 11: WHEN WAS THE BOARD WARRANT ISSUED?

__ - __ - __

1. MO DA YR (TMVIOLAT)
2. NOT APPLICABLE
9. DATA MISSING

13. TOTAL SENTENCE RECEIVED

1. ___YRS __ MOS __DAYS (TOTLTIME)
9. DATA MISSING

14. TIME SERVED PRIOR TO WORK RELEASE (FROM RECEIPT DATE TO WR APPROVAL DATE)

1. _____ MOS (TIMEATWR)
9. DATA MISSING

15. TIME LEFT AT WORK RELEASE (NUMBER OF MONTHS TO MAND. PAROLE AT TIME OF WR APPROVAL)

1. _____ MOS (TIMELEFT)
9. DATA MISSING

16. TIME SERVED ON WORK RELEASE (FROM WR APPROVAL DATE TO PAROLE DATE OR TO WR TERMINATION)

1. _____ MOS (TIMEINWR)
9. DATA MISSING

17. YEAR IN WORK RELEASE (YEARWR)
    1. 1987
    2. 1988
    3. 1989
    4. 1990
    5. 1991
    9. DATA MISSING

18. WORK RELEASE LOCATION (WRLOC)
    1. CHESTERFIELD
    2. SOUTHHAMPTON
    3. SPRING STREET
    9. DATA MISSING

19. SEX (SEX)
    1. FEMALE
    2. MALE

20. RACE (RACE)
    1. WHITE
    2. BLACK
    3. HISPANIC
    4. OTHER
    9. DATA MISSING

21. DATE OF BIRTH (DOB)

    __ - __ - __

    1. MO DA YR
    9. DATA MISSING

22. AGE AT WORK RELEASE (AGEATWR)

23. AGE AT CURRENT OFFENSE (AGEOFFNS)

    1. 26 OR OLDER
    2. 20-25
    3. 19 OR LESS
    9. DATA MISSING

24. OFFENSE CODE (OFFENSE)

    1. __ __ __ __ __ — — — — —
    9. DATA MISSING

25. OFFENSE TYPE (TYPOFFNS)
    1. PROPERTY
    2. PERSON
    3. DRUG
    4. SEX
    5. OTHER
    9. DATA MISSING

26. CURRENTLY INCARCERATED ON MULTIPLE OFFENSES (MULOFFNS)
    1. NO
    2. 2
    3. 3 OR MORE
    9. DATA MISSING

27. CRIME SERIOUSNESS SCALE (SEROFFNS)
    0. PENALTY 1-05 YEARS
    1. PENALTY 1-10 YEARS
    2 PENALTY 2-10 YEARS
    3. PENALTY 0-20 YEARS
    4. PENALTY 1-20 YEARS
    5. PENALTY 5-20 YEARS
    6. PENALTY 5-30 YEARS
    7. PENALTY 5-40 YEARS
    8. PENALTY 10-50 YEARS
    9. PENALTY 5 YEARS TO LIFE
    10. PENALTY 20 YEARS TO LIFE

28/29. PRIOR RECORD (ADULT ONLY)

    1. _____ FELONIES (FELONIES)
    9. DATA MISSING

    1. _____ MISDEMEANORS (MISDEME)
    9. DATA MISSING

30. PRIOR COMMITMENTS OF 30 DAYS OR MORE (PREVCOMT)
    1. NONE
    2. 1 OR 2
    3. 3 OR MORE
    9. DATA MISSING

31. LENGTH OF TIME ON STREET WITHOUT PRIOR INCARCERATION OF 30 DAYS OR MORE (STRETIME)
    1. 3 YEARS OR MORE
    2. 1 TO 3 YEARS
    3. LESS THAN 1 YEAR
    9. DATA MISSING

32. AT TIME OF CONVICTION FOR PRESENT OFFENSE, WAS INMATE ON PROBATION, PAROLE, IN CONFINEMENT, AN ESCAPEE OR PROBATION/PAROLE VIOLATOR? (CONVSTAT)
    1. NONE OF THE ABOVE
    2. YES (ONE OR MORE OF THE ABOVE)
    9. DATA MISSING

33. MARITAL STATUS (MARITAL)
    1. NEVER MARRIED
    2. MARRIED
    3. SEPARATED
    4. DIVORCED
    5. WIDOWED
    9. DATA MISSING

34. EDUCATION (YRSEDUC)
    1. 0-08 YEARS
    2. 9-12 YEARS
    3. H.S. DIPLOMA/GED
    4. SOME COLLEGE BUT NO DEGREE
    5. ASSOCIATE DEGREE
    6. BACHELOR'S DEGREE
    7. MASTER'S DEGREE OR GREATER
    9. DATA MISSING

TO ANSWER THE FOLLOWING ITEMS RELATED TO SUBSTANCE USE; REFER TO HEALTH SECTION OF PSI. IF THE PSI INDICATES ANY SUBSTANCE USAGE, CODE AS YES FOR THAT SUBSTANCE. (PSI p.8)

35. HEROIN/OPIATE USE (DRUG#HER)
    1. NO
    2. YES
    9. DATA MISSING

36. COCAINE USE (DRUG#COK)
    1. NO
    2. YES
    9. DATA MISSING

37. MARIJUANA USE (DRUG#MAR)
    1. NO
    2. YES
    9. DATA MISSING

38. ALCOHOL USE (DRUG#ALC)
    1. NO
    2. YES
    9. DATA MISSING

39. OTHER DRUG USE (DRUG#OTH)
    1. NO
    2. YES
    9. DATA MISSING

40. CUSTODY STATUS AT TIME OF WORK RELEASE (CUSTODY)
    1. A
    2. B
    3. C
    9. DATA MISSING

41. NUMBER OF INSTITUTIONAL INFRACTIONS OR REPORTS SINCE INCARCERATION.
    1. O (INFRACT)
    2. 1-3
    3. 4-6
    4. 7 OR MORE
    9. DATA MISSING

42. HAS INMATE HAD INSTITUTIONAL DRUG OR ALCOHOL VIOLATIONS?
    1. NO
    2. YES (SBSTANCE)
    9. DATA MISSING

43. HAS INMATE BEEN IN PROTECTIVE CUSTODY OR ISOLATION?
    1. NO
    2. YES (PCUSTODY)
    9. DATA MISSING

44. PARTICIPATION IN INSTITUTIONAL PROGRAMS (PROGRAMS
    1. ACQUIRED H.S. DIPLOMA OR GED
    2. TAKING OR TAKEN EDUCATIONAL OR VOCATIONAL COURSES WHILE INCARCERATED
    3. NONE
    9. DATA MISSING

45. SUPERVISION BY WORK RELEASE STAFF: JOB SITE VERIFICATION OF WHEREABOUTS DURING WORKING HOURS
    1. AT LEAST ONE CONTACT PER WEEK (CONTROL)
    2. AT LEAST ONE CONTACT EVERY TWO WEEKS
    3. AT LEAST ONE CONTACT EVERY THREE WEEKS
    4. LESS THAN ONE CONTACT PER MONTH

46. DRUG TESTING POLICY (DRUGTEST)
    1. WEEKLY
    2. EVERY TWO WEEKS
    3. MONTHLY
    4. NO DRUG TESTING
    9. DATA MISSING

47. WORK RELEASE REVOCATION POLICY (REVPOLCY)
    1. STRICT
    2. MODERATE
    3. LENIENT
    9. DATA MISSING

Appendix C

Summary of Work Release Prediction Variables

Construction Sample N=416

Variable	Rank	Score	df	Sig	R
PREVCOMT (2) Previous Commitments 1 or 2	1	12.00	1	<.01	.1443
TIMEINWR Time In Work Release	2	7.01	1	.01	.1248
YEARWR (2) Year In Work Release 1988	3	7.00	1	.01	.1248
AGEOFFNS (1) Age at Offense 26 or Older	4	6.70	1	.01	.1210
STRETIME (3) Time on Street Prior To Current Offense < 1 Year	5	6.50	1	.01	.1183
YEARWR (4) Year In Work Release 1990	6	5.10	1	.02	.0983
YEARWR (3) Year In Work Release 1989	7	4.94	1	.03	.0958
SBSTANCE (1) Substance Viol. In Prison None	8	4.84	1	.03	.0942
YEARWR (1) Year In Work Release 1987	9	4.42	1	.03	.0869

Variable	Rank	Score	df	Sig	R
PREVCOMT (1) Previous Commitments None	10	4.27	1	.04	.0842
STRETIME (2) Time On Street Prior To Current Offense 1 to 3 Years	11	4.22	1	.04	.0832
MISDEME Prior Misdemeanor Convictions	12	3.97	1	.05	.0784
INFRACT (1) Prison Infractions None	13	2.96	1	.08	.0547
DRUG#MAR (1) Prior Use of Marijuana No	14	2.74	1	.10	.0479
TYPOFFNS (1) Type of Offense Property	15	2.31	1	.12	.0311
YRSEDUC (5) Educational Level Associate Degree	16	2.24	1	.13	.0277
PCUSTODY (1) Been In Protective Custody or Isolation No	17	2.23	1	.13	.0271
YRSEDUC (1) Educational Level 0 to 8 Years	18	1.90	1	.17	.0000
AGEINPEN Age Entered Penitentiary	19	1.69	1	.19	.0000

Variable	Rank	Score	df	Sig	R
YRSEDUC (2) Educational Level 9 to 12 Years	20	1.49	1	.22	.0000
AGEATWR Age at Time of Work Release	21	1.42	1	.23	.0000
MARITAL Marital Status Married	22	1.18	1	.23	.0000
YRSEDUC Educational Level Some College/ No Degree	23	1.32	1	.25	.0000
PROGRAMS (2) Involvement in Inst. Programs Took Voc/Ed Programs	24	1.22	1	.27	.000
MARITAL (3) Marital Status Separated	25	1.18	1	.27	.0000
RACE (1) Race of Participants White	26	1.09	1	.29	.0000
RACE (2) Race of Participants Black	27	1.01	1	.31	.0000
YRSEDUC (3) Educational Level H.S. Diploma/GED	28	.96	1	.33	.0000
PROGRAMS (1) Involvement In Inst. Programs Acquired GED	29	.81	1	.37	.0000

Variable	Rank	Score	df	Sig	R
DRUG#OTH (1) Miscellaneous Drug Use None	30	.55	1	.46	.0000
TYPOFFNS (5) Type of Offense Other	31	.50	1	.47	.0000
AGEOFFNS (2) Age at Offense 20-25	32	.48	1	.48	.0000
SEROFFNS Crime Seriousness Based On Penalty Range	33	.46	1	.49	.0000
DRUG#HER (1) Prior Heroin Use None	34	.45	1	.50	.0000
MULOFFNS (2) Incarcerated on Multiple Offenses Two	35	.28	1	.59	.0000
TYPOFFNS (3) Type of Offense Drug	36	.27	1	.59	.0001
CONVSTAT (1) On Prob/Parole/ Escapee or In Confinement at Time of Arrest on Current Offense None	37	.26	1	.60	.0000
TOTLTIME Total Sentence In Years	38	.26	1	.61	.0000

Variable	Rank	Score	df	Sig	R
MARITAL (4) Marital Status Divorced	39	.24	1	.62	.0000
SEX (1) Sex of Participant Female	40	.23	1	.63	.0000
WRLOC (2) Work Release Location Southampton	41	.21	1	.64	.0000
DRUG#COK (1) Prior Use of Cocaine None	42	.21	1	.65	.0000
TIMELEFT Time Left On Sentence At Time of Work Release	43	.19	1	.66	.0000
MARITAL (1) Marital Status Never Married	44	.16	1	.68	.0000
FELONIES Prior Felony Convictions	45	.15	1	.69	.0000
CUSTODY (1) Custody Status at W.R Assignment A (Minimum)	46	.12	1	.72	.0000
INFRACT (3) Prison Infractions 4 to 6	47	.11	1	.74	.0000
TYPOFFNS (2) Type of Offense Person	48	.08	1	.77	.0000

Variable	Rank	Score	df	Sig	R
INFRACT (2) Prison Infractions 1 to 3	49	.07	1	.79	.0000
MULOFFNS (1) Incarcerated on Multiple Offenses No	50	.07	1	.79	.0000
WRLOC (1) Work Release Location Chesterfield	51	.05	1	.81	.0000
CONVSTAT (2) On Prob/Parole/ Escapee Or In Confinement at Time Of Current Offense Yes (One or More)	52	.04	1	.84	.0000
DRUG#ALC (1) Prior Use of Alcohol No	53	.02	1	.88	.0000
TIMEATWR Time Served Prior to Work Release Assignment	54	.02	1	.88	.0000
STRETIME (1) Time On Street Prior To Current Offense More Than 3 Years	55	.01	1	.92	.0000
TYPOFFNS (4) Type of Offense Sex Offender	56	.00	1	.96	.0000
YEARSEDUC (6) Educational Level Bachelor's Degree	57	.00	1	.96	.0000

Vita