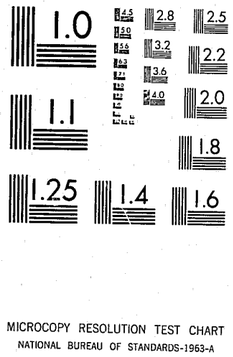

Draft Final Report

RATIONAL CHOICE THEORY AND OFFENDER REHABILITATION

by

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ABSTRACT

The implications of rational choice theory for offender rehabilitation are examined by deriving and testing a set of theoretical propositions. The propositions describe an economically motivated offender and suggest matching offender and treatment. The central hypothesis of this research is that income-enhancing prison rehabilitation programs are most effective for the economically motivated offender.

The hypothesis is addressed by considering the significance of interaction effects between a variety of income-enhancing rehabilitative programs and the type of offender as defined by indicators of economic motivation, sociodemographic background, criminal history, and characteristics of the offender's home region. The programs include work release, educational and vocational programs, prison enterprise and duty assignments, a community transition program, and alcohol, drug, and mental health programs. Outcome variables include a variety of measures of recidivism and employment in the two years after release from prison. Data are based on a subset of 1,425 males conditionally and unconditionally released from the North Carolina prison system during the first six months of 1980.

The main effects of rehabilitation programs on post-prison outcomes are generally not significant but a number of significant interaction effects that differ across programs define offender subpopulations for which the programs are more effective. The implications of the findings for rational choice theory and offender rehabilitation are discussed.

EXECUTIVE SUMMARY

Despite the pervasiveness of the rehabilitative ideal throughout most of this century, the past decade has witnessed a serious erosion of support for the ideal and an increase in support for the justice model of corrections. Emphasis has shifted from rehabilitation to crime control and retribution. However, the continuing provision of rehabilitative treatments in prisons and lingering doubts about the assertion that "nothing works" suggest the need for a reevaluation of the effectiveness of correctional programs.

Rational Choice Theory

The implications of rational choice theory for offender rehabilitation are examined by deriving and testing a set of theoretical propositions. The propositions describe an economically motivated offender who is defined by the strength of his taste for income and taste for work. They also describe the mechanism through which income-enhancing rehabilitation programs work--an increase in legitimate income associated with program effectiveness will decrease an offender's participation in illegitimate activity. Further, it is expected that income-enhancing programs will be most effective for the economically motivated offender who has a stronger preference for material goods and/or who regards work as less unpleasant than other offenders. The propositions, then, suggest matching offender and treatment for more effective correctional outcomes.

Research Design

Analyses are based on data collected on inmates under the jurisdiction of the North Carolina Department of Correction. In order to separate the effect of prison rehabilitation programs from extraneous influences, the sample of offenders under study was limited to males who were conditionally or unconditionally released for the first time during the instant incarceration; who were in prison at least six months, a sufficient amount of time to participate in programs; who had not been outside the prison for significant periods of time during the instant incarceration, whether for an escape or prior conditional release; and who were returned to free society in North Carolina rather than another state or a detainer. The final sample of 1,425 includes males less than 50 years of age who were released for the first time during this incarceration during the first six months of 1980. The reduced sample is similar to the original population on the basis of criminal history and sociodemographic characteristics other than those related to the selection criteria.

Data sets include machine readable and jacket data on inmates available from the North Carolina Department of Correction, information on returns to prison two years after the 1980 release date, "rap sheet" data on arrest history available from the North Carolina Police Information Network, and data from the North Carolina Employment Security Commission on employment and earnings.

The research examines the effects on post-release behaviors of rehabilitative programs during incarceration, characteristics of the offender related to economic motivation, the interaction of treatment

with these characteristics, and a set of control variables that account for exogenous influences on post-release behavior. Post-release behavior is measured in terms of recidivism and employment. Six measures of recidivism are used: any arrests, any convictions, or any reincarcerations in the two years after release; the length of time until first arrest after release; the seriousness of offense leading to any reincarceration; and a comparison of the seriousness of the new offense and that for the instant incarceration. Post-release employment behavior is measured in terms of any reported earnings and the amount of earnings per quarter.

Indicators of economic motivation include a history of property offenses prior to the instant incarceration, work history prior to the instant incarceration, and a history of alcohol, drug, or mental health problems. Income-enhancing programs include work release, educational and vocational programs, prison enterprise and duty assignments, a community transition program, and alcohol, drug, and mental health programs. Control variables include age, race, number of prior arrests, number of rule violations during the instant incarceration, time served during the instant incarceration, supervised/unsupervised release, the likelihood of being arrested in the offender's home region, and the unemployment rate in the offender's home region.

The major hypothesis that income-enhancing programs are more effective for the economically motivated offender is tested by means of ordinary least squares regression procedures. Emphasis is placed on the observation of the significance of interaction effects between program participation and offender characteristics.

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Research Findings

The eight indicators of post-prison behavior are first related to measures of economic motivation, prison program participation, and control variables without considering interaction effects between program participation and offender characteristics. Post-prison behavior is not strongly or consistently related to program participation. Those with good work histories have better post-prison outcomes in terms of recidivism and employment, while those with histories of alcohol, drug, or mental health problems or a history of property offenses have higher recidivism rates. The relation of control variables to post-prison behavior is consistent with past research. Findings regarding program participation offer weak support for the effectiveness of rehabilitation efforts.

Work release. Those on work release have lower recidivism rates and better labor market performance but the relationship disappears when controls for economic motivation and offender characteristics are introduced. Work release appears to enhance the earnings capacity of those with better job skills and to decrease the rate of reincarceration and increase labor force participation for those with an alcohol, drug, or mental health problem. The length of time on work release has little effect on post-prison behavior.

Educational and vocational programs. Taken together, educational and vocational programs do not affect recidivism and employment although nonproperty offenders who participate in those programs are less likely to recidivate. Participation in a greater number of such

programs is beneficial for habitual offenders, nonproperty offenders, and nonmarried offenders. Educational programs are particularly beneficial for some outcomes for those with good work histories, nonproperty offenders, and habitual offenders. Acquisition of the GED is most beneficial for those with poor work histories, poor job skills, and those without an alcohol, drug, or mental health problem. Vocational programs are more effective for some outcomes for those with poor work histories, nonproperty offenders, habitual offenders, those without a history of in-prison rule infractions, nonmarried offenders, and those with more years of education.

Prison work programs. Prison enterprise and prison duty programs taken together do not affect recidivism or labor force participation but appear to increase post-prison earnings. The programs are beneficial for some outcomes for those with alcohol, drug, or mental health problems, good work histories, better job skills, those serving longer sentences, and those with fewer in-prison rule violations. Earnings are increased if the offender participates in more prison work programs. Prison enterprise programs are beneficial for those with poor job skills, while prison duty programs are beneficial for some outcomes for those with good work histories, alcohol, drug, or mental health programs, and good job skills.

Pre-release and aftercare. Participation in PRAC does not affect post-release recidivism or employment, and interactions between this program and the set of economic motivation indicators are not significant.

Alcohol, drug, or mental health programs. Participation in these programs is related to lower recidivism rates but unrelated to labor market performance. Interactions between these programs and the set of economic motivation indicators are generally not significant. Participation in alcohol treatment programs is related to decreased recidivism but unrelated to labor market performance. None of the interaction terms for economic motivation indicators is significant.

Multiple program participation. The number of types of program participation is unrelated to labor market performance but related to more serious post-prison offenses. More programming appears to benefit those with alcohol, drug, and mental health problems.

Of the indicators of economic motivation, work history and a history of alcohol, drug, or mental health problems are predictive of recidivistic behavior, while job skills and property offenses are not predictive. Good job performance is predicted by job skills but not other indicators. Thus, rational choice theory is neither confirmed nor disconfirmed.

The basic model is not sensitive to alternative formulations of the model or operationalizations of the variables. Overall, participation in alcohol, drug, and mental health programs is related to reduced recidivism and participation in prison labor programs to enhanced post-prison job performance. Participation in work release, educational and vocational programs, or transitional programs is generally not effective. However, the programs are effective for specific offender subpopulations. If the programs were more focused to those subpopulations, the effectiveness of correctional treatment could be enhanced.

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CHAPTER 1

RATIONAL CHOICE THEORY AND OFFENDER REHABILITATION

This research examines the hypothesis that economic status has an effect on offender rehabilitation. The propositions on which the argument is based can be deduced from neoclassical criminological theory. This theory supposes that the behavior of offenders is motivated by the same guiding principle as that governing the behavior of others--that people are rational and that their behavior is guided by a desire to maximize their own well-being. In recent years, the theory has been given a logically rigorous mathematical treatment by Becker (1968) and has received significant refinements from Ehrlich (1973), Sjoquist (1973), Block and Heineke (1975), and Heineke (1978).

The Becker-Ehrlich-Sjoquist version of the rational choice theory assumes that an individual is free to choose among alternative options, that the options include legitimate and illegitimate activity, that the individual strives to maximize his/her well-being, and that well-being is maximized by appropriately allocating one's time between legitimate and illegitimate activity. The theory predicts that poor persons and the unemployed are more likely to engage in crime, and, conversely, that improvements in economic status reduce criminal activity. This version of the rational choice theory is also basic to sociological explanations of criminal and delinquent activity (Merton, 1938; Cohen, 1955; Cloward and Ohlin, 1960) which attribute the commission of offenses, particularly economically motivated property offenses, to the blockage of legitimate opportunity. The blockage of

legitimate opportunity is assumed to be more prevalent among lower socioeconomic status persons and to be manifested in lack of success in the labor market and in school.[1]

The theory is quite general. Maximization is not limited to pecuniary values or to material well-being. Social status, the psychic costs of conformity to social convention and family expectations, and one's physical health—to pick three examples—are all proper arguments in the function which is to be maximized. Thus, the theory encompasses an extremely wide spectrum of behaviors, some of which are commonly defined as irrational. According to the theory, for example, drug addiction, alcoholism, and aggravated assault may be perfectly rational behaviors if the returns to these behaviors are relatively high for individuals manifesting such behaviors. It could be that, for the addict, the chronic inebriate, and the perpetrator of violent crime, alternative behaviors leave the individual less well off. That is, such "irrational" behavior could well be optimal.

Given this theory's assumptions, it follows that involvement in legitimate activity will reduce the amount of time devoted to criminal activity. Hence, rehabilitation programs—skills and education training, work and study release, vocational counseling, etc.—that increase present or future legitimate income are expected to reduce recidivistic crime.

The Becker-Ehrlich-Sjoquist version of the rational choice theory has not found universal acceptance, however. Block and Heineke (1975), Heineke (1978), and others have argued that the theory's assumptions about human behavior are too restrictive.[2] These writers have shown that, when some of these assumptions are relaxed, the conclusions

derived from the theory must be qualified. In particular, they show that higher income will not necessarily reduce involvement in criminal activity. The thrust of their argument is that the effect of improved economic well-being on criminal propensities is environment- and population-specific. It follows, therefore, that the outcome of programmatic effort will not necessarily be favorable. In the context of this research, the implication of their analysis is that income-enhancing interventions applied to inappropriate populations will be less productive.

The remainder of this chapter describes in more detail the theoretical model that informs the empirical research reported here. Empirical research linking economic status and crime causation and rehabilitation is described. Chapter 2 describes research on rehabilitation, particularly focusing on those factors predicting post-prison recidivism and employment success. Empirical procedures, the sample, and variable measurement are described in Chapter 3. Chapters 4 to 6 present the empirical findings. Chapter 7 provides a summary and conclusions and tests the sensitivity of research findings to alternative model formulations.

A. Rational Choice Theory and Rehabilitation

This section presents more detailed description of rational choice theory and its relevance to rehabilitative efforts. An individual, embedded in a particular environment and free to choose among alternative behaviors (B), will choose that particular set of behaviors (B*) which produce a set of outcomes (Y) that leave him best off. "Best

off" requires that the individual assign values (V) to Y. V derives from the individual and serves, to a very great extent, to distinguish one individual from another. V is a short-hand expression for a collection of sociological and psychological concepts that carry names such as attitude, value, preference, propensity, and personality. V encompasses one's attitude (preference, propensity, etc.) toward work vs. leisure, blue collar vs. white collar work, apples vs. oranges, present vs. future gratification, risk vs. security, lawful vs. unlawful behavior, etc. The economist refers to this large, amorphous collection of values as "tastes." For the economist, tastes are internalized evaluations, analogous to a set of relative prices or values. For example, individual A may be said to have a relatively strong taste for economic status; B, for the euphoria that accompanies a heroin "fix." Alternatively, we might say that A assigns a relatively low net value, or price, to the collection of "things" associated with opiate use--indeed, its price may be negative, meaning that A would be willing to pay <u>not</u> to consume this commodity--while, evidently, B assigns a relatively high net value to the consequences associated with opiate use. It must be stressed, however, that price and value are used in this discussion purely as an analogue for individual valuation. The theory recognizes that some "prices" may have no monetary equivalent (Heineke, 1978). For example, assault may be so abhorrent to some persons that no quantitative valuation of such behavior is possible.

Rational choice theory can be used to elucidate the behavior of particular subsets of the population. The population of particular interest to us consists of those persons whom we shall refer to as the

economically motivated, or, in this case, the economically motivated offender. Specifically, we develop a theoretical model or explanation system, within which the principal environmental variables influencing the decision of economically motivated individuals are identified, and the mechanism through which the individual maximizes well-being may be established.

At the basis of our model is the assumption that maximization is subject to resource constraints. An important resource is the individual's own time. Time is, of course, strictly limited. For example, to obtain income or the things that income obtains, one must allocate some of one's time to income-producing activity and reduce, thereby, the time devoted to other activities. Formally, we signify the total time available to an individual as T, and specify that it be allocated among three mutually exclusive activities: legitimate activity (L), illegitimate activity (K), and leisure (R), such that

$$T = t_L + t_K + t_R \ . \qquad (1)$$

T is a constant, of course, with value equal to 24, 365, etc., depending upon the measurement unit selected.

Income (G), expressed in monetary equivalents, depends upon the time devoted to its generation, and is given by

$$G = G\ (t_L,\ t_K, {}^{\alpha}) \ . \qquad (2)$$

G includes legitimate and illegitimate earnings, as well as transfer payments from public agencies, family, etc. The term, , is a shift variable. It permits us to signify that the amount of income forthcoming from a particular combination of t_L and t_K may vary because of an "environmental change" such as a program intervention. It is

assumed that

$$\frac{\partial G}{\partial t_L} > 0; \frac{\partial G}{\partial t_K} > 0 . \tag{3}$$

That is, additional time spent in either legitimate or illegitimate activity will produce additional income.

An individual's well-being may be expressed by the relation

$$U = U (G, t_L, t_K, Z) \tag{4}$$

in which Z is a vector comprising all the other variables affecting the individual's well-being: his social status, health, sex life, etc. We assume

$$\text{(i)} \ \frac{\partial U}{\partial G} > 0; \ \text{(ii)} \ \frac{\partial U}{\partial t_L} < 0; \ \text{(iii)} \ \frac{\partial U}{\partial t_K} < 0. \tag{5}$$

Inequality (5i) simply states that an increase in income increases well-being; (5ii) and (5iii) that work activity is irksome.

It can be shown that, under rather general conditions, an increase in legitimate income, G_L, by increasing the well-being derivable from legitimate activity, will reduce an individual's participation in illegitimate activity. That is,

$$\frac{\partial t_K}{\partial G_L} < 0.$$

(A formal proof for this proposition can be derived by reworking and extending the Heineke (1978) model.) Rehabilitation programs that enhance an ex-offender's economic status derive their raison d'être from this proposition, for we have

$$dG = \left(\frac{\partial G}{\partial \alpha} + \frac{\partial G}{\partial t_L} \cdot \frac{dt_L}{\partial \alpha} \right) d\alpha . \tag{6}$$

The first term indicates that some economic status-enhancing rehabilitation programs achieve their results directly, as when an ex-offender is provided with an income supplement. The second term indicates that some economic status-enhancing programs achieve their result by increasing the ex-offender's propensity to work, possibly by enhancing his earning potential or work-related skills.[3] Whichever way rehabilitation has its effect, it is our contention that the " effect," or program effect, will be larger for some offenders than for others. This is so because some ex-offenders have a stronger preference for material goods and/or because they regard work as less unpleasant than do other ex-offenders.

Formally, we differentiate Equation (4), and obtain

$$dU = \left(\frac{\partial U}{\partial G} \cdot \frac{\partial G}{\partial \alpha} + \frac{\partial U}{\partial G} \cdot \frac{\partial G}{\partial t_L} \cdot \frac{\partial t_L}{\partial \alpha} + \frac{\partial U}{\partial t_L} \cdot \frac{\partial t_L}{\partial \alpha} \right) d + \frac{\partial^2 U}{\partial t_L \partial \alpha} . \tag{7}$$

The effect on well-being and, therefore, on the criminal choice, will be larger if $\frac{\partial U}{\partial G}$ is larger, and if $\frac{\partial U}{\partial t_L}$ is smaller. These two terms represent, respectively, the attractiveness of income and the unattractiveness of work, i.e., the benefits and costs associated with legitimate activity.

Equation (7), in turn, can be reduced to a simple linear expression in two variables:

$$dU = \left(\omega_G \frac{\partial U}{\partial G} + \omega_t \frac{\partial U}{\partial t_L} \right) d\alpha . \tag{8}$$

Equation (8) provides the theoretical basis for an empirical classification system for the economically motivated offender.

1. The Economically Motivated Offender

An empirical classification system may be derived from Equation (8). We consider a population consisting of n offenders. The i^{th} individual's taste for income and work is given by $\frac{\partial U}{\partial G_1}$ and $\frac{\partial U}{\partial t_{L \cdot i}}$, respectively. We define the degree to which this individual is an economically motivated offender (EMO) as a linear combination of these two taste variables. For a given set of weights, w_G and w_t, we may order these n individuals, according to the EMO scores, as follows:

$$\left(w_G \frac{\partial U}{\partial G_1} + w_t \frac{\partial U}{\partial t_{L \cdot 1}}\right) > \left(w_G \frac{\partial U}{\partial G_2} + w_t \frac{\partial U}{\partial t_{L \cdot 2}}\right) > \ldots > \tag{9}$$

$$\left(w_G \frac{\partial U}{\partial G_n} + w_t \frac{\partial U}{\partial t_{L \cdot n}}\right) . \tag{9}$$

For simplicity of expression, we refer to individuals with higher EMO scores as economically motivated offenders.

To develop the EMO score, we require indicators for two taste variables and the weights associated with each. To anticipate our discussion of the empirical procedures to be used, we note that direct empirical measures for the two taste variables do not exist, and that we shall have to use several indirect measures. Accordingly, each of the taste variables can be thought of as a composite index, consisting of a set of indicators combined by application of an appropriate set of weights. Thus, the theoretical representation of the effect of an income-enhancing program which was provided by Equation (8) has its empirical counterpart in the EMO score obtained for the i^{th}

individual by

$$EMO_i = w_Y \sum_j^{m_Y} \left(v_{Y.j} Y_{j.i} \right) + w_L \sum_j^{m_L} \left(v_{L.j} L_{j.i} \right), \tag{10}$$

where Y and L represent vectors of indicators of the taste for income and work, respectively, and

$$m_Y \geq 1;\ m_L \geq 1;\ \Sigma v_{y.i} = \Sigma v_{L.i} = w_Y + w_L = 1.$$

With no loss in generality, we have constrained each of the three sets of weights to equal unity. If, then, we require that $0 \leq Y_i \leq 1$ and $0 \leq L_i \leq 1$ for all i, we shall have $0 \leq EMO_i \leq 1$. That is, our EMO index will be bounded by zero and unity (one).

Our ultimate objective is to develop an EMO index using the structure given by Equation (10). Accordingly, we must obtain a set of measures of the marginal value placed on material goods by individual offenders and a set of measures of the marginal disutility of work for these same ex-offenders. We must also provide a set of weights with which to combine these two measures. Once these data are developed, ex-offenders can be rank-ordered in the manner suggested by Equation (9). The vector of EMO values may be dichotomized into those possessing relatively strong economic motivation vs. those who do not; it may be organized into k discrete class intervals; or it may be treated as a continuous variable.

a. The Taste for Income

The economically motivated offender is partly defined by the strength of his taste for income. That income is an important motivation for criminal behavior is supported by theoretical and empirical work in economics, sociology, and related disciplines. This literature is reviewed in detail later in this chapter. Petersilia (1980:362-366)

provides a useful overview of research findings on the importance of economic factors in criminal motivation. For young adult offenders, about 70 percent reported being involved in crime for economic reasons, that is, to obtain money to support oneself or to purchase drugs or alcohol. Although expressive needs may have been important in initiating a career of crime, economic distress appears to have been critical for its maintenance. These findings are particularly relevant for the measurement of the taste for income; crimes for which the major payoff is economic gain, or the need to obtain money to provide for an addictive habit, are here described as the primary indicators of the taste for income.

Sociological theory concerning the taste for income derives from traditional conceptions of the centrality of the striving for economic success within American society (see Williams, 1951). This striving was interpreted by Mertonian strain theory (Merton, 1957) as a primary motivation for engaging in illegitimate activity in the face of the blockage of legitimate opportunity for certain individuals. The experience of strain has most often been defined in terms of lower socioeconomic status or residence in lower socioeconomic neighborhoods, but is actually a concept based on the weighing of the relative ability to attain economic goals in a legitimate manner and may not be tied to socioeconomic position. Others have argued that the taste for income is formed by the standard of living or socioeconomic status of his family of orientation (Becker, 1960; Blau and Duncan, 1967; Easterlin, 1973).

One psychological construct useful in delineating the rational choice offender is that of immediate vs. deferred gratification or, to

use the economist's phrase, time preference. The theoretical relevance of this construct to our classification system is straightforward. We assume that the returns to legitimate activity occur, on the average, more distantly in time than do the returns to illegitimate activity. That is, crime tends to yield immediate rewards. Therefore, persons who are more willing to defer gratification would find legitimate returns relatively more attractive, and will be more predisposed to accept the material gain offered by income-enhancing rehabilitation programs.

This construct received great currency in the 1960s literature on the "culture of poverty," perhaps originating with Lewis' La Vida (1966). The preference for immediate rather than deferred gratification is associated with lower achievement motivation, the inability to plan, lower educational attainment, etc. The literature identifies socioeconomic status (Davis and Dollard, 1940; Schneider and Lysgaard, 1953; Cohen, 1955; Barber, 1957; Phillips, 1966; Farquhar, 1968); race (Zytkoskee et al., 1971); and age (Le Blanc, 1969; Mischel et al., 1969; Walls, 1973; Nisan, 1974; Davids and Falkof, 1975; and the review of the literature in Bochner and David, 1968) as variables associated with deferred gratification. Zimring and Hawkins (1973:98-101) relate this tendency to lesser deterability and, thus, higher crime rates among poverty groups; Fleisher (1966:19-27) to delinquent behavior. There are thus four possible categories of outcomes. The value of D_i is taken to be the highest of the four outcomes. Obviously, $0 \leq D_i \leq 1$.

We may now summarize our estimation procedure for the taste-for-income variable. Using the notation of Equations (8) and (10), we have

$$\frac{\partial U}{\partial G_i} = \sum_{j}^{3} v_{Y \cdot j} Y_{j \cdot i} = v_{Y \cdot A} \cdot A_i + v_{Y \cdot C} \cdot C_i + v_{Y \cdot D} \cdot D_i \qquad (11)$$

where A, C, and D represent mean arrest, conviction, and drug scores. Note that both arrests and convictions appear in equation (11). We wish to focus on arrests but at the same time to retain convictions data as a possible alternative or supplementary measure of criminal history.

b. The Taste for Work

The taste for income describes those motivations for participation in illegitimate and legitimate activity for which returns are primarily economic. Behavior may also be motivated by noneconomic factors—the desire for prestige, personal feelings of achievement, contributions to societal welfare, and the like. These noneconomic motivations are most frequently associated with being fulfilled by engaging in legitimate work activity and have been referred to as the "intrinsic rewards" of work (Cherrington, 1980:421-424). Work may also be viewed as an end unto itself (see discussion of the work ethic arising from the Protestant ethic in Williams (1951:421-424), and discussion of the workaholic in which work becomes a misplaced terminal value in its extreme in Cherrington (1980:24). These conceptions of the intrinsic rewards of work contrast dramatically with those conceptions of the motivation to engage in work or other activity for instrumental, or economic, reasons.

At the same time that work may bring rewards to the individual, work may be seen as irksome. Work demands a regularity of attendance, dedication, and effort. The decision to engage in legitimate work versus other activity is dependent on whether the benefits to work

outweigh its costs, as well as by the strength of the taste for work. In our classification system, tastes for income and for work provide the prices by which to weigh the relative benefits and costs of legitimate and illegitimate behavioral alternatives.

2. Uses in Guiding Rehabilitative Efforts

If we assume that rational choice theory correctly describes criminal justice agency behavior, or desired behavior, then this classification structure may be used to develop the formal optimization policy that guides, or should guide, the agency. Briefly, in words, the following deductive system suggests what that optimization policy should be. Assume:

(1) There are n offenders available for income-enhancing treatment (T).

(2) Criminal justice agency (C) has a fixed budget (B).

(3) B is only sufficient to administer effective treatment to m offenders.

(4) $m < n$.

(5) Equation (8) represents the marginal increment in well-being for an offender receiving T.

(6) The EMO scores, which are the empirical representation of dU in Equation (8), may be empirically evaluated for the n offenders. That is, we assume that the partial derivatives, representing the taste for income and work, exist and can be evaluated for all n offenders, and that the w weights that correctly represent average offender experience also exist and may be evaluated.

(7) C equates its well-being with that of the n offenders.

(8) C is a welfare maximizer.

Optimization then requires that C rank-order the EMO scores in the manner indicated in Equation (9), and that the agency provide T to the leftmost m offenders in the spectrum represented by that equation. To implement this optimal agency policy, it is necessary, therefore, that an effective, accurate empirical classification system be developed. Analyses presented in this report examine the relation of the set of economic motivation indicators to offender rehabilitation to provide the basis for development of such a classification system.

B. Empirical Evidence Linking Economic Status to Crime Causation and Rehabilitation

It is commonly believed that poverty and unemployment produce crime. The connection seems obvious enough: the poor and the unemployed have relatively little to lose if they are caught at criminal activity, and, relatively speaking, much more to gain from such activity. Although the argument has intuitive appeal, as a general statement concerning human behavior it does not bear up under close scrutiny. We have argued above that theoretical analysis provides only conditional validity for the argument. In the following two sections we show that, contrary to common belief, the empirical evidence also fails to provide general validity for the argument. Finally, in the third section, we argue that, despite our failure to document a strong, consistent relation between economic status and crime, such a relation probably does exist. We argue that the revised rational choice theory predicts different responses to improved economic status by different population subsets, and that the empirical evidence is consistent with, and supports, the theory.

1. Indirect Evidence

Two general sets of findings provide indirect evidence concerning the empirical relation between economic status and crime. The one utilizes aggregate data, the other individual data. The studies based on aggregate data are directed at the effects on the crime rate of unemployment and of poverty. These studies use empirical models that are based, implicitly or explicitly, on the early Becker-Ehrlich-Sjoquist version of the rational choice theory, which hypothesizes that crime rates vary inversely with legitimate earnings. That is, the models predict that, where there is more unemployment and more poverty, crime rates will be higher.

The empirical models used to examine the relation between unemployment rates and crime rates yield mixed results. Gillespie's (1975) review of the pre-1975 literature concerning the crime-unemployment relation yields inconclusive results: three studies report the existence of a relation, but seven do not. Subsequent studies do no better. Leveson (1976) finds crime rates and youth unemployment (but not adult unemployment) significantly related. Brenner (1976) reports a significant relation for the aggregate offense rate, but this result is disputed by the Center for Econometric Studies (1979). The studies by Bartel (1976), Forst (1976), Land and Felson (1976), the Center for Econometric Studies (1978), Fox (1978), Vandaele (1978), Orsagh (1980a), and Wadycki and Balkin (1980) are also inconclusive. (Orsagh, 1980b, surveys this literature.)

The empirical models used to examine the relation between poverty and crime rates also yield mixed results. The models rely upon indirect measures for the income variable because direct measures do

not exist. The measures used refer to broad population groups, not to the population "at risk," i.e., the population of potential offenders and of ex-offenders. The measures also fail to account for various transfer payments which would be important to this population. Hence, valid tests of the hypothesis are impossible (Orsagh, 1979). It is not surprising, therefore, that Gillespie's (1975) survey and the other studies cited above provide exceedingly thin support for an income-crime relation.

The findings from individual data, some reported for offender populations, are somewhat more supportive of the theory. Glaser (1964), Evans (1968), Pownall (1969), and Cook (1975) indicate that better labor market performance was directly related to parole success and inversely related to recidivism. Witte (1980a; 1980b) and Sickles, Schmidt and Witte (1979) show consistent but weak support for a relation between crime and wages but no relation for unemployment. Others have shown that ex-offenders have little trouble finding jobs, but have high turnover rates--even when the job is attractive, with good wages and advancement opportunities--and have substantial periods of voluntary unemployment (see Witte, 1979, for a survey; and Witte and Reid, 1980). Svirdoff and Thompson (1979) argue that the sign of the crime/unemployment coefficient can be positive, zero, or negative for ex-offenders. They believe, though, that the population of younger offenders is particularly likely to reduce their criminal activity in response to economic rewards. Research based on self-reported criminality and economic status is similarly inconclusive--both negative (see review in Kornhauser, 1978) and nonexistent or weak positive relationships (Tittle et al., 1979) have been found between economic

status and crime. However, Tittle et al.'s findings are rejected by Clelland and Carter (1980). In addition, interpretation of the evidence is clouded by differences in offense domains between official and self-report data (Hindelang et al., 1979).

Thus, findings from aggregate and individual data are inconclusive, but findings from individual data are somewhat more supportive of the thesis that crime and economic status are related; and, therefore, by indirection, that rehabilitation and improved economic status are positively related.

2. Program-Specific Evidence

A review of rehabilitation programs that employ economic status instruments also yields mixed results. Rovner-Pieczenik's (1974) evaluation of fifteen pretrial intervention programs designed to improve the economic status of young offenders was inconclusive. Taggart (1972) concluded that Project Crossroads and the Manhattan Court Employment project were effective for adults but not for teenagers. The in-prison vocational training and work experience programs reviewed by Taggert (1972) and Abt Associates (1971), the post-release services reviewed by Taggart (1972) and by Toborg, et al. (1977), and the Job Corps programs reviewed by Mathematica Policy Research (1978) all fail to provide conclusive evidence that enhanced economic viability produces positive outcomes for the offender population. The carefully designed and executed vocational counseling program conducted by the Pennsylvania Prison Society (1980), led to the conclusion that such programs "will not necessarily lead to higher ex-offender employment rates and are unlikely to lead to significant reduction in

criminal behavior" (p. 5). While work release is reported to have been an effective program in California in reducing recidivism (Jeffrey and Woolpert, 1974; Rudoff and Esselstyn, 1973), it did not reduce the recidivism rate in North Carolina, though recidivistic crimes did tend to be less serious (Witte, 1977), and was not effective in Massachusetts (Leclair, 1972) or in Florida (Waldo and Chiricos, 1977). Studies of community-based assistance programs designed to assist the transition from prison to employment were found to exaggerate the importance of these programs for reducing recidivism (NILECJ, 1978). Finally, Wright and Dixon's (1977) review of 96 juvenile delinquency programs showed that, at best, the results were "promising," while Robin's (1969) evaluation of a juvenile employment program was inconclusive.

Several recent policy initiatives deserve attention. The Vera Institute's supported work programs, revised and extended under the direction of the Manpower Development and Research Corporation, emphasized the development of self-discipline and other behavior patterns conducive to a successful work life. Results were mixed (Manpower Demonstration Research Corporation, 1978; Maynard et al., 1979), but the programs have been cost-effective (Friedman, 1977). Mixed results are also reported for the employment and earnings experience of ex-offenders in the Michigan Comprehensive Offender Manpower Program (Borus et al., 1976).

The LIFE experiment deserves attention because one of the program treatments provided for significant levels of financial aid. The sample consisted of offenders who partly conformed to the rational choice model, in that they were younger males, with crimes of theft

figuring prominently in their history, and having no known history of substance abuse. The sample was chosen to maximize the likelihood of a favorable response to income-enhancement. Unfortunately, from our viewpoint, LIFE did not use a control group of offenders who did not fit the model. LIFE's results are, however, consistent with our hypothesis. The income-enhancing treatment significantly reduced recidivistic arrests and was cost-effective. The other treatment (job placement or no treatment) had no significant effect on post-release behavior (Mallar and Thorton, 1978).

The $3.4 million TARP experiment evolved as an extension of the LIFE experiment (Rossi et al., 1980). TARP differed from LIFE in two important respects, one favorable and one unfavorable, from our viewpoint: (i) Several treatments were used to assess more precisely the effect of income enhancement on ex-offenders; and (ii) Offenders were not classified according to whether they fit the rational choice model. Instead, a random assignment procedure was used which effectively eliminated the possibility of comparing outcomes by our offender paradigm. The results of the TARP experiment were decidedly less favorable than those of LIFE. Income-enhancement appeared to reduce recidivistic arrests, but to have adverse effects on employment behavior. On balance, ex-offenders appeared to prefer no work, with an income subsidy, to work and no subsidy (or a reduced subsidy). Unfortunately, it is not possible to determine from the TARP data whether employment behavior differed systematically by offender classification. A strong possibility exists that the less positive overall outcome derived from TARP masks very different behavioral responses by identifiable subsets of the ex-offender population.

C. Conclusion

Our theory, a derivative of the Block and Heineke version of the rational choice theory, asserts the existence of a crime/economic status relation only with reference to particular population subsets. The empirical studies that have attempted to establish a crime/economic status relation have not evaluated the evidence within this context. The studies based on indirect evidence correlate variation in crime rates with variation in unemployment rates and income levels for broad population groups without consideration for differences in the degree to which different population subsets might respond to legitimate economic opportunities. Hence, the failure of these studies to establish the existence of a crime/economic status relation should not be surprising.

The same criticism can be levied at the studies that have evaluated specific programs. With few exceptions, rehabilitation programs employing economic status instruments have not been targeted to populations that fit the rational choice theory (Mann, 1976). These programs have included drug addicts, alcoholics, habitual felons, morals offenders, violent offenders, and individuals who have shown a distaste for steady work at normal wages. The disappointing results of so many programs may be explained by inclusion of these groups. Such programs should be more effective if they are addressed to populations that will respond to reopening legitimate spheres of economic activity. Glaser (1975), Palmer (1975), and Warren (1964) among others have argued more generally that it is feasible--and, of course, desirable--to match treatments to offenders. Although we have no

record of a rehabilitation program that has tested the rational choice theory by matching income enhancement to appropriate offender populations, LIFE endorses the concept, and LIFE, TARP, and other supported work programs endorse the desirability of income-enhancement for ex-offenders on the basis of rational choice theory. The LIFE project, which comes closest to conforming to our paradigm, also produced results which are quite encouraging.

This research views the rehabilitative ideal from a more focused perspective. We suggest that the success of rehabilitative programs can be enhanced by matching treatment modalities to specific, suitable offender populations. In particular, we suggest that rehabilitative programs that improve actual or potential earnings are more likely to succeed if targeted at those offenders for whom the choice between legitimate and illegitimate activity derives from rational considerations. We test this contention by examining the effect on post-release behavior of ex-offenders of factors suggested by the rational choice model. The impact of income-enhancing rehabilitative programs is evaluated vis-a-vis other rehabilitative programs and the set of economic motivation indicators. Impact is measured in terms of recidivistic and employment outcomes, utilizing several measures for each. Of particular interest is the relative impact of rehabilitative treatments for specific types of offenders.

NOTES - CHAPTER 1

1. The most relevant of the sociological theories is Merton's strain theory, from which has emerged a number of theoretical studies regarding the criminological impact of the blockage of legitimate opportunity that are consistent with the rational choice model. The theoretical work of Cohen (1955) and Cloward and Ohlin (1960) concerning juvenile populations is also of interest because of the obvious parallel between adult economic status and criminality on the one hand and school success and juvenile delinquency on the other.

2. One crucial assumption concerns the allocation of time. In the earlier, simpler version of the theory, time is divided between legitimate and illegitimate activity. An additional hour devoted to legitimate activity implies one hour less time devoted to illegitimate activity. That is, leisure is a constant. On the other hand, in Heineke's (1978) more general version of the theory, leisure is treated as variable. This assumption implies a wider range of responses by an individual to a particular environmental change. For example, under an income-enhancing inducement, he might increase his time devoted to legitimate activity, but he may do so by giving up leisure rather than illegitimate activity.

3. Rehabilitation may also enhance an ex-offender's productivity. In our model, this would be represented by

$$\frac{\partial^2 G}{\partial t_L \partial \alpha} > 0$$

To simplify the exposition, we assume that this second-order effect is represented by the two first-order terms in the equation.

CHAPTER 2

THE INSTRUMENTS OF REHABILITATION

Rehabilitation of offenders is one of the central goals of corrections, along with deterrence, incapacitation, and retribution (see discussion in Sutherland and Cressey, 1978:533-537; Grizzle et al., 1980:11; Marshall, 1981:5). Rehabilitation was foremost among correctional goals until the past decade, and although its support has diminished, it continues to be a primary goal (Allen, 1959). The thrust of the rehabilitative goal, as with the goals of deterrence and incapacitation, is the reduction of crime. In contrast to the goals of deterrence and rehabilitation, however, the specific goal through which crime is reduced is not removing the offender from risk or changing his perception of the risk of sanctions but rather prevention through effecting basic changes in offenders' values, attitudes, and behaviors.

The instruments of rehabilitation through which this change is effected are various institutional- and community-based programs conducted under prison auspices. This chapter briefly describes research findings regarding the effectiveness of selected rehabilitation programs, particularly concerning the effects of post-release recidivism and employment success. Discussion focuses on those programs outlined in the previous chapter as income enhancement programs: work release, educational programs, vocational training, duty assignments, prison enterprises, and various programs that ease the transition of the offender from prison to community living. Each

works to improve basic skills through which the ex-offender can more effectively compete as he reenters society. Following discussion of research on these programs, research conclusions on the specific factors that predict recidivism and employment success of prison releasees is reviewed. Discussion focuses on the distinctive role of drug, alcohol and mental health problems in crime causation, factors only recently receiving great theoretical and empirical attention.

A. The Rehabilitative Ideal

Support for the rehabilitative ideal derives from the nearly universal acceptance of the assumption that favorable behavioral changes in offender populations can be brought about by individualized intervention, or treatment. This stance, generally referred to as the "medical model," emerged from positivistic social thought in the last century as well as liberal orientations of this century. These trends were buttressed by the involvement of criminologists in correctional practice and the belief that rehabilitation could be effectively achieved by the provision of certain types of prison programs.

Despite the pervasiveness of the rehabilitative ideal throughout most of this century, the past decade has witnessed a serious erosion of support for the ideal and an increase in support for the "just deserts" or justice model of corrections. The goals of the latter are retribution, incapacitation, and deterrence (see Allen, 1978, 1981; Bayer, 1981; Fogel, 1975, 1979; MacNamara, 1977; Von Hirsch, 1976). The decline of the rehabilitative ideal is due to a complex set of forces. It is closely linked to the recommendations of Morris (1974)

concerning the need to rehabilitate the medical model itself and the comprehensive review of correctional effectiveness studies by Lipton, Martinson, and Wilks (1975) that concluded that few correctional treatments have been effective. These works and others (see reviews by Adams, 1975; Shover, 1979; Bennett, 1979), combined with a very broad shift to a more conservative social thought and public policy, have resulted in a rethinking of the validity of the rehabilitative ideal and its relative importance within the goal hierarchy. Consequently, the emphasis has shifted from rehabilitation to crime control and retribution. The shift implies a reorientation from treatment to punishment and from concern with the offender to the offense.

Despite these trends away from a predominant focus on rehabilitation, the goal of rehabilitation continues to guide correctional policy. Educational and vocational programs whose specific intent is to foster reform in inmates' behavior, attitudes, and skills are central components in correctional practice. Rehabilitative treatments have thus remained important to prisons although writings on correctional practice suggest a movement away from such treatments and a decreasing belief in their success.

The continuing provision of rehabilitative treatments in prisons, coupled with lingering doubts about the assertions that "nothing works," suggest the need for a reevaluation of the effectiveness of prison treatments. The work of Lipton et al. (1975) has itself been the subject of a continuing debate regarding the quality of correctional evaluations in general and the validity of the methodology of that study in particular. Bennett (1979), for instance, criticizes current evaluations for their lack of a control group, variations in

the length of the followup period that preclude comparison across evaluations, the misapplication of statistical analyses, unrefined outcome measures and the lack of provision for evaluation studies in many programs. Palmer (1978) criticizes the Lipton et al. study on numerous points, concentrating on their lack of ability to see degrees of effectiveness in various programmatic efforts because of their attempt at a global portrayal of effectiveness. Further, he argues that Lipton et al. failed to see the conditionality of correctional effectiveness, that is, the effectiveness of certain types of treatments for certain types of offenders in certain types of settings. Although many maintain that the goal of rehabilitation has been replaced by other goals that are more punishment-oriented, these and other questions about the quality of evaluations on which the belief in the death of rehabilitation were based suggest that its burial is premature.

B. More Effective Evaluations

Major conceptual and methodological difficulties limit the value of the extensive body of literature on treatment effectiveness. These issues are examined in more detail in Marsden and Orsagh (1983) and broadly concern the lack of consideration of goals other than rehabilitation, the use of dichotomous measures of recidivism and other outcomes that fail to consider such factors as the timing of recidivism, and the diversity in outcome measures that preclude comparison of research findings across studies. Questions of efficiency are frequently neglected, while scarce resources increasingly call into

question policy recommendations based on the assumption of unlimited resources. Perhaps most frequently ignored are strength and integrity issues (see Quay, 1977; Sechrest and Redner, 1979) which concern how well the program was implemented and the overall quality of treatment.

Evaluation should be considered in the context of multiple goals, cost effectiveness, and process. Concerns for the attainment of rehabilitative and other goals should be joined by concerns for administrative goals such as efficiency and cost. Likewise, concerns for outcomes of the prison experience should be integrated with concerns for the processes by which those outcomes are produced. Within this framework, greater concern should be given to the development of more uniform outcome measures that permit comparison of results across prisons, treatments, and studies.

C. Treatment Programs

A variety of treatment programs exist by which rehabilitative efforts are directed in prisons. They vary in strength and integrity, in the degree to which they enhance economic viability, by their location (within the prison, in the community, or both), and perhaps in the degree of coercion involved in participation. The programs of interest to this research include work release, educational programs, vocational training, prison work, prison enterprises, and transitional programs. Research on the effectiveness of each of these types of programs is described below. Subsequently, specific predictors of post-release recidivism and employment success of offenders are described.

1. Work Release

Work release or work furlough programs may be classed as transitional programs in that they involve both in-prison and in-community components. The offender typically remains in prison at night but is allowed to work in the community during workdays. The programs vary in the inmate populations allowed to participate, the level of supervision, types of employment, program goals, and certain legal restrictions on the use of earnings and inmate labor. Therefore, comparisons across states and localities within states are tenuous. Coupled with the methodological shortcomings germane to most criminal justice evaluations, considerable doubt must be placed on the validity of research findings concerning the effectiveness of work release.

Existing research on the effectiveness of work release programs in reducing post-release recidivism is reviewed in Lipton, Martinson, and Wilks (1975), LEAA (1976), Greenberg (1977), and Bennett (1979). In those studies that use a comparison group of inmates not participating in work release, a broad range of levels of recidivism is found. However, as Bennett (1979:83) notes, a number of studies had no control group nor did they adequately consider the issue of in-program failures. Lipton, Martinson, and Wilks (1975:277) argue in fact that up until the time their study was conducted there was no valid evidence concerning the effects of work release. Rates of recidivism, variously measured, range from approximately one-half that of nonparticipants (Jeffery and Wolpert, 1974; a program in Washington, D.C. cited by Greenberg, 1977) to somewhat more effective for participants (Godby, 1972; Kimbrel, 1973; Rudoff and Esseltyn, 1973) to no

difference (LeClair, 1973; Bass, 1974; Waldo and Chiricos, 1975; Witte, 1975).

Given the wide variation in program characteristics and evaluation methodology, comparisons of research findings across locales is tenuous. The results of this body of research, however, appear to be highly inconsistent regarding the effectiveness of work release as an instrument of rehabilitation. Jeffery and Wolpert (1975) suggest that one reason that work release participants have been found in some studies to be less recidivistic is that of selection bias. Participants in such programs are better risks than those not allowed to participate. However, when the effect of such potential biases is controlled through statistical means or random assignment to programs (Waldo and Chiricos, 1975), it is less likely that differences between participants and nonparticipants will be observed. Therefore, the body of research regarding the effectiveness of work release in reducing recidivism is inconclusive.

2. Educational Programs

Educational programs found in most prison settings include adult basic education or remedial programs, programs of study preparatory to taking the General Education Development (G.E.D.) examination or high school equivalency examination, academic college courses, and various types of study release programs in which the offender is allowed to leave the prison to take courses in a local college or training school. Relatively few studies of the effectiveness of these types of programs exist. Further, existing evaluations are subject to the same sorts of

methodological difficulties as other studies of correctional effectiveness, particularly the lack of a control group.

The relation of participation in educational programs in prison to post-release recidivism as studied in a number of evaluations is reviewed by Lipton, Martinson, and Wilks (1975), Greenberg (1977) and Bennett (1978). Overall they conclude that most studies of the effectiveness of educational programs show little or no effect on recidivism. Regarding the validity of those studies that do show some effect, Bennett (1978:75) maintains that selection bias may have contributed to the differences observed. That is, significant differences between participants and nonparticipants in educational programs may be due not to program effect but rather to the fact that program participants are more highly motivated and thus better risks than non-participants. Findings by Lipton et al. (1975) suggest that participation in educational programs is associated with parole success and lowered recidivism but not to a significant degree. They suggest that the effects of educational programs may be clouded by the effects of the longer prison terms of those who participate in educational programs, since educational programs show some effect only when they are extensive.

3. Vocational Training

Vocational training programs are here meant to include those programs that teach specific skills such as carpentry or auto repair and exclude prison work programs such as duty assignments or prison enterprises in which those newly acquired skills can be put into practice. The latter type of program is discussed in the next section.

As with educational programs, there are relatively few studies of the effectiveness of vocational training programs and many existing studies are methodologically deficient. In reviews of research findings, Lipton, Martinson, and Wilks (1975), Greenberg (1977), and Bennett (1978) find little evidence for the effectiveness of these programs. The research findings concern the variety of types of training available in the states ranging from California to Texas to Alabama. In the limited number of programs that were found to be effective, differences between those receiving and not receiving training were found to disappear when considerations of program dropouts and program implementation were addressed. Lipton et al. (1975) conclude that while the studies as a shole show little effect, the lack of effect may be due to the fact that programs were inappropriately applied to mixed groups of offenders. Such programs can be effective for older and more mature inmates and for those obtaining the first post-release job in the area of the training.

4. Prison Work

Prison work programs have received increased attention in recent years as economic pressures experienced by prisons have placed a greater demand on prisons for self-sufficiency. They have also long been cited as an element in rehabilitative treatment, that is, in preparing the inmate for employment upon release. Despite this emphasis and rationale, however, prison work programs are not currently well designed, are subject to many legal constraints, and have been found to be less than effective in rehabilitating offenders. Most prison work is unskilled and unrelated to meaningful jobs on the

outside. Wages are not competitive and many tasks are related simply to the maintenance of the prison (see discussion in Reid, 1981:248-254).

Prison work programs are of two major types--duty assignments that are related to the maintenance of the prison or highway system and prison industries in which offenders are paid a wage in return for work. Examples of the latter include woodworking and printing. Since duty assignments typically involve more menial tasks and have not been extensively evaluated, they will not be discussed here. Instead, discussion focuses on research on the effectiveness of prison enterprises.

5. Transitional Programs

Transitional programs ease the transition of the offender from prison to community by providing certain supportive services such as job counseling and job placement. They are typically provided in conjunction with more traditional probation and parole services. Few evaluations have been performed on programs of this nature.

D. Predicting Recidivism

Criminal careers and post-prison behavior take form from several important factors. Age is perhaps the most important--as offenders age they tend to mature out of crime and crime seems to be almost a preoccupation of the young. Recidivism then is strongly age related; those offenders who are younger when released from prison are more likely than older releasees to recidivate. Those who are involved in crime at early ages are likely to enter careers of crime (see reviews

of studies in Service, 1972; see also Waller, 1974; Fishman, 1977). Prior criminal history is likewise an important predictor of recidivism; those with more extensive criminal histories prior to incarceration are likely to continue involvement in crime after release (Service, 1972; Fishman, 1977). Other factors are less important predictors although they are consistently related to recidivism. Research on the role of these factors in predicting recidivism is described in the works cited above.

Recidivism is generally higher among property offenders than nonproperty offenders, single persons, those with rule violations in prison, those who were not employed upon admission, those not employed upon release, and those on unsupervised release. Findings are inconsistent regarding the effects of race or ethnic status, time incarcerated, and educational and occupational level upon admission to prison.

E. Predicting Employment Success

Most correctional research has been oriented toward measuring the effectiveness in attaining the goal of rehabilitation and the primary measure has been recidivism. Substantially less research has been conducted on the employment success of offenders after release from prison. Pownall (1969) finds that post-release unemployment is higher for nonwhites, younger offenders, those nonmarried, and those released less than 6 months. Unemployment was found to be lower for those with more time on the last job or those with skilled jobs prior to incarceration.

F. The Effects of Drug, Alcohol, and Mental Problems

A great deal of interest regarding the effect of drug, alcohol, and mental health problems on post-release behavior, and on involvement in crime more generally, has recently been expressed. This section examines existing research on the role of each of these factors in crime and employment.

The use of drugs and alcohol and the occurrence of mental health problems by inmates of state correctional facilities prior to their current incarceration is pervasive. Not only is the use of drugs and alcohol among inmates substantially higher than in the general population, but about one-third of inmates report having used illicit drugs or drank heavily at the time they committed the offense for which they were currently incarcerated (Bureau of Justice Statistics, 1983a, 1983b). Further, there is evidence that suggests that a history of drug and alcohol use prior to incarceration increases the risk of post-release recidivism (see review of studies of alcohol-recidivism relationship in Greenberg, 1981, and Collins, 1981). For these reasons, the use of drugs and alcohol prior to incarceration emerges as an important predictor of post-release success. In addition, drug and alcohol use, together with evidence of mental problems prior to incarceration, have been incorporated as indicators of economic motivation, as discussed in Chapter 4.

The rest of this section discusses existing research literature regarding the prevalence of drug and alcohol use and mental health problems in inmate populations and the relationship of both drug and alcohol use to involvement in crime and post-release success measured in terms of recidivism and employment.

1. Drug Use

The Survey of Inmates of State Correctional Facilities conducted in 1979 by the Bureau of the Census for the Bureau of Justice Statistics revealed the extent of inmate involvement in drug use. Three-fourths of inmates of state prisons in 1979 had ever used drugs, over one-half used drugs in the month prior to the current incarceration, and one-third were under the influence of drugs at the time the incarceration offense was committed. In contrast, 40 percent of the general population in 1979 had ever used drugs and 20 percent had used drugs in the month prior to responding to a national survey. Thus, inmates compared to members of the general population are substantially more likely to have ever used drugs and twice as likely to have recently used drugs. Recent drug use among the inmate population is more likely among males, younger offenders, those not employed, those with prior convictions, and those incarcerated for property offenses compared with violent offenders (Bureau of Justice Statistics, 1983b).

a. Drugs and Crime

An extensive research literature has documented the association between drugs and crime (see reviews of studies in Gandossy et al., 1980; Greenberg and Adler, 1974). Despite the number of studies concerning the relationship between drug use and crime, the basic question remains as to the nature of causation in that relationship. Does drug use cause crime or vice versa? Or, is the relationship a spurious one, the result of a third set of factors? The resolution of these questions remains elusive because of methodological problems inherent to the study of both drug use and criminal behavior, and because much of this research has been conducted on arrestee or

confined populations.

The persistent belief remains that drug use causes criminal behavior, particularly income-generating criminal behavior designed to support expensive drug habits. Research on addict populations is supportive of the belief that drug use fosters involvement in income-generating crime. In fact, an increase in the price of heroin is associated with an increase in the property crime rate (Levine, Stoloff, and Sprill, 1976). However, the earnings from such crime may not be as high as supposed (Coate and Goldman, 1980). Others find extremely high rates of criminal activity for persons involved in the use of hard drugs, in California (McGlothlin et al., 1977), Baltimore (Ball et al., 1979, 1981), and Miami (Inciardi, 1980, 1981). Moreover, offense rates appear to increase with the level of opiate use (Chaiken et al., 1982; Chaiken and Chaiken, 1982). On the other hand, Peterson et al. (1980) suggest that the number of non-drug offenses for this group may not be that much greater than that of others with similar characteristics. Bachman and Witte (1980) find that addicts are deterred from crime by the risk of apprehension and the expected severity of punishment but the risk of imprisonment is unexpectedly associated with higher involvement in criminal activity. They conjecture that this unexpected finding may be related to the strong effects of the length of supervision on drug addicts or by savings accumulated during confinement.

b. Drugs and Employment

Drug use is implicated in lowered employee performance in terms of increased absenteeism (Langdon, 1976; NIDA, 1979; Jennings, 1977; Trice and Roman, 1978; Halpern, 1972); increased number of accidents

(Trice and Roman, 1978; Langdon, 1976; NIDA, 1979); decreased motivation to work (NIDA, 1979); and increased turnover (Trice and Roman, 1978; Halpern, 1972). However, little broad-based research exists on the extent of the problem and what research exists is characterized by methodological difficulties such as limited scope and inattention to sound research techniques (NIDA, 1979:2). Much relevant information on the extent of the problem comes from company management, and management frequently perceives that drug abuse exists at a much lower level than self-reports by employees indicate (NIDA, 1979).

Ex-addicts are particularly poor risks at employment (Dembo and Chambers, 1973; Fiddle, 1973; National Commission on Marihuana and Drug Abuse, 1973). Addicts and ex-addicts are vulnerable to employment failure because they are typically less well educated, less skilled, and less experienced than other employees (Langdon, 1976; National Commission on Marihuana and Drug Abuse, 1973; Dickinson, 1981). They have generally been unemployed intermittently or for substantial periods of time, frequently dependent on public welfare or the support of others. Many hold unskilled jobs and support their habits through illegal activities (National Commission on Marihuana and Drug Abuse, 1979). Moore (1970) estimates that 18 percent of income came from legal sources and 45 percent from the drug distribution system. Newmeyer (1974) finds that only 15 percent of users in treatment hold jobs and another 21 percent gain income from legal sources; the remainder received income from illegal sources.

Despite poor employment histories among ex-addicts, research has shown that skills training and vocational counseling can improve employment and earnings (NIDA, 1978). Further, employment and arrest

histories improved while ex-addicts were on probation, but only slightly (Desmond and Maddux, 1977).

2. Alcohol Use

The Survey of Inmates of State Correctional Facilities conducted in 1979 by the Bureau of the Census for the Bureau of Justice Statistics revealed the extent of inmate involvement in alcohol use. Inmates were much more likely than members of the general population to be heavy drinkers, that is, to have drunk an ounce or more of ethanol a day prior to incarceration; almost one-half of inmates compared with only one-tenth of the general population were classed as heavy drinkers. Heavy drinkers were particularly prevalent in the inmate population among males, those aged 18 to 25, whites or American Indians, divorced persons, those with less education or moderate incomes, more prior convictions, and those who had committed property offenses. Fully one-half of inmates in 1979 had been drinking just prior to the current offense (Bureau of Justice Statistics, 1983b).

a. Alcohol and Crime

Statistics on the extent of alcohol use among inmate populations, particularly relative to the general population, imply that there is a strong relationship between alcohol use and involvement in crime. Research findings reveal that this is indeed the case. Alcohol use is more prevalent among criminals than the general population; alcohol use is associated with crime, particularly violent crime, and is often present in or precedes the criminal event, and alcoholics have higher rates of criminality than the general population, according to a review of the research literature by Greenberg (1981). However, she cautions,

a number of methodological problems preclude an indepth knowledge of the manner in which alcohol influences crime. Collins (1981:292) maintains that an additional deterrent to sound explanation of the alcohol-crime relationship is at the theoretical level: the problem requires multidisciplinary explanation but disciplinary boundaries prevent such understanding. Lindelius and Salum (1975) suggest that criminality among alcoholics is closely related to their social situation; rates of criminality vary among treatment and homeless populations of men.

b. Alcohol and Employment

Alcohol use has been implicated in higher rates of both personal and occupational instability (Warkov, Bacon, and Hawkins, 1965). However, Straus and Bacon (1951) and Wellman, Maxwell, and O'Hallarand (1957) caution that the extent of personal and occupational disruption among alcoholics is substantially lower than the typical image of the alcoholic. Regardless of the degree of instability across various spheres of the individual's life, alcohol use results in significant losses to business and industry each year associated with lower employee productivity and higher absenteeism. Brisolara (1979) and Williams and Moffit (1975) estimate that the costs may run as high as $10 billion annually, while Winslow et al. (1966) estimate that problem drinkers cost their employers two to three times that which other employees cost in terms of absenteeism, accidents, and other problems.

Numerous studies have revealed the higher rates of occupational problems among drinkers in terms of lower work efficiency (Trice and Roman, 1978; Archer, 1977; Williams and Moffit, 1975; Trice, 1962);

higher absenteeism (Trice and Roman, 1978; Pell and D'Alonzo, 1970; Trice, 1962, 1965; Observer and Maxwell, 1959); higher turnover (Strayer, 1957; Hochwald, 1951; Schramm, Mandell, and Archer, 1978); and work motivation (Warkov, Bacon, and Hawkins, 1965). Trice (1962) discusses the fact that research on the relation of alcohol use to accidents is conflicting, while others (Observer and Maxwell, 1959) find a positive relationship. Trice and Roman (1978) suggest that the effect is primarily at the early stages of problem drinking. Archer (1977) reviews existing literature on the timing of occupational instability during the work career and finds that problems other than accidents at work increase as years in the labor force increase. Trice and Roman (1978) suggest that occupational problems may actually be greater among blue collar than white collar workers because blue collar workers are more subject to supervision, less able to conceal their problems, and more visible on the job. Layne and Lowe (1979) find support for this assertion but also find that if employment is lost, the losses to higher status workers are greater in terms of regaining employment at their prior status level.

3. Mental Problems

Substantially less research has been conducted on the role of mental health problems in criminal careers. There is little systematic information about the extent and type of psychiatric disorders among correctional inmates. However, a recent study of the North Carolina state prison system (Collins and Schlenger, 1983) estimates that of male felons, almost half have either alcohol or drug dependence, 29 percent antisocial personality, 21 percent sexual dysfunction, 19

percent substance abuse or dependence, and 11 percent simple phobia. The lifetime prevalence of other disorders such as major depressive episode, agoraphobia, etc. is rare, 5 percent or less. These rates are considerably higher than in the general population.

CHAPTER 3

RESEARCH DESIGN

This research examines the effect of in-prison and transitional treatment programs on post-release success measured in terms of recidivism and employment. In order to attempt to separate the effect of such treatment programs from other extraneous influences a number of decisions were made regarding the sample of inmates studied and research design employed. This chapter describes the sample, data sources, and research paradigm, including major sets of variables hypothesized to influence post-release behavior.

Analyses are based on data collected on inmates under the jurisdiction of the North Carolina Department of Correction (DOC). Inmates within the North Carolina correctional system were chosen for analysis because (1) the North Carolina inmate population is large enough to assure a sufficient number of observations to satisfy the study's design criteria, (2) the North Carolina DOC maintains an exceptionally detailed statistical information system, thereby assuring the availability of essential data elements required by the study; and (3) because of its close proximity to the investigators, the cost of data collection is substantially reduced.

I. THE SAMPLE

Inmates released from prison during the first half of 1980 were chosen as the base population for analysis in order to enable study of the post-release success of a sample of inmates two years after their release. During the first six months of 1980, 6,808 male inmates were released from prisons under the jurisdiction of the North Carolina Department of Correction. This population was reduced in size because of certain design requirements that necessitated removal of potentially contaminating influences on the observation of treatment effectiveness. In order to obtain valid estimates of treatment effect, it was judged essential that (1) the period of incarceration was sufficiently long enough for treatment to have been received, (2) that the inmate was not outside the prison for substantial periods of time, either for a prior release during the current term of incarceration or for an escape, or (3) that the inmate was returned to free society upon release, not to another jurisdiction or detainer. The final sample is thus one of "first releasees" who were in prison for at least six months. The specific groups excluded from the total population of 6,808 to yield the study population are noted in Table 3.1.

Data were obtained from the North Carolina DOC on 6,771 separations, excluding females and escapes or deaths during the first six months of 1980. Female inmates were excluded from the analysis sample because females are incarcerated in different prisons, have substantially different in-prison treatments and instant offenses, and are released into different environments than male inmates. These differences would have required a separate analysis but the expected number of females appropriate for analysis would have been too small for such analysis. Females represent only 605 of the total number of separations and design requirements might have reduced the number to about 100 females. Those who were separated by escape or death during the

Table 3.1

TOTAL SEPARATIONS AND TYPES OF EXCLUSIONS
TO YIELD ANALYSIS SAMPLE

Type of Separation			Number
Total Separations			6,808
Gross Separations (excludes females, escapes or deaths during first six months of 1980)			6,771
Exclusions			
Time served less than 6 months		1,576	
Over age 50 on January 1, 1980		336	
Escaped more than one month prior to first six months of 1980		110	
Released this incarceration prior to first six months of 1980			
Parole	2,144		
Conditional release	314		
Probation	731		
Total prior releases		3,189	
Other exclusions[a]		135	
Total exclusions			5,346
Sample size			1,425

[a]Includes paroled out-of-state, detainers, post-release death and other reasons for which inmate is not suitable for analysis.

1980 were also excluded because they were not releasees.

The population of 6,771 gross separations was reduced further on the basis of two major and a number of minor exclusionary criteria. First, those whose term of incarceration is very brief are less likely to be eligible for or be able to participate in certain programs. Thus, the decision was made to exclude those who were incarcerated less than 6 months. This criterion resulted in the elimination of 1,576 inmates. Second, inmates with substantial amounts of "street time" during the current incarceration might have been exposed to certain environmental influences that would be inseparable from the impact of incarceration. To preserve the integrity of program measurement, those inmates who were out of prison more than one month during the instant incarceration were excluded. These included 3,299 inmates with prior releases for probation, parole, or conditional release or those who had escaped for at least one month during this incarceration.

Older persons, those 336 inmates age 50 and over at the time of release, were excluded because of their distinctiveness in terms of release conditions and environments on release. Finally, 135 additional inmates were excluded because they were remandated to other jurisdictions for further adjudication, were paroled out of state, died after release, and other reasons that prevented their inclusion in this sample.

The final sample of 1,425 includes males less than 50 years of age who were released for the first time on this incarceration during the first six months of 1980. They were released through parole, conditional release, or discharge after having served at least six

months in prison and had not been "on the street" for any appreciable length of time prior to their release.

This reduced sample of 1,425, despite the exclusion of several groups of inmates, is similar to the original population of 6,771 on the basis of sociodemographic characteristics other than those related to the selection criteria and on the basis of criminal history. Thus, the exclusions do not appear to have biased the sample in ways that would affect data analysis.

A. Sociodemographic Characteristics

The population and sample are highly similar in terms of race and educational attainment but differ in age and marital status. The population is 53.5 percent non-white compared to 52.9 percent for the sample. The mean age of the sample, 26.9, is lower than that of the population, 29.0, largely because of the exclusion of inmates age 50 and over. The difference is statistically significant. However, if the distributions of those under age 50 in the population and sample are compared, the age distributions of the sample and the population are very similar, as Table 3.2 indicates.

The educational attainment of the inmate population and sample are also very similar, as shown in Panel A of Table 3.3 for the average number of years completed.

The population and sample differ somewhat in terms of marital status, partially due to the fact that the sample is younger than the population and younger persons are more likely to be single. As shown in Panel B of Table 3.3, 52.3 percent of the population are single compared with the 56.9 percent of the sample.

TABLE 3.2

AGE DISTRIBUTION OF POPULATION AND SAMPLE

Age	Population			Sample	
	Number	Percent		Number	Percent
Total	6771	100	100	1425	100
14-16.9	8	0.1	0.0	6	.4
17-20.9	1045	15.4	16.5	250	17.5
21-29.9	3042	45.0	48.0	686	48.2
30-39.9	1587	23.5	25.0	341	23.9
40-49.9	666	9.8	10.5	142	10.0
50 and over	423	6.2	--	--	--

TABLE 3.3

EDUCATION AND MARITAL STATUS:
POPULATION AND SAMPLE

Variable	Population	Sample
PANEL A: Years of School Completed		
Total	100%	100%
0-8	27.7	27.7
9-10	36.8	36.3
11-12	30.6	31.1
Over 12	4.9	4.9
PANEL B: Marital Status		
Total	100%	100%
Single	52.3	56.9
Married	27.7	25.7
Divorced or Separated	19.0	16.7
Other	1.0	.7

Socioeconomic status indicators drawn from inmate self-reports also reveal that the sample is similar to the population. As shown in Panel A of Table 3.4, the sample is slightly more likely to report poverty status compared with the population but the differences are not substantial. Similarly, the population and sample do not differ in terms of the percentage with gainful employment. Although the sample and population differ slightly regarding other sources of income the differences are not meaningful. The information regarding the source of income of the inmate's family of origin was obtained from a different set of questions and is not directly comparable to that for the inmate but also reveals no differences between population and sample.

The population and sample are also similar in terms of labor force characteristics, as shown in Table 3.5. The population and sample are exceedingly similar in terms of occupational skill level, while the slight tendency for the sample to have fewer years worked and a more unstable work history is most likely attributed to the younger average age of the sample.

The population and sample are also similar as to histories of substance abuse and mental problems, as shown in Table 3.6. The sample is slightly more likely than the population to have had mental problems but the tendency for the sample to report a history of drug use is attributable to the younger average age of the sample. Those inmates in the sample are more likely than those in the population to drink or drink occasionally but did not differ substantially from the population in the frequency of problem drinking.

TABLE 3.4

INDICATORS OF SOCIOECONOMIC STATUS OF INMATE AND HIS FAMILY OF ORIGIN: POPULATION AND SAMPLE

Variable	Inmate		Inmate's Family	
	Population	Sample	Population	Sample
PANEL A: Socioeconomic Status				
Total	100%	100%	100%	100%
Poverty	12.3	13.6	12.8	13.8
Subsistence	63.3	60.7	57.9	56.8
Middle Income	23.4	24.6	27.8	28.1
Other	1.1	1.1	1.5	1.3
PANEL B: Source of Income				
Total	100%	100%	100%	100%
Gainful Employment	71.9	71.0	78.1	78.6
Gainful Employment & Government	3.0	1.4	15.2	13.8
All Government	4.3	2.2	6.1	6.7
Family and Other Persons	15.5	17.2	--	--
Crime	5.3	7.1	--	--
Unknown	.0	.1	.6	.9

TABLE 3.5

LABOR FORCE CHARACTERISTICS OF THE SAMPLE AND POPULATION

Variable	Population	Sample
PANEL A: Occupation		
Total	100%	100%
Professional & Skilled	14.7	13.2
Semi-skilled	26.2	24.3
Unskilled	46.0	48.7
Student	5.2	6.4
Other	8.9	7.4
PANEL B: Number of Years Worked		
Total	100%	100%
None	16.3	20.0
Less than one	20.1	22.1
One to six	38.1	36.2
Over six.	28.5	21.7
PANEL C: Employment Status at Time of Arrest		
Total	100%	100%
Stable work history and		
working regularly	47.2	43.0
not working regularly	7.8	7.5
unemployed	0.8	1.3
Unstable work history and		
working regularly	12.6	14.2
not working regularly	16.1	17.5
unemployed	7.8	9.1
Student	4.7	5.3
Physically disabled	3.0	2.1

TABLE 3.6

HISTORY OF MENTAL, ALCOHOL, AND DRUG
PROBLEMS WITHIN THE SAMPLE AND POPULATION

Variable	Population	Sample
PANEL A: History of Mental Problems		
Total	100%	100%
No problems	91.1	86.6
Had problems		
No treatment	2.6	3.6
Treated outside institution	2.3	3.0
Hospitalized	4.0	6.8
PANEL B: History of Alcohol Problems		
Total	100%	100%
Did not drink	26.6	18.9
Drank occasionally	38.0	48.6
Drank frequently		
But has no problem	16.6	15.0
And has a problem	16.3	15.4
But has given up drinking	2.5	1.9
PANEL C: History of Drug Use		
Total	100%	100%
Never used	46.1	45.7
Occasional use	35.3	33.1
Frequent use	18.6	21.2

B. Criminal History Characteristics

The percentage distributions of the population and sample according to the principal offense related to the incarceration for which the inmate was released in 1980 are presented in Table 3.7. The sample includes higher percentages of principal violent offenders and property offenders and lower percentages with miscellaneous offenses. These differences are not large but are related to one of the selection criteria. The fact that the sample includes those who served less than six months filters out a number of inmates serving time for less serious offenses such as traffic offenses or misdemeanor offenses such as those included in the miscellaneous category.

The number of years served by inmates in the population and sample are presented in Table 3.8. In the population, 26 percent had served less than 6 months. When these short-timers are excluded from the population, the percentage distributions of the population and sample differ. The sample includes proportionately more short-timers and the population proportionately more long-timers. This difference is partially the result of the fact that the sample is younger than the population and the longest sentences may be served by those over age 50. In addition, the population includes a large proportion who returned after an escape or violation of the conditions of supervised release who will have served longer sentences because of these infractions.

Authorized separations from prison are unsupervised released or discharge and two forms of supervised release, parole and conditional release. The latter is applicable to youthful offenders. The population includes 47 percent with discharges, 50 percent with paroles, and

TABLE 3.7

PRINCIPAL OFFENSE RELATED TO
THE INSTANT INCARCERATION: SAMPLE
AND POPULATION

Offense		Population		Sample
Total		100%		100%
Principal Violent		19.8		25.6
Homicide	3.8		5.8	
Assault	9.0		9.3	
Robbery	7.0		10.5	
Principal Property		52.4		57.0
Burglary & Larceny	40.5		43.5	
Auto theft	2.1		2.7	
Forgery	3.1		2.7	
Drugs	6.7		8.1	
Other & Miscellaneous		27.8		17.4
Miscellaneous	11.5		9.7	
Traffic	8.0		3.9	
Drunken Driving	8.3		3.8	

TABLE 3.8

TIME SERVED TO RELEASE:
POPULATION AND SAMPLE

Variable	Population		Sample
PANEL A: Distribution of Time Served			
Total	100%	100%	100%
Under 6 months	26	--	0
6 mo.-1 yr.	20	27	36
1 - 2 yrs.	22	30	30
2 - 5 yrs.	23	32	28
5 - 10 yrs.	8	10	6
Over 10 yrs.	1	2	1
PANEL B: Summary Statistics (in years)			
Total	6771		1425
Mean	2.02		2.04
Minimum	.01		.50
Maximum	52.7		18.4
Standard Deviation	2.62		1.88

3 percent with conditional releases. Comparable percentages for the sample are 15 percent with discharges, 74 percent with paroles, and 11 percent with conditional releases. The sample contains proportionately fewer who were discharged but the discrepancy arises primarily from sample selection criteria. Because persons who were separated from prison after a parole and conditional release were excluded from the sample and because revocation is likely to cause the individual to remain in prison until he serves the full term, the population can be expected to contain proportionately more persons who "max out."

C. Representativeness of the Sample

The sample and population are exceedingly similar in terms of most sociodemographic and criminal history characteristics. Where the two differ is generally attributable to selection criteria, particularly age and prior release criteria. In terms of simple comparisons of those characteristics, the sample appears to be highly representative of the population.

The decision to exclude prior releasees from the sample may strengthen the validity of inferences regarding program effect but has its cost. It is quite possible that first releasees differ fundamentally from those who recidivated while under supervised release. If so, treatments that work or fail to work for the sample of inmates may have different effects for the larger, more heterogeneous population. These potential biases argue for great caution in the interpretation of results reported in subsequent chapters.

II. DATA SOURCES

The research is based on four major data sets that are described in this section. Other minor data sets are described elsewhere in the report as they are introduced.

A. The Basic DOC Data File

This data file consists of the 6,771 observations described above as the raw population from which the sample of 1,425 observations was derived. This population consists of all males who were separated from the North Carolina prison system in the first half of 1980 for reasons other than death or an escape during the first half of 1980. The data include administratively collected information on various transactions within the prison such as entrance, exit, program participation, and offense history as well as self-reported social history information. These data were available in machine-readable form from the North Carolina DOC and were supplemented with data collected from inmate "jackets" and measures of the unemployment rate and probability of arrest in the regions in which offenders were released.

B. The Follow-Up DOC Data File

The Basic DOC Data File refers to releases in the first half of 1980. To determine who returned to prison among the 1,425 inmate cohort, it was necessary to obtain a search of the Department of Correction files to determine if any of these 1,425 inmates returned

to prison subsequent to their 1980 release date. The follow-up file provides data on inmates who reentered prison during a two-year period subsequent to the inmate's release. The data elements in this file include type of admission, (conditional release, revocation, or a new conviction) and, for a new conviction, the offense and sentence length. Follow-up data were obtained for all 1,425 observations.

C. The PIN Data File

The North Carolina Police Information Network (PIN) provided arrest history data for the 1,425 cohort. This file provides what is commonly termed "rap sheet" data. The data elements included in the file are date of arrest, type of offense, conviction, and disposition.

D. The ESC Data File

The Employment Security Commission provided data on employment and earnings of the cohort for five quarters after release; of the sample of 1,425, data were obtained for 852 offenders for whom social security numbers were available and who had not been reincarcerated during the study period.

III. THE RESEARCH PARADIGM

The objective of this research is to explain the post release behavior of the 1,425 individuals included in the sample. Their behavior is presumed to be influenced by four sets of factors:

(1) treatments received during the period of incarceration,

(2) characteristics of the offender related to economic motivation,

(3) the interaction of treatment with these characteristics, and

(4) control variables that account for exogenous influences on post-release behavior.

The research paradigm consists of the relations of these four sets or vectors of variables and may be represented as:

Post-release Behaviors = F (Treatments, EMI variables, Interactions, Controls),

where EMI variables are defined as economic motivation indicators. The factors included in each of the vectors are defined below.

A. Indicators of Post-Release Behavior

The data available for this study permit an unusually broad and multifaceted measurement of post-release behavior involving both criminal justice contacts and labor force experience. Criminal justice system contacts as measured by arrests, convictions, and reincarcerations in the two years after release are available. Employment experience is based on earnings data for five quarters, beginning with the fourth quarter of 1981 (data were available for a maximum of five quarters).

Arrests are measured using two indicators: (1) whether the offender was rearrested, and (2) for those who were rearrested, the length of time until the first rearrest. Convictions are measured with one indicator: whether the offender was convicted of a new offense

somewhat less ambiguous. In addition, occupation is frequently used as a proxy for socioeconomic status.

Full-time employment, coupled with a stable work history, or full-time student status is taken as an indicator of the taste for work. A second indicator, a history of alcohol, drug or mental health problems, is also used as a measure of the taste for work.

C. Treatment Indicators

Four treatments have been selected for analysis. Criteria used for selection were: (1) reporting of program participation was reasonably complete; and (2) a significant proportion of the sample participated in the treatment. The characteristic of each treatment which is of direct relevance to this research is the effect of the treatment on the individual's post-release employment and earning potential. Listed in descending order, according to the strength of the presumed effect, these treatments are:

Work Release

Two measures of work release program participation are used. The first simply asks whether the individual was on work release. The second acounts for the strength of the work release program by the length of time the individual was on work release.

Educational and Vocational Programs

Inmates participated in an enormous variety of educational and vocational programs. In this research these programs are divided into those which are primarily educational, advancing the individual toward

high school or college completion, or programs directed at the development of an occupational skill. One indicator of program participation is the enrollment of the individual in at least one program. Another is the number of programs in which the offender was enrolled. A third indicator is successful completions. The latter focuses particularly upon the completion of a GED while in prison.

Work Programs

In-prison work programs are of two kinds: (1) prison enterprise, in which the individual would have engaged in an activity involving the production of a commodity for sale or distribution; and (2) duty assignments, which involve either assistance in the normal routine maintenance and operation of the prison system or assignment to highway maintenance work crews. The indicators used distinguish between these two activities. Within each activity, the index will simply indicate whether there was participation in this program.

PRAC

The North Carolina Department of Correction has developed a transitional program, Pre-Release and After-Care (PRAC). This program is designed to assist the offender in making the transition from prison to community. The services provided include counseling, vocational guidance, and assistance in job search. In this research the indicator used is whether the offender participated in the program.

Overall Program Participation

An alternative index of treatment consists of an enoumeration of all programs participated in during the term of incarceration, including all those identified above plus having received either drug, alcohol, or mental health treatment.

D. Treatment and Offender Interactions

The principal hypothesis advanced for consideration in this research is that particular treatments have significantly different effects when applied to particular subsets of the offender population. In its simplest form, the research has the following design:

Degree to Which Offender Is Economically Motivated[1]	Degree to Which Treatment Is Income Enhancing: Low	High	All Treatment
Low	P_1	P_2	R_1
High	P_3	P_4	R_2
All Offenders	C_1	C_2	T

[1]Note: The cell entries are proportions. The marginal entries are a weighted mean of these P values.

Let each cell entry and marginal total represent the proportion of individuals within the category who indicate successful post-release behavior.[1] For example, $P_1 = .35$ might signify that 35 percent of persons of low economic motivation, subjected to a treatment having little income enhancing potential, were not convicted of a new offense within two years of release.

One might anticipate, or hypothesize, that ceteris paribus, $R_1 < R_2$, or $C_1 < C_2$; i.e., that persons with less economic motivation have lower success rates, or that treatments that do not help enhance employability or raise earnings levels are less effective. Whether these

main effects exist--i.e., whether treatment of economic motivation affects post-release behavior--is of secondary interest to this research. Primary interest focuses on the differential effect of treatment, by offender type. Specifically, interest focuses on the interaction between treatment and offender type; i.e., on the differences between P_1 and P_4. The main null hypothesis is $P_1 \overset{\times}{=} P_4$; the alternate hypothesis, $P_1 < P_4$. If the alternative hypothesis is sustained, rehabilitation treatment can be said to be more effective if matched to offender type.

To evaluate the latter hypotheses, the four indicators of economic motivation--work history, occupation, offense history, and alcohol/drug/mental health problems--must be crossed with the treatment categories. In this report the primary means of testing the hypothesis of program and interaction effects is regression analysis with interaction terms.

E. Control Variables

Based on rational choice theory, post-release behavior is hypothesized to be related to economic motivation, treatment, and the interaction of motivation and treatment. Post-release behavior is likely to be influenced by other factors as well, factors which are not readily deducible from rational choice theory. These exogenous factors may obscure the empirical relation hypothesized by theory and must be filtered out through the use of statistical controls. If not, the hypothesized main effects and interaction effects may not be detected. The use of procedures such as generalized least squares

provides a strong test of the theoretical model. It must be remembered, however, that the researcher employs substantial discretion in the choice of variables to be included in the empirical model, the functional form of the model, and test statistics (Orsagh, 1979). This process may not necessarily yield a more valid approach.

The control variables selected for inclusion in the GLS analysis are those identified in prior research, most of which have been discussed in the preceding chapter. Demographic and socioeconomic effects on post-release behavior are captured through the age and race of the offender, his marital status, and number of years of formal education. His propensity to criminal and delinquent behavior is indexed by the number of recorded arrests prior to the instant incarceration and the number of rule violations during that incarceration, both adjusted for time at risk. The crime-control effects of legal sanctions are expressed by two measures: time served on the instant incarceration and the general likelihood of being arrested were one to commit an offense within the offender's home region. The former attempts to measure the specific deterrent effect of the sentence received; the latter, the general deterrent effect associated with potential future criminality. Finally, two variables relate to the environment into which the offender returns: (1) whether the offender is on supervised release after exit from prison; and (2) the general availability of jobs, as measured by the unemployment rate in the offender's home region.

CHAPTER 4

THE EMPIRICAL SETTING

This chapter provides a detailed description of the empirical setting within which the research was conducted. The empirical variables selected for inclusion in the analysis are defined, statistical profiles of the inmate, his behavior, and the treatments to which he was exposed are presented, and the first order association between post-prison behavior and the set of treatment, control, and economic motivation indicators is examined.

I. EMPIRICAL VARIABLES TO BE USED

Four sets of empirical variables are used in this analysis—post-prison behavior, measures of economic motivation, treatment, and control variables.

A. Post-Prison Behavioral Indicators

Analysis of post-prison behavior relies upon eight indicators. Six relate to recidivism and two to labor force behavior. Labor force behavior is measured by reported participation in the labor force and by reported earnings. The basic measures of recidivism are three dichotomous measures--a recorded new arrest, new conviction, or new imprisonment within two years after release. Three quantitative indicators are used to extend the basic recidivism measures: one accounts for the length of time which elapses between release and

further criminal justice contact; the other two relate to the seriousness of the recidivistic behavior. Four of these eight post-prison dependent variables are dichotomous (participation in the labor force, new arrest, new conviction, new imprisonment); the other four are continuous variables.

The three basic measures of recidivism--arrest, conviction, and imprisonment, are, of course, interrelated. For example, most of those reentering prison will have been rearrested and reconvicted. But the relation is imperfect: not all returns to prison involve a new offense (there may be a parole violation without a new offense); not all arrests result in a new conviction. The measures are thus to some extent independent, providing somewhat different pictures of recidivistic behavior. We have chosen to report post-prison recidivism in terms of all three basic measures for two reasons. First, the measures, taken together, provide a more accurate picture of recidivism than either taken alone. Three independent measures of a phenomenon tend to fill in gaps and to average out inaccuracies appearing in one measure, providing a more informative, composite picture of the phenomenon under observation.

Second, these measures are somewhat independent; they tell somewhat different stories. Arrest data capture more of the actual recidivistic offenses than the other two indicators, but also include offenses for which the offender may not be prosecuted; convictions are a more stringent measure than arrests, but omit offenses for which a conviction did not result. Thus, associated with the arrest-conviction-imprisonment continuum is a recidivistic indicator that becomes increasingly defective because proportionately fewer of the

actual offenses committed are included in the indicator. At the same time, the indicator becomes increasingly more valid because proportionately fewer unjustified criminal justice actions are included in the indicator. In the absence of objective criteria for selection between these two types of bias, we have chosen not to select, but, rather, to permit the reader to interpret the data through application of his own criteria. This decision also allows comparison with other research that relies on various alternative measures of recidivism.

B. Economic Motivation Indicators

The rational choice theory elaborated above calls for economic motivation indicators (EMI) that reflect an individual's taste for work and for income.

1. The Taste for Income

The strength of preference for income may be indicated in a variety of ways, each of which is an indirect measure of the underlying propensity. Three indicators will be considered--the importance of property offenses in the criminal career, the existence of a history of drug abuse, and the offender's income--although there are other indicators of the taste for income suggested in the literature.[1]

The principal measure of the strength of preference for income which we shall adopt is the offender's criminal history. It is reasonable to assume that, on the average, crimes whose outcome tends to enhance the economic status of the offender are more likely to have been motivated by the offender's desire for material gain than are crimes such as rape and assault, for which a material advantage is

less obvious. We recognize that this generalization is simplistic; that even check fraud may have been precipitated by non-pecuniary factors (vengeance, self-destruction, etc.) and crimes such as rape may have been secondary to a desire to effect a transfer of assets from victim to offender. Nevertheless, we believe that the generalization is useful--that, on the average, property offenders are motivated by a desire for pecuniary gain while non-property offenders are not so motivated, or if the latter are, that the pecuniary motive is of secondary importance. (Presumably, the FBI's conventional dichotomization of Part I Index offenses into personal and property crime derives its justification from these considerations.)

If one accepts the argument that property offenders are primarily motivated by economic gain, then we have, at least, a prima facie basis for the inference that offenders with a history of property offenses are more strongly motivated by economic status rewards than other offenders. (The inference is understood to be valid, of course, only in a certeris paribus context.) Presumably, offender selection for inclusion in the LIFE and the TARP projects was partly motivated by these considerations.

Scoring the offender's taste for income based on his prior criminal history is based on his arrest history, which is obtained from the State of North Carolina's Police Information Network file. The offender's propensity for property crime is developed by summing the number of recorded property arrests, including both prior arrests and those resulting in the instant incarceration, and dividing that number by the total number of recorded arrests.[2]

Three conceptual considerations deserve notice. First, the scoring procedure implies that equal importance is ascribed to each offense. An alternative scoring procedure would have been to assign a higher score to more serious property offenses, using, perhaps, the Sellin-Wolfgang seriousness index. We shall not do so because we are not convinced that, for example, a burglary manifests a greater appreciation for material goods than does a larceny. Second, the scoring system permits dissimilar criminal histories to yield identical scores: for example, individual A may have one arrest and B six arrests; if both have committed only property offenses, they would both have a mean score of 1. Yet, some might plausibly argue that on the basis of their criminal history that B is more intensely devoted to property crime, and therefore, should receive a higher score. (The same argument could be made for non-property offenders.) This is an important consideration. Accordingly, in subsequent analysis we shall assess the results obtained from alternative scoring procedures. Third, there may be some justification for assigning greater importance to present vis-à-vis prior offenses. For example, one might wish to assign a higher economic motivation score to an individual who has a prior arrest for assault and a current arrest for burglary, compared to one whose prior arrest was for burglary and current arrest was for assault, based on the assumption that the latter offense more accurately depicts his present set of preferences. However, we lack a strong a priori sense that current arrests do, indeed, provide a more representative depiction of the offender's present economic motivation score; hence, we prefer to treat instant and prior arrests equally.

The second indicator of the taste for income is the offender's history of addictive drug use. Appropriate treatment of the variable is, however, complicated. It appears that persons who are heavily addicted to hard drugs exhibit diminished aggressivity. Hence, on this account, we would expect the person possessing an addictive drug history to have no more than, and probably less than, an average propensity for material things. On the other hand, popular wisdom suggests that addiction augments the value of property, since property is essential in order to acquire the addictive substance. An extensive research literature seems to support this view. Finestone (1957) reviews studies published between 1934 and 1956, and Greenberg and Adler (1974) studies from 1920 to 1973. They find that addicts are primarily involved in nonviolent, income-producing crimes. A series of studies, annotated in NIDA (1976), traces the causal ordering of drug use and crime. Most find an increase in property crimes after addiction.[3] See also Gandossy et al. (1980) for a survey and analysis of the literature. The relation between drugs and crime is described in more detail in Chapter 2.

We do not know whether the serious addict's passivity is outweighed by his drive to support his habit. Nor do we know what proportion of the offender population indicated as having an addictive drug history can be said to have a serious addictive problem. In light of these uncertainties, we propose to chart a conservative course, and to admit the possibility that, on average, information about a history of addictive drug use may be construed as an indication of the taste for income.

The third indicator of the taste for income is directly derived from economic theory. Microeconomic theory assumes that, as a very general rule, the marginal utility derived from consumption of any commodity tends to decrease as consumption increases. By extension, if consumption of all commodities increases--i.e., if income increases--marginal utility also diminishes. It follows, therefore, that those whose incomes are lower should experience relatively greater incremental benefits from an addition to income.[4] Two indicators of offender income are available in the North Carolina data, both self-reported. One categorizes the offender's income level. The categories are broad (see Chapter 3), include income sources other than gainful employment, and are silent concerning the offender's potential income level. The alternative measure, which is the principal measure to be used in the analysis, is the offender's occupation. This measure is also exceedingly broad in concept--we shall simply distinguish between more and less skilled occupations--but it directly relates to gainful employment and it provides a better indicator of the offender's earnings potential upon exit from prison.

2. The Taste for Work

The taste for income describes those motivations for participation in illegitimate and legitimate activity for which returns are primarily economic. We believe that the offender's work history provides a useful indicator for inclusion in the composite index of his taste for work. Our belief is grounded in the following reasoning. First, we assume that an inverse relation exists between the degree to which work is regarded as irksome or unpleasant and the degree of aggressiveness with which one seeks work, as well as the effort one is

willing to devote to keeping one's job. Put differently, offenders for whom work is least unpleasant will most actively seek a job and are most likely to hold a job.[5] We assume that those who are most aggressive will be more willing to undertake the job search costs associated with obtaining employment; specifically, that expenditure of time and of physical and intellectual effort which is normally required to locate an employer and to make oneself known to, and acceptable to, him. We may also assume, with no loss of generality, that the number of offenders in the population exceeds the number of available jobs for which this population is qualified. If the reader wishes, he may define that differential much as one defines the conventional, official unemployment index. We also assume that the population is reasonably homogeneous within particular demographic, job, and skill categories, so that those suited for particular categories of employment would be treated approximately equally by prospective employers. The last assumption means that employers seeking menial labor, for example, view all low productivity labor as being essentially similar; those seeking clerical workers view all laborers who are willing and able to peform clerical tasks to be equally productive, etc. Assuming the correctness of the foregoing assumptions, it then follows that those who have the strongest taste for work, being most aggressive, will be the ones to find the potential employer, or to find him first, and, therefore, will be the ones to get the job. If we also assume that the more aggressive person will attempt to differentiate himself from his competitors by attempting to convince the potential employer that he is better (better trained, more personable, harder working, etc.), we then have an additional,

very compelling reason to expect the employer to hire the more aggressive individual first.

We conclude that, if jobs are scarce, those with a stronger taste for work will be the ones employed. On the other hand, if jobs are in excess supply, we have the straightforward conclusion that those not working have chosen not to work. Either way, employment history provides an index of the taste for work--or, to borrow McClelland's phrase, the "will to achieve."

Our assumption of minimal intra-class differences among offenders, viewed as potential employees, is probably unrealistic. Even if employers are perfectly rational in their hiring decisions, basing their decisions on productivity, personality, and motivational characteristics, they necessarily and unavoidably proceed from incomplete information, and must, perforce, judge the applicant using the general attributes ascribed to particular classes of individuals. Thus, if the average teenager and average black have been shown through past experience to be poor employment risks, a rational employer would, and should, discount the applicant's potential value if that applicant happens to be a teenager or a black. The practice is common to most, if not all, business decisions involving risk. Automobile insurance rates for teenagers, and bank interest rates for young couples proposing to start a relatively risky business attest to its universality. An ideal index would, therefore, account for demographic characteristics, such as age and race, which appear to influence the hiring decision.[6]

Our index only relates to legitimate employment. Ideally, we would also incorporate the work activity of individuals operating in

illegal markets. The criminal history data used in constructing the taste-for-income variable provides some of that information; but, of course, the data are silent with respect to those individuals who are not apprehended and convicted for property offenses. We must assume, therefore, that some of those offenders having few or no recorded property offense arrests or convictions will have been more fully engaged in such activity than the data suggest; and that, to some indefinite extent, some of the lower taste-for-work scores may be downward biased.

We propose to equate school attendance with work. Attending and progressing through school have most of the essential characteristics of holding a job; they require regular attendance, punctuality, and perseverance in the performance of specific, assigned tasks. We assume that all, or almost all, of the sampled population had the opportunity to attend school. Hence an individual is assumed to manifest a strong taste for work if he was either fully employed at a steady job or was a student at the time of the arrest resulting in the instant incarceration. Note that being a drop-out does not suggest a reduced propensity to work unless it is accompanied by a poor job record.

We assume that a history of drug or alcohol abuse or of mental health problems is correlated with a diminished taste for work. The relation may be causal: heavy substance use may be so debilitating that the individual cannot work effectively, or heavy usage may engender irregular attendance at the job or at school. On the other hand, the relation may simply be associative: for example, the consumption of the softer drugs may imply membership in a subculture that generally eschews legitimate work activity; while drug and alcohol

abuse and psychological disorders may reflect a personality that, through preference or constitutional infirmity, finds active participation in the legitimate world, with its various demands, to be relatively unrewarding.

The empirical evidence concerning the effect of drug use on employment is limited and often based on indirect evidence. Most studies have been concerned with the drug user's criminal record prior to arrest, incarceration or treatment, or his recidivism record subsequent to incarceration or treatment. Consequently, the evidence concerning his work record is largely circumstantial and indirect. The National Commission on Marihuana and Drug Abuse (1973:169) indicates that drug users tend to hold unskilled jobs, which suggests, but does not prove, that users have lower achievement motivation. Users' employment rates prior to arrest also appear to be substantially lower than rates for the general population of offenders: Ball and Snarr (1969) find 42 percent of a sample of addicts to support themselves principally or exclusively by criminal means, 33 percent to work irregularly, and only 18 percent to maintain steady full-time, legitimate employment. Similar findings are reported by DeFleur, Ball, and Snarr (1969). By contrast, 61 percent of persons newly admitted to state prisons in 1974, and 45 percent of the jail population in 1978 were employed full-time prior to arrest (Hindelang, et al., 1981:500). In North Carolina the equivalent rate for new prison admissions in 1979 was 62 percent. The National Commission on Marihauna and Drug Abuse (1973:169) reviewed prior studies of pre-incarceration employment rates. Their results are less conclusive, but not inconsistent with the foregoing: they report that 41 to 66 percent of various drug using

populations are employed, not necessarily full-time, immediately prior to arrest.

Regarding the effect of alcohol on employment prior to incarceration, the hypothesis advanced above is sustained: Goodwin, Crane, and Guze (1971) and Cahalan and Room (1974:103-110) find the use of alcohol to be associated with a poor work record.

Additional research on the relation of drug use and alcohol use to employment is discussed in Chapter 2.

The proportion of inmates with reported drug and psychological problems is too small for separate analysis. Therefore, only two empirical variables will be chosen to represent drug, alcohol, and psychological histories. One considers all three attributes within a composite index. The other is concerned solely with those reporting a serious drinking problem.

C. Treatment Variables

The treatments selected for consideration are those which: (1) were operational within the North Carolina prison system during the period under consideration; (2) affected a sufficiently large number of inmates to permit statistical analysis; and (3) provided reasonably complete data. Five categories of treatment are considered. In descending order with respect to their presumed income-enhancing potential these are:

1. Work Release

Two basic measures are considered: a dichotomous measure of participation vs. non-participation in a work release program and a

continuous measure of the length of participation.

2. Educational and Vocational Training

Several measures of participation in educational and vocational training programs are used: (1) whether or not the inmate participated in one of these programs; (2) the number of participations; and (3) for those eligible, whether or not the individual acquired a general education diploma (GED). Education and vocational training will be considered separately and as a composite index.

3. Prison Work Programs

Inmates participated in the operation of the prison system and also provided services to other government agencies through prison duty assignments. They also participated in prison enterprises, in which they worked in the production of commodities and services in environments that resembled production activities within the private sector. The measures to be used relate to (1) participation in one of these programs; and (2) the number of participations. Prison enterprise and duty assignments will be considered separately and as a composite index.

4. Transitional Programs

An important program within the North Carolina system is its Pre-Release and After-Care program (PRAC), which attempts to facilitate the transition from prison to non-institutional life. The measure used is participation in the program.

5. Alcohol, Drug, and Mental Health Programs

These programs attempt to treat inmates identified as having

substance abuse and psychological problems. Evaluation will focus on two measures: (1) whether the individual participated in a program directed toward alcohol, drug or mental health problems; or (2) whether the individual participated in an alcohol rehabilitation program.

D. Control Variables

The ultimate objective of subsequent statistical analysis is to evaluate the interactive effect between treatment and economic motivation indicators (EMI). Because analysis is to proceed using data derived from natural variation, rather than experimental variation, statistical controls are required during parameter estimation to correct for potentially significant, but spurious covariation. In the regression models which constitute the principal instruments for evaluating interaction effects, the EMI and treatment variables are introduced as control variables, as well as components of particular interaction terms. This is done because of a direct relation presumed to exist between these variables and post-prison labor market and criminal behavior. These direct effects have been discussed in Chapter 2.

Additional control variables are needed, however. Accordingly, we propose to introduce the offender's age, marital status, years of education completed, and race. In addition to these demographic and socioeconomic status characteristics, we use two variables presumed to be related to post-prison success: the degree of involvement in criminal activity prior to the instant incarceration and the extent of rule violations during the instant incarceration. Both measures are

corrected for time at risk. Because individuals released under supervision may have been deferred or otherwise deflected from further criminal activity by virtue of being under official supervision, or may be pressured to perform better in the labor market, the conditions of release are introduced as a control. Time actually served for the instant offense(s) is included in the model to account for potential deterrent, social bonding, labelling, or prisonization effects, as well as control for differences in the amount of time inmates are exposed to program participation. An index of the probability of being officially sanctioned, given that one commits an offense, is included to control for potential general deterrent effects; and, finally, an unemployment index is used to account for local labor market conditions encountered by the released inmate. The latter two measures are aggregate measures for the counties to which the offender is released.

II. DEFINITIONS OF EMPIRICAL VARIABLES

The principal empirical variables to be used in this report are defined below. Note that names ending in D signify dichotomous (dummy) variables. Additional variables, of lesser importance, will be defined as they are discussed in the text. More complete definitions of the variable set appear in Appendix A.

A. Behavioral Outcome Variables

ARRESTD : If offender was arrested within two years of release, ARRESTD = 1. Else, ARRESTD = 0.

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CONVICTD : If offender was convicted of a new offense within two years of release, CONVICTD = 1. Else, CONVICTD = 0.

PRISOND : If offender was returned to prison within two years of release, PRISOND = 1. Else, PRISOND = 0.

EARND : If offender had any reported earnings, EARND = 1. Else EARND = 0.

TIME_OUT : Length of time between release and new arrest for those for whom ARRESTD = 1.

SERIOUS : An index of the seriousness of the new offense or rule infraction for those for whom PRISOND = 1. Measured as expected number of days to release.

CHANGE : An index which compares SERIOUS to a corresponding "SERIOUS" value, SERIOUS*. SERIOUS* equals the actual days incarcerated prior to the 1980 release. CHANGE = SERIOUS-SERIOUS*.

EARNINGs : Earnings per 100 days free for those reporting income; i.e., for those for whom EARND = 1.

EARNINGa : Earnings per 100 days free, all inmates.

B. Treatment Variables

WRK_RELD : If offender was on work release some time during the instant incarceration, WRK_RELD = 1. Else, WRK_RELD = 0.

WRK_RELTa : For all offenders, the length of time on work release, in 100 day units.

WRK_RELTs : For the subset of offenders for whom WRK_RELD = 1, the length of time on work release, in 100 day units.

ED_VOCD : If offender participated in at least one educational or vocational program, ED_VOCD = 1. Else, ED_VOCD = 0.

ED_VOCN : The number of educational and vocational program participacions.

EDUCD : If offender participated in an educational program, EDUCD = 1. Else, EDUCD = 0.

VOCATND : If offender participated in a vocational program, VOCATND = 1. Else, VOCATND = 0.

GEDD : If offender acquired a GED during incarceration, GEDD = 1. Else, GEDD = 0. Pertains to subsample reporting less than 12 years of education.

WRK_PGMD : If offender participated in a prison work program, WRK_PGMD = 1. Else, WRK_PGMD = 0.

WRK_PGMN : Number of prison work program participations.

WRK_PID : If offender participated in a prison enterprise program, WRK_PID = 1. Else, WRK_PID = 0.

WRK_PDD : If offender participated in a prison duty program, WRK_PDD = 1. Else, WRK_PDD = 0.

PRACD : If offender participated in the Pre-Release and After-Care program, PRACD = 1. Else, PRACD-0. Pertains to population for whom RELEASED = 1.

ADM_PGMD : If offender participated in an alcohol, drug, or

mental treatment program, ADM_PGMD = 1. Else ADM_PGMD = 0.

ALC_PGMD : If offender participated in an alcohol rehabilitation program, ALC_PGMD = 1. Else, ALC_PGMD = 0.

ALL_PGMN : Number of program participations: used as an index of intensity of program participation. ALL_PGMN = WRK_RELD+ED_VOCD+WRK_PGMD+PRACD+ADM_PGMD.

C. Economic Motivation Indicator (EMI) Variables

WRK_HISD : If offender had a good work/school history prior to the instant incarceration, WRK_HISD = 1. Else, WRK_HISD = 0.

JOB_SKLD : If offender was a professional, skilled, or semi-skilled worker, JOB_SKLD = 1. Else, JOB_SKLD = 0.

PROPRTY : The ratio of property arrests to all arrests prior to incarceration.

PROPRTYD : If PROPRTY > 0.5, PROPRTYD = 1. Else, PROPRTYD = 0.

ADMD : If offender had a history of serious alcohol, drug, or mental history problems, ADMD = 1. Else, ADMD = 0.

ALCHD : If offender had a history of serious alcohol problems, ALCHD = 1. Else, ALCHD = 0.

D. Control Variables

AGE : Offender's age as of January 1, 1980, in years.

EDYEARS : Number of years of formal education at time of prison admission.

MARRYD : If offender was married and living with spouse at time of offense resulting in instant incarceration, MARRYD = 1. Else, MARRYD = 0.

RACED : If offender is nonwhite, RACED = 1. Else, RACED = 0. (Because of the very small proportion of other races, nonwhite is almost equivalent to black.)

RELEASED : If offender exited from prison under supervised release, RELEASED = 1. Else, RELEASED = 0.

RULE_BRK : The number of reported rule violations per year of imprisonment.

ARR_RATE : The number of arrests per year of risk prior to the instant incarceration.

TIME_IN : Time served in years to first release on the instant incarceration. In regression analysis in natural log format.

DETERP : An index of the general deterrent effect of official sanctions. DETERP = A/B, where A = Arrests for UCR Part I property offenses, and B = the number of these offenses known to the police. Both are with reference to the offender's home region.

UNEMPLOY : An index of employment opportunity: the unemployment rate of males in the offender's home region.

III. MEANS AND OTHER STATISTICS FOR THE VARIABLE SET

In this section the sampled population is described in terms of means and standard deviations. The description adds additional detail to the statistical profile of the sampled inmates which was presented in the preceding chapter. Further information concerning the socio-economic, demographic, and criminal history background of the sampled inmates is presented in Table 4.1. The table also contains measures relating to post-prison behavior and to treatments received during the inmate's prison tenure. In addition to rounding out the statistical picture, these data will be used to facilitate the analysis which follows.

A. Outcome Variables

Within two years of release almost half of the 1425 inmates were reported as having at least one new arrest; over a quarter had a new conviction; and a third were returned to prison. Note that reimprisonment rates are higher than conviction rates because reimprisonment includes return for violation of release conditions. The TIME_OUT variable indicates that those who were rearrested remained arrest-free for an average of 343 days. The SERIOUS variable indicates that those who were returned to prison were expected to serve an average of 1075 days for their new offense or their violation of release conditions. On the average, these same individuals served 691 days on their prior sentence. Thus, the new expected sentence length exceeds the actual time served on the prior sentence by 384 days. This latter value

TABLE 4.1

MEAN, STANDARD DEVIATION, AND NUMBER OF OBSERVATIONS FOR PRINCIPAL VARIABLES

Variable	Mean	S.D.	n	Variable	Mean	S.D.	n
Outcome Variables				EMI Variables			
ARRESTD	.47	.50	1277	WRK_HISD	.49	.50	1235
CONVICTD	.28	.45	1277	JOB_SKLD	.44	.50	1129
PRISOND	.33	.47	1425	PROPRTYD	.59	.49	1425
EARND	.59	.49	852	ADMD	.43	.49	1317
TIME_OUT	343	225	600	ALCHD	.32	.47	1288
SERIOUS	1075	2539	474				
CHANGE	384	2452	474	Treatment Variables			
EARNINGs	13.96	14.72	502	WRK_RELD	.51	.50	1425
				WRK_RELTs	1.97	1.57	685
Control Variables				ED_VOCD	.49	.50	1425
AGE	27.2	7.74	1425	ED_VOCN	.86	1.14	1425
EDYEARS	9.6	2.29	1423	EDUCD	.32	.46	1425
MARRYD	.26	.44	1401	VOCATND	.32	.47	1425
RACED	.54	.50	1425	GEDD	.06	.24	1105
RELEASED	.85	.36	1425	WRK_PGMD	.70	.46	1425
RULE_BRK	1.19	1.86	1425	WRK_PGMN	1.27	1.16	1425
ARR_RATE	.23	.17	1425	WRK_PID	.14	.35	1425
TIME_IN	1.51	2.12	1425	WRK_PDD	.67	.47	1425
DETERP	.20	.05	1425	PRACD	.34	.47	1205
UNEMPLOY	4.82	1.31	1391	ADM_PGMD	.17	.37	1425
				ALC_PGMD	.10	.31	1425
				ALL_PGMN	2.16	1.03	1425

provides the mean of the variable, CHANGE.[7] Finally, we observe that, of the 852 individuals for who social security numbers were available and who had not been reincarcerated during the survey period, 59 percent reported some earnings during the survey period. Reported earnings for those at work averaged $14.00 per day.

B. EMI Variables

Interpretation of the EMI data is straightforward. Of the 1235 individuals for whom a work/school history was available, half were either working full-time at a steady job or were in school at the time of the instant offense, almost half were either professional, skilled, or semi-skilled workers, 59 percent were defined as property offenders, a third reported a serious drinking problem, and an additional eleven percent reported a serious drug or mental health problem.

C. Control Variables

The average age of the sampled inmates in 1980, omitting from consideration those over age 50, was 27 years. Prior to commitment, these individuals had, on the average, somewhat less than ten years of formal education. A quarter were married and living with spouse, and slightly over half were nonwhite. Almost all (85 percent) were released onto parole or conditional release after having served an average of one and one-half years.[8] The inmate sample averaged approximately 1.2 rule infractions per year in prison, and approximately one arrest every four years prior to the instant incarceration. DETERP indicates that the mean probability of being arrested in North

Carolina for a Part I UCR Index offense, given that an offense had been committed, was .20. Finally, UNEMPLOY indicates that the mean unemployment rate of males in North Carolina was approximately 4.8 percent in 1980.

D. Treatment Variables

Many of the treatment programs enjoyed wide inmate participation. Half of the inmates participated in work release some time during their prison tenure. A third participated in at least one educational program, a third in at least one vocational training program. Altogether, half of all inmates had participated in at least one educational or vocational program. Of the 1105 inmates who had not completed high school prior to incarceration, six percent obtained a General Education Diploma during the instant incarceration.

The prison system placed heavy reliance on prison work programs. This is seen in the fact that two-thirds of all inmates participated in at least one prison duty program, while a seventh worked within some prison enterprise. Altogether, each inmate participated in an average of 1.27 prison work programs during his prison term. A third of the inmates participated in the community transition program, PRAC. Almost a fifth were exposed to an alcohol, drug, or mental health treatment program, and in particular, one inmate in ten received some treatment for alcohol abuse. All told, the sampled inmates averaged over two treatment programs per inmate during their prison stay.

IV. PRINCIPAL FIRST ORDER CORRELATES

Table 4.2 provides a matrix of correlation coefficients which relate eight indicators of post-prison behavior to selected EMI, treatment, and control variables. Significance levels for these coefficients are presented in parentheses. Significance levels are for two-tailed tests and are only reported for values of 20 percent or less. The table serves two purposes. First, it identifies, or at least suggests the existence of, particularly strong causal linkages between the behavioral outcome variables and those variables which will become regressors in the subsequent multivariate analyses. The table is also of interest because it provides another means of evaluating the hypothesis that the sampled inmate population is representative of other inmate populations.

A. Treatment Variables

The pattern of correlation coefficients between behavioral outcome measures and in-prison treatment variables (Table 4.2) shows that post-prison behavior is not strongly or consistently related to in-prison treatment. The expected sign for the TIME_OUT variable and the labor force variables is positive and the remaining variables negative, if treatment were to have a strong beneficial effect on behavior. Of 128 comparisons, only 35 are significant and in the expected direction. The dichotomous dependent variables fare better than the continuous dependent variable. The most effective treatment in terms of consistently lower recidivism rates and better labor force behavior appears

TABLE 4.2
SIMPLE CORRELATION COEFFICIENTS BETWEEN OUTCOME VARIABLES AND TREATMENT, EMI, AND CONTROL VARIABLES

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Treatment Variables				
WRK_RELD	-.13(.0001)	-.11(.0001)	-.12(.0001)	.08(.018)
WRK_RELTa	-.17(.0001)	-.13(.0001)	-.16(.0001)	.09(.007)
WRK_RELTs	-.17(.0001)	-.12(.005)	-.16(.0001)	.08(.079)
ED_VOCD	.08(.004)	.04(.12)	.01(-)	.05(.16)
ED_VOCN	.06(.02)	.04(.14)	-.0004(-)	.01(-)
EDUCD	.09(.002)	.05(.053)	.02(-)	.02(-)
VOCATND	.07(.02)	.03(-)	-.01(-)	.001(-)
GEDD	-.04(.17)	-.07(.024)	-.06(.031)	.002(-)
WRK_PGMD	.04(.13)	.03(-)	.001(-)	-.02(-)
WRK_PGMN	.06(.025)	.06(.047)	.0009(-)	-.04(-)
WRK_PID	.03(-)	.05(.055)	.03(.20)	.01(-)
WRK_PDD	.04(.18)	.02(-)	-.004(-)	-.05(.12)
PRACD	-.04(-)	-.02(-)	-.08(.004)	-.02(-)
ADM_PGMD	-.04(.15)	-.02(-)	-.007(-)	.02(-)
ALC_PGMD	-.02(-)	-.0008(-)	.002(-)	.004(-)
ALL_PGMN	-.04(.16)	-.05(.077)	-.09(.0006)	.08(.014)
EMI Variables				
WRK_HISD	-.11(.0002)	-.10(.0009)	-.10(.0003)	.10(.006)
JOB_SKLD	-.05(.096)	-.04(.16)	-.001(-)	.01(-)
PROPRTYD	.09(.0008)	.12(.0001)	.16(.0001)	.04(-)
ADMD	.06(.050	.03(-)	.07(.007)	-.04(-)
Control Variables				
AGE	-.12(.0001)	-.10(.0003)	-.11(.0001)	-.04(-)
EDYEARS	-.07(.008)	-.06(.049)	-.06(.035)	.03(-)
MARRYD	-.10(.0003)	-.10(.0007)	-.10(.0004)	.12(.0004)
RACED	.06(.040)	.09(.002)	.03(-)	.003(-)
RELEASED	-.07(.011)	-.10(.0005)	-.05(.070)	.22(.0001)
RULE_BRK	.19(.0001)	.16(.0001)	.15(.0001)	-.12(.0003)
ARR_RATE	.28(.0001)	.24(.0001)	.29(.0001)	-.03(-)
TIME_IN	.06(.035)	.06(.028)	-.05(.080)	-.009(-)
DETERP	-.05(.098)	-.02(-)	-.010(-)	.07(.041)
UNEMPLOY	-.06(.034)	-.02(-)	-.02(-)	-.05(.12)

Table 4.2--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Treatment Variables				
WRK_RELD	.03(-)	-.01(-)	-.04(-)	.12(.009)
WRK_RELTa	.05(.19)	-.04(-)	-.12(.006)	.13(.003)
WRK_RELTs	.07(-)	-.03(-)	-.17(.022)	.13(.03)
ED_VOCD	.07(.096)	.08(.072)	.06(.19)	-.08(.07)
ED_VOCN	.06(.17)	.07(.12)	.04(-)	-.03(-)
EDUCD	.06(.17)	.08(.076)	.09(.064)	-.08(.07)
VOCATND	.03(-)	-.00(-)	-.03(-)	-.04(-)
GEDD	.03(-)	.11(.037)	.08(.10)	-.01(-)
WRK_PGMD	.01(-)	-.02(-)	-.04(-)	-.01(-)
WRK_PGMN	-.03(-)	.01(-)	-.06(.20)	.02(-)
WRK_PID	-.04(-)	.00(-)	-.03(-)	.05(-)
WRK_PDD	.02(-)	-.02(-)	-.04(-)	.005(-)
PRACD	.09(.050)	-.01(-)	.06(-)	-.03(-)
ADM_PGMD	-.01(-)	-.04(-)	-.04(-)	-.004(-)
ALC_PGMD	-.05(-)	-.05(-)	-.04(-)	-.04(-)
ALL_PGMN	.09(.021)	.00(-)	-.01(-)	.008(-)
EMI Variables				
WRK_HISD	.08(.058)	.01(-)	-.01(-)	.18(.0002)
JOB_SKLD	.02(-)	.05(-)	.02(-)	.04(-)
PROPRTYD	-.08(.050)	.07(.12)	.08(.085)	-.08(.07)
ADMD	-.07(.12)	-.10(.025)	-.07(.12)	-.06(-)
Control Variables				
AGE	.01(-)	-.03(-)	-.08(.074)	.07(.12)
EDYEARS	-.03(-)	.03(-)	.02(-)	.12(.01)
MARRYD	.004(-)	-.01(-)	-.05(-)	.07(.13)
RACED	-.02(-)	.09(.061)	.06(.20)	-.04(-)
RELEASED	.10(.019)	-.05(-)	-.07(.12)	.09(.04)
RULE_BRK	-.13(.0009)	.02(-)	.02(-)	-.08(.07)
ARR_RATE	-.13(.002)	-.06(-)	-.06(.20)	-.10(.03)
TIME_IN	-.01(-)	.15(.0007)	-.06(.17)	.06(.19)
DETERP	.12(.004)	-.00(-)	.01(-)	-.04(-)
UNEMPLOY	.06(.15)	.07(.15)	.05(-)	-.05(-)

to be work release. In addition, the fact that both work release participation and time on work release show significant effects suggests that the common charge of selection bias cannot be waged as an explanation of the effect of work release. If it were simply true that better risks were placed on work release and that work release per se had no effect, then the participation coefficient might be significant but not the time on work release coefficient. However, both coefficients are significant.

Of the remaining programs, obtaining a GED and the total number of all types of programs in which an offender participates have significant effects for the dichotomous dependent variables. There are other significant coefficients for other programs but their effect is not consistent across all outcome measures.

B. EMI Variables

The EMI coefficients provide decidedly mixed results. The coefficients overwhelmingly support the hypothesis that persons with good work histories have lower recidivism rates and better post-prison work and earnings records. It also appears that persons with histories of drug, alcohol, and mental health problems have significantly higher recidivism rates. And, consistent with expectation, persons who incline toward property offenses have higher recidivism rates. On the other hand, there appears to be a relation between job skills and post-prison behavior only for measures of rearrest and conviction.

C. Control Variables

The pattern of coefficients relating to the control variables is consistent with past research. We observe that being older or more educated, or being married is associated with lower recidivism rates and better labor force behavior and that those who have higher prior arrest rates and more in-prison rule infractions are more likely to recidivate. We also note that, as expected, being released under supervision is related to lower recidivism and improved labor force performance. Contrary to expectation, a tighter labor market, as evidenced by higher average unemployment rates in the offender's home region, does not seem to engender higher recidivism rates (only the rearrest coefficient is statistically significant).

V. THE BASIC REGRESSION MODEL

Analysis is directed toward the interaction between treatment and EMI variables. To obtain valid estimates of the interaction effect, it is essential that these effects be estimated within a correctly specified model. We have identified a set of control variables which we have hypothesized to be related to the behavioral outcome variables. We have also hypothesized in Chapter 2 that the EMI and treatment variables, themselves, affect outcome. Thus, the basic statistical model involves sets of behavioral outcome (B), EMI, treatment (T), and control (C) variables. We estimate the several EMI, T, and C effects on B by means of linear regression models which have the form:

$$B = B(EMI, t, C, t*EMI, t*C),$$

where all variables are vectors except the scalar, t, which is an element of T. Several models are estimated. Each model consists of eight behavioral, dependent variables regressed upon four EMI and ten control variables, plus the one treatment variable, t. Altogether sixteen treatment indices are evaluated.

In the model, the first three sets of regressors measure main model effects, the last two, interaction effects. It will be noted that the model includes the interaction between treatment and control variables. This last set of regressors allows for the possibility that the t*C variables are, themselves, significantly related to the behavioral outcomes.

The minimum number of regression models implied by the foregoing paradigm is very large. Because we also wish to examine main effects without the influence of interaction effects, the actual minimum will be more than twice as large.[9] Analysis of the pattern of regression results reveals important regularities that permit a substantial reduction in the number of regressions for which data will need to be reported. These regularities, and the data-presentation shortcuts which they allow, will be indicated in the course of the following exposition.

The analysis begins with a presentation of the coefficients of an ordinary least squares regression model of the form, B = B(EMI, C). We shall refer to this as the basic regression model. The basic regression model has eight equations, one for each of the post-prison outcomes. The results pertaining to the eight regressions related to this model appear in Table 4.3. These results represent the main

TABLE 4.3
THE BASIC REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
EMI Variables				
WRK_HISD	-.021(-)	-.016(-)	-.016(-)	.083(.038)
JOB_SKLD	.029(-)	.031(-)	.061(.042)	-.010(-)
PROPRTYD	.042(-)	.069(.031)	.082(.0097)	.025(-)
ADMD	.102(.0013)	.063(.031)	.110(.0002)	.024(-)
Control Variables				
AGE	-.0032(.19)	-.0027(-)	-.0008(-)	-.0061(.047)
EDYEARS	-.013(.056)	-.0055(-)	-.011(.071)	.0040(-)
MARRYD	-.040(-)	-.0066(-)	-.023(-)	.13(.005)
RACED	.043(.18)	.090(.0019)	.042(.15)	-.006(-)
RELEASED	-.078(.079)	-.109(.007)	-.049(-)	.21(.0001)
RULE_BRK	.028(.0010)	.022(.006)	.027(.0009)	-.023(.059)
ARR_RATE	.686(.0001)	.560(.0001)	.697(.0001)	-.041(-)
TIME_IN	.030(-)	.040(.079)	.023(-)	.027(-)
DETERP	.435(.20)	.506(.11)	.490(.12)	.84(.049)
UNEMPLOY	-.019(.11)	-.0029(-)	-.0027(-)	-.017(-)

Table 4.3-continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
EMI Variables				
WRK_HISD	29(-)	-14(-)	-43(-)	5.06(.002)
JOB_SKLD	-9.0(-)	362(-)	359(-)	-.70(-)
PROPRTYD	-38(.14)	384(-)	372(-)	-1.44(-)
ADMD	-30(.16)	-542(.065)	-480(.093)	-.70(-)
Control Variables				
AGE	-1.3(-)	-11(-)	-20(-)	.019(-)
EDYEARS	-3.5(-)	-13(-)	-7(-)	1.12(.003)
MARRYD	-17(-)	-97(-)	-112(-)	-.33(-)
RACED	-13(-)	93(-)	112(-)	-2.89(.076)
RELEASED	33(-)	-751(.063)	-756(.054)	5.53(.050)
RULE_BRK	-11(.030)	-33(-)	-33(-)	-.077(-)
ARR_RATE	-167(.006)	-913(-)	-839(-)	-1.78(-)
TIME_IN	12(-)	693(.001)	-46(-)	-.25(-)
DETERP	324(.16)	-722(-)	-1030(-)	-13.2(-)
UNEMPLOY	1.9(-)	126(-)	125(-)	-1.01(.11)

effects of EMI and control variables on post-prison behavior. The table contains regression coefficients and, in parentheses, significance levels for those coefficients for which the probability associated with rejection of the null hypothesis is estimated to be less than 20 percent for a two-tailed test.

Before we examine the details of Table 4.3, we note that the pattern of coefficients across the three recidivism measures, ARRESTD, CONVICTD, and PRISOND, is highly stable. Without exception, the signs are either all positive or all negative, indicating that the three measures are, indeed, substitutable indexes of recidivism. The significance levels of the coefficients lend additional support to this observation, but also suggest that the measures are not perfect substitutes, that they do display certain systematic differences. For example, in the progression from arrest to conviction to imprisonment, note that the coefficients of JOB_SKLD and PROPRTYD become progressively larger, eventually attaining statistical significance. The only serious inconsistency relates to RACED, wherein the arrest and prison coefficients barely achieve significance at the 20 percent level, while the conviction coefficient is highly significant. This inconsistency notwithstanding, the overall pattern is sufficiently regular to warrant our treating these three measures as three reasonably accurate repre- sentations of a single underlying recidivistic behavior.

A. EMI Variables

The pattern of EMI coefficients does not altogether conform to expectations. Only half of the coefficients are significant at the

five percent level. One of these significant results supports the contention that persons with a history of drug, alcohol, or mental health problems have higher recidivism rates. The data show, for example, that those having this characteristic have rearrest and reimprisonment rates which are ten percentage points higher than those without the characteristic. Since the average reincarceration rate equals .33 (see Table 4.1), this differential implies that those with an alcohol, drug, or mental health problem are a third more likely to be reincarcerated.[10] The data also support the common belief that property offenders are more recidivistic than non-property offenders. For example, those defined as property offenders are 25 percent more likely to be returned to prison than non-property offenders.[11] On the other hand, the data do not demonstrate that individuals with good work histories are less likely to recidivate: while the coefficients have an appropriately negative sign, they are not statistically significant. The JOB_SKLD variable is more of a puzzle: it indicates that, if anything, those with higher skilled, better paid occupations are more recidivistic.

Only one of the four EMI variables appears to be related to labor market performance. The data show that those with a good work history have a better post-prison work record. Their participation rate in the labor force is 8.3 percentage points, or 14 percent higher than those with poorer work histories. Moreover, their earnings are substantially (36 percent) higher.

B. Control Variables

The two control variables that appear most strongly related to recidivism are the inmate's prior arrest record and his rate of in-prison delinquency. Offenders averaging one additional arrest per year prior to the instant incarceration are twice as likely to return to prison. Those averaging one additional in-prison delinquency are eight percent more likely to return.[12] Individuals with such records are also likely to recidivate sooner--almost two weeks earlier for in-prison delinquents and six months for the more habitual offender.

Age, marital status, and years of education display their expected inverse relationship to recidivism, but the coefficients of the first two are not significant. Moreover, the small size of the education coefficient and its relatively low significance level suggest a relatively weak effect for the third variable. The unemployment rate does not seem to have an effect on recidivism. Indeed, the signs of its coefficients run counter to the prevailing, though disputed, hypothesis that unemployment induces criminal behavior. Except for the aberrant conviction coefficient, race does not seem to be especially associated with recidivism--nor does time served. The data for type of release suggest that parole supervision does reduce the likelihood of rearrest and reconviction, but not that of reincarceration. One possible reason why supervision does not appear to reduce reincarceration is that individuals under supervision are under greater risk of returning to prison. That is, potential positive effects from supervision may be offset by the fact that those under supervision can be returned to prison for a greater variety of behaviors than those no longer under

correctional control. Finally, there is no evidence that general deterrence, as measured by the risk of rearrest, had any effect on post-prison behavior.

VI. THE MAIN EFFECT OF TREATMENT IN THE BASIC MODEL

In the preceding section we examined the effects of EMI and control variables on eight post-prison behaviors within the context of the basic regression model. In this section the effects of treatment are introduced. We propose to present the results for this higher level of analysis in abbreviated form, suppressing data for all coefficients in the regression model except those for treatment. Compression of regression results is dictated by three considerations. First, the combination of eight dependent variables and sixteen treatment indicators, not including several minor variants, necessitates the estimation of 128 regression equations. Neither economy nor reader comprehension is served by the full presentation of these results. Second, main model effects are of less interest to this research than interactive effects. Hence, it is sufficient to display their general pattern and to have recourse to average effects, neglecting other variation. Third, the coefficients of the EMI and control variables which have been presented in the preceding table as the basic model are not appreciably altered when a single treatment variable is added to the set of regressors. For example, in Table 4.4, column (1), coefficients of the EMI and control variables of Table 4.3, column (1) are reproduced.

TABLE 4.4

MAIN EFFECTS MODEL WITH AND WITHOUT SELECTED TREATMENTS, USING ARRESTD AS OUTCOME

	Treatment			
Regressor	None	WRK-RELD	ED-VOCD	WRK-PGMD
	(1)	(2)	(3)	(4)
Treatment	----	-.04(-)	-.003(-)	.002(-)
EMI Variables				
WRK_HISD	-.02(-)	-.02(-)	-.02(-)	-.02(-)
JOB_SKLD	.03(-)	.03(-)	.03(-)	.03(-)
PROPRTYD	.04(-)	.04(-)	.04(-)	.04(-)
ADMD	.10(.001)	.10(.001)	.10(.001)	.10(.001)
Control Variables				
AGE	-.003(.19)	-.003(-)	-.003(.20)	-.003(.19)
EDYEARS	-.01(.056)	-.01(.081)	-.01(.056)	-.01(.056)
MARRYD	-.04(-)	-.04(-)	-.04(-)	-.04(-)
RACED	.04(.18)	.04(-)	.04(.18)	.04(.18)
RELEASED	-.08(.079)	-.07(.095)	-.08(.080)	-.08(.079)
RULE_BRK	.03(.001)	.03(.002)	.03(.001)	.03(.001)
ARR_RATE	.69(.0001)	.68(.0001)	.69(.0001)	.69(.0001)
TIME_IN	.03(-)	.03(.18)	.03(-)	.03(-)
DETERP	.44(.20)	.44(.20)	.44(.20)	.44(.20)
UNEMPLOY	-.02 (.11)	-.02(.091)	-.02(.11)	-.02(.11)

In the next columns are found three variants of this regression model. Column (2) reports regression coefficients and significance levels when WRK_RELD (participation in the work release program) is introduced as a regressor. The effect of WRK_RELD on the EMI and control variable coefficients is seen to be negligible. The next two columns permit analysis of the effects of introducing participation in educational or vocational training programs and participation in prison work programs. Again, the differences in coefficients across treatments are negligible.

The effects displayed here are typical of the effects obtained for the other treatment indicators and for the other behavioral outcomes. Thus, we deem it expedient and appropriate to focus attention on the main effect of treatment, and to suppress the data relating to the main effects of the EMI and control variables. These latter values will be reported for the full regression model, which includes interaction effects.

Accordingly, we present in Table 4.5 estimates of the relation of 16 treatment indicators to the eight behavioral indicators. The table reports the treatment coefficient (and significance level) which was generated by each regression equation associated with the intersection of each treatment with each behavior. The data may be interpreted as follows: where dichotomous dependent variables (columns 1-4) intersect with dichotomous treatment indicators, the value of the coefficient represents the change in the probability of occurrence of the specified behavior, holding EMI and control variables constant. For example, ceteris paribus, persons placed on work release are 3.6 percentage

TABLE 4.5

THE MAIN TREATMENT EFFECT IN THE BASIC MODEL

Panel A: Dichotomous Dependent Variables

Treatment	ARRESTD	CONVICTD	PRISOND	EARND
	(1)	(2)	(3)	(4)
WRK_RELD	-.036(-)	-.020(-)	-.026(-)	-.018(-)
WRK_RELTa	-.050(.0004)	-.028(.032)	-.038(.003)	-.0014(-)
WRK_RELTs	-.073(.0003)	-.039(.026)	-.052(.004)	.013(-)
ED_VOCD	-.003(-)	-.020(-)	-.034(-)	.073(.08
ED_VOCN	.0031(-)	-.005(-)	-.011(-)	-.0039(-)
EDUCD	.018(-)	-.009(-)	-.044(.17)	.012(-)
VOCATND	.017(-)	-.006(-)	-.016(-)	.0030(-)
GEDD	-.058(-)	-.13(.049)	-.14(.050)	.0068(-)
WRK_PGMD	.002(-)	-.022(-)	-.033(-)	-.0046(-)
WRK_PGMN	.0071(-)	-.0025(-)	-.0066(-)	-.0035(-)
WRK_PID	-.057(-)	-.022(-)	-.008(-)	.094(.13
WRK_PDD	.012(-)	-.008(-)	-.027(-)	-.047(-)
PRACD	-.026(-)	.012(-)	-.080(.020)	-.031(-)
ADM_PGMD	-.034(-)	-.007(-)	.012(-)	.0060(-)
ALC_PGMD	-.006(-)	.028(-)	.023(-)	-.017(-)
ALL_PGMN	-.016(-)	-.012(-)	-.033(.026)	.0016(-)

TABLE 4.5--Continued

Panel B: Continuous Dependent Variables

Treatment	TIME-OUT	SERIOUS	CHANGE	EARNINGS
	(5)	(6)	(7)	(8)
WRK_RELD	-17(-)	-129(-)	-124(-)	-.45(-)
WRK_RELTa	-.02(-)	-238(.098)	-268(.055)	-.16(-)
WRK_RELTs	.85(-)	-529(.017)	-530(.011)	-.34(-)
ED_VOCD	35(.12)	502(.11)	525(.083)	-2.54(.14)
ED_VOCN	1.0(-)	120(-)	126(-)	-.64(-)
EDUCD	22(-)	588(.069)	591(.060)	-1.64(-)
VOCATND	6.3(-)	-201(-)	-182(-)	-2.17(-)
GEDD	2.6(-)	1013(.19)	1099(.14)	-1.34(-)
WRK_PGMD	14(-)	-193(-)	-124(-)	.81(-)
WRK_PGMN	-2.6(-)	-106(-)	- 80.1(-)	.60(-)
WRK_PID	20(-)	-158(-)	-124(-)	3.48(.15)
WRK_PDD	7.4(-)	-226(-)	-168(-)	1.28(-)
PRACD	47(.064)	337(-)	312(-)	-.55(-)
ADM_PGMD	-23( )	-189(-)	-184(-)	.38(-)
ALC_PGMD	-61(.074)	-273(-)	-288(-)	-1.50(-)
ALL_PGMN	11(-)	60.0(-)	79.3(-)	-.52(-)

points less likely to be rearrested; or, in elasticity terms, approximately eight percent less likely to be rearrested. However, the estimate is not statistically significant. Analogous results hold for continuous dependent variables. For example, the likely effect of participating in PRAC is to extend the time to first new arrest by a month and a half, while working in prison enterprise increases earnings by $3.48 per day for those who were working--a 25 percent increase in earnings (significance levels of 6 and 15 percent, respectively).

Overall, the pattern of reported results does not lend credence to the generalization that "nothing works." Ideally, if treatment were effective, it would reduce recidivism, reduce the severity of new offenses by those who do recidivate, reduce the severity of these new offenses relative to the offenses giving rise to the instant incarceration, extend the time to new arrest, increase participation in the labor force, and enhance the earnings of those who were working. Hence, the signs of the coefficients of TIME_OUT, EARND, and EARNINGs would be positive, and those of the other variables would be negative. In actuality, the signs of approximately three-quarters of the coefficients are in agreement with an alternative hypothesis, viz., that rehabilitation "works."

The data permit a test of the "nothing works" null hypothesis. Table 4.5 shows that 24 of the 3*16 = 48 coefficients expected to be positive were, indeed, positive; and that 58 of the 5*16 = 80 coefficients expected to be negative were negative. Hence, 64 percent of the combined total of 128 coefficients have the correct sign. If these coefficients are independent of each other, then the null hypothesis of fifty percent correct signs--the result of chance variation--can be

tested against the alternative hypothesis that the proportion of correct signs is greater than fifty percent--i.e., the hypothesis that rehabilitation is effective. By application of the standard normal variate probability distribution the sample percentage is found to be significant at the 0.001 level. We may safely conclude that, in general, the rehabilitation programs administered by the North Carolina Department of Correction to the cohort of inmates selected for observation did, in fact, effect a modification of behavior in the desired direction. The validity of this test is, of course, open to question. The observations are obviously not independent of each other. ED_VOCD is a function of EDUCD and VOCATND. WRK_RELTa and WRK_RELTs have identical values except for those observations which are missing in WRK_RELTs. (In WRK_RELTa these missing observations have the value zero.)

An alternative test of the "nothing works" hypothesis can be applied to these data. Again, assuming independent trials, and assuming that there is no rehabilitative effect, one would calculate the number of significant tests expected in a number of repeated trials at a given significance level. Adopting the five-percent significance level, we obtain a statistical expectation of 6.4 successful treatments in 128 trials. Table 4.5 shows that ten of the 128 trials in this experiment were successful, using the five percent significance level. The probability of obtaining ten or more significant results when, in actuality, the process is random is approximately eleven percent and is based on the standard normal variate approximation to the binomial distribution. Hence, were we to adopt the conventional 0.01 or 0.05 level as the critical value for hypothesis rejection, we

could not reject the null hypothesis. Moreover, the assumption of independent trials biases the test in favor of rejection. For example, if WRK_RELTa and WRK_RELTs represent a single, composite variable, so that one of these two must be omitted from the experiment, then there are but seven "successes." With an expected value of 6.4, the difference, 7.0-6.4, is not distinguishable from a chance event. Hence, our conclusion, based on this test, is that there is no evidence to support the rehabilitation hypothesis.[13]

In summary, these two global statistical tests of the effects of rehabilitative treatment offer rather weak support for the validity of the "rehabilitative ideal." Moreover, even if one were inclined to view these data and their accompanying statistical tests as supportive of the hypothesis that rehabilitation works, the data do not address the issue of the magnitude of the presumed rehabilitative effect.[14]

While the overall impact of rehabilitative treatment is open to question, analysis of the details of Table 4.5 reveals the existence of important rehabilitative components. The data very strongly support the hypothesis that those who spend more time on work release are less likely to recidivate. Note, however, that the presumed mechanism through which time spent on work release is supposed to operate, viz., through the encouragement of good work habits, the development of job skills, and the facilitation of an orderly transition to post-release work activity, is not borne out by the evidence. Neither participation in the labor force (EARND) nor earnings appear to be affected by time spent on work release. Note, also, that participation in work release (WRK_RELD), as distinguished from time spent on work release (WRK_RELT), does not appear to affect post-prison outcomes.

Some of the other programs deserve comment. Those obtaining a general education diploma appear to be less likely to recidivate after release. PRAC may reduce the chance of reincarceration and lengthen the time to new arrest. And, possibly, the more program interventions there are in total, the less likely one is to return to prison. Beyond these findings, however, the results are not encouraging.

In the next two chapters we take a fresh look at rehabilitation. Specifically, we reexamine the main treatment effects delineated above in Table 4.5 after account is taken of possible interaction effects between treatment and the EMI and control variables appearing in the basic model. And, more important, we ask whether particular combinations of treatment and inmate characteristics can be identified which are more promising for the administration of rehabilitative treatment.

NOTES - CHAPTER 4

1. We do not propose to use the construct of immediate vs. deferred gratification to describe the taste for income, although it may be an important consideration. That construct is only imperfectly measured by available officially collected data. For example, dropping out of school may be the result of a desire for immediate income at the expense of substantially greater future income, but the decision to drop out may be affected by a number of other factors, including economic necessity and school failure, which are not theoretically related to the construct, or because the individual believes, rightly or wrongly that the decision has no detrimental effect on future income.

   The Easterlin (1973) hypothesis that an individual's income aspirations are formed by the standard of living he experienced within the household in which he was raised is conceptually not difficult to translate into an empirical construct. The theory asserts that the marginal value of income, U', depends upon the standard of living of the family of origin, F, and the actual or prospective standard of living of the child, C, such that $U = U(F/C)$, and $\frac{\partial U}{\partial (F/C)} > 0$.

   The North Carolina data do provide information concerning the individual's and his family's living standard. However, these data are incompletely reported, differences in income levels are limited to a few gross income categories, and variance in income differentials is severely restricted. Hence, these data have limited value for the proposed analysis.

   Age, marital status, and having dependent children, which are consistently suggested as successful criteria for consideration in choosing motivated applicants for employment (England, 1971:47-53), offer additional possibilities. These will be considered as control variables.

2. See Appendix B for the scoring of each of North Carolina's 294 criminal offense codes. Note that we treat robbery as a property offense, believing that pecuniary considerations override the proclivity for violence.

   We note that arrest records are silent about the offender's participation in illegal activity as a juvenile; and to the extent that he had an active juvenile career, are incomplete. The magnitude and direction of bias arising from the omission of data on the juvenile career is unknown.

3. The process by which narcotic drugs lead to property crime is not material to this study. It may be, as Finestone (1957) and others have argued, that addicts are impelled to steal in order to support their habit; but it may also be that forced-to-steal is a myth; that addicts share the myth, and thus learn that, once a person is an addict, "he will do anything to get a fix." That is, his behavior may simply be a rationalization (Coleman, 1976:139).

4. Justification for the graduated income tax is based on this assumption.

5. The desire for work and the aggressiveness with which one seeks work is also related to one's preference, desire, or need for income. But these preferences have already been incorporated into the taste-for-income variable. It should be understood, therefore, that the taste-for-work variable is defined within this context.

6. Age, race, and socioeconomic status will be introduced as control variables in the analysis in an effort to correct for these influences. To correct for differences in job market opportunities regional unemployment will also be introduced as a control.

7. We cannot infer from the CHANGE data that the average seriousness of offenses increased. Expectations by correctional authorities concerning time to be served on the prison return may be in substantial error. Moreover, North Carolina's sentencing code underwent substantial revision after 1980, raising the average nominal sentence length, and possibly imparting an upward bias to the expected sentence length. However, for the purpose of this study, measures of the absolute level of offense seriousness are not required. Variation in the index across offender characteristics is the principal concern of this study, and such variation is not likely to be influenced by CHANGE's central tendency value.

8. Hereafter we shall use the word parole to refer to persons conditionally released. The Department of Correction distinguishes between parole (for adult offenders) and conditional release (for youthful offenders). In addition, an unknown number of offenders were released onto probation by means of a split sentence. All of these persons had their cases administered by the same parole/probation agency. Hence, there seems little need to distinguish between these categories of release in the pursuit of this research.

9. Eight behavioral variables and sixteen treatments requires 128 regressions. With main effects considered separately, the total rises to 256. Since we shall also examine several variants of the B, EMI, T, and C variables, 256 understates the actual number of regression models.

10. Hereafter we shall frequently translate coefficients into "elasticities." In the foregoing, in which the dependent variable is dichotomous, one divides the particular coefficient by the mean value of the dependent variable. When the independent variable is continuous, the particular coefficient is multiplied by the mean of its independent variable and divided by the mean of the dependent variable to transform the coefficient into an elasticity. Unless otherwise indicated, mean values derive from Table 4.1.

11. The percentage is obtained by dividing the coefficient, .082, by its mean, .33.

12. The values are .697/.33 = 2.11 and .027/.33 = .082, respectively.

13. Support for the hypothesis is rendered all the weaker when one recognizes that other treatments--for example, those under the category of educational and vocational programs--are probably not independent of each other.

14. Intuitively, one suspects that the second statistical test requires a stronger underlying relation than the first in order to reject the null hypothesis. The first test leads to rejection of the hypothesis that nothing works, the second does not. One conclusion to be reached from these tests is that there is, indeed, a relation, but that relation is relatively weak--too weak to induce rejection of the null hypothesis when that hypothesis is subjected to a stronger test.

CHAPTER 5

THE INTERACTION EFFECTS OF WORK RELEASE, EDUCATIONAL, AND VOCATIONAL PROGRAMS

The theoretical model developed in this study implies that income enhancing programs--those that enhance employment and earnings opportunities--will be particularly effective when applied to economically motivated offenders. Of the existing treatment programs in this state prison system the most direct and promising with respect to employment and earnings opportunities is work release. The presumption is that participation in work release establishes a post-release linkage to the job market. In addition, through development of steady work habits and job skills, the program may be supposed to raise the subject's earning potential.

A priori, participation in vocational training programs within the prison environment might be supposed to have the same beneficial effects. Although vocational training does not provide the direct hands-on experience of work release and does not offer a direct link to an employer, it does act to augment job skills and thereby raise the inmate's earning potential. Educational programs are yet another step removed from immediate income-enhancement. Yet, very clearly, an advance in one's educational attainment heightens future earning prospects.

Thus, in this chapter we consider two general classes of programs: the one--work release--is very much applications oriented, with an immediate job and earnings payoff. The other--education and vocational

training--is concerned with skill development and with a payoff which may be just as certain, but which is less immediate in its effect and less likely to be perceived as income-enhancing at the time of its experience.

The data presented in this chapter utilize the complete regression model. That is, behavioral outcomes are regressed upon EMI and control variables, one of the income-enhancing treatments, and the interaction between the particular treatment and the EMI and control variables. Because the main EMI and control effects were presented in the preceding chapter, and because their coefficients undergo relatively minor changes when the interaction terms are introduced into the regression model, these main effects are not reported in the text of this chapter. The data in the principal tables presented in this and the succeeding chapter are based on ordinary least squares regression, and are presented in the same format as earlier, except for one important simplification. We hereafter present only the signs and significance levels of the coefficients, suppressing the actual values of the coefficients. This simplification will facilitate the presentation and comprehension of the mass of data which analysis requires, and will do so without loss of important detail. The full regression results from which the text tables were derived (coefficients and significance levels) are presented in Appendix B.

I. PARTICIPATION IN WORK RELEASE

In this section we evaluate the hypothesis that the post-prison behavior of certain inmate types was significantly affected by exposure

to the work release program. Earlier, it was shown that, on the average, persons placed on work release had lower recidivism rates and better labor market performance (Table 4.2). However, after taking account of offender EMI and control characteristics, the work release effect disappeared (Table 4.5). The inference to be drawn from these results is that the initial, positive result may have been largely artifactual; that selection bias may have been working; and that the subsequent multivariate analysis corrected for this bias. In Table 5.1 work release is reevaluated by means of a more fully specified model in which a full set of interaction terms is introduced as regressors. The data indicate that the main effect of work release remains negligible. Recidivism rates are not lowered; there is no delay in the time until a new arrest occurs; offenders do not appear to shift toward less serious offenses; and neither the offender's participation rate in the labor force nor his earnings appear to be enhanced by the work release experience. But the question remains: Are there any significant interaction effects which are disguised by these average tendencies?

A. EMI Variables

In Chapter 4 it was shown that a good work history was inversely related to recidivism rates (Table 4.2). However, this relation did not hold up under multivariate analysis (Table 4.3). We concluded that the relation may have been associated with a confounding of work history with other offender characteristics. In the full regression model underlying Table 5.1, it can be shown that the addition of

TABLE 5.1
PARTICIPATION IN WORK RELEASE: MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
WRK_RELD	-(-)	-(-)	-(-)	-(-)
EMI Variables				
WRK_HISD	-(.005)	-(.018)	-(.056)	-(-)
JOB_SKLD	+(-)	-(.20)	-(-)	+(-)
PROPRTYD	-(-)	+(-)	+(-)	+(-)
ADMD	-(-)	-(-)	-(.031)	+(.052)
Control Variables				
AGE	+(-)	+(-)	+(-)	-(-)
EDYEARS	-(-)	-(-)	+(-)	+(-)
MARRYD	-(-)	+(-)	+(-)	+(.055)
RACED	+(.011)	+(.027)	+(-)	+(-)
RELEASED	+(-)	+(-)	-(-)	-(-)
RULE_BRK	+(.11)	+(.048)	+(-)	-(.070)
ARR_RATE	+(-)	+(-)	+(.026)	+(-)
TIME_IN	-(-)	-(-)	-(-)	+(-)
DETERP	+(.016)	+(-)	+(.057)	+(-)
UNEMPLOY	-(-)	+(-)	+(-)	-(-)

Table 5.1 (continued)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
WRK_RELD	+(-)	+(-)	+(-)	-(-)
EMI Variables				
WRK_HISD	-(.094)	+(-)	+(-)	-(-)
JOB_SKLD	-(-)	+(-)	+(-)	+(.056)
PROPRTYD	-(.040)	+(-)	+(-)	+(-)
ADMD	+(-)	+(-)	+(-)	+(-)
Control Variables				
AGE	-(-)	-(-)	-(-)	+(-)
EDYEARS	-(-)	-(.16)	-(.16)	+(.13)
MARRYD	+(-)	+(-)	+(-)	-(-)
RACED	-(-)	+(.13)	+(.13)	-(.13)
RELEASED	+(-)	+(-)	+(-)	-(-)
RULE_BRK	-(-)	-(-)	-(-)	-(-)
ARR_RATE	+(-)	-(-)	-(-)	-(-)
TIME_IN	+(-)	+(-)	+(-)	+(-)
DETERP	-(.16)	-(-)	-(-)	-(-)
UNEMPLOY	+(-)	-(-)	-(-)	+(-)

interaction terms as regressors in the basic model does not alter the earlier conclusion that work history per se is unrelated to post-prison behavior (Appendix B). However, when interaction effects are considered, some significant effects emerge. According to the data of Table 5.1, placing individuals with good work histories on work release produces significantly lower recidivism rates in terms of the three dichotomous variables though not better labor market performance.

Work release appears to enhance the earnings capacity of offenders with better job skills; and, for those with an alcohol, drug, or mental health problem, it appears to decrease the rate of reincarceration and to increase the rate of participation in the job market. Finally, those individuals identified as property offenders do not appear to respond to work release any differently than non-property offenders, except that the former seem to recidivate sooner (but not at a higher rate) if placed on work release. This finding may be related to the character of property offenses relative to nonproperty offenses; property offenders are more recidivistic while nonproperty offenses are more rare occurrences.

B. Control Variables

Rule breaking is positively associated with recidivism (ARRESTD and CONVICTD) and negatively associated with holding a job. These data imply that work release is best suited for those individuals who do not have a record of in-prison rule infractions. By similar interpretation, the evidence suggests that work release is best suited for

neophyte offenders compared with habitual offenders, for whites, and for those who are married.

II. TIME ON WORK RELEASE

The measure of work release participation is joined by two conceptually different measures of the strength, or intensity, of participation in work release. The first measure can be interpreted as a generalization of the dichotomous work release variable. This measure, WRK_RELD, simply refers to whether the inmate participated in the work release program. WRK_RELTa treats work release as a continuous variable, applicable to all inmates. It assumes that the program's impact is proportional to time spent in the program, with zero time being one of many experiential values. The data related to this concept of time on work release appear in Table 5.2. The data disconfirm the earlier finding concerning the main effects of time spent on work release. Whereas Table 4.5 showed a significant reduction in recidivism rates and a possible shift to less serious offenses, the full model reveals no apparent relation between this treatment measure and any measure of recidivism. On the other hand, the interaction of WRK_RELTa with the EMI and control variables yields a pattern of coefficients similar to that obtained when work release was treated dichotomously, though fewer of the coefficients are statistically significant. The conclusion that may be drawn from these data is that it is participation in work release, as measured by WRK_RELD, rather than the time actually spent on work release which has an effect on

TABLE 5.2

LENGTH OF PARTICIPATION IN WORK RELEASE: MAIN AND INTERACTION EFFECTS: TOTAL SAMPLE

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
WRK_RELTa	-(-)	-(-)	-(-)	+(-)
EMI Variables				
WRK_HISD	-(.055)	-(-)	-(.14)	+(-)
JOB_SKLD	+(-)	-(.20)	-(-)	-(-)
PROPRTYD	-(-)	+(-)	+(-)	-(-)
ADMD	-(-)	+(-)	-(-)	+(.046)
Control Variables				
AGE	-(-)	+(-)	+(-)	-(-)
EDYEARS	+(-)	+(-)	-(-)	-(-)
MARRYD	+(-)	+(-)	+(-)	+(-)
RACED	+(.076)	+(.071)	+(-)	+(-)
RELEASED	-(-)	+(-)	-(-)	+(-)
RULE_BRK	+(-)	+(.016)	+(-)	-(-)
ARR_RATE	+(-)	-(-)	+(.16)	-(-)
TIME_IN	+(.11)	+(-)	+(.033)	-(-)
DETERP	+(-)	-(-)	-(-)	+(-)
UNEMPLOY	-(-)	+(-)	+(-)	-(-)

Table 5.2 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
WRK_RELTa	+(-)	-(-)	-(-)	-(-)
EMI Variables				
WRK_HISD	-(.10)	+(-)	+(-)	+(-)
JOB_SKLD	-(-)	-(-)	-(-)	+(-)
PROPRTYD	-(-)	+(-)	+(-)	-(-)
ADMD	+(-)	-(-)	-(-)	+(-)
Control Variables				
AGE	+(-)	+(-)	+(-)	+(-)
EDYEARS	-(-)	-(-)	-(-)	+(-)
MARRYD	-(-)	+(-)	+(-)	-(-)
RACED	-(-)	-(-)	-(-)	-(-)
RELEASED	+(-)	+(-)	+(-)	-(-)
RULE_BRK	+(-)	-(-)	-(-)	-(-)
ARR_RATE	+(-)	+(-)	+(-)	+(-)
TIME_IN	-(-)	+(.18)	+(-)	+(-)
DETERP	-(-)	+(-)	+(-)	+(-)
UNEMPLOY	-(-)	+(-)	+(-)	+(-)

post-prison behavior: the intensity of treatment, per se, has a negligible effect on behavior.

The foregoing measure of work release intensity may not be wholly appropriate. One difficulty concerns its all-inclusive nature. Approximately half of the observations have a zero value--i.e., half of the inmates did not participate in work release[1]. A less inclusive, and perhaps more meaningful concept of program intensity is one which asks whether work release duration affects those who were actually on work release.[2] Its operational measure, WRK_RELTs, is considered in Table 5.3. The results are similar to those for WRK_RELTa. The data show that the introduction of the full set of interaction terms reduces the main effect of program duration to statistical non-significance both with respect to recidivism and labor market performance.[3] The table also shows that, with one notable exception, the effects of variation in program intensity are inconsequential. The one exception, however, has both plausible and encouraging implications. It suggests that work release has the effect of upgrading worker skills. This hypothesis is suggested by the fact that individuals with poor job skills benefit more from remaining longer in a work release program than individuals with good job skills, in that the former's likelihood of being gainfully employed increases relative to the latter due to the work release effect.

TABLE 5.3

LENGTH OF PARTICIPATION IN WORK RELEASE:
MAIN AND INTERACTION EFFECTS: WORK RELEASE SAMPLE

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
WRK_RELTs	+(-)	-(-)	+(-)	+(-)
EMI Variables				
WRK_HISD	+(-)	+(.13)	-(-)	+(-)
JOB_SKLD	+(-)	-(-)	-(-)	-(.034)
PROPRTYD	+(-)	+(-)	+(-)	-(-)
ADMD	+(-)	+(-)	+(-)	+(-)
Control Variables				
AGE	-(-)	-(-)	+(-)	+(-)
EDYEARS	+(-)	+(-)	-(.15)	-(-)
MARRYD	+(-)	+(-)	+(.20)	-(-)
RACED	-(-)	+(-)	+(-)	-(-)
RELEASED	-(-)	+(-)	-(-)	+(-)
RULE_BRK	+(-)	+(.11)	+(-)	-(-)
ARR_RATE	-(-)	-(.10)	-(.19)	-(-)
TIME_IN	+(.16)	+(-)	+(.011)	-(-)
DETERP	-(-)	-(.14)	-(.073)	+(-)
UNEMPLOY	-(-)	-(-)	-(-)	-(-)

Table 5.3 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
WRK_ RELTs	-(-)	-(-)	-(.14)	+(-)
EMI Variables				
WRK_ HISD	-(-)	+(-)	+(-)	+(-)
JOB_ SKLD	+(-)	-(-)	-(-)	-(-)
PROPRTYD	+(-)	+(-)	+(-)	-(-)
ADMD	+(-)	+(-)	+(-)	+(-)
Control Variables				
AGE	+(-)	+(-)	+(-)	-(-)
EDYEARS	-(-)	+(-)	+(-)	-(-)
MARRYD	-(-)	+(-)	-(-)	+(-)
RACED	-(-)	-(.14)	-(.12)	+(-)
RELEASED	+(.20)	+(-)	+(-)	-(-)
RULE_BRK	+(.11)	-(-)	-(-)	-(-)
ARR_RATE	+(-)	+(.15)	+(.16)	+(-)
TIME_IN	-(-)	+(-)	+(-)	-(-)
DETERP	+(-)	+(-)	+(.19)	+(-)
UNEMPLOY	-(-)	-(-)	+(-)	+(-)

III. PARTICIPATION IN EDUCATIONAL AND VOCATIONAL PROGRAMS

A. General Participation Rates

The effect of participation in educational and vocational programs on particular offender types is the subject of this section. We begin by considering the most basic question, does participation in an educational or vocational program have a behavioral effect? The data which address this question appear in Table 5.4. With respect to main effects, the evidence lends no support to the hypothesis that criminal or labor force behavior is favorably affected by these programs. Concerning interaction effects, the only noteworthy EMI variable is PROPRTYD. The data suggest that non-property offenders exposed to educational or vocational training are less likely to recidivate. The control variable data strongly support the hypothesis that educational or vocational training benefits habitual offenders more than neophytes. These programs may also be more beneficial for whites and for non-married individuals.

Participation in educational and vocational training also may be measured as a continuous variable by asking in how many of these educational and vocational programs the individual participated. This measure provides a crude index of the intensity of program treatment. The data relevant to this measure appear in Table 5.5. Using this measure, main effects remain nil. That is, the introduction of interaction regressors does not change the evaluation of the main effect of these programs. However, the table shows that participation in more programs is definitely better for habitual offenders. The table also

TABLE 5.4

PARTICIPATION IN EDUCATIONAL OR VOCATIONAL PROGRAMS:
MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
ED_VOCD	-(-)	-(-)	-(-)	+(-)
EMI Variables				
WRK_HISD	+(-)	+(-)	+(-)	+(-)
JOB_SKLD	-(-)	-(-)	-(-)	+(-)
PROPRTYD	+(.18)	+(.10)	+(.041)	+(.16)
ADMD	+(-)	+(-)	-(-)	+(-)
Control Variables				
AGE	+(-)	-(-)	-(-)	+(-)
EDYEARS	+(-)	-(.13)	-(-)	+(.064)
MARRYD	-(-)	+(-)	+(.039)	-(-)
RACED	+(.021)	+(-)	+(.066)	-(.029)
RELEASED	+(-)	+(-)	+(-)	-(.086)
RULE_BRK	+(-)	+(.20)	-(-)	-(-)
ARR_RATE	-(.015)	-(.007)	-(.006)	+(-)
TIME_IN	+(-)	-(-)	+(-)	+(-)
DETERP	+(-)	+(-)	+(-)	-(-)
UNEMPLOY	-(-)	+(-)	-(.19)	-(-)

Table 5.4 (concluded)

Panel B: Continous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
ED_VOCD	+(-)	+(.10)	+(.13)	+(-)
EMI Variables				
WRK_HISD	+(-)	-(-)	-(-)	+(-)
JOB_SKLD	+(-)	+(.18)	+(.15)	-(.17)
PROPRTYD	+(-)	+(-)	+(-)	-(-)
ADMD	-(-)	+(-)	+(-)	+(-)
Control Variables				
AGE	+(-)	-(.093)	-(.12)	+(-)
EDYEARS	-(-)	+(-)	+(-)	-(-)
MARRYD	-(.091)	-(-)	-(-)	-(-)
RACED	+(-)	-(-)	-(-)	-(.19)
RELEASED	-(-)	-(.10)	-(.088)	-(-)
RULE_BRK	-(-)	-(-)	+(-)	-(-)
ARR_RATE	-(-)	-(.14)	-(.12)	-(-)
TIME_IN	-(-)	-(-)	-(-)	+(-)
DETERP	+(-)	-(.061)	-(.076)	+(-)
UNEMPLOY	-(-)	+(-)	+(-)	+(.10)

TABLE 5.5

NUMBER OF EDUCATIONAL AND VOCATIONAL PROGRAMS:
MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISON (3)	EARND (4)
Main Effect				
ED_VOCN	-(-)	+(-)	+(-)	-(-)
EMI Variables				
WRK_HISD	+(-)	+(-)	+(-)	+(-)
JOB_SKLD	-(-)	-(-)	-(-)	+(.19)
PROPRTYD	+(-)	+(-)	+(.044)	+(-)
ADMD	+(-)	-(-)	-(-)	+(-)
Control Variables				
AGE	+(-)	-(-)	-(-)	+(-)
EDYEARS	+(-)	-(.13)	-(-)	+(.13)
MARRYD	+(-)	+(.064)	+(.012)	+(-)
RACED	+(-)	-(-)	+(-)	-(-)
RELEASED	+(-)	+(-)	+(-)	-(-)
RULE_BRK	+(-)	+(.16)	+(-)	-(.20)
ARR_RATE	-(.031)	-(.087)	-(.028)	+(-)
TIME_IN	+(-)	-(-)	+(-)	-(-)
DETERP	+(-)	+(.12)	+(-)	-(-)
UNEMPLOY	-(-)	-(-)	-(.20)	-(-)

Table 5.5 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
ED_VOCN	-(-)	+(.10)	+(.13)	+(-)
EMI Variables				
WRK_HISD	+(-)	-(-)	-(-)	+(-)
JOB_SKLD	-(-)	+(-)	+(-)	-(-)
PROPRTYD	-(-)	+(-)	+(-)	-(-)
ADMD	+(-)	+(-)	+(-)	+(-)
Control Variables				
AGE	+(-)	-(-)	-(-)	-(-)
EDYEARS	-(-)	+(-)	+(-)	-(.16)
MARRYD	-(.15)	-(-)	-(-)	-(-)
RACED	+(-)	-(-)	-(-)	-(-)
RELEASED	+(-)	-(-)	-(-)	-(-)
RULE_BRK	+(-)	-(-)	-(-)	-(-)
ARR_RATE	-(-)	-(.10)	-(.090)	-(-)
TIME_IN	-(-)	+(-)	+(-)	+(-)
DETERP	+(-)	-(.077)	-(.092)	+(-)
UNEMPLOY	-(-)	-(-)	-(-)	+(.072)

suggests that more participation is better for non-property offenders and non-married persons. We also have the curious result that those offenders who return to regions where crime is more likely to be legally sanctioned tend to be deflected into less serious offenses through more intense programming.

B. Educational Programs

In the foregoing section educational and vocational training were treated as if their separate effects were additive, and that these effects all operated in the same direction. In actuality the one program could have had no effect or could even have tended to cancel out the statistical effect of the other. Hence, analysis of the programs' separate effects is desirable. Table 5.6 considers the question of whether participation in one or more educational programs had beneficial effects. As can be seen from the table, the main effects are nil, as they were in the basic model. However, two significant EMI interaction effects are discernible. First, educational programs seem to be particularly beneficial to persons with good work histories. Second, they seem to especially benefit non-property offenders. In both instances, they seem not to reduce recidivism rates, but they do reduce the severity of the new, recidivistic offenses.

It is also quite clear that habitual offenders are more favorably affected by educational programs than neophyte offenders. Some results, however, appear to be inconsistent. Prison education programs may reduce the recidivism rates of those with more years of education

TABLE 5.6

PARTICIPATION IN EDUCATION PROGRAMS:
MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
EDUCD	-(-)	-(-)	-(-)	+(-)
EMI Variables				
WRK_HISD	-(-)	-(-)	-(-)	+(-)
JOB_SKLD	+(-)	+(-)	+(-)	+(-)
PROPRTYD	+(-)	+(-)	+(.12)	+(-)
ADMD	-(-)	-(-)	+(-)	+(-)
Control Variables				
AGE	-(-)	-(-)	-(-)	+(-)
EDYEARS	+(-)	-(.066)	-(-)	+(-)
MARRYD	-(.10)	-(-)	-(-)	-(-)
RACED	+(-)	+(-)	+(.19)	-(.16)
RELEASED	+(-)	+(-)	+(.072)	-(-)
RULE_BRK	+(-)	+(-)	-(-)	+(-)
ARR_RATE	-(.010)	-(.038)	-(.0008)	+(-)
TIME_IN	-(-)	-(-)	-(-)	-(.012)
DETERP	+(-)	+(.042)	+(-)	-(-)
UNEMPLOY	+(-)	+(-)	+(-)	-(-)

Table 5.6 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
EDUCD	+(-)	+(-)	+(-)	+(-)
EMI Variables				
WRK_HISD	+(-)	-(.003)	-(.002)	-(-)
JOB_SKLD	+(-)	+(.0008)	+(.0006)	-(-)
PROPRTYD	+(-)	-(-)	-(-)	-(-)
ADMD	+(-)	-(-)	-(-)	+(-)
Control Variables				
AGE	+(-)	-(-)	-(-)	+(-)
EDYEARS	-(-)	+(.025)	+(.021)	-(.19)
MARRYD	+(-)	-(.12)	-(.17)	-(-)
RACED	+(-)	-(-)	-(-)	-(-)
RELEASED	+(-)	-(.11)	-(.089)	-(-)
RULE_BRK	+(-)	+(-)	+(-)	+(-)
ARR_RATE	-(-)	-(.18)	-(.13)	+(-)
TIME_IN	-(-)	-(.067)	-(.090)	+(-)
DETERP	+(-)	-(.20)	-(-)	+(-)
UNEMPLOY	-(-)	+(.069)	+(.059)	+(-)

prior to the instant incarceration; but, at the same time, these programs seem to deflect those offenders who had fewer years of education toward less serious offenses. Also, apparently as a result of prison educational programs, those serving longer sentences commit less serious post-prison offenses, but those serving relatively short sentences appear more likely to be gainfully employed. Finally, it appears that prison education programs enhance the likelihood of recidivism of those released under supervision, but reduce the severity of their recidivistic offenses.

We note that those enrolled in educational programs and exiting into high unemployment rate regions tend to commit more serious offenses, but not more offenses. We also note that the only significant interaction between educational programs and labor market performance relates to the number of years of prior formal education.

C. Acquiring a General Education Diploma

A program of special interest is that resulting in the acquisition of a general education diploma. Relatively few individuals obtain a general education diploma during their incarceration. Of the 1105 inmates who had not completed high school and who were, therefore, eligible, only six percent acquired their diploma. The program is of interest because it is voluntary; it has a very specific objective; achievement of this objective ought to be a signal of genuine economic motivation; and its achievement ought to favor its recipient in his post-prison job search. These a priori considerations notwithstanding, it appears from the data of Table 5.7 that the general education

TABLE 5.7

ACQUISITION OF GED:
MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
GEDD	-(-)	+(-)	+(-)	-(-)
EMI Variables				
WRK_HISD	+(-)	-(-)	+(.021)	+(-)
JOB_SKLD	+(.12)	+(-)	-(-)	-(.026)
PROPRTYD	+(-)	-(-)	+(-)	+(-)
ADMD	+(.030)	+(-)	+(.13)	-(.15)
Control Variables				
AGE	-(.041)	-(-)	-(.083)	+(.049)
EDYEARS	+(-)	-(-)	+(-)	+(-)
MARRYD	+(.099)	+(-)	+(-)	-(.15)
RACED	-(-)	+(-)	-(.040)	-(-)
RELEASED	-(-)	-(-)	-(.18)	a
RULE_BRK	+(-)	-(-)	+(-)	-(-)
ARR_RATE	-(.029)	-(-)	-(.064)	+(-)
TIME_IN	+(-)	+(-)	+(.031)	-(-)
DETERP	+(.006)	+(.093)	+(.20)	+(-)
UNEMPLOY	-(-)	-(-)	-(-)	+(-)

Table 5.7 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
GEDD	+(.16)	-(-)	-(-)	+(-)
EMI Variables				
WRK_HISD	-(-)	+(-)	+(-)	-(-)
JOB_SKLD	+(-)	-(-)	-(-)	+(-)
PROPRTYD	-(-)	+(-)	+(-)	-(-)
ADMD	-(-)	+(-)	+(-)	+(-)
Control Variables				
AGE	-(-)	+(-)	+(-)	-(-)
EDYEARS	-(-)	-(-)	-(-)	+(-)
MARRYD	+(-)	-(-)	-(-)	+(-)
RACED	-(-)	+(-)	+(-)	-(-)
RELEASED	+(-)	+(-)	+(-)	a
RULE_BRK	-(-)	-(-)	-(-)	-(-)
ARR_RATE	-(-)	+(-)	+(-)	+(-)
TIME_IN	+(-)	+(-)	+(-)	-(-)
DETERP	-(-)	b	b	+(-)
UNEMPLOY	-(-)	b	b	+(-)

[a]Matrix becomes singular with presence of RELEASED in equation. RELEASED was omitted from regression.

[b]Matrix becomes singular with presence of DETERP and UNEMPLOY in equation. Those two variables were omitted from the regression.

diploma is associated with neither lower recidivism rates nor better job market performance. However, we do note that those with poor work histories and those without an alcohol, drug, or mental health problem are less likely to be reincarcerated, while those with poor job skills are more likely to get a job after acquisition of a general education diploma.

D. Vocational Programs

Table 5.8 is concerned with the effects of participation in vocational training programs. Main effects are nil except for the two measures of offense seriousness, both of which suggest the counter-intuitive and implausible result that vocational training increases the seriousness of recidivistic crime. However, a simple explanation for this phenomenon is available. The data show that those who served longer sentences on the instant incarceration also committed more serious new offenses [The correlation coefficient, r, equals .26 (.0001) between TIME_IN and SERIOUS]. This finding is in accord with the generally accepted hypothesis that those committing more serious offenses commit more serious recidivistic offenses. The data also show that those placed in vocational training programs served significantly longer sentences [r = .24 (.0001)]. Hence, ceteris paribus, those "selected into" vocational training programs can be expected to commit more serious recidivistic offenses.

The treatment by EMI variable interaction effects are of some interest. They support the hypothesis that individuals with poor work histories, when given vocational training, respond favorably with

TABLE 5.8

PARTICIPATION IN VOCATIONAL PROGRAMS:
MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISON (3)	EARND (4)
Main Effect				
VOCATND	+(-)	+(-)	+(-)	-(.17)
EMI Variables				
WRK_HISD	+(.16)	+(.13)	+(.055)	+(-)
JOB_SKLD	-(.13)	-(-)	-(-)	+(-)
PROPRTYD	+(-)	+(.18)	+(.11)	+(-)
ADMD	+(-)	+(.11)	+(-)	+(-)
Control Variables				
AGE	+(-)	-(-)	-(.20)	+(-)
EDYEARS	-(-)	-(-)	-(-)	+(.007)
MARRYD	+(-)	+(.075)	+(.005)	-(-)
RACED	+(-)	+(-)	+(-)	-(-)
RELEASED	+(-)	+(-)	-(-)	-(-)
RULE_BRK	+(-)	+(.15)	-(-)	-(.035)
ARR_RATE	-(.068)	-(.043)	-(.11)	+(.082)
TIME_IN	-(-)	-(-)	-(-)	+(-)
DETERP	+(-)	+(-)	+(-)	-(-)
UNEMPLOY	-(.054)	-(-)	-(.10)	-(-)

Table 5.8 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
VOCATND	-(-)	+(.064)	+(.079)	+(-)
EMI Variables				
WRK_HISD	+(-)	+(.16)	+(.14)	+(-)
JOB_SKLD	-(-)	-(-)	-(-)	-(-)
PROPRTYD	-(-)	+(-)	+(-)	-(-)
ADMD	+(-)	+(.11)	+(.14)	+(-)
Control Variables				
AGE	+(-)	-(.14)	-(.15)	-(-)
EDYEARS	+(-)	-(.19)	-(.20)	-(-)
MARRYD	-(.12)	+(-)	+(-)	-(-)
RACED	+(-)	-(-)	-(-)	-(-)
RELEASED	-(-)	-(-)	-(-)	-(-)
RULE_BRK	+(-)	-(-)	-(-)	-(-)
ARR_RATE	-(-)	-(-)	-(-)	-(-)
TIME_IN	-(-)	+(-)	+(-)	-(-)
DETERP	+(-)	-(-)	-(-)	+(-)
UNEMPLOY	+(-)	-(-)	-(-)	+(-)

respect to future criminal activity. It may also be true that non-property offenders' future criminal activity is favorably influenced.

Of the control variable effects, the most significant finding is that habitual offenders receiving vocational training are less recidivistic and may also be more likely to hold a job after release. On the other hand, those who do not have a history of in-prison rule infractions exhibit better post-prison job performance after vocational training. The data also show that vocational training seems more effective on non-married individuals and may assist individuals with higher levels of education in getting a job.

NOTES - CHAPTER 5

1. Another potential difficulty concerns the use of absolute time to measure time on work release. If the effect of work release increases at a decreasing rate, so that adding one month to a two month work release stint has more effect than adding one month to a two year stint, then chronological time provides an inappropriate measure.

2. An alternative method of analysis is use of Tobit techniques for truncated distributions.

3. It is important to emphasize, however, that the magnitudes of the coefficients are not appreciably affected. For example, with and without the interaction terms, the regressions show that an additional 100 days on work release reduces the probability of a return to prison by 12 and 15 percent, respectively.

CHAPTER 6

THE INTERACTION EFFECTS OF OTHER TREATMENTS

In this chapter we consider the relation of post-prison behavior to treatments whose income-enhancing effects may be supposed to be less significant.

I. PRISON WORK PROGRAMS

Two general types of prison work programs are considered: duty programs, which involve maintenance and repair functions directed at correctional or other state activities, and prison enterprise programs, which involve the production of commodities for sale or use within state agencies. A priori, one can adduce benefical behavioral effects from participation in prison work programs. These programs are an in-prison analogue of work release. Participation in these programs can instill steady work habits and can lead to skill development. Although inmates customarily do not receive pay for prison labor, they often earn pay in kind, in the form of "good time" credit. Thus, these programs often embody a compensation system for services performed. Coupled with these positive factors, whose effect—if there is an effect—is to improve productivity and enhance the subject's willingness to work, is another factor of potential significance. It may be that prison work functions as an instrument of specific deterrence. If the subject finds prison labor distasteful, perhaps interpreting this labor as part of the sanction for his misconduct, then he may

respond by avoiding a repetition of the behavior which resulted in the instant incarceration.

Counterbalancing these arguments, which maintain that prison labor produces favorable post-prison outcomes, are arguments which maintain that prison labor has unfavorable consequences. It may be, for example, that prison labor inculcates poor work habits and makes the holding of a civilian job more difficult. Prison labor differs significantly from its civilian counterpart. The pace is much slower, the supervision more concerned with security and other administrative functions than with productivity, the "enterprise" itself lacks the strong profit and loss incentives that drive the enterprise to seek higher performance levels from its workers, and the workers lack the incentive and industrial discipline found in the private sector's work place. Thus, a prisonization effect of some consequence may develop, manifesting itself in attitudes and expectations inimical to holding a job and advancing in that job. After release, confronted by the requirements of a typical civilian job, the subject may resist and/or resent the unaccustomed demands placed on him in the work place.

Thus, a priori, one may adduce the alternative hypotheses that prison work programs promote or discourage favorable post-prison behavior. The next four data tables permit evaluation of these alternative hypotheses.

A. General Effects of Prison Labor

We first ask whether participation in one or more work programs has post-prison effects. Table 6.1 is concerned with this issue.

TABLE 6.1
PARTICIPATION IN A PRISON LABOR PROGRAM:
MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
WRK_PGMD	+(-)	+(-)	+(-)	-(-)
EMI Variables				
WRK_HISD	-(.027)	-(-)	-(-)	+(-)
JOB_SKLD	-(.047)	-(-)	-(-)	+(.023)
PROPRTYD	+(-)	+(-)	+(.16)	+(.15)
ADMD	-(.004)	-(.055)	-(.078)	+(-)
Control Variables				
AGE	+(.090)	+(-)	+(-)	-(.19)
EDYEARS	+(-)	+(-)	-(-)	+(-)
MARRYD	+(-)	+(.14)	+(-)	+(-)
RACED	-(.070)	+(-)	-(-)	+(-)
RELEASED	-(-)	-(.043)	-(-)	+(-)
RULE_BRK	+(.046)	+(-)	+(-)	-(-)
ARR_RATE	-(-)	+(-)	+(-)	+(-)
TIME_IN	-(-)	-(-)	-(.019)	+(.064)
DETERP	+(-)	-(-)	-(-)	+(.044)
UNEMPLOY	-(-)	-(-)	+(-)	-(-)

Table 6.1 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
WRK_PGMD	-(-)	+(-)	+(-)	+(.018)
EMI Variables				
WRK_HISD	+(-)	-(-)	-(-)	+(-)
JOB_SKLD	+(-)	+(-)	+(-)	+(-)
PROPRTYD	-(-)	-(-)	-(-)	-(-)
ADMD	+(-)	+(-)	+(-)	+(-)
Control Variables				
AGE	-(-)	-(.12)	-(.17)	-(-)
EDYEARS	-(-)	+(.086)	+(.13)	-(.037)
MARRYD	+(-)	-(-)	+(-)	-(.15)
RACED	-(-)	-(-)	-(-)	-(-)
RELEASED	-(-)	-(-)	-(-)	-(-)
RULE_BRK	+(-)	+(.17)	+(.16)	+(-)
ARR_RATE	+(-)	-(-)	-(-)	-(-)
TIME_IN	+(-)	-(.031)	-(.032)	-(-)
DETERP	+(-)	-(.12)	-(.16)	-(.098)
UNEMPLOY	+(.20)	-(-)	-(-)	-(-)

The data indicate that work programs do not increase the likelihood of holding a job, but they do enhance the post-prison earnings of those who are working. Evidently, these programs enhance worker productivity, possibly through improved work habits or because job skills are improved. However, these programs apparently do not affect recidivism rates.

Several of the interaction effects deserve notice. Very clearly, persons with alcohol, drug, or mental health problems are much less likely to recidivate if placed in prison labor programs. The same is true of those with good work histories and of those with better job skills. In addition, the latter are also more likely to be gainfully employed.

Among the offender control characteristics, the implication of these data is that prison work programs are most beneficial for those serving longer sentences. Both criminal and labor market behavior are favorably affected. These programs are also more beneficial for those who commit fewer in-prison rule infractions; and, perhaps, for those destined for supervised release. Finally, those with more formal education seem to be more likely to find and/or hold a job if they have had prison work program experience.

Does it matter how many labor programs the subject participated in? This question is addressed in Table 6.2. Concerning main effects, the data indicate that more participation is better in the sense that earnings are thereby increased. Evidently, the positive productivity effect of prison labor is enhanced by greater program participation.

Interaction effects associated with more intense treatment disappear except for two offender characteristics. Those with more

TABLE 6.2
NUMBER OF PARTICIPATIONS IN PRISON WORK PROGRAMS:
MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
WRK_PGMN	-(-)	-(-)	-(-)	-(-)
EMI Variables				
WRK_HISD	-(-)	+(-)	+(-)	-(-)
JOB_SKLD	-(-)	+(.20)	+(-)	+(.11)
PROPRTYD	+(-)	+(-)	+(-)	+(-)
ADMD	-(.10)	-(-)	-(.18)	+(-)
Control Variables				
AGE	+(-)	+(-)	-(-)	-(-)
EDYEARS	+(-)	+(-)	+(-)	+(-)
MARRYD	+(.15)	+(.16)	+(-)	+(-)
RACED	-(-)	+(-)	+(-)	+(-)
RELEASED	-(-)	-(-)	-(-)	+(-)
RULE_BRK	+(.024)	+(.050)	+(-)	-(.15)
ARR_RATE	-(-)	+(.19)	+(-)	+(-)
TIME_IN	+(-)	+(.094)	+(-)	+(.15)
DETERP	+(.14)	+(-)	-(-)	+(-)
UNEMPLOY	-(.17)	-(-)	-(-)	+(-)

Table 6.2 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
WRK_PGMN	-(.18)	+(.19)	+(-)	+(.045)
EMI Variables				
WRK_HISD	-(-)	-(-)	-(-)	+(-)
JOB_SKLD	+(-)	+(-)	+(-)	+(-)
PROPRTYD	-(-)	-(.15)	-(-)	+(-)
ADMD	-(-)	+(-)	+(-)	+(-)
Control Variables				
AGE	-(-)	-(.096)	-(.14)	+(-)
EDYEARS	+(-)	+(-)	+(-)	-(.028)
MARRYD	+(-)	+(-)	+(-)	-(-)
RACED	+(-)	+(-)	+(-)	+(-)
RELEASED	-(-)	+(-)	+(-)	-(-)
RULE_BRK	+(-)	+(-)	+(-)	+(-)
ARR_RATE	+(.15)	-(-)	-(-)	-(-)
TIME_IN	-(-)	-(-)	-(.11)	-(.071)
DETERP	+(-)	-(.10)	-(.12)	-(.091)
UNEMPLOY	+(-)	+(-)	+(-)	-(-)

formal education benefit from greater exposure to prison labor, as do those who are more well behaved in prison.

B. Prison Industry Effects

In Table 6.3 we consider the effects of participation in prison industry programs. The data indicate that participation in prison industry programs neither reduces recidivism rates nor enhances labor market performance. These programs appear to interact significantly with only one EMI characteristic: JOB_SKLD. Evidently, those with poor job skills experience an increase in earnings because of participation in this type of prison work program. There is also the possibility that those with good work histories are differentially benefitted by these programs.

There is the suggestion in the data that non-married persons benefit from these programs in that their recidivism rates are lowered. It also appears that these programs are best for those who have in-prison disciplinary problems in that their earnings seem to improve differentially by virtue of participation in these programs.

C. Prison Duty Programs

The effects of prison duty programs are considered in Table 6.4. Evidently, participation in these programs does not effect a reduction in recidivism rates, nor does it increase the rate of participation in the labor force. However, the data strongly suggest that these programs increase inmate earnings after release.

TABLE 6.3

PARTICIPATION IN PRISON INDUSTRY PROGRAMS:
MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISON (3)	EARND (4)
Main Effect				
WRK_PID	-(-)	-(-)	-(-)	+(-)
EMI Variables				
WRK_HISD	+(-)	-(-)	-(-)	-(-)
JOB_SKLD	+(-)	+(-)	+(-)	+(-)
PROPRTYD	+(-)	-(-)	+(.16)	-(-)
ADMD	+(-)	+(-)	+(-)	-(-)
Control Variables				
AGE	-(.13)	-(-)	-(.13)	+(-)
EDYEARS	+(-)	+(-)	+(.15)	-(-)
MARRYD	+(-)	+(.057)	+(.052)	-(-)
RACED	+(-)	+(-)	+(-)	-(-)
RELEASED	-(-)	+(-)	+(-)	-(-)
RULE_BRK	+(-)	-(-)	+(-)	-(.12)
ARR_RATE	+(-)	+(.089)	-(-)	+(-)
TIME_IN	-(-)	+(-)	+(-)	-(-)
DETERP	+(-)	+(.084)	+(-)	+(-)
UNEMPLOY	+(-)	-(-)	-(-)	-(-)

Table 6.3 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
WRK_PID	+(-)	+(-)	+(-)	-(-)
EMI Variables				
WRK_HISD	+(-)	+(-)	+(-)	+(.073)
JOB_SKLD	-(-)	-(-)	-(-)	-(.023)
PROPRTYD	+(-)	-(-)	-(-)	+(.16)
ADMD	+(-)	+(-)	+(-)	-(.16)
Control Variables				
AGE	-(-)	+(-)	-(-)	+(.12)
EDYEARS	-(-)	+(-)	-(-)	-(-)
MARRYD	+(-)	+(-)	+(-)	-(-)
RACED	+(.060)	-(-)	-(-)	+(-)
RELEASED	-(-)	+(-)	+(-)	+(.20)
RULE_BRK	+(.093)	+(-)	+(-)	+(.038)
ARR_RATE	-(.18)	+(-)	+(-)	+(-)
TIME_IN	-(-)	+(-)	+(-)	-(.077)
DETERP	-(.091)	+(-)	+(-)	-(-)
UNEMPLOY	+(.092)	-(.20)	-(-)	-(-)

TABLE 6.4

PARTICIPATION IN PRISON DUTY PROGRAMS:
MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
WRK_POD	-(-)	+(-)	+(-)	-(-)
EMI Variables				
WRK_HISD	-(.030)	-(-)	-(-)	+(-)
JOB_SKLD	-(.086)	-(-)	-(-)	+(.036)
PROPRTYD	+(-)	+(-)	+(-)	+(.14)
ADMD	-(.006)	-(.022)	-(.032)	+(-)
Control Variables				
AGE	+(.11)	+(-)	+(-)	-(.16)
EDYEARS	+(-)	-(-)	-(-)	+(-)
MARRYD	+(-)	+(-)	+(-)	+(-)
RACED	-(.15)	-(-)	-(-)	+(-)
RELEASED	-(-)	-(.022)	-(-)	+(-)
RULE_BRK	+(.034)	+(.088)	+(-)	-(-)
ARR_RATE	-(-)	-(-)	+(-)	-(-)
TIME_IN	-(-)	+(-)	-(.13)	+(.11)
DETERP	+(-)	-(-)	+(-)	+(.081)
UNEMPLOY	-(-)	-(-)	-(-)	-(-)

Table 6.4 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
WRK_PDD	-(-)	+(-)	+(-)	+(.005)
EMI Variables				
WRK_HISD	+(-)	-(-)	-(-)	+(-)
JOB_SKLD	+(-)	+(-)	+(-)	+(-)
PROPRTYD	-(-)	-(-)	-(-)	-(-)
ADMD	+(-)	+(-)	+(-)	-(-)
Control Variables				
AGE	-(-)	-(.056)	-(.087)	-(-)
EDYEARS	-(-)	+(.16)	+(-)	-(.019)
MARRYD	+(-)	+(-)	+(-)	-(.090)
RACED	-(-)	+(-)	+(-)	-(-)
RELEASED	-(-)	-(-)	-(-)	-(-)
RULE_BRK	-(-)	+(-)	+(-)	+(-)
ARR_RATE	+(-)	-(-)	-(-)	-(-)
TIME_IN	+(-)	-(.011)	-(.010)	-(.12)
DETERP	+(.14)	-(.12)	-(.16)	-(.043)
UNEMPLOY	+(.12)	+(-)	+(-)	-(.066)

Prison duty programs are closely related to offender EMI characteristics. Those with good work histories, and especially those with alcohol, drug, or mental health problems have lower recidivism rates after participation in prison duty programs. In addition, those with good job skills are more likely to be gainfully employed, and may, as well, have lower recidivism rates as a result of participation in these programs.

The noteworthy offender control characteristics are these: prison duty programs appear to enhance the earnings of individuals with less formal education and those who exit into regions in which offenders are more likely to be legally sanctioned. These programs also seem to be better suited for offenders who have fewer in-prison rule infractions and for those serving longer sentences. The former seem to experience lower recidivism rates, the latter a shift toward less serious offenses.

II. PARTICIPATION IN PRAC

Main effects related to PRAC are not significant. Indeed, aside from EARND, the signs of the coefficients of PRACD are perverse, and that for CONVICTD approaches significance at conventional levels (Table 6.5). There are no significant interactions between PRAC and the EMI variables. Among control variables we note one significant pattern: viz., the coefficients for the CONVICTD variable are often significant, but not those for the other recidivism coefficients. This pattern is in accord with the contrasting results for the conviction main effect

TABLE 6.5

PARTICIPATION IN PRAC: MAIN AND INTERACTION EFFECTS: SUPERVISED RELEASE SAMPLE

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
PRACD	+(-)	+(.098)	+(-)	+(-)
EMI Variables				
WRK_HISD	+(-)	+(-)	+(-)	+(-)
JOB_SKLD	+(-)	+(-)	-(.15)	-(-)
PROPRTYD	+(-)	+(-)	-(.15)	+(-)
ADMD	-(-)	-(-)	+(-)	+(-)
Control Variables				
AGE	+(-)	-(-)	-(-)	-(-)
EDYEARS	-(-)	-(-)	-(-)	+(-)
MARRYD	-(.082)	-(.036)	-(.10)	+(-)
RACED	-(-)	-(.002)	-(-)	-(-)
RULE_BRK	-(-)	-(.012)	-(-)	-(-)
ARR_RATE	-(-)	+(-)	-(-)	-(-)
TIME_IN	-(-)	+(.023)	-(-)	+(-)
DETERP	-(-)	-(-)	-(-)	-(-)
UNEMPLOY	+(-)	-(-)	+(-)	+(-)

Table 6.5 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
PRACD	+(-)	+(.070)	+(.089)	-(-)
EMI Variables				
WRK_HISD	-(-)	+(-)	+(-)	+(-)
JOB_SKLD	-(-)	-(-)	-(-)	+(-)
PROPRTYD	-(-)	-(-)	-(-)	+(-)
ADMD	+(-)	+(-)	+(-)	-(.18)
Control Variables				
AGE	-(-)	-(.16)	-(-)	+(.20)
EDYEARS	-(-)	-(-)	-(-)	-(-)
MARRYD	+(-)	-(-)	-(-)	-(-)
RACED	+(.092)	-(-)	-(-)	+(-)
RULE_BRK	+(-)	-(-)	-(-)	+(-)
ARR_RATE	-(.061)	+(-)	+(-)	+(-)
TIME_IN	-(-)	-(-)	+(-)	+(-)
DETERP	-(-)	-(-)	-(-)	-(-)
UNEMPLOY	+(-)	-(-)	-(-)	-(-)

vis-à-vis that for arrest and imprisonment. This pattern may be the result of the following mechanism.

Suppose first that the program tends to include poorer risks. This would explain the positive coefficients for the recidivism and the EARNINGs coefficients. Second, suppose that the program tends to include individuals who have committed more serious offenses. This would explain the higher significance level for CONVICTD relative to ARRESTD and the fact that the coefficients of SERIOUS and CHANGE are significant. Finally, suppose that the program operates as follows: A releasee is arrested for a new offense, an arrest is made, and the PRAC authority having jurisdiction over the releasee is notified. In response to particular offender characteristics, the authority intervenes and frequently succeeds in having the charges dropped, in exchange for which the offender is returned to prison for a "technical violation." This would explain the significant results for CONVICTD and the lack of significance for the PRISOND variable.

This set of assumptions would explain why married persons, blacks, those who had relatively more in-prison rule infractions, and those serving relatively short sentences are not distinguishable from their counterparts with respect to arrest and imprisonment, but do have significantly lower conviction rates. In effect, so the hypothesis goes, the program selectively intervenes on behalf of certain recidivists, transforming their new offenses into technical violations.

III. PARTICIPATION IN DRUG, ALCOHOL, OR MENTAL HEALTH PROGRAMS

A. General Effects

In this section we treat alcohol, drug, and mental health programs as a composite treatment strategy. The data relating to this treatment category are presented in Table 6.6. The data definitely support the hypothesis that these programs reduce recidivism rates. We note, however, that the effect is confined to relatively minor new infractions--those that might have necessitated an arrest but which were less likely to result in a conviction--perhaps because the charges were dropped, the offender being referred to a community alcohol or drug treatment program in lieu of the pressing of charges. We also note that the program had no effect on labor market performance.

Concerning the first three EMI characteristics, no discernable interaction effect is evident. Concerning the fourth EMI variable, one might have expected those having a history of alcohol, drug, or mental health problems to display a significant interaction with programs designed for individuals with such characteristics. Table 6.6 hardly supports this expectation. There is, indeed, a suggestion that those with recorded alcohol, drug, or mental health problems who have been placed in an alcohol, drug, or mental health program have fewer rearrests and are more likely to be employed. However, these individuals seem to commit more serious new offenses.

Concerning offender control characteristics, these particular interactions deserve comment: there is a suggestion in the data that habitual offenders who participate in an alcohol, drug, or mental

TABLE 6.6

PARTICIPATION IN AN ALCOHOL, DRUG, OR MENTAL HEALTH PROGRAM:
MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISON (3)	EARND (4)
Main Effect				
ADM_PGMD	-(.005)	-(.048)	-(.061)	-(-)
EMI Variables				
WRK_HISD	-(-)	-(-)	-(-)	-(-)
JOB_SKLD	+(.16)	+(-)	+(.18)	-(-)
PROPRTYD	+(-)	+(-)	+(-)	+(-)
ADMD	-(.066)	+(-)	-(-)	+(.031)
Control Variables				
AGE	+(-)	+(-)	+(-)	-(-)
EDYEARS	+(-)	+(.17)	+(.091)	-(-)
MARRYD	-(.089)	-(-)	-(-)	+(-)
RACED	-(-)	-(.16)	-(-)	+(.17)
RELEASED	+(-)	+(-)	+(.18)	+(.10)
RULE_BRK	+(.048)	+(-)	+(.077)	-(-)
ARR_RATE	+(-)	-(-)	-(.13)	-(.027)
TIME_IN	+(-)	-(-)	-(-)	-(-)
DETERP	+(.011)	+(.063)	+(.20)	-(-)
UNEMPLOY	+(.18)	+(-)	+(-)	+(-)

Table 6.6 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
ADM_PGMD	-(.026)	+(-)	+(-)	-(-)
EMI Variables				
WRK_HISD	+(-)	+(-)	+(-)	+(-)
JOB_SKLD	-(-)	-(-)	+(-)	-(-)
PROPRTYD	+(.10)	-(-)	-(-)	-(-)
ADMD	-(-)	+(.042)	+(.037)	+(-)
Control Variables				
AGE	+(.16)	-(.20)	-(-)	+(-)
EDYEARS	+(-)	-(-)	-(-)	+(-)
MARRYD	+(-)	-(-)	-(-)	-(-)
RACED	-(-)	+(-)	+(-)	-(-)
RELEASED	+(-)	+(-)	+(-)	+(-)
RULE_BRK	-(-)	-(-)	-(-)	+(-)
ARR_RATE	+(.015)	-(-)	-(-)	-(-)
TIME_IN	+(-)	-(.16)	-(.11)	+(-)
DETERP	+(-)	+(-)	+(-)	+(-)
UNEMPLOY	+(-)	-(-)	-(-)	+(-)

health program remain free of arrest for a longer time, though their recidivism rate is no lower, and their likelihood of being gainfully employed is lower. The data also suggest that these programs are differentially beneficial for those who had relatively few in-prison rule infractions and for those who exited into regions in which the likelihood of being legally sanctioned for a new offense was lower.

B. Alcohol Treatment Programs

In an effort to isolate particular program effects, we undertook a special analysis of alcohol treatment programs. To preserve symmetry and sharpen the focus of the analysis, we consider a revised regression model in which post-prison outcomes are hypothesized to be a function of EMI and control variables, alcohol treatment, and the interaction of treatment and the EMI and control variables, except that ADMD is replaced by ALCHD as an EMI variable. The replacement allows consideration of the interaction between alcohol rehabilitation and identified alcoholics, rather than between alcohol rehabilitation and a cohort consisting of identified substance abusers and persons with psychological disorders. Table 6.7 presents the regression results relating to alcohol treatment.

The data support the hypothesis that treatment for alcohol abuse reduces recidivism rates but does not support the hypothesis that treatment improves labor market performance. In contrast to main effects, interaction effects are relatively weak. None of the EMI variables displays significant interactions. It is especially noteworthy that alcohol rehabilitation programs do not seem to have any

TABLE 6.7

PARTICIPATION IN AN ALCOHOLIC TREATMENT PROGRAM: MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
Main Effect				
ALC_PGMD	-(.015)	-(.037)	-(.036)	+(-)
EMI Variables				
WRK_HISD	-(-)	-(-)	-(-)	-(-)
JOB_SKLD	+(.17)	+(-)	+(.18)	+(-)
PROPRTYD	+(-)	+(-)	+(-)	+(-)
ALCHD	-(.14)	+(-)	-(-)	+(-)
Control Variables				
AGE	+(-)	+(-)	+(-)	-(-)
EDYEARS	+(-)	+(.16)	+(.033)	-(.19)
MARRYD	-(.050)	-(-)	-(.066)	+(.17)
RACED	-(-)	-(-)	-(-)	+(.19)
RELEASED	+(-)	+(-)	+(.20)	+(.18)
RULE_BRK	+(-)	+(-)	+(-)	+(-)
ARR_RATE	+(-)	-(-)	-(.055)	-(.076)
TIME_IN	-(-)	-(-)	-(.090)	-(-)
DETERP	+(.014)	+(.008)	+(.042)	-(-)
UNEMPLOY	+(.16)	+(-)	+(-)	+(-)

Table 6.7 (concluded)

Pane B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
ALC_PGMD	-(.093)	+(-)	+(-)	+(-)
EMI Variables				
WRK_HISD	+(-)	+(-)	-(-)	+(-)
JOB_SKLD	-(-)	-(-)	-(-)	-(-)
PROPRTYD	+(-)	-(-)	-(-)	-(-)
ALCHD	-(-)	+(-)	+(-)	+(-)
Control Variables				
AGE	+(.069)	-(-)	-(-)	-(-)
EDYEARS	+(-)	-(-)	-(-)	-(-)
MARRYD	+(-)	+(-)	+(-)	-(-)
RACED	-(-)	+(-)	+(-)	-(-)
RELEASED	+(-)	+(-)	+(-)	+(-)
RULE_BRK	-(-)	+(-)	+(-)	-(-)
ARR_RATE	+(.022)	+(-)	+(-)	-(-)
TIME_IN	+(-)	-(-)	-(-)	+(-)
DETERP	+(-)	+(-)	+(-)	+(-)
UNEMPLOY	+(-)	-(-)	-(-)	+(-)

special recidivistic effect upon persons identified as having a drinking problem, though the programs do seem to increase the likelihood that these persons will be gainfully employed. This lack of influence on post-prison criminal behavior would appear to be inconsistent with the finding noted above that, generally speaking, treatment for alcohol abuse does reduce recidivism. However, the inconsistency may be more apparent than real. Either of two mechanisms, were they to be operative, would resolve the inconsistency. First, it may be that alcohol rehabilitation programs do, indeed, reduce recidivism, but that many of the persons in these programs who were favorably affected may not have been identified as having had a drinking problem. A cross-tabulation of the data indicates that 50 percent of the 144 persons who participated in a treatment program had not been identified as having a drinking problem. At the same time, 83 percent of the 418 who alleged a drinking problem were never enrolled in an alcohol treatment program. Thus, the relation between having a reported drinking problem and being treated for alcoholism is quite loose. This highly imperfect match could explain the failure of the regression model to detect an interaction effect.

The apparent inconsistency can be explained by a second mechanism. It may be that, in actuality, alcohol rehabilitation has no recidivistic effect. The observed favorable effect on recidivism may simply derive from selection bias. Individuals predisposed toward recidivism may avoid the program. Or, perhaps, individuals who are less likely to recidivate may choose to enter the program. Or, the Department of Correction may "volunteer" such persons into the program for reasons not closely related to a true alcohol problem. This particular

selection bias is all the more possible if, as seems likely, the identification of persons with a genuine drinking problem is fraught with error.

Of the interaction effects which operate through control variables, we observe that the program seems to help those who are not married and those with less education; it seems to extend the time that individuals with longer criminal records remain free of further criminal justice contacts, and reduces their chance of recidivating; and it may improve job performance among those persons whom we categorize as neophyte offenders. Finally, it appears that individuals exposed to the program and who exit into regions where the probability of legal sanctions for new offenses is low tend to be less recidivistic.

IV. MULTIPLE PROGRAM PARTICIPATION

The question addressed in this last section is whether exposure to more than one type of program has beneficial post-prison effects. To assess the effect of multiple participations, we have created a synthetic variable which identifies five treatment types and assigns equal weight to participation in each of these categories of treatment. The treatment categories are: work release, education and vocational training, prison labor, PRAC, and alcohol, drug, or mental health rehabilitation. Thus, the value of the index has a range from zero to five. The data addressing the issue of multiple participations appears in Table 6.8.

TABLE 6.3

AGGREGATE PROGRAM PARTICIPATION: MAIN AND INTERACTION EFFECTS

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISON (3)	EARND (4)
Main Effect				
ALL_PGMN	-(-)	+(-)	-(-)	-(-)
EMI Variables				
WRK_HISD	-(.085)	-(-)	-(-)	-(-)
JOB_SKLD	-(-)	-(-)	-(-)	+(.18)
PROPRTYD	+(-)	+(.15)	+(.099)	+(.12)
ADMD	-(.027)	-(-)	-(.12)	+(.011)
Control Variables				
AGE	+(-)	-(-)	-(-)	-(.092)
EDYEARS	-(-)	-(-)	+(-)	+(.090)
MARRYD	-(.14)	-(-)	+(-)	+(-)
RACED	+(-)	-(-)	-(-)	-(-)
RELEASED	-(-)	-(-)	-(-)	-(-)
RULE_BRK	+(.028)	+(-)	+(-)	-(.030)
ARR_RATE	-(.18)	-(.091)	-(.11)	-(-)
TIME_IN	-(-)	-(-)	-(-)	+(-)
DETERP	+(.007)	+(.086)	+(-)	+(-)
UNEMPLOY	-(-)	-(-)	-(-)	-(-)

Table 6.8 (concluded)

Panel B: Continuous Dependent Variables

Variable	TIME OUT (5)	SERIOUS (6)	CHANGE (7)	EARNINGs (8)
Main Effect				
ALL_PGMN	-(-)	+(.014)	+(.021)	+(-)
EMI Variables				
WRK_HISD	-(-)	+(-)	+(-)	+(-)
JOB_SKLD	+(-)	+(-)	+(-)	+(-)
PROPRTYD	-(-)	-(-)	-(-)	-(-)
ADMD	-(-)	+(.031)	+(.028)	+(-)
Control Variables				
AGE	+(-)	-(.003)	-(.005)	+(-)
EDYEARS	-(-)	+(-)	-(-)	-(-)
MARRYD	+(-)	-(-)	-(-)	-(.073)
RACED	+(-)	+(-)	+(-)	-(.20)
RELEASED	+(.16)	-(-)	-(-)	-(-)
RULE_BRK	+(-)	-(-)	+(-)	+(-)
ARR_RATE	+(-)	-(.16)	-(.18)	-(-)
TIME_IN	+(-)	-(.12)	-(.078)	+(-)
DETERP	+(-)	-(.049)	-(.057)	-(-)
UNEMPLOY	+(-)	-(-)	-(-)	+(-)

Main effects are nil, except for the finding that those with more treatment variety (and possibly more treatment intensity) tend to commit more serious offenses. We would be inclined to ascribe this otherwise implausible result to selection bias, and would infer from the result that the Department of Correction targets more varied and intensive treatment to those offenders whom the Department regards as being, potentially, the most serious repeat offenders.

Concerning interaction effects, we note that those inmates who have reported an alcohol, drug, or mental health problem are more likely to hold a job and are less likely to recidivate if given a variety of treatments; but, if they do recidivate, they, too, tend to commit more serious offenses. We also note that more programming appears to benefit older inmates, deflecting them away from more serious offenses, inmates who are relatively well behaved in prison, and those exiting into regions where there is less likelihood of rearrest for the commission of a new offense.

CHAPTER 7

SUMMARY, FURTHER ANALYSIS, AND CONCLUSIONS

This chapter serves three functions. First, the findings reported in the preceding chapters are reviewed, particularly with regard to developing substantive policy conclusions. Second, the effects on the research findings of decisions made regarding the inclusion and exclusion of specific variables are discussed. Because model estimation proceeded on the basis of ordinary least squares, and because certain decisions were made concerning variables included and excluded from regression models, the sensitivity of the reported results to variations in model specification and estimation procedure are evaluated. Finally, the chapter addresses policy issues related to research findings.

I. SUMMARY OF FINDINGS

A summary of the principal empirical results of the research presented in this section serves as a vehicle for the subsequent policy-oriented analysis. The effects of treatment on recidivism and employment are examined by means of discussion of the interactions between specific treatments and background variables.

A. Interactions Involving Recidivistic Outcomes

The summary data relating treatment to recidivism appear in Table 7.1. Table 7.1 summarizes significant interactions between treatment

Table 7.1

SUMMARY OF SIGNIFICANT TREATMENT * RECIDIVISM INTERACTION EFFECTS*

Treatment	Main Effect	WRK_ HISD	JOB_ SKLD	PROP_ RTYD	ADMD	AGE	EDYEARS	MARRYD	RACED	RELEASED	RULE_ BRK	ARR_ RATE	TIME_ IN
WRK_RELD		-(.01)		-a(.05)	-(.05)				+(.05)		+(.05)	+(.05)	
WRK_RELTs													+(.05)
ED_VOCD				+(.05)				+(.05)	+(.05)			-(.01)	
ED_VOCN				+(.05)				+(.05)				-(.05)	
EDUCD		-b(.01)	+b(.01)				+b(.05)					-(.01)	
VOCATND								+(.01)				-(.05)	
GEDD		+(.05)			+(.05)	-(.05)			-(.05)			-(.05)	+(.05)
WRK_PGMD		-(.05)	-(.05)		-(.01)					-(.05)	+(.05)		-(.05); -b(.05)
WRK_PGMN											+(.05)		
WRK_PID													
WRK_PDD		-(.05)			-(.01)					-(.05)	+(.05)		-b(.05)
PRAC								-(.05)	-(.01)		-(.05)		+(.05)
ADM_PGMD	-(.01)				+b(.05)						+(.05)		-a(.05)
ALC_PGMD	-(.05)						+(.05)	-(.05)					+a(.05)
ALL_PGMN	+b(.05)				-(.05); +b(.05)	-b(.01)					+(.05)		

*Recidivism significance level is the maximum significance level of [ARRESTD, CONVICTD, PRISOND], unless coefficient sign is followed by an "a" or "b". If "a", the variable referred to is TIME_OUT; if "b", the maximum of [SERIOUS, CHANGE].

and a modified set of EMI and control variables. The modification consists of the deletion of two of the control variables. Results pertaining to DETERP have been deleted from the table because interactions involving DETERP have neither immediate nor substantive policy significance. While a department of correction may deliberately direct programmatic effort toward inmates possessing specified criminal history, demographic, or socioeconomic characteristics, arguing that such policy is plausible because these characteristics have theoretical linkages to behavioral outcomes for specific offender types, the same justification cannot be advanced to support the targeting of programs toward offenders who will exit into regions where the offender is more likely to be rearrested should he commit a new offense. We can discover no plausible reason that would make sense to practitioners to support such a policy.[1] The second deletion is the variable UNEMPLOY. The results for this variable do not appear in the table because none of its interactions with treatment measures achieves the minimum five percent significance level.

We have also modified the set of treatment variables. WRK_RELTa, the more inclusive measure of time spent on work release, has been deleted. This is done because the research findings regarding the relation of this variable to recidivism are similar to WRK_RELTs.

Three different measures of the recidivism rate have been used in the foregoing analysis: ARRESTD, CONVICTD, and PRISOND. These three rate measures were supplemented with three measures concerned with particular features of recidivism. These latter measures are: TIME_OUT, SERIOUS, and CHANGE. We begin our summary by considering significant interactions involving the three rate measures.

We define a significant interaction as one in which the relation of a variable to at least one of the three recidivism rates is statistically significant at either the one or the five percent level. For each combination of a treatment measure and one of the EMI or control characteristics, Table 7.1 indicates whether one or more of the three recidivism rate coefficients was significant. Where a significant coefficient was discovered, it is reported in a format which indicates the signs of the three coefficients[2] and their significance levels. To illustrate: Table 5.1 reported a significant and negative interaction effect between participation in work release and having a good work history with respect to post-prison arrests. The interaction was significant at the .005 level. In Table 7.1 this finding is reported at the intersection of WRK_RELD and WRK_HISD and is assigned the value -(.01). That is, the data in the latter table indicate that WRK_RELD interacts inversely with WRK_HISD to reduce the recidivism rate.[3]

Based on the tabular data of the two preceding chapters, and using the reduced set of fifteen treatment measures and twelve EMI and control measures, 45 significant interactions involving the recidivism rate are identified. Probability theory demonstrates that the occurrence of 45 significant interactions is, itself, statistically significant and is not a statistical artifact. This assertion is based on the following reasoning.

Table 7.1 reports any interaction which is significant at the five percent level. Given three recidivistic outcomes, twelve offender characteristics, and fifteen treatment measures, chance variation would produce an average of 25.7 significant interactions involving the recidivism rate. In fact, we observe 45 interactions. This difference

is, itself, statistically significant at the 0.001 level.[4] We reject the hypothesis that there are no effective treatment and offender matchings. We infer that we have, indeed, observed specific instances in which treatment successfully interacted to produce more favorable recidivism rate outcomes than those obtained, on average, for the entire treated population.

Results pertaining to the three subsidiary recidivism outcomes also appear in the table. When a significant interaction effect was discovered involving one of these outcomes, it is indicated in a format similar to that just described, except for the inclusion of an alphabetic character between the sign of the coefficient and its significance level. The character signifies to which outcome reference is made. An "a" indicates TIME_OUT; a "b", either SERIOUS or CHANGE. Thus, from Table 5.6 we note that individuals with fewer job skills who recidivate tend to commit less serious new offenses when placed in educational programs. The coefficients of SERIOUS and CHANGE are significant at the 0.0008 and 0.0006 levels, respectively. In Table 7.1, at the intersection of EDUCD and JOB_SKLD, this finding is recorded as a +b(.01); i.e., lesser job skills are associated with less serious offenses, given that the individual participated in a prison education program. Based on the tabular data of the preceding two chapters, and using the selected fifteen treatments and twelve EMI and control variables, twelve significant interactions are identified which involve either a change in the length of time which elapses between release and a new arrest or a change in the seriousness of new, recidivistic offenses.

The results of Table 7.1 may be summarized as follows. The table suggests that, on the average, treatment for substance abuse and mental problems reduces recidivism. This finding is in accord with that established with the basic model and reported above in Table 4.5. On the other hand, the significant main effects which were reported in that table relating to length of time on work release, to participation in PRAC, to the acquisition of a general education diploma, and to more varied and intensive programming wash out when the interaction terms are added to the regression model. On balance, therefore, conclusions concerning the main effects of treatment on recidivism are more disappointing when treatment is evaluated using a more fully specified model. Finally, we note a perverse and counter-intuitive result arising out of the full model; viz., the suggestion that those inmates subjected to more treatments shift to more serious post-prison offenses. We have not undertaken the task of explaining this counter-intuitive finding, but it may be related to selection bias or the fact that those with more treatments are those incarcerated for longer periods of time, for more serious offenses.

The foregoing results refer to the average effect of treatment. That is, the regression coefficient of a particular treatment variable indicates the effect of treatment on the typical inmate within the cohort of all inmates receiving that particular treatment. When attention is directed to impacts upon specific population subsets via examination of the interaction coefficients, a very different picture emerges. Table 7.1 indicates that every treatment measure except WRK_PID has at least one significant impact, and most treatments have

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several. Most of these impacts relate to the recidivism rate, suggesting that the main effect of a reallocation of treatment programs among offender types is likely to be a reduction in these rates rather than a modification in the characteristics of recidivism, such as a lengthening of the time which elapses before a new offense is committed or a reduction in the seriousness of new offenses.[5]

Although the pattern of results appearing in the table does not present a clear, unambiguous pattern, certain regularities are discernible. Participation in work release and in prison work programs are similar in terms of interaction effects. Both forms of work seem to be best suited for inmates with good work histories, with a history of alcohol, drug, or mental health problems, and for those with no in-prison disciplinary problems. The two principal divergences between these two program types concern (1) the favorable impact of work release on neophyte offenders and whites and the absence of such effect from prison work programs; and (2) the favorable impact of prison work programs on inmates with good job skills, those serving long sentences, and those released under supervision, while no significant impact on these subpopulations is associated with work release.

Another pattern concerns educational and vocational programs. These programs stand apart from work release and prison work. In part, they seem to affect different population subsets, notably non-property offenders and non-married persons. Most especially, while work release seems best suited for neophyte offenders, both educational and vocational programs seem best suited for the habitual offender. Finally, we note that, when considered separately, educational and vocational programs appear to be quite similar in their impacts.

The acquisition of a general education diploma appears to embody very different behavioral mechanisms from those associated with participation in educational and vocational programs. Whether this is due to the program itself or the type of inmate who stays the course and ultimately achieves his objective is not known. Certainly, the sample upon which the GEDD results are based is very small relative to the population "at risk," which strongly suggests the possibility of selection bias.

The impact of PRAC lacks commonalities with the other treatment measures. PRAC appears to work opposite to prison labor programs (compare the signs of RULE_BRK and TIME_IN) and also opposite to educational and vocational programs (note MARRYD) and to alcohol, drug, and mental health problems (note RULE_BRK).

The pattern of results can also be examined from the viewpoint of the EMI and control characteristics. The offender characteristics which seem most likely to relate to treatment are work history, a history of alcohol, drug, and mental health problems, marital status, race, time served on the instant incarceration, length of criminal career, and in-prison delinquency. By contrast, job skills, type of offense found in the criminal career, age, education, and release conditions appear less rich in their potential as characteristics upon which to hinge the choice of treatment. This is not to say that these latter characteristics are of no importance, however. For example, the finding that older inmates respond favorably to the acquisition of a general education diploma is an important result; but, in a wider sense, except for this treatment measure, correctional authorities

need not be as concerned with inmate age in determining treatment as they might be, for example, with the inmate's criminal history.

B. Interactions Involving Job Performance

In Table 7.2 we summarize significant findings concerning post-prison participation in the labor force and reported earnings for those in the labor force. Main and interaction effects of treatment are summarized. A main treatment effect is defined as significant if the null hypothesis concerning the coefficient of the treatment variable can be rejected at the five percent level in either the EARND or the EARNINGs regression model. This table shows one significant main effect of treatment: evidently, prison labor programs--specifically, prison duty programs--improve post-prison job performance. This finding is at variance with that obtained from the basic model and reported in Table 4.5, wherein neither prison labor programs nor any other treatment program was found to be statistically significant at the five percent level. Apparently, one or more of the interaction regressors covaries with prison work programs, statistically suppressing the treatment effect when these interactions are excluded from the regression model.

An interaction effect is defined as significant if the coefficient of an interaction regressor in either the EARND or the EARNINGs regression model is statistically significant at the five percent level. Altogether, Table 7.2 reports 21 or 22 significant interactions, depending on whether WRK_RELTa is included as a treatment measure. At the five percent level of significance the null hypothesis

TABLE 7.2

SUMMARY OF SIGNIFICANT TREATMENT * EMPLOYMENT INTERACTION EFFECTS

Treatment	Main Effect	WRK_ HISTD	JOB_ SKLD	PROP_ RTYD	ADMD	AGE	EDYEARS
WRK_RELD							
WRK_RELTs			-(.05)		a		
ED_VOCD							
ED VOCN							
EDUCD							
VOCATND							+(.01)
GEDD			-(.05)			+(.05)	
WRK_PGMD	+(.05)		+(.05)				-(.05)
WRK_PGMN	+(.05)						-(.05)
WRK_PID			-(.05)				
WRK_PDD	+(.01)		+(.05)				-(.05)
PRAC							
ADM_PGMD				+(.05)			
ALC_PGMD							
ALL_PGMN				+(.05)			

TABLE 7.2 - continued

Treatment	MARRYD	RACED	RELEASED	RULE_BRK	ARR_RATE	TIME_IN
WRK_RELD						
WRK_RELTs						
ED_VOCD		-(.05)				
ED_VOCN						
EDUCD						
VOCATND		-(.05)			-(.05)	
GEDD						
WRK_PGMD						
WRK_PGMN						
WRK_PID		+(.05)				
WRK_PDD						
PRAC						
ADM_PGMD				-(.05)		
ALC_PGMD						
ALL_PGMN		-(.05)				

[a]For WRK_RELTa, +(.05); but not significant for WRK_RELTs.

that there are no significant interactions involving treatment and the selected EMI and control variables is sustained. In other words, the interaction effects reported in Table 7.2 could be a chance phenomenon. We cannot be as confident concerning the efficacy of treatment with respect to job performance as we can be with respect to recidivism.

Table 7.2 shows a pattern of significant interactions relating to post-prison job performance which resembles that reported in Table 7.1. Specifically, Table 7.2 shows that educational and vocational training programs interact with offender characteristics in a direction opposite to that of prison work programs. For example, prison work programs are best suited for inmates with fewer years of education, but vocational training programs are best suited for those with more education. Also, vocational training is best suited for the infrequent in-prison delinquent, but prison industry programs are best for those who create in-prison disciplinary problems.

The offender characteristics which most frequently interact with treatment to promote good job performance are job skills, education, and in-prison delinquency. Surprisingly, work history does not relate to job performance <u>through</u> treatment. However, we should recall that the main effects of WRK_HISD on job performance are statistically highly significant. The correlation coefficients between this variable and EARND and EARNINGs are 0.10 and 0.18, respectively. Moreover, in the full regression model, in which some, if not all of the confounding variation with other statistical effects is eliminated, the coefficients of WRK_HISD are positive and statistically significant at the 0.03 and 0.002 levels, respectively, indicating that, on the average, a good work history is associated with good job performance. One

explanation for the failure of treatment to interact with work history is that the rehabilitation programs which we have evaluated do not enhance either the willingness to work nor the productivity of offenders with poor work histories.

II. FURTHER ANALYSIS

The analysis which we have presented was largely developed from a basic model involving fourteen EMI and control variables, a set of treatment variables each taken separately, and the interaction between the treatment and the other fourteen variables. At several points in the development of this general empirical framework we were required to make critical choices concerning model specification. In this section we discuss the sensitivity of the findings to selected alternative formulations of the model.

A. <u>Alternatives Involving Outcome Variables</u>

A special feature of this research is its consideration of a large number of outcome measures: six measures of recidivism and two measures of post-prison job performance were used. One of the important--and reassuring--findings of this research is that the statistical results of the regression analyses are relatively insensitive to variations in the definition of the recidivism rate or to variations in the definition of job performance. Regressions which use arrests, convictions, or reimprisonment on the one hand or labor force participation or earnings on the other as the dependent variable tell essentially the

same story. Consequently, each variant of the basic regression model tends to validate the results of the other variants. Moreover, the similarity of findings has a deeper significance. It suggests that, in the existing research literature in which recidivism is of central concern, reported results, though based on disparate recidivism or employment measures, are more comparable than is often alleged.

The sensitivity of regression results to alternative measures of post-prison work activity was further tested by introducing a third job performance measure. This measure, EARNINGa, was defined as reported average daily earnings for all individuals who were free to work. EARNINGa is the continuous variable counterpart of EARND. EARNINGa provides a rough index of the degree of participation in the labor force. This variable differs from EARNINGs in that the latter includes only individuals for whom some earnings were reported (i.e., EARND > 1), whereas EARNINGa includes the (zero) earnings of all those individuals who were not working, but could have worked. Thus, EARNINGs is more inclusive than EARND.

The regressions were rerun for all treatments, using EARNINGa in lieu of the alternative job performance measures. For the most part, the statistical results for main and interaction effects obtained from use of the new variable are indistinguishable from the results obtained using the other two job performance measures. The differences in results which are observed are never inconsistent with those obtained through use of EARND and EARNINGs.[6] In general, the results fall in between those of EARND and EARNINGs, but tend to be closer to the latter. However, the goodness of fit of the regressions using EARNINGa is poorer, and, consequently, fewer coefficients are statistically

significant. This analysis suggests that the findings reported in Chapters 5 and 6 are not sensitive to alternative job performance measures obtainable from the employment security data available to this research.

Were the time available, we would have extended the analysis of Chapters 5 and 6 through examination of outcome in the context of a typology of recidivistic offenses. An analysis of the interaction of treatments, by their income-enhancing potential, with recidivistic offenses, by their income-generating potential, would help elucidate the mechanism through which treatment interacts with offender characteristics to reduce recidivism. For example, we observe that work release favorably affects offenders with good work histories. A plausible hypothesis to explain this phenomenon is that work release raises legitimate earnings relative to illegitimate earnings for offenders with good work histories, thereby deflecting these offenders from illegitimate activity and producing the observed, significantly lower recidivism rate for this cohort. If the hypothesis is correct, the proportion of property offenses committed by the work release/good work history cohort should be significantly reduced. A more refined analysis, one which considers the type of recidivistic offense, would help evaluate this hypothesis and thereby enhance our understanding of the linkage between work release, work history, and recidivism.

B. Alternative EMI Variables

1. PROPRTYD

The index which has been used to identify a property offender, PROPRTYD, can be criticized for including an unduly large percentage

of both "false positives" and "false negatives" among its observations. To illustrate: assume a property offender is defined as a person whose lifetime average ratio (LAR) of property offenses to all offenses committed exceeds 0.5. Suppose individual A, with an LAR slightly in excess of 0.5, has only one reported offense. The probability of a correct identification of this individual is approximately 0.5. The same reasoning indicates that individuals who would be categorized as non-property offenders, based on their LAR, will have a probability of 0.5 of being incorrectly identified as a property offender if only one reported offense is available, and if their LAR is slightly less than 0.5. That is, for individuals whose LAR is close to 0.5, there is a high probability that an incorrect identification of the individual will result. More succinctly, the variable PROPRTYD probably contains a great deal of noise.

To differentiate property offenders from non-property offenders with more precision, we developed an alternative index, XPROPD, as follows: define a property offender as an individual whose LAR is greater than 0.5. Let the maximum probability that a non-property offender will be identified as a property offender be 0.10. That is, let us subject ourselves to a maximum one-tailed "alpha risk" of ten percent of deciding that a non-property offender is a property offender. Because of the critical 0.10 alpha risk level which has been chosen, very small sample sizes cannot produce a one-tailed probability value of 0.10; i.e., very small samples cannot provide a clear indication that the individual is a property offender--nor that he is a non-property offender. Inspection of the binomial probability distribution indicates that a minimum of four observations is required

to operate at the desired alpha risk level; and that, in this instance, all four observations must be for property offenses if the individual is to be categorized as a property offender. For larger samples, the proportion of property to total offenses which causes rejection of the null hypothesis can be less than 100 percent, declining toward an asymtotic value of 0.50 as sample size increases.

Based on the foregoing considerations, a variable, XPROPD, was created, such that XPROPD = 1 signifies a property offender and XPROPD = 0 signifies a non-property offender. Each subject's rap sheet record provided a sample of arrest counts. The proportion of property arrest counts to all arrest counts was estimated. The probability was estimated of a proportion equal to, or greater than, this sample proportion being produced by chance from a universe in which the true proportion equals 0.5. If this probability was greater than 0.9, the null hypothesis was rejected. The offender was identified as a property offender, and XPROPD set equal to one. Otherwise, XPROPD was set equal to zero.[7]

XPROPD was evaluated for four treatment measures against the usual outcome measures, with the former substituted for PROPRTYD in the regression equations. Because the sample is restricted to individuals with at least four arrest counts, the substitution of XPROPD for PROPRTYD reduces the number of observations to 443--a two-thirds reduction from the initial sample size.

In general, the goodness of fit of the data is somewhat poorer, and the significance levels of the correlation coefficients somewhat lower when XPROPD is used in lieu of PROPRTYD. Some coefficients become non-significant, and a few attain significance. Whether this

is due to the use of a different variable or is due to the restrictions imposed on sample selection is not clear. In any event, the only noteworthy interaction effect observed in this sample of regression equation models refers to participation in educational and vocational training. The earlier finding that these programs had favorable recidivistic effects on non-property offenders disappears when the more discriminating measure of property offender is used. This change may be due to selection bias. Use of the XPROPD variable results in a significant increase in the percentage of "false negatives." That is, the non-property offender cohort, which produces negative interaction effects, may have its effect diluted because of the presence of a greater percentage of (mislabeled) property offenders. The dilution might have caused a cancelling out of the dominant, negative interaction effect. More generally, the results of the substitution of XPROPD for PROPRTYD suggest that the use of the former, more discriminating measure of a property offender does not materially alter the conclusions set forth above.

2. JOB_SKLD

The use of JOB_SKLD, the subject's occupation, to index expected future earnings can be questioned. The data available to this research included a crude measure of the subject's income level prior to the instant incarceration. This measure was used to create a new, dichotomous income variable, POVERTYD, which is described in Appendix A. Four representative treatment measures were evaluated for their impact on the eight outcome measures, substituting POVERTYD for JOB_SKLD in the regression equations. The substitution had no consequential effect

on the regression coefficients in these models, except for the coefficients of the substituted variables. Even here, the only notable differences concern work release and the prison work programs. In the following tabulation, the coefficients of the interaction terms involving JOB_SKLD and POVERTYD are contrasted. Only those coefficients are displayed which were significant at the twenty percent level; the dots refer to a nonsignificant relationship while the pluses and minuses follow prior conventions. In the tabulation, the first entry in each pair of values refers to JOB_SKLD.

	ARRESTD	PRISOND	EARND
WRK_RELD	. / +(.15)	. / .	. / -(.054)
WRK_PGMD	-(.047)/ .	. / .	+(.023)/ .

The data show that work release may have had favorable recidivistic and job performance effects on subjects defined as having higher income levels, but not for subjects having better job skills; conversely, prison work programs may have had favorable recidivistic and job performance effects on subjects with better job skills, but not on subjects with higher incomes. These results suggest the possibility that JOB_SKLD and POVERTYD capture slightly different, but certainly not contradictory, offender characteristics. More important, the data show that the findings are not especially sensitive to the choice of JOB_SKLD in lieu of POVERTYD as the principal index of future earnings ability.

3. ADMD

A defining EMI characteristic was the presence or absence of an alcohol, drug, or mental health problem (ADMD). The sensitivity of

the regression results to a less broadly defined variable was assayed. Separate analyses relating to alcohol as a defining characteristic (ALCHD), and to drug and mental health problems (DRMHD) as a defining characteristic were also conducted. There is a complication in the reporting of the results of these analyses. A full presentation of the regression results using ALCHD and DRMHD would require that the complete set of regression equations appearing in Chapters 5 and 6 be rerun with ALCHD and DRMHD alternatively substituted for ADMD in the regression models. To do so would triple the number of required regression runs, and is, therefore, not feasible. Accordingly, we have restricted analysis to two outcome measures, ARRESTD and PRISOND, and four treatments, WRK_RELD, WRK_RELTs, VOCATND, and WRK_PDD. The relevant data appear in Table 7.3. Note again that dots refer to nonsignificant relationships.

The cell entries in Table 7.3 contain coefficients for treatment and interaction effects for regressions using ACLHD in place of ADMD and for regressions using DRMHD in place of ADMD. The first value in each cell refers to the alcohol characteristic. Only coefficients significant at the twenty percent level are presented. Inspection of the table indicates a very close correspondence between an explanation system based on alcohol as a defining characteristic and an explanation system in which drug and mental health is a defining characteristic. As the reader will readily perceive, the differences in coefficients for the two formulations of the model are very small, and never of importance. It seems reasonable to assume, based on this evidence, that comparisons involving other treatments and other outcomes will also produce small, non-consequential differences. Thus, the most

TABLE 7.3

SELECTED OUTCOMES AND TREATMENTS FOR INDIVIDUALS WITH ALCOHOL PROBLEMS VERSUS DRUG AND MENTAL HEALTH PROBLEMS: TREATMENT AND INTERACTION EFFECTS

Panel A: ARRESTED as Outcome

Treatment	(1) WRK_RELD	(2) WRK_RELTs	(3) VOCATND	(4) WRK_PDD
Main Effect	./.	./.	./.	./.
EMI Variables				
WRK_HISD	-(.008)/-(.008)	./.	./+(.17)	-(.055)/-(.077)
JOB_SKLD	./.	./.	-(.14)/-(.079)	-(.050)/-(.072)
PROPRTYD	./.	./.	./.	./.
ALCH/DRMH	./.	./.	./.	-(.009)/-(.17)
Control Variables				
AGE	./.	./.	./.	+(.13)/+(.17)
EDYEARS	./.	./.	./.	./.
MARRYD	./.	./.	./.	./.
RACED	+(.009)/+(.009)	./.	./.	./.
RELEASED	./.	./.	./.	./.
RULE_BRK	+(.13)/+(.057)	./.	./.	+(.044)/+(.043)
ARR_RATE	./.	./.	-(.093)/-(.082)	./.
TIME_IN	./.	+(.17)/+(.10)	./.	./.
DETERP	+(.019)/+.018)	./.	./.	./.
UNEMPLOY	./.	./.	-(.029)/-(.038)	./.

Table 7.3-continued

Panel B: PRISOND as Outcome

Treatment / Main Effect	(5) WRK_RELD	(6) WRK_RELTs	(7) VOCATND	(8) WRK_PDD
	-(.20)/.	./+(.20)	+(.17)/+(.20)	./.
EMI Variables				
WRK_HISD	-(.10)/-(.087)	./.	+(.094)/+(.065)	./.
JOB_SKLD	./.	./.	./.	./.
PROPRTYD	./.	./.	+(.093)/+(.095)	./.
ALCHD/DRMHD	./-(.051)	+(.13)/.	./.	-(.094)/-(.089)
Control Variables				
AGE	./.	./.	-(.20)/.	./.
EDYEARS	./.	-(.16)/-(.13)	/.	./.
MARRYD	./.	./.	+(.005)/+(.005)	./.
RACED	./.	./.	./.	./.
RELEASED	./.	./.	./.	. /-(.20)
RULE_BRK	./.	./.	./.	./.
ARR_RATE	+(.028)/+(.029)	-(.11)/ .	-(.091)/-(.12)	./.
TIME_IN	./.	+(.017)/+(.008)	./.	-(.098)/ .
DETERP	+(.062)/+(.074)	-(.093)/-(.071)	./.	./.
UNEMPLOY	./.	./.	-(.11)/-(.076)	./.

reasonable conclusion to be reached from this sampling of regression models is that the findings reported in Chapters 5 and 6 would not be materially affected were a thoroughgoing distinction to be made between offenders with alcohol problems and offenders with drug and mental health problems.

C. Alternative Treatment Variables

In the analysis of Chapters 5 and 6, attention centered on the collection of alcohol, drug, and mental health programs viewed as a composite treatment strategy. The particular effects of alcohol treatment programs were given separate consideration. It was shown via Tables 6.6 and 6.7 that the interaction effects involving the aggregate treatment variable and the effects involving the alcohol treatment variable were very similar in most respects, and were never inconsistent. To extend the analysis, the effects of drug and mental health programs were considered as a separate strategy.

In Table 7.4, the main and interaction effects of participation in alcohol treatment programs, ALC_PGMD, and in drug and mental health programs, DMH_PGMD, are contrasted using the basic regression model, except for one variation. In the evaluation of alcohol treatment, the offender's alcohol history, ALCHD, is substituted for the more general "problems" variable, ADMH. In the evaluation of drug and mental health treatment, the offender's drug and mental health history, DRMHD, is substituted for ADMH. The two treatment categories are evaluated with respect to three outcomes: arrests, imprisonments, and labor force participation. The cell entries consist of pairs of values, the first

TABLE 7.4
SELECTED OUTCOMES FOR INDIVIDUALS WITH ALCOHOL VERSUS DRUG AND MENTAL HEALTH PROBLEMS: ALCOHOL VERSUS DRUG AND MENTAL HEALTH TREATMENT AND THEIR RESPECTIVE INTERACTION EFFECTS

Variable	ARRESTD	PRISOND	EARND
Treatment			
ALC/DRMH	-(.015/-(.082)	-(.036)/.	./.
EMI Variables			
WRK_HISD	./.	./.	./.
JOB_SKLD	+(.17)/.	+(.18)/.	./.
PROPRTYD	./.	./.	./.
ALCH/DRMH	-(.14)/.	./+(.20)	./.
Control Variables			
AGE	./.	./.	./.
EDYEARS	./.	+(.033)/.	-(.19)/.
MARRYD	-(.050)/.	-(.066)/.	+(.17)/.
RACED	./.	./.	+(.19)/.
RELEASED	./.	+(.20)/+(.068)	+(.18)/.
RULE_BRK	./+(.13)	./+(.040)	./.
ARR_RATE	./+(.13)	-(.055)/.	-(.076)/.
TIME_IN	./.	-(.090)/.	./.
DETERP	+(.014)/.	+(.042)/.	./.
UNEMPLOY	+(.16)/+(.064)	./+(.18)	./.

of which pertains to alcohol programs, the second to drug and mental health programs. Only results significant at the twenty percent level are reported.

The results suggest that alcohol treatment may be more effective in reducing recidivism than drug and mental health treatment. The results also suggest that interaction effects involving alcohol treatment are unrelated to interaction effects involving drug and mental health treatment. An important point to note is that there are many more significant interactions involving alcohol treatment than those involving drug and mental health treatment. From the practitioner's perspective, this implies that (1) there is a potential for enhancing the effectiveness of alcohol, drug, and mental health treatment though the targeting of these programs to offenders possessing these particular characteristics; and (2) the potential is substantially greater with respect to alcohol treatment than it is with respect to drug and mental health treatment.

D. Alternative Structural Form

The models which have been evaluated implicitly assume that recidivism and job performance are unrelated. The assumption may be incorrect; and, if it is, an alternative estimating structure would be required in which the decision to engage in crime or to engage in legitimate activity are permitted to interact. One formulation of particular interest is a model based on rational choice principles in which it is hypothesized that individuals turn to crime when legitimate employment opportunities are more limited; and, conversely, that they

turn to legitimate activity when illegitimate opportunities are more limited.[8]

To illustrate how one might evaluate this alternative hypothesis, a theoretical model is considered which involves one treatment, participation in work release, and a two-equation structure to explain participation in legitimate and illegitimate work. In the empirical counterpart of this model, it is hypothesized that participation in the labor force after release (EARND = 1) signifies a decision to engage in legitimate activity, and that a rearrest (ARRESTD = 1) signifies a decision to engage in illegitimate activity. We assume that the full set of EMI and control variables constitutes a complete explanation system. These variables, sorted by their presumed effect on either legitimate or illegitimate activity, give the model the following form:

(1)ARRESTD = F(EARND, XPROPD, DETERP, Z)

(2)EARND = F(ARRESTD, WRK_HISD, JOB_SKLD, UNEMPLOY, WRK_RELD, Z)

where

Z = (ADMD, AGE, EDYEARS, MARRYD, RACED, RELEASED, RULE_BRK, TIME_IN)

A return to crime is hypothesized to depend on the opportunities to engage in legitimate work (EARND), one's prior experience in and commitment to illegitimate earnings (XPROPD), the expected cost of engaging in crime, indexed by the probability of being arrested for the commission of a felony property offense (DETERP), and the set of control variables, Z.

The decision to enter the legitimate labor force depends on the relative attraction of crime as an income-generating activity, indexed by the decision to engage in crime (ARRESTD), on the individual's prior experience in and commitment to legitimate work (WRK_HISD), his potential earnings (JOB_SKLD), the general availability of legitimate work (UNEMPLOY), and the work release treatment (WRK_RELD), and the set of control variables contained in Z.

The equations were estimated via two-stage least squares. The regression results, reported only for variables whose coefficients are significant at better than the twenty percent level, are as follows:

(1)ARRESTD = .053 RULE_BRK + ...
(.15)

Adjusted R^2 = .04

(2)EARND = -1.12 ARRESTD - .013 AGE + .20 MARRYD + .048 RULE_BRK
(.14) (.10) (.13) (.13)
+ ...

Adjusted R^2 = .07

Four variables are significant in the EARND equation, only one in the ARRESTD equation. Note, in particular, that EARND is not a significant variable in the arrest equation, but that ARRESTD is a significant variable in the EARND equation. These data suggest that legitimate earnings opportunities do not affect the decision to engage in crime; but that the decision to engage in crime affects the decision to enter the legitimate job market. That is, if there is a cause and effect relation between illegitimate and legitimate earnings, it is more

likely that illicit income opportunities determine legitimate work behavior than the other way around.

These results are, however, highly speculative. The model does not fit the data very well, judging from the significance level of the coefficients and from the magnitude of the coefficients of determination. Moreover, the variables selected for inclusion in the model are far from ideal. The model calls for an index of illegitimate work activity. ARRESTD applies to all offenses. If arrest records are to be used, only property arrests should be considered. Finally, other treatments require consideration, and tests should be made for interaction effects.

However suggestive this exercise may be, it does not vitiate the results based on single equation, ordinary least squares models. If the two-stage least squares models more correctly define offender behavior, then the ordinary least squares results reported in Chapters 5 and 6 represent the system's reduced form equations. Hence, the interpretations of the effects of the variables reported in these chapters remain unaltered.

III. CONCLUSIONS

The statistical analyses which we have conducted provide additional evidence to support the contention that little, if anything, "works"; and that the impact of the array of treatment programs to which offenders are subjected is disappointing, at best. We have seen from the main effects that neither work release, educational and vocational training, North Carolina's community transition program,

nor the administering of a barrage of such programs to inmates appears to reduce their recidivism nor to improve job performance. However, some programs appear to have worked: alcohol, drug, and mental health treatment seems to have reduced recidivism, and prison labor programs seem to have enhanced post-prison job performance. These exceptions duly noted, our findings are, nonetheless, in the mainstream of recent evaluation research with their implication that the performance of rehabilitation programs is, indeed, disappointing.

On the other hand, each of the treatments--indeed, every one of the sixteen principal treatment measures--significantly reduces the recidivism rate or improves the labor market performance of some particular inmate subpopulation. <u>This, we believe, is the most important finding which emerges from this research</u>. The implication is that, while the average effect of treatment is minimal in most cases, it is possible to identify inmates who are amenable to particular treatments. Were the treated population to consist of a greater proportion of these more amenable inmates, the overall effectiveness of treatment would be significantly enhanced.

A corollary and far reaching implication of this research is that the dismal showing of in-prison rehabilitation could be due to the failure to match the right program to the right inmate. The gross mismatches which were observed in the case of alcoholics and alcohol treatment illustrate the problem: half of the inmates in the treatment program indicated on admission that they had no serious problem with alcohol, while 80 percent of those who had indicated a serious problem did not receive treatment. One must assume that the mismatches with reference to other defining offender characteristics will be at least

as serious, since alcoholism would appear to be more readily identified than, say, an unwillingness to work, a strong need for immediate gratification, or a latent predisposition toward violence.

How might the findings of this research be used? Setting aside the very real, practical problems related to the implementation of a program for systematically matching treatments and offenders--these problems shall be considered, briefly, below--the findings lend themselves to the development of a prescription in which those treatments are delineated which appear to be most appropriate for particular offender types. The prescription is presented as Table 7.5.

With minor modifications--which should be clear to the reader--Table 7.5 represents a synthesis of Tables 7.1 and 7.2. Several comments concerning Table 7.5 are in order. First, the table refers to ADMH (alcohol, drug, or mental health) problems or programs. As a prescription for treatment, the ADMH category is too broad. In practice, individuals are placed into programs appropriate to their need: drug addicts into drug therapy, alcoholics into alcohol rehabilitation treatment, etc. Second, where a GED is prescribed, it is assumed that the subject did not finish high school, and it is implied that he will receive, as part of his "treatment" those educational courses which are required for the acquisition of the GED. Finally, our offender typology is designedly loose--high/low, problem/no problem, etc.--because our statistical modelling was not concerned with the establishment of more precise thresholds. Given difficulties in accurately classifying inmates, these categories are sufficient.

We would have preferred a more compact, theoretically grounded, and intuitively obvious prescription than that which appears in Table

TABLE 7.5

TREATMENTS MATCHED TO OFFENDERS: A PRESCRIPTION

Type Offender	Treatment Prognosis: Favorable Recidivism Effect	Favorable Job Effect
Work History		
Good	Work release; Prison labor	
Poor	GED	
Job/Income Class		
High	Prison labor	Prison labor
Low		Work release; GED
ADMH Problem	Work release; Prison labor	ADMH program
Older, no high school	GED	GED
Education		
Below aver.	Alcohol program, if has problem	Prison labor
Above aver.		Vocational training
Not Married	Education/vocation	
Married	PRAC	
White	Work release; Education/ Vocation	
Black	GED; PRAC	Education/Vocation
In-Prison Discipl.		
Problem	PRAC	
No Problem	Work release; prison labor; ADMH program if has problem	Vocation
Habitual Offender	Education/Vocation	
Neophyte Offender	Work release; prison labor	ADMH program if has problem
Sentence		
Long/Serious	Prison labor	
Short	Work release; PRAC; GED	Vocational training

7.5. It is a source of disappointment and considerable frustration that the prescriptions found in that table lack cohesion and appear to have emerged ad hoc from the analysis. The rational choice theory which we proposed for evaluation and which has guided this research has been neither validated nor invalidated. The interactions concerning treatment and work history are as predicted; those concerning ADMH characteristics were not expected, but are consistent with theory; but those concerning income/occupation and property offenses do not support the theory. Thus, the results with respect to rational choice theory are decidedly mixed.

We do not believe that the theory, in its general formulation, is wrong. It is, after all, directly derived from the most basic micro-economic principles of human behavior, principles whose validity is vouchsafed by an enormous body of empirical research. Within the economics profession there is and has been virtually universal acceptance of these principles. Rather, we believe that the difficulty originates in the translation of abstract theoretical constructs into empirical measures, and is compounded by our defective understanding of the principles by which treatment is supposed to have its effect, and is further aggravated by our inability to observe, much less control, the actual implementation of treatment programs.

Thus, we believe that the failure of our study to confirm the rational choice hypothesis resides, in part at least, in the data themselves. The theory requires measures of the marginal utility of income and of the marginal disutility of work. The empirical proxies for these constructs which were available for this research, the EMI variables, are extremely crude approximations of these theoretical

constructs. For example, PROPRTYD is supposed to indicate whether the individual values an incremental increase in income more or less highly. However, PROPRTYD may also index the individual's unwillingness to engage in legitimate work.[9] If this is true, the two statistical effects could cancel out, thereby explaining the lack of explanatory power for this variable.[10]

Our inability to validate rational choice theory may also be ascribed to theoretical and conceptual difficulties concerning the treatment mechanism. How do treatments achieve their effect? Upon which of the parameters governing criminal behavior do they operate? In a rational choice context, do they change the individual's value (or valuation) system, or do they change the environmental constraints within which he operates? That is, do treatments change the taste for income or work or the relative value which one places upon immediate gratification, or do they change the probability that the subject will find work or enhance his earnings? And, what is the nature of an income-enhancing effect? Does it imply an environmental change such as an augmentation of job skills, or a change in values such as a more ready acceptance of routine, unexciting, but demanding legitimate work?

Until we know more about the rehabilitative mechanism, the patterns of treatment effects which have been observed cannot be explained. Why do work release and prison labor programs have similar effects? Why do they affect populations with characteristics which are sometimes opposite to those possessed by individuals benefiting from educational and vocational training? What principles determine whether some population subsets will be affected by a treatment and others not? For example, we observe that prison labor programs improve

the job performance of persons with little education, and decrease the recidivism rate of persons with relatively high income and occupational status. Why is this? Might the former experience an income-enhancing effect which makes legitimate work relatively more attractive to the inmate and the inmate relatively more attractive to potential employers, thereby explaining the observed favorable labor market outcome? Might the latter population, perceiving the same prison labor program to be distasteful and status-reducing, seek to avoid a repetition of the prison labor experience? That is, might prison labor operate as a specific deterrent when applied to the latter population, and thereby explain the favorable recidivism rate effect which was observed with respect to this population?

Thus, if rational choice theory is to be properly tested, it is essential that a valid theory be developed which links specific treatments to specific effects which operate on the taste and environmental parameters governing the offender's decisions with respect to alternative income and labor market behaviors. Only if we can be reasonably certain concerning the impacts upon these income and work decisions will it be possible to develop a classification strategy which will place appropriate offenders in appropriate income-enhancing programs.

Our inability to validate rational choice theory may also be ascribable to other imperfections in the data. We are reasonably confident concerning the validity and accuracy of the outcome and control variable measures, as well as some of the EMI and treatment measures. We are much less confident concerning other EMI measures, as has been indicated above, and are deeply troubled concerning some

of the treatment measures. Participation in a program is an extraordinarily vague concept. Even when time spent in the program is known, as is true of work release and PRAC, questions of program strength and integrity remain largely unresolved. For most programs, even this vital dimension of the treatment quality is unknown. If rational choice theory is to be properly tested, valid and accurate measures of program quality must be available. We cannot be reasonably certain concerning program impacts until we know that the program was, indeed, applied to particular subjects in the manner which is faithful to the program's conception, and is applied with an intensity expected in the program's design.

These considerations concerning the requirements for a proper test of the rational choice hypothesis, when placed in the context of the findings of this research, provide the foundation for a new research agenda. We have noted the fact that the category of program entitled alcohol, drug, and mental health (ADMH) is the only type whose overall, main effect is favorable with respect to post-prison outcomes. ADMH also displays important interaction effects. Moreover, we have noted that the presence or absence of ADMH problems in an offender's reported history can be fitted into the rational choice paradigm. Finally, we observe some curious empirical results concerning the ADMH population and ADMH treatment. How is it that ADMH programs can be successful at reducing recidivism rates in the population which is treated, but not have any special effect upon the population which confesses to an ADMH problem? Why is it that individuals with ADMH problems respond to both work release and prison labor programs, but not to ADMH programs? How does the ADMH treatment effect operate? Is

it income-enhancing; and, if so, does it alter the environmental or taste parameters of the offender's behavioral system?

Thus, the loose association of conventional ADMH programs with post-prison outcomes, and the evidence that individuals identified as having ADMH problems appear to respond more readily to non-conventional--i.e., non-ADMH--treatments, strongly suggest the need for exploration of new causal models, models which address the issue of the interaction of criminal behavior and rehabilitative treatment. The results of this study raise serious questions concerning the validity of the near universal acceptance of the hypothesis that individuals with serious drug and alcohol problems are incapable of perceiving and responding to alterations in the system of benefits and costs to which other adult offenders and the more general populace respond. In particular, we believe that rational choice theory may help identify treatment mechanisms which are more appropriate for ADMH subjects.

Thus, we propose the application of rational choice theory for the explication of the behavior of ADMH subjects, and suggest that this theory be exploited for the purpose of developing a treatment strategy which is intended to effect favorable post-prison behaviors in the subject population. The rational choice model may be a valuable tool for enhancing our understanding of the behavior of this subject population, whose recidivism rate remains a source of serious concern and whose post-prison labor market behavior remains dismal even when conventional ADMH treatment appears successful. The theoretical and empirical work found in this study, with its rational choice paradigm, provides a base from which new lines of promising research can be

extended. Further evaluation of rational choice theory, whether it be applied to the ADMH population or be used in some other context, must proceed within a carefully structured empirical environment utilizing more precise and faithful empirical measures of the model's theoretical constructs.

NOTES - CHAPTER 7

1. The underlying, basic difficulty with policy prescriptions based on DETERP is that a causal mechanism which relates DETERP to treatment programs is lacking. Without that mechanism, policy based on a DETERP criterion cannot be justified.

2. In every instance in which significance is found, all three coefficients have the same sign. Hence, the signs reported in Table 7.1 are unambiguously positive or negative.

3. Table 5.1 also reports interactions for CONVICTD and PRISOND at the .018 and .058 significance levels, but these have been overridden by the coefficient of ARRESTD, which, as indicated, was significant at the .005 level.

4. Assume that, on the average, there are no interaction effects; i.e., assume that the null hypothesis is true. Then, the probability of rejecting the null hypothesis at the five percent level is 0.05; and the probability that one or more of the three recidivism rate measures, ARRESTD, CONVICTD, and PRISOND, will be significant is 0.143. Hence, the probability that any one of the 12*15 = 180 cells in Table 7.1 will have a significant value is 0.143; and the expected number of "significant" events would be 0.143*180 = 25.74. The observed number, 45, is 4.10 standard deviates from its expected value, based on the standard normal distribution, causing rejection of the null hypothesis at the 0.001 significance level.

5. Supporting this observation is the fact that the incidence of occurrence of significant interactions involving the defining characteristics of recidivism, as distinguished from the recidivism rate, is not statistically significant, there being, in fact, less than the expected number of interaction events, given the validity of the null hypothesis of no significant interactions.

6. Most of the time the signs of the coefficients correspond. Very occasionally, the signs differ, with one coefficient being significant at the twenty percent level. In no case are two coefficients statistically significant, but of opposite sign.

7. This procedure distinguishes property offenders from all other offenders. A greater degree of discrimination can be attained by defining a non-property offender as one whose sample proportion would occur by chance less than ten percent of the time, given that the true universe probability equals 0.5. A trichotomy could then be created in which the values +1, 0, and -1 signify, respectively, property offenders, persons of uncertain persuasion, and non-property offenders. Judging from the relatively insignificant effects obtained from the substitution of XPROPD for PROPRTYD in the regression equations, we did not think the exercise worthwhile.

8. We follow recent rational choice modelling of the criminal choice and assume that legitimate and illegitimate activities are not mutually exclusive (Block and Heineke, 1975; Heineke, 1978).

9. The correlation coefficient of PROPRTYD with respect to WRK_HISD is -0.18 (.0001). Unwillingness to work is, itself, a vague empirical concept. It may mean that the individual is unwilling to work at any activity which requires steady, disciplined activity, or it may indicate an unwillingness to engage in legitimate vis-à-vis illegitimate work, possibly because of the more challenging and exciting nature of the latter.

10. PROPRTYD also covaries with AGE and with MARRYD, with correlation coefficients of -0.35 (.0001) and -0.14 (.0001), respectively, further clouding the statistical interpretation of the regression coefficients of the PROPRTYD variable.

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APPENDIX A

DEFINITION OF VARIABLES IN ANALYSIS DATA SET

KEYWORDS appearing in the following definitions:

"Instant Incarceration" refers to the term of incarceration under study. The instant incarceration terminated in the first half of 1980.
"Exit Date" is that date in early 1980 when the inmate was released from prison, thus ending the period of his instant incarceration.

ADM_PGMD: This dummy is 1 if the inmate received treatment for either alcohol or drug abuse, or for mental health problems. If the inmate did not undergo treatment during his instant incarceration for any of these problems, the dummy is 0.

ADMD: If the inmate reported a serious alcohol or drug problem or had received treatment for a mental health problem, this dummy is 1; if he had no problem the dummy is 0. A serious alcohol problem is defined as "drinks frequently." A drug problem is defined as "uses drugs frequently" or "former drug user." A mental problem is defined as "any history of any mental problem." Definitions are derived from inmate history, compiled by the Department of Correction.

AGE: This is the inmate's age as of 1 Jan 1980. Only the month and year of birth are available. Thus, it is assumed that the birthdate was the first of the month.

ALC_PGMD: This dummy is 1 if the inmate ever participated in an alcoholics' rehabilitation program prior to his Exit Date. Otherwise, it is 0.

ALCHD: This dummy is 1 if the inmate is reported to have been a frequent drinker. If he drinks occasionally or never, it is 0. If the data is not available, the dummy is missing.

ALL_PGMN: This variable sums the values for 5 "treatment" dummy variables: WRK_RELD (work release), ED_VOCD (educational and vocational programs in which the inmate enrolled), PRACD (community transition program), ADM_PGMD (alcohol, drug, or mental problem programs), WRK_PGMD (prison duty & prison enterprise programs).

ARR_RATE: This is the inmate's arrest rate per year between age 12 and the year of admission on the instant incarceration.

ARRESTD: This dummy is 1 if the inmate was rearrested at least once during the first 2 years following his Exit Date. Arrest data are derived from Police Information Network sources. Also, ARRESTD=1 if there is no arrest data but the inmate is back in prison because of a conviction for a new offense.

CHANGE: This variable is defined as the difference between SERIOUS and OLDTIME. (CHANGE = SERIOUS - OLDTIME.) CHANGE compares the seriousness of a new recidivistic offense or the seriousness of a violation of release conditions with the seriousness of the offense resulting in the instant incarceration.

CONVICTD: This dummy is 1 if the inmate is ever reconvicted for a new offense during the two years following his Exit Date, according to Police Information Network sources. If the Police Information Network data do not indicate a new conviction, but the Department of Correction data indicate a return to prison for a new conviction, CONVICTD=1. If there is no indication that he is reconvicted CONVICTD is 0.

DETERP: This is the regional ratio of property arrests to reported property offenses in 1979. Arrests and offenses refer to the UCR Part I Index offenses: Larceny, Auto Theft, Burglary, and Robbery. The region is one of the 42 judicial districts in North Carolina. The region is that which contains the offender's home county.

DETERV: This is the regional ratio of violent arrests to reported violent offenses in 1979. Arrests and offenses refer to the UCR categories of Homicide, Rape, and Assault.

DMH_PGMD: This dummy has a value 1 if the inmate ever participated in a drug rehabilitation or mental health program during his instant incarceration. Otherwise, DMH_PGMD=0.

DRMHD: If the inmate reported a drug problem or had received treatment for a mental health problem, this dummy is 1; if he had neither problem the dummy is 0. A drug problem is defined as "uses drugs frequently" or "former drug user." A mental health problem is defined as "any history of any mental problem." Definitions are derived from inmate history, compiled by the Department of Correction. Missing information is 'missing'.

EARND: This "earnings" dummy has 4 possible values. It is missing if the Department of Correction had no Social Security number on record for the inmate which could be used to recover "earnings" information from the Employment Security Commission (ESC). It is -9 if the inmate returned to prison before the date when "earnings" data were collected (Oct. 1, 1981). It is 0 if the inmate had a social security number and was free for some period of time after Oct. 1, 1981, but the ESC had no record of earnings. It is 1 if the ESC did have a record of earnings. (See EARNINGa and EARNINGs.) Note: In the statistical analysis the -9 values are converted to missing.

EARNINGa: This variable lists "earnings per day free." It gives a zero or a positive value for each inmate, unless

no Social Security number could be located for the inmate; or the inmate returned to prison before Oct.1, 1981, when the "earnings" data survey began. (See EARND.)

EARNINGS: This variable has the value of the variable EARNINGa when the latter is greater than zero. Otherwise, EARNINGS is set to missing. (See EARND.)

ED_VOCD: This dummy is 1 if the inmate enrolled in one or more prison educational or vocational training programs, and is derived from ED_VOCN. Otherwise, ED_VOCD=0.

ED_VOCN: This is the number of prison educational and vocational training programs the inmate enrolled in while in prison. GED tests are not included. This does not evaluate whether the program was completed. Only program participations during the instant incarceration are included.

EDUCATN: This is the number of prison educational programs the inmate enrolled in while in prison during the instant incarceration. GED tests are not included.

EDUCD: This dummy is 1 if EDUCATN is 1 or more; otherwise, it is 0.

EDYEARS: This is the number of years of schooling which the inmate is reported to have had.

GEDD: This dummy is 1 if the inmate took the GED exam and passed it during the instant incarceration. Otherwise, it is 0. However, if the inmate already had 12 or more years of education (EDYEARS GT 11) then this dummy is set to missing.

ID80: This number is an identifier which is unique for each inmate. Its purpose is to simplify the task of matching observations for the same inmate which may have been stored in different data files.

JOB_SKLD: This variable dummy has the value 1 if the inmate was employed as a skilled or semi-skilled worker or was a student prior to his instant incarceration. If he was an unskilled worker, unemployed, or reported no occupation, JOB_SKLD=0. If the information is missing the dummy is missing.

MARRYD: This dummy is set to 1 if the inmate was married and living with his spouse at the time of the arrest resulting in the instant incarceration. Otherwise, MARRYD=0 or missing.

NUMPTY: This represents the total number of property arrest counts relating to offenses committed prior to the instant incarceration, as derived from the Police Information Network. (See TOTAL.)

NUMRECON: This is the number of reconvictions the inmate has had during the 2 years since his Exit Date.

OLDTIME: This represents the number of days of incarceration served by the inmate during his instant incarceration.

POVERTY: This is the inmate's socio-economic status, as reported by the inmate. It has the following possible values: 1=Poverty, 2=Subsistence, 3=Middle income, 4=High income. Missing information is 'missing'.

PRACD: This dummy variable has the value 1 if the inmate participated in the post-release component of the Pre-Release and After-Care (PRAC) program. If he did not, PRACD=0. If the information is missing, PRACD is missing. (The presumption is that those participating in post-release treatment received the pre-release treatment component.)

PRISOND: PRISOND=1 if there was a parole revocation or conditional release revocation or a reentry into the prison system on a new conviction within two years after the Exit Date. Otherwise, PRISOND=0.

PROPRTY: This is a ratio comprised of the inmate's number of arrest counts for property offenses divided by the inmate's total number of arrest counts for all offenses. The arrest record ends with the instant incarceration.

PROPRTYD: This dummy has the value 1 if PROPRTY is equal to or greater than 0.5. Otherwise, PROPRTYD=0.

RACED: This dummy represents the inmate's race classification. It has the value 0 for 'white' and 1 for 'nonwhite'.

RELEASED: This dummy has the value 1 if the inmate was released from prison under supervision on his Exit Date. Supervision would be by parole, conditional release, or in the case of a split sentence, by probation. Unconditional release --"maxing out"-- equals zero.

RULE_BRK: This is the number of reported rule violations per year during the instant incarceration.

SERIOUS: This variable represents the number of days served (or projected to be served) upon the inmate's return to prison after his Exit Date. Those who did not recidivate within two years or for whom data are missing have a missing value for this variable.

TIME_IN: This is the natural log of the number of years served by the inmate during his instant incarceration, rounded to the nearest quarter of a year. The minimum possible value corresponds to 6 months.

TIME_OUT: This variable contains the number of days between the inmate's Exit Date and the date when the inmate was first rearrested. This variable is only valid for those inmates who were rearrested during the first two years following the Exit Date (ARRESTD=1). It is set to missing for all other inmates.

TOTAL: This variable reports the total number of counts on all arrests prior to the inmate's instant incarceration. Note that each arrest may have several counts, so that TOTAL may be greater than the number of arrests.

UNEMPLOY: This is the regional unemployment rate for males within the region in which the inmate's county of release was located. Data refer to 1980.

VOCATN: This is the number of prison vocational training programs the inmate enrolled in while in prison during the instant incarceration.

VOCATND: This dummy is 1 if VOCATN is 1 or more; otherwise,

VOCATND=0.

WRK_HISD: This is a dummy for the inmate's reported work history based on the inmate's employment record as coded by the Department of Correction. 1 indicates a good work history (stable work record and working regularly at time of offense) or that the inmate was a student at the time of the offense. Any other code has a value of 0. Missing values are treated as missing.

WRK_PDD: This dummy has a value 1 if the inmate participated in one or more prison duty programs during his instant incarceration. Otherwise, it is 0. This dummy is derived from the value of WRK_PGMM.

WRK_PGMD: This dummy has a value 1 if WRK_PGMN is greater than 0. Otherwise, it is 0.

WRK_PGME: This is the number of prison enterprise programs in which the inmate participated during his instant incarceration.

WRK_PGMM: This is the number of prison duty programs in which the inmate participated during his instant incarceration.

WRK_PGMN: This is the sum of the number of prison duty (WRK_PGMM) and prison enterprise (WRK_PGME) programs in which the inmate participated during his instant incarceration.

WRK_PID: This dummy has a value 1 if the inmate participated in one or more prison enterprise (industry) programs during his instant incarceration. Otherwise, it is 0. This dummy is derived from the value of WRK_PGME.

WRK_RELD: This dummy equals 1 if the inmate was ever on work release during his instant incarceration. Otherwise, WRK_RELD=0.

WRK_RELTa: This indicates the length of time the inmate spent on work release measured in 100-day units. If WRK_RELD=0, WRK_RELTa=0. The measure applies to all inmates.

WRK_RELTs: This indicates the length of time the inmate spent on work release measured in 100-day units. If WRK_RELD=0, WRK_RELTs has a missing value. The measure only applies to inmates who were on work release.

XPROPD: The relationship between NUMPTY and TOTAL is examined in the context of a binomial distribution with p=0.5. First, the probability that the ratio NUMPTY to TOTAL is greater than or equal to the expected binomial distribution is obtained. Next, if that probability is .9 or greater, XPROPD=1; if that probability is .1 or less (not less than 0), XPROPD=0. In either case, TOTAL must be 4 or more. If the above conditions are not met, XPROPD is missing. This measure provides a more certain identification of property and non-property offenders.

APPENDIX B

SUPPLEMENTARY TABLES FOR FULL REGRESSION MODEL

TABLE B5.1

PARTICIPATION IN WORK RELEASE: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
WRK_RELD	-.21(-)	-.28(-)	-.36(-)	-.16
B. EMI Variables				
WRK_HISD	.07(.12)	.05(-)	.04(-)	.13(.031)
JOB_SKLD	.01(-)	.06(.16)	.07(.092)	-.07(-)
PROPRTYD	.06(-)	.06(.20)	.05(-)	.02(-)
ADMD	.13(.005)	.06(.13)	.17(.0001)	-.04(-)
C. Control Variables				
AGE	-.003(-)	-.004(-)	-.002(-)	-.001(-)
EDYEARS	-.01(-)	.0003(-)	-.01(-)	-.003(-)
MARRYD	-.0001(-)	-.02(-)	-.04(-)	.02(-)
RACED	-.05(-)	.02(-)	.03(-)	-.03(-)
RELEASED	-.08(.18)	-.12(.019)	-.01(-)	.22(.005)
RULE_BRK	.02(.014)	.02(.096)	.03(.002)	-.01(-)
ARR_RATE	.58(.0001)	.51(.0001)	.48(.0002)	-.11(-)
TIME_IN	.03(-)	.05(.094)	.02(-)	.02(-)
DETERP	-.45(-)	.15(-)	-.15(-)	.73(-)
UNEMPLOY	-.01(-)	-.002(-)	-.01(-)	-.02(-)

Table B5.1 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-.18(.005)	-.14(.018)	-.12(.056)	-.08(-)
JOB_SKLD	.02(-)	-.08(.20)	-.04(-)	.10(-)
PROPRTYD	-.04(-)	.01(-)	.04(-)	.01(-)
ADMD	-.07(-)	-.02(-)	-.13(.031)	.16(.052)
B. Control*Treatment				
AGE	.001(-)	.005(-)	.002(-)	-.01(-)
EDYFARS	-.01(-)	-.01(-)	.002(-)	.02(-)
MARRYD	-.04(-)	.05(-)	.04(-)	.19(.055)
RACED	.16(.011)	.13(.027)	.02(-)	.05(-)
RELEASED	.01(-)	.03(-)	-.08(-)	-.01(-)
RULE_BRK	.04(.11)	.04(.048)	.02(-)	-.06(.070)
ARR_RATE	.15(-)	.02(-)	.42(.026)	.13(-)
TIME_IN	-.01(-)	-.03(-)	-.01(-)	.01(-)
DETERP	1.7(.016)	.75(-)	1.2(.057)	.24(-)
UNEMPLOY	-.02(-)	.004(-)	.01(-)	-.003(-)
C. Adj. R-Square	.123	.102	.116	.057

Table B5.1--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
WRK_RELD	202(-)	1038(-)	1114(-)	-14(-)
B. EMI Variables				
WRK_HISD	63(.054)	-310(-)	-287(-)	7.7(.002)
JOB_SKLD	.89(-)	353(-)	364(-)	-4.9(.073)
PROPRTYD	20(-)	153(-)	145(-)	-1.5(-)
ADMD	-39(.18)	-669(.085)	-629(.097)	-1.6(-)
C. Control Variables				
AGE	.09(-)	-9.8(-)	-15(-)	-.03(-)
EDYEARS	-1.2(-)	84(-)	86(-)	.29(-)
MARRYD	-26(-)	-668(-)	-687(-)	.29(-)
RACED	-21(-)	-355(-)	-331(-)	.45(-)
RELEASED	18(-)	-1059(.040)	-1070(.033)	7.8(.047)
RULE_BRK	-8.6(.14)	-45(-)	-47(-)	.04(-)
ARR_RATE	-242(.004)	-174(-)	-115(-)	-.70(-)
TIME_IN	12(-)	475(.11)	-132(-)	-2.0(-)
DETERP	679(.042)	780(-)	585(-)	-15(-)
UNEMPLOY	-4.4(-)	152(-)	162(-)	-1.5(.11)

Table B5.1 --continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-79(.094)	758(-)	662(-)	-3.3(-)
JOB_SKLD	-34(-)	335(-)	252(-)	6.7(.056)
PROPRTYD	-109(.040)	600(-)	669(-)	.28(-)
ADMD	16	418(-)	495(-)	2.6(-)
B. Control*Treatment				
AGE	-1.1(-)	-13(-)	-19(-)	.13(-)
EDYEARS	-2.6(-)	-192(.16)	-188(.16)	1.3(.13)
MARRYD	12(-)	969(-)	976(-)	-.90(-)
RACED	-6.3(-)	970(.13)	948(.13)	-5.2(.13)
RELEASED	29(-)	727(-)	855(-)	-4.9(-)
RULE_BRK	-20(-)	-143(-)	-128(-)	-.86(-)
ARR_RATE	146(-)	-1474(-)	-1357(-)	-.16(-)
TIME_IN	9.5(-)	466(-)	173(-)	3.0(-)
DETERP	-674(.16)	-3611(-)	-3304(-)	-.14(-)
UNEMPLOY	8.2(-)	-59(-)	-79(-)	.46(-)
C. Adj. R-Square	.042	.028	-.008	.043

TABLE B5.2

TIME SPENT IN A WORK RELEASE PROGRAM: FULL SAMPLE AND FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
WRK_RELTa	-.09(-)	-.13(-)	-.05(-)	.03(-)
B. EMI Variables				
WRK_HISD	.03(-)	-.0004(-)	.02(-)	.07(.15)
JOB_SKLD	.002(-)	.06(.14)	.07(.079)	.02(-)
PROPRTYD	.06 (.19)	.07(.079)	.08(.052)	.03(-)
ADMD	.10 (.010)	.04(-)	.11(.002)	-.03(-)
C. Control Variables				
AGE	-.001(-)	-.002(-)	.00003(-)	-.01(-)
EDYEARS	-.01(.15)	-.01(-)	-.01(-)	.01(-)
MARRYD	-.03(-)	-.01(-)	-.03(-)	.10(.12)
RACED	-.01(-)	.05(.13)	.03(-)	-.03(-)
RELEASED	-.07(.18)	-.13(.008)	-.03(-)	.19(.004)
RULE_BRK	.02(.019)	.01(.14)	.02(.008)	-.02(.13)
ARR_RATE	.64(.0001)	.59(.0001)	.59(.0001)	-.03(-)
TIME_IN	.02(-)	.03(-)	.01(-)	.05(-)
DETERP	.31(-)	.72(.060)	.57(.15)	.70(.20)
UNEMPLOY	-.02(.19)	-.01(-)	-.01(-)	-.01

Table B5.2--continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-.06(.055)	-.02 (-)	-.04(.14)	.001(-)
JOB_SKLD	.02(-)	-.03 (.20)	-.02(-)	-.04(-)
PROPRTYD	-.01(-)	.01 (-)	.01(-)	-.01(-)
ADMD	-.02(-)	.01 (-)	-.02(-)	.07(.046)
B. Control*Treatment				
AGE	-.001(-)	.001(-)	.001(-)	-.001(-)
EDYEARS	.002(-)	.01(-)	-.004(-)	-.003(-)
MARRYD	.01(-)	.03(-)	.03(-)	.03(-)
RACED	.05(.076)	.05(.071)	.005(-)	.02(-)
RELEASED	-.01(-)	.02(-)	-.03(-)	.03(-)
RULE_BRK	.02(-)	.04(.016)	.01(-)	-.02(-)
ARR_RATE	.01(-)	-.08(-)	.12(.16)	-.005(-)
TIME_IN	.04(.11)	.02(-)	.04(.033)	-.02(-)
DETERP	.17(-)	-.21(-)	-.06(-)	.19(-)
UNEMPLOY	-.003(-)	.005(-)	.01(-)	-.01(-)
C. Adj. R-Square	.123	.102	.116	.050

Table B5.2--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
WRK_RELTa	51(-)	-1717(-)	-1765(-)	-4.6(-)
B. EMI Variables				
WRK_HISD	58(.041)	-163(-)	-170(-)	5.3(.013)
JOB_SKLD	-16(-)	534(.17)	544(.15)	-2.4(-)
PROPRTYD	-22(-)	377(-)	359(-)	-.88(-)
ADMD	-44(.087)	-504(.14)	-452(.17)	-1.2(-)
C. Control Variables				
AGE	-1.4(-)	-11(-)	-23(-)	.01(-)
EDYEARS	-2.5(-)	12(-)	12(-)	.77(.14)
MARRYD	-2.6(-)	-380(-)	-367(-)	-.10(-)
RACED	-11(-)	38(-)	64(-)	-1.3(-)
RELEASED	13(-)	-850(.068)	-872(.054)	7.7(.030)
RULE_BRK	-12(.032)	-56(-)	-61(-)	.05(-)
ARR_RATE	-190(.009)	-947(-)	-914(-)	-3.5(-)
TIME_IN	22(-)	596(.020)	-51(-)	-.65(-)
DETERP	400(.16)	-1914(-)	-2135(-)	-16(-)
UNEMPLOY	.92(-)	133(-)	136(-)	-1.3(.12)

Table B5.2--continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-41(.10)	57(-)	45(-)	.33(-)
JOB_SKLD	-1.7(-)	-277(-)	-317(-)	1.6(-)
PROPRTYD	-13(-)	178(-)	179(-)	-.72(-)
ADMD	21(-)	-20(-)	-13(-)	.84(-)
B. Control*Treatment				
AGE	.23(-)	20(-)	23(-)	.04(-)
EDYEARS	-3.1(-)	-10(-)	-4.2(-)	.34(-)
MARRYD	-19(-)	454(-)	415(-)	-.32(-)
RACED	-9.2(-)	-65(-)	-57(-)	-1.5(-)
RELEASED	40(-)	240(-)	286(-)	-2.5(-)
RULE_BRK	4.7(-)	-138(-)	-103(-)	-.35(-)
ARR_RATE	30(-)	478(-)	499(-)	2.9(-)
TIME_IN	-8.7(-)	264(.18)	143(-)	.47(-)
DETERP	-158(-)	1574(-)	1605(-)	2.7(-)
UNEMPLOY	-1.7(-)	27(-)	10(-)	.24(-)
C. Adj. R-Square	.031	.015	-.017	.025

TABLE B5.3

TIME SPENT IN A WORK RELEASE PROGRAM: WORK RELEASE PARTICIPANTS ONLY AND FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
WRK_RELTs	.04(-)	-.02(-)	.22(-)	.25(-)
B. EMI Variables				
WRK_HISD	-.16(.067)	-.19(.009)	.003(-)	-.06(-)
JOB_SKLD	-.03(-)	.04(-)	.11(.14)	.24(.042)
PROPRTYD	-.02(-)	.05(-)	.05(-)	.19(.092)
ADMD	.01(-)	-.003(-)	.002(-)	.12(-)
C. Control Variables				
AGE	.004(-)	.002(-)	.001(-)	-.01(.19)
EDYEARS	-.02(-)	-.02(-)	.01(-)	.03(-)
MARRYD	-.05(-)	.02(-)	-.09(-)	.30(.011)
RACED	.14(.12)	.15(.048)	-.004(-)	.05(-)
RELEASED	.005(-)	-.10(-)	-.02(-)	.17(-)
RULE_BRK	.04(-)	.02(-)	.02(-)	-.04(-)
ARR_RATE	.77(.004)	.85(.0003)	1.2(.0001)	.58(.18)
TIME_IN	.003(-)	.004(-)	-.05(-)	.10(-)
DETERP	1.8(.038)	1.6(.033)	2.1(.007)	.75(-)
UNEMPLOY	-.01(-)	.02(-)	.03(-)	.01(-)

Table B5.3--continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	.02(-)	.06(.13)	-.04(-)	.05(-)
JOB_SKLD	.03(-)	-.03(-)	-.04(-)	-.12(.034)
PROPRTYD	.01(-)	.01(-)	.02(-)	-.07(-)
ADMD	.02(-)	.03(-)	.03(-)	.01(-)
B. Control*Treatment				
AGE	-.002(-)	-.0004(-)	.001(-)	.002(-)
EDYEARS	.004(-)	.01(-)	-.01(.15)	-.01(-)
MARRYD	.01(-)	.01(-)	.05(.20)	-.05(-)
RACED	-.01(-)	.005(-)	.02(-)	-.02(-)
RELEASED	-.03(-)	.01(-)	-.04(-)	.02(-)
RULE_BRK	.01(-)	.03(.11)	.01(-)	-.02(-)
ARR_RATE	-.05(-)	-.20(.10)	-.16(.19)	-.24(-)
TIME_IN	.05(.16)	.03(-)	.06(.011)	-.05(-)
DETERP	-.40(-)	-.53(.14)	-.63(.073)	.16(-)
UNEMPLOY	-.01(-)	-.01(-)	-.01(-)	-.02(-)
C. Adj. R-Square	.159	.165	.175	.079

Table B5.3--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
WRK_RELTs	-176(-)	-3482(-)	-3884(.14)	.47(-)
B. EMI Variables				
WRK_HISD	75(-)	-578(-)	-550(-)	2.2(-)
JOB_SKLD	-75(-)	1100(-)	1234(.19)	4.6(-)
PROPRTYD	-102(.14)	475(-)	566(-)	.23(-)
ADMD	-45(-)	-883(-)	-719(-)	-1.7(-)
C. Control Variables				
AGE	-3.2(-)	-20(-)	-50(-)	.10(-)
EDYEARS	-5.6(-)	-244(.20)	-261(.14)	2.0(.020)
MARRYD	32(-)	579(-)	621(-)	-.91(-)
RACED	-33(-)	1734(.085)	1737(.064)	-6.4(.093)
RELEASED	-54(-)	-511(-)	-464(-)	5.2(-)
RULE_BRK	-58(.020)	101(-)	62(-)	-.01(-)
ARR_RATE	-169(-)	-4914(.045)	-4472(.050)	1.9(-)
TIME_IN	54(-)	1208(.051)	380(-)	3.3(-)
DETERP	-691(-)	-17,266(.074)	-16,853(.061)	-20(-)
UNEMPLOY	1.6(-)	196(-)	154(-)	-1.5(-)

Table B5.3--continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-46(-)	322(-)	270(-)	1.9(-)
JOB_SKLD	29(-)	-403(-)	-529(-)	-1.4(-)
PROPRTYD	21(-)	49(-)	4.3(-)	-.79(-)
ADMD	23(-)	203(-)	141(-)	1.5(-)
B. Control*Treatment				
AGE	.84(-)	22(-)	35(-)	-.002(-)
EDYEARS	-.80(-)	94(-)	114(-)	-.17(-)
MARRYD	-31(-)	24(-)	-18(-)	.03(-)
RACED	-.67(-)	-826(.14)	-806(.12)	.30(-)
RELEASED	80(.20)	2.7(-)	12(-)	-1.7(-)
RULE_BRK	35(.11)	-319(-)	-260(-)	-.55(-)
ARR_RATE	24(-)	1962(.15)	1808(.16)	.81(-)
TIME_IN	-22(-)	193(-)	132(-)	-1.2(-)
DETERP	382(-)	6589(-)	6600(.19)	4.4(-)
UNEMPLOY	-2.7(-)	-2.7(-)	6.3(-)	.29(-)
C. Adj. R-Square	-.022	.059	-.012	.076

TABLE B5.4

PARTICIPATION IN EDUCATIONAL AND VOCATIONAL PROGRAMS: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
ED_VOCD	-.20(-)	-.04(-)	-.04(-)	.12(-)
B. EMI Variables				
WRK_HISD	-.04(-)	-.04(-)	-.03(-)	.07(.19)
JOB_SKLD	.05(-)	.05(-)	.08(.051)	-.05(-)
PROPRTYD	.004(-)	.02(-)	.03(.-)	-.04(-)
ADMD	.09(.044)	.06(.16)	.12(.004)	-.03(-)
C. Control Variables				
AGE	-.01(.11)	-.003(-)	-.001(-)	-.005(-)
EDYEARS	-.02(.056)	.002(-)	-.01(-)	-.01(-)
MARRYD	-.03(-)	-.03(-)	-.08(.077)	.17(.005)
RACED	-.03(-)	.08(.061)	-.01(-)	.08(.17)
RELEASED	-.09(.13)	-.14(.005)	-.07(.18)	.29(.0001)
RULE_BRK	.02(.088)	.01(-)	.03(.014)	-.01(-)
ARR_RATE	.92(.0001)	.77(.0001)	.92(.0001)	-.20(-)
TIME_IN	.02(-)	.07(.031)	.03(-)	.01(-)
DETERP	.36(-)	.15(-)	.09(-)	1.5(.017)
UNEMPLOY	-.01(-)	-.005(-)	.01(-)	-.01(-)

Table B5.4 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	.03(-)	.05(-)	.03(-)	.05(-)
JOB_SKLD	-.03(-)	-.02(-)	-.03(-)	.05(-)
PROPRTYD	.09(.18)	.11(.097)	.13(.041)	.12(.16)
ADMD	.04(-)	.03(-)	-.001(-)	.07(-)
B. Control*Treatment				
AGE	.003(-)	-.003(-)	-.004(-)	.001(-)
EDYEARS	.01(-)	-.02(.13)	-.003(-)	.04(.064)
MARRYD	-.03(-)	.07(-)	.15(.039)	-.08(-)
RACED	.15(.021)	.05(-)	.11(.066)	-.18(.029)
RELEASED	.05(-)	.10(-)	.08(-)	-.20(.086)
RULE_BRK	.02(-)	.02(.20)	-.004(-)	-.03(-)
ARR_RATE	-.49(.015)	-.50(.007)	-.52(.006)	.33(-)
TIME_IN	.01(-)	-.05(-)	.002(-)	.004(-)
DETERP	.33(-)	.69(-)	.74(-)	-1.1(-)
UNEMPLOY	-.02(-)	.005(-)	-.03(.19)	-.02(-)
C. Adj. R-Square	.113	.100	.117	.071

Table B5.4--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
ED_VOCD	50(-)	4838 (.10)	4334(.13)	3.3(-)
B. EMI Variables				
WRK_HISD	14(-)	141(-)	118(-)	4.4(.074)
JOB_SKLD	-18(-)	75(-)	58(-)	2.6(-)
PROPRTYD	-47(.19)	325(-)	271(-)	-.52(-)
ADMD	-20(-)	-669(.10)	-558(.16)	-1.1(-)
C. Control Variables				
AGE	-1.4(-)	25(-)	13(-)	-.09(-)
EDYEARS	.32(-)	-22(-)	-20(-)	1.3(.011)
MARRYD	28(-)	324(-)	226(-)	.38(-)
RACED	-30(-)	283(-)	286(-)	-.10(-)
RELEASED	39(-)	-337(-)	-338(-)	7.4(.053)
RULE_BRK	-9.4(.19)	-21(-)	-29(-)	.03(-)
ARR_RATE	-143(.094)	136(-)	242(-)	7.7(-)
TIME_IN	7.9(-)	768(.011)	-2.2(-)	.01(-)
DETERP	111(-)	5932(-)	5162(-)	-12(-)
UNEMPLOY	12(-)	-2.2(-)	-.37(-)	-2.2(.018)

Table B5.4 --continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	37(-)	-484(-)	-472(-)	.64(-)
JOB_SKLD	10(-)	851(.18)	882(.15)	-4.7(.17)
PROPRTYD	19(-)	244(-)	315(-)	-1.9(-)
ADMD	-29(-)	292(-)	210(-)	1.1(-)
B. Control*Treatment				
AGE	3.0(-)	-90(.093)	-81(.12)	.14(-)
EDYEARS	-8.6(-)	101(-)	106(-)	-.74(-)
MARRYD	-101(.091)	-865(-)	-721(-)	-1.0(-)
RACED	25(-)	-412(-)	-389(-)	-4.5(.19)
RELEASED	-11(-)	-1441(.10)	-1453(.088)	-5.3(-)
RULE_BRK	-1.5(-)	-7.5(-)	5.9(-)	-.32(-)
ARR_RATE	-36(-)	-2462(.14)	-2537(.12)	-13(-)
TIME_IN	-4.3(-)	-180(-)	-133(-)	.22(-)
DETERP	392(-)	-12,341(.061)	-11,386(.076)	.22(-)
UNEMPLOY	-17(-)	257(-)	258(-)	2.2(.10)
C. Adj. R-Square	.030	.042	.012	.044

TABLE B5.5

NUMBER OF PARTICIPATIONS IN EDUCATIONAL AND VOCATIONAL PROGRAMS: . LL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
ED_VOCN	-.03(-)	.01(-)	.07(-)	-.08(-)
B. EMI Variables				
WRK_HISD	-.03(-)	-.03(-)	-.02(-)	.07(.19)
JOB_SKLD	.06(.18)	.04(-)	.07(.060)	-.05(-)
PROPRTYD	.02(-)	.04(-)	.04(-)	-.02(-)
ADMD	.10(.011)	.08(.026)	.13(.0005)	.01(-)
C. Control Variables				
AGE	-.004(.20)	-.003(-)	-.001(-)	-.01(.073)
EDYEARS	-.01(.065)	-.00001(-)	-.01(.18)	-.01(-)
MARRYD	-.06(.19)	-.05(-)	-.09(.045)	.13(.021)
RACED	.03(-)	.09(.010)	.03(-)	.02(-)
RELEASED	-.08(.11)	-.12(.013)	-.04(-)	.26(.0001)
RULE_BRK	.02(.026)	.01(.18)	.03(.012)	-.01(-)
ARR_RATE	.85(.0001)	.65(.0001)	.83(.0001)	-.12(-)
TIME_IN	.02(-)	.06(.044)	.02(-)	.05(-)
DETERP	.22(-)	.07(-)	.25(-)	1.1(.050)
UNEMPLOY	-.01(-)	-.002(-)	.01(-)	-.02(-)

Table B5.5 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	.02(-)	.03(-)	.004(-)	.02(-)
JOB_SKLD	-.03(-)	-.01(-)	-.01(-)	.05(.19)
PROPRTYD	.04(-)	.03(-)	.06(.045)	.04(-)
ADMD	.001(-)	-.02(-)	-.02(-)	.02(-)
B. Control*Treatment				
AGE	.0003(-)	-.001(-)	-.003(-)	.001(-)
EDYEARS	.003(-)	-.01(.13)	-.002(-)	.02(.13)
MARRYD	.03(-)	.08(.064)	.10(.012)	.01(-)
RACED	.02(-)	-.0001(-)	.01(-)	-.03(-)
RELEASED	.02(-)	.02(-)	.01(-)	-.10(-)
RULE_BRK	.01(-)	.01(.16)	.0004(-)	-.02(.20)
ARR_RATE	-.21(.031)	-.15(.087)	-.20(.028)	.10(-)
TIME_IN	.001(-)	-.02(-)	.01(-)	-.03(-)
DETERP	.27(-)	.44(.12)	.26(-)	-.16(-)
UNEMPLOY	-.01(-)	-.001(-)	-.01(.20)	-.007(-)
C. Adj. R-Square	.109	.097	.113	.057

Table B5.5--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
ED_VOCN	-58(-)	2338(.10)	2107(.13)	4.9(-)
B. EMI Variables				
WRK_HISD	26(-)	131(-)	123(-)	4.3(.045)
JOB_SKLD	-2.0(-)	247(-)	228(-)	1.2(-)
PROPRTYD	-40(-)	243(-)	212(-)	-.32(-)
ADMD	-38(.17)	-629(.096)	-541(.14)	-1.5(-)
C. Control Variables				
AGE	-2.6(-)	6.6(-)	-5.1(-)	.05(-)
EDYEARS	-2.2(-)	.26(-)	3.1(-)	1.4(.003)
MARRYD	15(-)	90(-)	47(-)	.04(-)
RACED	-27(-)	228(-)	251(-)	-1.9(-)
RELEASED	15(-)	-496(-)	-501(-)	6.4(.078)
RULE_BRK	-14(.039)	-10(-)	-18(-)	.16(-)
ARR_RATE	-155(.045)	79(-)	162(-)	4.5(-)
TIME_IN	14(-)	672(.014)	-72(-)	.04(-)
DETERP	241(-)	4121(-)	3433(-)	-22(-)
UNEMPLOY	7.0(-)	131(-)	130(-)	-1.8(.030)

Table B5.5--continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	8.6(-)	-213(-)	-239(-)	.96(-)
JOB_SKLD	-14(-)	250(-)	270(-)	-1.4(-)
PROPRTYD	-.95(-)	275(-)	290(-)	-.99(-)
ADMD	5.9(-)	124(-)	88.4(-)	1.1(-)
B. Control*Treatment				
AGE	2.3(-)	-30(-)	-26(-)	-.08(-)
EDYEARS	-1.5(-)	27(-)	30(-)	-.64(.16)
MARRYD	-46(.15)	-215(-)	-200(-)	-.22(-)
RACED	17(-)	-185(-)	-197(-)	-.51(-)
RELEASED	34(-)	-498(-)	-495(-)	-2.5(-)
RULE_BRK	4.0(-)	-28(-)	-17(-)	-.50(-)
ARR_RATE	-8.4(-)	-1307(.10)	-1325(.090)	-7.5(-)
TIME_IN	-5.3(-)	36(-)	32(-)	.32(-)
DETERP	75(-)	-5123(.077)	-4750(.092)	11(-)
UNEMPLOY	-5.2(-)	-10(-)	-5.6(-)	1.1(.072)
C. Adj. R-Square	.023	.017	-.014	.039

TABLE B5.6

PARTICIPATION IN EDUCATIONAL PROGRAMS: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
EDUCD	-.27(-)	-.02(-)	-.08(-)	.24(-)
B. EMI Variables				
WRK_HISD	-.01(-)	-.01(-)	-.0003(-)	.06(-)
JOB_SKLD	.02(-)	.03(-)	.05(.14)	-.02(-)
PROPRTYD	.02(-)	.05(.17)	.06(.11)	-.01(-)
ADMD	.10(.009)	.08(.023)	.10(.004)	.02(-)
C. Control Variables				
AGE	-.003(-)	-.002(-)	-.001(-)	-.01(.12)
EDYEARS	-.01(.060)	.001(-)	-.01(.13)	.003(-)
MARRYD	-.01(-)	.004(-)	-.02(-)	.14(.012)
RACED	.01(-)	.10(.006)	.02(-)	.04(-)
RELEASED	-.10(.053)	-.13(.005)	-.08(.082)	.25(.0001)
RULE_BRK	.03(.023)	.02(.047)	.03(.004)	-.02(.10)
ARR_RATE	.82(.0001)	.64(.0001)	.85(.0001)	-.04(-)
TIME_IN	.03(-)	.07(.016)	.04(.12)	.07(.051)
DETERP	.33(-)	-.002(-)	.31(-)	1.1(.036)
UNEMPLOY	-.02(.13)	-.01(-)	-.001(-)	-.01(-)

Table B5.6--continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-.06(-)	-.04(-)	-.06(-)	.10(-)
JOB_SKLD	.07(-)	.02(-)	.04(-)	.04(-)
PROPRTYD	.09(-)	.07(-)	.11(.12)	.06(-)
ADMD	-.004(-)	-.05(-)	.02(-)	.05(-)
B. Control*Treatment				
AGE	-.001(-)	-.004(-)	-.004(-)	.01(-)
EDYEARS	.01(-)	-.03(.066)	-.01(-)	.01(-)
MARRYD	-.15(.10)	-.03(-)	-.01(-)	-.05(-)
RACED	.09(-)	.01(-)	.08(.19)	-.13(.16)
RELEASED	.12(-)	.10(-)	.17(.072)	-.14(-)
RULE_BRK	.01(-)	.01(-)	-.003(-)	.02(-)
ARR_RATE	-.58(.010)	-.43(.038)	-.72(.0008)	.08(-)
TIME_IN	-.01(-)	-.05(-)	-.03(-)	-.18(.012)
DETERP	.47(-)	1.3(.042)	.61(-)	-.92(-)
UNEMPLOY	.01(-)	.03(-)	.001(-)	-.03(-)
C. Adj. R-Square	.114	.101	.115	.062

Table B5.6--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
EDUCD	11(-)	1371(-)	1007(-)	1.4(-)
B. EMI Variables				
WRK_HISD	16(-)	488(.18)	457(.20)	5.2(.012)
JOB_SKLD	-13(-)	-130(-)	-130(-)	.07(-)
PROPRTYD	-58(.056)	400(-)	370(-)	-.65(-)
ADMD	-30(-)	-410(-)	-323(-)	-1.3(-)
C. Control Variables				
AGE	-1.7(-)	8.7(-)	-3.1(-)	-.06(-)
EDYEARS	-1.1(-)	-57(-)	-54(-)	1.2(.005)
MARRYD	-11(-)	107(-)	53(-)	.12(-)
RACED	-18(-)	170(-)	163(-)	-2.1(-)
RELEASED	30(-)	-446(-)	-433(-)	6.6(.056)
RULE_BRK	-13(.059)	-48(-)	-53(-)	-.18(-)
ARR_RATE	-118(.099)	-300(-)	-178(-)	-1.3(-)
TIME_IN	15(-)	911(.0002)	143(-)	-.45(-)
DETERP	165(-)	2352(-)	1893(-)	-14(-)
UNEMPLOY	10(-)	-23(-)	-24(-)	-1.6(.042)

Table B5.6--continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	52(-)	-2025(.003)	-1994(.002)	-.81(-)
JOB_SKLD	4.1(-)	2284(.001)	2260(.0006)	-1.1(-)
PROPRTYD	75(-)	-399(-)	-308(-)	-3.7(-)
ADMD	11(-)	-629(-)	-653(-)	1.6(-)
B. Control*Treatment				
AGE	3.0(-)	-75(-)	-68(-)	.21(-)
EDYEARS	-11(-)	406(.025)	406(.021)	-1.3(.19)
MARRYD	6.3(-)	-1435(.12)	-1245(.17)	-.88(-)
RACED	24(-)	-750(-)	-678(-)	-1.4(-)
RELEASED	7.6(-)	-1615(.11)	-1657(.089)	-3.4(-)
RULE_BRK	5.1(-)	87(-)	92(-)	.22(-)
ARR_RATE	-183(-)	-2672(.18)	-2937(.13)	2.3(-)
TIME_IN	-15(-)	-871(.067)	-781(.090)	.28(-)
DETERP	427(-)	-8529(.20)	-7844(-)	9.0(-)
UNEMPLOY	-21(-)	455(.069)	459(.059)	1.8(-)
C. Adj. R-Square	.027	.096	.070	.030

TABLE B5.7

ACQUISITION OF A GED: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
GEDD	-.28(-)	.80(-)	.73(-)	-.98(-)
B. EMI Variables				
WRK_HISD	-.01(-)	-.01(-)	-.04(-)	.11(.034)
JOB_SKLD	.02(-)	.05(.13)	.06(.079)	.03(-)
PROPRTYD	.05(-)	.08(.042)	.05(.15)	.03(-)
ADMD	.10(.008)	.07(.035)	.11(.001)	.02(-)
C. Control Variables				
AGE	-.005(.092)	-.01(.027)	-.004(.17)	-.01(.002)
EDYEARS	-.02(.070)	-.01(-)	-.02(.083)	-.001(-)
MARRYD	-.07(.13)	-.01(-)	.001(-)	.18(.003)
RACED	.04(-)	.10(.006)	.07(.043)	.03(-)
RELEASED	-.07(.17)	-.10(.044)	-.02(-)	a
RULE_BRK	.03(.006)	.02(.011)	.03(.002)	-.03(.038)
ARR_RATE	.74(.0001)	.52(.0001)	.70(.0001)	.04(-)
TIME_IN	.02(-)	.05(.083)	.01(-)	.04(-)
DETERP	.38(-)	.58(.11)	.39(-)	.73(.15)
UNEMPLOY	-.01(-)	.01(-)	.01(-)	-.01(-)

Table B5.7 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	.02(-)	-.04(-)	.43(.021)	.15
JOB_SKLD	.28(.12)	.10(-)	-.03(-)	-.53(.026)
PROPRTYD	.05(-)	-.07(-)	.15(-)	.04(-)
ADMD	.53(.030)	.19(-)	.34(.13)	-.44(.15)
B. Control*Treatment				
AGE	-.05(041)	-.02(-)	-.04(.083)	.05(.049)
EDYEARS	.03(-)	-.03(-)	.02(-)	.01(-)
MARRYD	.41(.099)	.15(-)	.07(-)	-.44(.15)
RACED	-.03(-)	.10(-)	-.34(.040)	-.27(-)
RELEASED	-.11(-)	-.47(-)	-.68(.18)	a
RULE_BRK	.10(-)	-.02(-)	.06(-)	-.10(-)
ARR_RATE	-1.2(.029)	-.58(-)	-.97(.064)	.30(-)
TIME_IN	.17(-)	.06(-)	.29(.031)	-.09(-)
DETERP	5.7(.006)	3.2(.093)	2.4(.20)	.68(-)
UNEMPLOY	-.07(-)	-.07(-)	-.06(-)	.01(-)
C. Adj. R-Square	.115	.093	.107	.046

Table B5.7--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
GEDD	1537(.16)	-10,299(-)	-10,218(-)	6.7(-)
B. EMI Variables				
WRK_HISD	44(.11)	223(-)	187(-)	6.9(.001)
JOB_SKLD	-19(-)	309(-)	303(-)	-2.8(.17)
PROPRTYD	1.5(-)	531(.17)	469(-)	.08(-)
ADMD	-27(-)	-416(.20)	-344(-)	-1.2(-)
C. Control Variables				
AGE	-1.7(-)	-.22(-)	-12(-)	.01(-)
EDYEARS	-9.2(.18)	-25(-)	-22(-)	.56(-)
MARRYD	10(-)	-158(-)	-187(-)	-1.9(-)
RACED	-12(-)	14(-)	56(-)	-1.3(-)
RELEASED	33(-)	-355(-)	-386(-)	a
RULE_BRK	-11(.046)	-26(-)	-28(-)	.01(-)
ARR_RATE	-157(.027)	-863(-)	-815(-)	-1.8(-)
TIME_IN	-.02(-)	786(.001)	67(-)	1.2(-)
DETERP	401(.13)	b	b	-18(-)
UNEMPLOY	6.1(-)	b	b	-1.3(.11)

Table B5.7 --continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-165(-)	853(-)	811(-)	-8.4(-)
JOB_SKLD	63(-)	-2059(-)	-2035(-)	10(-)
PROPRTYD	-262(-)	6655(-)	7159(-)	-6.1(-)
ADMD	-181(-)	3261(-)	3431(-)	9.7(-)
B. Control*Treatment				
AGE	-28(-)	348(-)	283(-)	-1.1(-)
EDYEARS	-34(-)	-636(-)	-565(-)	.15(-)
MARRYD	423(-)	-2609(-)	-1948(-)	4.2(-)
RACED	-70(-)	1171(-)	1028(-)	-1.6(-)
RELEASED	130(-)	1695(-)	1544(-)	a
RULE_BRK	-148(-)	-598(-)	-789(-)	-2.5(-)
ARR_RATE	-514(-)	1359(-)	1949(-)	9.2(-)
TIME_IN	161(-)	2877(-)	3405(-)	-.89(-)
DETERP	-569(-)	b	b	14(-)
UNEMPLOY	-30(-)	b	b	2.8(-)
C. Adj. R-Square	.040	.026	-.027	-.020

[a]Matrix becomes singular with presence of RELEASED in equation. RELEASED was omitted from regression.

[b]Matrix becomes singular with presence of DETERP and UNEMPLOY in equation. Those two variables were omitted from the regression.

TABLE B5.8

PARTICIPATION IN VOCATIONAL PROGRAMS: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
VOCATND	.11(-)	.05(-)	.37(-)	-.62(.17)
B. EMI Variables				
WRK_HISD	-.04(-)	-.04(-)	-.05(.14)	.07(.14)
JOB_SKLD	.06(.14)	.04(-)	.09(.020)	-.03(-)
PROPRTYD	.03(-)	.04(-)	.05(.19)	-.001(-)
ADMD	.08(.029)	.03(-)	.11(.002)	.002(-)
C. Control Variables				
AGE	-.003(-)	-.003(-)	.001(-)	-.01(.020)
EDYEARS	-.01(.12)	-.002(-)	-.01(-)	-.01(-)
MARRYD	-.05(-)	-.04(-)	-.08(.050)	.14(.008)
RACED	.03(-)	.09(.007)	.04(-)	.02(-)
RELEASED	-.08(.094)	-.12(.007)	-.03(-)	.24(.0001)
RULE_BRK	.03(.010)	.02(.099)	.03(.002)	-.01(-)
ARR_RATE	.81(.0001)	.68(.0001)	.79(.0001)	-.22(.20)
TIME_IN	.03(-)	.05(.067)	.02(-)	.001(-)
DETERP	.26(-)	.41(-)	.33(-)	1.2(.021)
UNEMPLOY	-.004(-)	.001(-)	.01(-)	-.02(-)

Table B5.8 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	.10(.16)	.10(.13)	.13(.055)	.02(-)
JOB_SKLD	-.11(.13)	-.04(-)	-.07(-)	.07(-)
PROPRTYD	.05(-)	.09(.18)	.11(.11)	.07(-)
ADMD	.06(-)	.11(.11)	.02(-)	.06(-)
B. Control*Treatment				
AGE	.002(-)	-.001(-)	-.01(.20)	.01(-)
EDYEARS	-.005(-)	-.02(-)	-.01(-)	.06(.007)
MARRYD	.07(-)	.15(.075)	.23(.005)	-.04(-)
RACED	.06(-)	.001(-)	.01(-)	-.09(-)
RELEASED	.03(-)	.06(-)	-.07(-)	-.08(-)
RULE_BRK	.01(-)	.03(.15)	-.01(-)	-.06(.035)
ARR_RATE	-.39(.068)	-.39(.043)	-.32(.11)	.50(.082)
TIME_IN	-.03(-)	-.05(-)	-.003(-)	.09(-)
DETERP	.66(-)	.32(-)	.38(-)	-.73(-)
UNEMPLOY	-.05(.054)	-.01(-)	-.04(.10)	-.01(-)
C. Adj. R-Square	.110	.098	.114	.068

Table B5.8--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
VOCATND	-266(-)	5926(.064)	5461(.079)	12(-)
B. EMI Variables				
WRK_HISD	25(-)	-303(-)	-338(-)	4.4(.025)
JOB_SKLD	-9.0(-)	665(.087)	662(.080)	.68(-)
PROPRTYD	-34(-)	361(-)	333(-)	-.78(-)
ADMD	-39(.14)	-829(.020)	-739(.033)	-.47(-)
C. Control Variables				
AGE	-2.3(-)	2.0(-)	-7.9(-)	.10(-)
EDYEARS	-5.5(-)	34(-)	37(-)	1.3(.003)
MARRYD	14(-)	-7.8(-)	-75(-)	-.01(-)
RACED	-29(-)	172(-)	188(-)	-2.0(-)
RELEASED	34(-)	-678(.14)	-694(.12)	5.7(.068)
RULE_BRK	-12(.042)	4.9(-)	-.58(-)	.14(-)
ARR_RATE	-152(.048)	-827(-)	-763(-)	6.6(-)
TIME_IN	13(-)	577(.029)	-153(-)	.67(-)
DETERP	266(-)	-219(-)	-838(-)	-13(-)
UNEMPLOY	-.40(-)	224(.11)	219(.11)	-1.5(.055)

Table B5.8--continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	18(-)	967(.16)	986(.14)	1.2(-)
JOB_SKLD	-9.0(-)	-856(-)	-853(-)	-2.7(-)
PROPRTYD	-.45(-)	184(-)	201(-)	-.96(-)
ADMD	27(-)	1077(.11)	985(.14)	.09(-)
B. Control*Treatment				
AGE	4.3(-)	-98(.14)	-92(.15)	-.21(-)
EDYEARS	5.5(-)	-226(.19)	-217(.20)	-.55(-)
MARRYD	-104(.12)	217(-)	322(-)	-1.3(-)
RACED	33(-)	-116(-)	-104(-)	-3.1(-)
RELEASED	-9.9(-)	-527(-)	-492(-)	-4.8(-)
RULE_BRK	2.5(-)	-199(-)	-175(-)	-1.8(-)
ARR_RATE	-47(-)	-44(-)	-22(-)	-14(-)
TIME_IN	-3.6(-)	617(-)	566(-)	-.52(-)
DETERP	256(-)	-1459(-)	-627(-)	6.6(-)
UNEMPLOY	14(-)	-324(-)	-318(-)	1.5(-)
C. Adj. R-Square	.024	.021	-.011	.032

TABLE B6.1

PARTICIPATION IN PRISON WORK PROGRAMS: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
WRK_PGMD	.02 (-)	.22(-)	.06(-)	-.39(-)
B. EMI Variables				
WRK_HISD	.11(.091)	.03(-)	.01(-)	.04(-)
JOB_SKLD	.12(.049)	.05(-)	.09(.12)	-.15(.054)
PROPRTYD	.02(-)	.03(-)	.004(-)	-.08(-)
ADMD	.25(.0001)	.15(.006)	.19(.001)	-.01(-)
C. Control Variables				
AGE	-.01(.030)	-.004(-)	-.003(-)	-.001(-)
EDYEARS	-.02(.17)	-.01(-)	-.01(-)	-.001(-)
MARRYD	-.10(.20)	-.09(.18)	-.10(.15)	.10(-)
RACED	.13(.040)	.08(.15)	.07(-)	-.08(-)
RELEASED	-.04(-)	.01(-)	-.01(-)	.18(.083)
RULE_BRK	.01(-)	.02(.14)	.02(.090)	-.01(-)
ARR_RATE	.76(.0001)	.53(.003)	.64(.001)	-.18(-)
TIME_IN	.07(.14)	.05(-)	.12(.007)	-.08(-)
DETERP	.22(-)	.56(-)	.79(.18)	-.63(-)
UNEMPLOY	-.01(-)	.02(-)	-.01(-)	.01(-)

Table B6.1 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-.16(.027)	-.06(-)	-.02(-)	.03(-)
JOB_SKLD	-.14(.047)	-.03(-)	-.05(-)	.21(.023)
PROPRTYD	.04(-)	.06(-)	.10(.16)	.14(.15)
ADMD	-.20(.004)	-.12(.055)	-.12(.078)	.06(-)
B. Control*Treatment				
AGE	.01(.090)	.002(-)	.003(-)	-.01(.19)
EDYEARS	.01(-)	.003(-)	-.01(-)	.01(-)
MARRYD	.08(-)	.12(.14)	.10(-)	.03(-)
RACED	-.13(.071)	.002(-)	-.05(-)	.10(-)
RELEASED	-.07(-)	-.18(.043)	-.06(-)	.06(-)
RULE_BRK	.04(.046)	.01(-)	.01(-)	-.02(-)
ARR_RATE	-.09(-)	.03(-)	.09(-)	.13(-)
TIME_IN	-.06(-)	-.003(-)	-.12(.019)	.14(.064)
DETERP	.34(-)	-.11(-)	-.43(-)	2.0 (.044)
UNEMPLOY	-.02(-)	-.03(-)	.01(-)	-.03(-)
C. Adj. R-Square	.127	.096	.110	.067

Table B6.1--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
WRK_PGMD	-156(-)	2556(-)	1895(-)	47(.018)
B. EMI Variables				
WRK_HISD	16(-)	221(-)	190(-)	2.4(-)
JOB_SKLD	-44(-)	240(-)	205(-)	-4.1(-)
PROPRTYD	-30(-)	702(-)	615(-)	- .06(-)
ADMD	-59(.17)	-707(.20)	-682(.20)	-1.2(-)
C. Control Variables				
AGE	1.3(-)	44(-)	28(-)	.09(-)
EDYEARS	-3.3(-)	-218(.12)	-185(.17)	2.6(.0009)
MARRYD	-50(-)	- 43(-)	-264(-)	3.8(-)
RACED	5.1(-)	183(-)	190(-)	-1.8(-)
RELEASED	38(-)	-802(-)	-808(-)	6.9(.13)
RULE_BRK	-14(.12)	-152(.19)	-149(.18)	-.48(-)
ARR_RATE	-195(.12)	-239(-)	-376(-)	12 (-)
TIME_IN	-13(-)	1410(.0005)	652 (.095)	2.7(-)
DETERP	6.1(-)	6694(-)	5643(-)	43(-)
UNEMPLOY	-17(-)	178(-)	143(-)	.28(-)

Table B6.1 --continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	17(-)	-401(-)	-383(-)	3.7(-)
JOB_SKLD	48(-)	156(-)	196(-)	4.1(-)
PROPRTYD	-16(-)	-632(-)	-493(-)	-2.0(-)
ADMD	34(-)	351(-)	396(-)	.74(-)
B. Control*Treatment				
AGE	- 4.0(-)	-78(.12)	-67(.17)	-.02(-)
EDYEARS	- .29(-)	272(.086)	237(.13)	-1.9(.037)
MARRYD	47(-)	-112(-)	157(-)	-6.2(.15)
RACED	-18(-)	- 87(-)	-70(-)	- .77(-)
RELEASED	- 6.3(-)	-131 (-)	-115(-)	-2.1(-)
RULE_BRK	4.9(-)	205(.17)	206(.16)	1.1(-)
ARR_RATE	45(-)	-882(-)	-610(-)	-18(-)
TIME_IN	32(-)	-1020(.031)	-993(.032)	-3.9(-)
DETERP	501(-)	-10,962(.12)	-9703(.16)	-67(.098)
UNEMPLOY	25(.20)	-91(-)	-43(-)	-2.0(-)
C. Adj. R-Square	.028	.043	.006	.056

TABLE B6.2

NUMBER OF PARTICIPATIONS IN PRISON WORK PROGRAMS: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
WRK_PGMN	-.06(-)	-.09(-)	-.04(-)	-.16(-)
B. EMI Variables				
WRK_HISD	-.003(-)	-.01(-)	-.04(-)	.09(.14)
JOB_SKLD	.04(-)	-.01(-)	.06(-)	-.08(.20)
PROPRTYD	.04(-)	.06(-)	.05(-)	-.02(-)
ADMD	.16(.001)	.10(.028)	.16(.001)	.004(-)
C. Control Variables				
AGE	-.004(-)	-.003(-)	.00003(-)	-.004(-)
EDYEARS	-.02(.092)	-.01(-)	-.01(.16)	-.001(-)
MARRYD	-.11(.076)	-.07(-)	-.07(-)	.07(-)
RACED	.07(.15)	.05(-)	.04(-)	-.03(-)
RELEASED	-.04(-)	-.05(-)	-.04(-)	.19(.027)
RULE_BRK	.01(-)	.01(-)	.02(.067)	-.01(-)
ARR_RATE	.70(.0001)	.42(.003)	.65(.0001)	-.22(-)
TIME_IN	.01(-)	-.001(-)	.02(-)	-.01(-)
DETERP	-.08(-)	.36(-)	.51(-)	.50(-)
UNEMPLOY	-.002(-)	.01(-)	.001(-)	-.02(-)

Table B6.2--continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-.01(-)	.002(-)	.02(-)	-.01(-)
JOB_SKLD	-.01(-)	.04(.20)	.004(-)	.06(.11)
PROPRTYD	.001(-)	.01(-)	.02(-)	.04(-)
ADMD	-.05(.10)	-.03(-)	-.04(.18)	.02(-)
B. Control*Treatment				
AGE	.001(-)	.001(-)	-.001(-)	-.002(-)
EDYEARS	.004(-)	.002(-)	.002(-)	.004(-)
MARRYD	.05(.15)	.05(.16)	.04(-)	.05(-)
RACED	-.03(-)	.03(-)	.004(-)	.02(-)
RELEASED	-.04(-)	-.04(-)	-.005(-)	.04(-)
RULE_BRK	.02(.024)	.02(.050)	.01(-)	-.02(.15)
ARR_RATE	-.004(-)	.11(.19)	.04(-)	.14(-)
TIME_IN	.01(-)	.04(.094)	.01(-)	.04(.15)
DETERP	.49(.14)	.14(-)	-.005(-)	.19(-)
UNEMPLOY	-.02(.17)	-.01(-)	-.002(-)	.001(-)
C. Adj. R-Square	.114	.100	.102	.054

Table B6.2--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
WRK_PGMN	-135(.18)	1712(.19)	1506(-)	17(.045)
B. EMI Variables				
WRK_HISD	33(-)	195(-)	166(-)	3.7(.15)
JOB_SKLD	-25(-)	342(-)	335(-)	-2.3(-)
PROPRTYD	-37(-)	835(.11)	718(.16)	-2.1(-)
ADMD	-20(-)	-585(.19)	-548(-)	-1.2(-)
C. Control Variables				
AGE	-.65(-)	35(-)	19(-)	- .03(-)
EDYEARS	-9.0(-)	-93(-)	-69(-)	2.3(.0003)
MARRYD	-28.(-)	-369(-)	-502(-)	1.3(-)
RACED	-18(-)	60(-)	75(-)	-3.9(.12)
RELEASED	50(-)	-852(.20)	-868(.18)	5.9(.15)
RULE_BRK	-14(.055)	-72(-)	-73(-)	- .47(-)
ARR_RATE	-266(.006)	-668(-)	-599(-)	3.5(-)
TIME_IN	23(-)	1078(.001)	400(-)	2.2(-)
DETERP	24(-)	4920(-)	4143(-)	28(-)
UNEMPLOY	-6.3(-)	110(-)	86(-)	-.06(-)

Table B6.2 --continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-2.4(-)	-228(-)	-219(-)	.96(-)
JOB_SKLD	13(-)	37(-)	33(-)	1.3(-)
PROPRTYD	- .70(-)	-476(.15)	-378(-)	.36(-)
ADMD	-11(-)	76(-)	97(-)	.66(-)
B. Control*Treatment				
AGE	-.35(-)	-41(.096)	-35(.14)	.08(-)
EDYEARS	3.8(-)	63(-)	48(-)	-.94(.028)
MARRYD	9.3(-)	165(-)	252(-)	-1.6(-)
RACED	5.4(-)	59(-)	51(-)	1.0(-)
RELEASED	-12(-)	80(-)	83(-)	-.07(-)
RULE_BRK	4.2(-)	32(-)	35(-)	.60(-)
ARR_RATE	88(.15)	-326(-)	-330(-)	-4.8(-)
TIME_IN	-6.4(-)	-243(-)	-306(.11)	-2.3(.071)
DETERP	268(-)	-4865(.10)	-4460(.12)	-30(.091)
UNEMPLOY	6.0(-)	2.8(-)	20(-)	-.72(-)
C. Adj. R-Square	.028	.017	-.016	.058

TABLE B6.3

PARTICIPATION IN PRISON INDUSTRY PROGRAMS: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
WRK_ PID	-.08(-)	-.56(-)	-.38(-)	.20(-)
B. EMI Variables				
WRK_HISD	-.02(-)	-.02(-)	-.01(-)	.10(.023)
JOB_SKLD	.02(-)	.03(-)	.06(.075)	-.01(-)
PROPRTYD	.04(-)	.08(.018)	.07(.041)	.04(-)
ADMD	.10(.005)	.05(.12)	.10(.002)	.05(-)
C. Control Variables				
AGE	-.002(-)	-.001(-)	.001(-)	-.01(.033)
EDYEARS	-.01(.038)	-.01(-)	-.01(.025)	.01(-)
MARRYD	-.05(.20)	-.04(-)	-.05(.19)	.14(.004)
RACED	.04(-)	.08(.014)	.03(-)	-.003(-)
RELEASED	-.08(.11)	-.11(.010)	-.05(-)	.21(.0004)
RULE_BRK	.03(.003)	.03(.003)	.03(.003)	-.02(.18)
ARR_RATE	.64(.0001)	.51(.0001)	.70(.0001)	-.07(-)
TIME_IN	.04(.13)	.04(.10)	.03(-)	.03(-)
DETERP	.39(-)	.30(-)	.37(-)	.83(.067)
UNEMPLOY	-.02(.11)	-.01(-)	-.003(-)	-.02(-)

Table B6.3 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	.02(-)	-.01(-)	-.09(-)	-.09(-)
JOB_SKLD	.07(-)	.07(-)	.05(-)	.02(-)
PROPRTYD	.02(-)	-.08(-)	.14(.16)	-.14(-)
ADMD	.03(-)	.08(-)	.01(-)	-.13(-)
B. Control*Treatment				
AGE	-.01(.13)	-.01(-)	-.01(.13)	.01(-)
EDYEARS	.02(-)	.01(-)	.03(.15)	-.003(-)
MARRYD	.11(-)	.21(.057)	.21(.052)	-.16(-)
RACED	.02(-)	.11(-)	.08(-)	-.05(-)
RELEASED	-.02(-)	.004(-)	.12(-)	-.16(-)
RULE_BRK	.003(-)	-.02(-)	.01(-)	-.07(.12)
ARR_RATE	.33(-)	.51(.089)	-.08(-)	.24(-)
TIME_IN	-.04(-)	.02(-)	.02(-)	-.05(-)
DETERP	.06(-)	1.9(.084)	.54(-)	1.0(-)
UNEMPLOY	.01(-)	-.01(-)	-.01(-)	-.01(-)
C. Adj. R-Square	.106	.095	.109	.052

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Table B6.3--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
WRK_PID	540(-)	1060(-)	1172(-)	-13(-)
B. EMI Variables				
WRK_HISD	26(-)	-100(-)	-132(-)	3.8(.025)
JOB_SKLD	-4.1(-)	498(.15)	499(.14)	.65(-)
PROPRTYD	-40(.13)	427(-)	406(-)	-2.3(.19)
ADMD	-23(-)	-572(.075)	-504(.11)	.43(-)
C. Control Variables				
AGE	-.76(-)	-16(-)	-24(-)	-.04(-)
EDYEARS	-3.1(-)	-14(-)	-8.5(-)	1.1(.003)
MARRYD	-19(-)	-80(-)	-134(-)	.38(-)
RACED	-24(-)	197(-)	202(-)	-3.2(.064)
RELEASED	48(.12)	-818(.066)	-806(.063)	4.9(.094)
RULE_BRK	-14(.010)	-79(-)	-77(-)	-.45(-)
ARR_RATE	-154(.016)	-966(-)	-893(-)	-4.0(-)
TIME_IN	13(-)	641(.007)	-87(-)	.88(-)
DETERP	459(.063)	-1059(-)	-1418(-)	-2.2(-)
UNEMPLOY	-2.7(-)	188(.14)	179(.15)	-.52(-)

Table B6.3--continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	87(-)	414(-)	533(-)	9.2(.073)
JOB_SKLD	-26(-)	-1002(-)	-999(-)	-13(.023)
PROPRTYD	30(-)	-568(-)	-411(-)	8.3(.16)
ADMD	39(-)	25(-)	19(-)	-8.0(.16)
B. Control*Treatment				
AGE	-14(-)	6.2(-)	-5.5(-)	.70(.12)
EDYEARS	-23(-)	20(-)	-2.3(-)	-.20(-)
MARRYD	23(-)	421(-)	633(-)	-7.7(-)
RACED	149(.060)	-660(-)	-544(-)	3.6(-)
RELEASED	-23(-)	191(-)	111(-)	13(.20)
RULE_BRK	26(.093)	184(-)	180(-)	4.0(.038)
ARR_RATE	-317(.18)	1339(-)	1146(-)	15(-)
TIME_IN	-51(-)	437(-)	361(-)	-8.4(.077)
DETERP	-1348(.091)	3765(-)	4223(-)	-61(-)
UNEMPLOY	45(.092)	-499(.20)	-455(-)	-.84(-)
C. Adj. R-Square	.050	.006	-.026	.093

TABLE B6.4

PARTICIPATION IN PRISON DUTY PROGRAMS: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
WRK_PDD	-.002(-)	.24(-)	.08(-)	-.37(-)
B. EMI Variables				
WRK_HISD	.09(.12)	.04(-)	-.003(-)	.05(-)
JOB_SKLD	.10(.082)	.04(-)	.08(.15)	-.13(.085)
PROPRTYD	.03(-)	.02(-)	.06(-)	-.07(-)
ADMD	.22(.0001)	.15(.002)	.20(.0001)	-.04(-)
C. Control Variables				
AGE	-.01(.038)	-.01(.19)	-.002(-)	.0001(-)
EDYEARS	-.02(-)	-.004(-)	-.01(-)	-.001(-)
MARRYD	-.08(-)	-.04(-)	-.06(-)	.07(-)
RACED	.10(.079)	.09(.087)	.05(-)	-.05(-)
RELEASED	-.03(-)	.01(-)	.02(-)	.17(.087)
RULE_BRK	.01(-)	.01(-)	.02(.056)	-.01(-)
ARR_RATE	.75(.0001)	.58(.0005)	.62(.0003)	.10(-)
TIME_IN	.04(-)	.02(-)	.08(.056)	-.04(-)
DETERP	-.07(-)	.51(-)	.46(-)	-.28(-)
UNEMPLOY	-.01(-)	.02(-)	.001(-)	.0005(-)

Table B6.4 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-.15(.031)	-.07(-)	-.01(-)	.027(-)
JOB_SKLD	-.12(.086)	-.01(-)	-.03(-)	.19(.036)
PROPRTYD	.02(-)	.08(-)	.03(-)	.14(.14)
ADMD	-.18(.007)	-.14(.022)	-.14(.032)	.10(-)
B. Control*Treatment				
AGE	.01(.11)	.004(-)	.002(-)	-.01 (.16)
EDYEARS	.001(-)	-.004(-)	-.003(-)	.01 (-)
MARRYD	.05(-)	.03(-)	.04(-)	.08(-)
RACED	-.10(.15)	-.01(-)	-.01(-)	.07(-)
RELEASED	-.09(-)	-.20(.022)	-.10(-)	.08(-)
RULE_BRK	.04(.034)	.03(.088)	.01(-)	-.02(-)
ARR_RATE	-.07(-)	-.03(-)	.11(-)	-.23(-)
TIME_IN	-.02(-)	.03(-)	-.07 (.13)	.11(.11)
DETERP	.80(-)	-.02(-)	.02(-)	1.6(.081)
UNEMPLOY	-.02(-)	-.03(-)	-.01(-)	-.02(-)
C. Adj. R-Square	.125	.102	.106	.068

Table B6.4--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
WRK_PDD	-216(-)	2726(-)	2107(-)	54(.005)
B. EMI Variables				
WRK_HISD	13(-)	242(-)	215(-)	2.6(-)
JOB_SKLD	-43(-)	21(-)	13(-)	-3.7(-)
PROPRTYD	-34(-)	706(-)	622(-)	.43(-)
ADMD	-50(-)	-766(.14)	-721(.15)	-.36(-)
C. Control Variables				
AGE	.65(-)	53(.18)	36(-)	.09(-)
EDYEARS	-2.7(-)	-167(-)	-139(-)	2.6(.0003)
MARRYD	-34(-)	-178(-)	-320(-)	4.2(-)
RACED	6.9(-)	22(-)	22(-)	-2.1(-)
RELEASED	57(-)	-789(-)	-785(-)	6.4(.14)
RULE_BRK	-10(.20)	-64(-)	-64(-)	-.42(-)
ARR_RATE	-213(.063)	-456(-)	-480(-)	7.1(-)
TIME_IN	-14(-)	1515(.0001)	765(.043)	3.2(-)
DETERP	-144(-)	6107(-)	4976(-)	44(.16)
UNEMPLOY	-17(-)	95(-)	73(-)	.75(-)

Table B6.4 --continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	22(-)	-413(-)	-399(-)	3.3(-)
JOB_SKLD	49(-)	464(-)	472(-)	3.8(-)
PROPRTYD	-8.4(-)	-703(-)	-566(-)	-3.0(-)
ADMD	25(-)	433(-)	460(-)	-.40(-)
B. Control*Treatment				
AGE	-3.3(-)	-95(.056)	-83(.087)	-.03(-)
EDYEARS	-1.4(-)	217(.16)	187(-)	-2.0(.019)
MARRYD	37(-)	67(-)	256(-)	-6.9(.090)
RACED	-26(-)	216(-)	233(-)	-.26(-)
RELEASED	-26(-)	-59(-)	-55(-)	-1.9(-)
RULE_BRK	-.19(-)	31(-)	34(-)	1.2(-)
ARR_RATE	81(-)	-704(-)	-545(-)	-12(-)
TIME_IN	35(-)	-1191(.011)	-1177(.010)	-4.7(.12)
DETERP	724(.14)	-10,613(.12)	-9314(.16)	-76(.043)
UNEMPLOY	28(.12)	32(-)	66(-)	-2.6(.066)
C. Adj. R-Square	.033	.040	.004	.072

TABLE B6.5

PARTICIPATION IN PRAC: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
PRACD	.03(-)	.49(.098)	.22(-)	.01(-)
B. EMI Variables				
WRK_HISD	-.02(-)	-.005(-)	-.04(-)	.07(-)
JOB_SKLD	.03(-)	-.01(-)	.10(.016)	.03(-)
PROPRTYD	.05(-)	.08(.051)	.14(.001)	.04(-)
ADMD	.10(.020)	.09(.017)	.10(.015)	.03(-)
C. Control Variables				
AGE	-.004(-)	-.001(-)	-.001(-)	-.004(-)
EDYEARS	-.01(.20)	-.004(-)	-.02(.054)	-.002(-)
MARRYD	-.01(-)	.06(-)	.02(-)	.06(-)
RACED	.04(-)	.14(.0004)	.05(-)	.02(-)
RELEASED[a]				
RULE_BRK	.05(.002)	.06(.0001)	.05(.0003)	-.05(.030)
ARR_RATE	.65(.0001)	.49(.0001)	.64(.0001)	.01(-)
TIME_IN	.04(-)	.01(-)	.03(-)	.05(-)
DETERP	.42(-)	.53(-)	.62(.15)	1.3(.030)
UNEMPLOY	-.03(.090)	.004(-)	-.01(-)	-.01(-)

Table B6.5 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	.01(-)	.02(-)	.04(-)	.08(-)
JOB_SKLD	.01(-)	.05(-)	-.10(.15)	-.06(-)
PROPRTYD	.02(-)	.02(-)	-.11(.15)	.03(-)
ADMD	-.02(-)	-.01(-)	.07(-)	.04(-)
B. Control*Treatment				
AGE	.002(-)	-.01(-)	-.002(-)	-.01(-)
EDYEARS	-.01(-)	-.01(-)	-.0004(-)	.02(-)
MARRYD	-.15(.082)	-.16(.036)	-.13(.10)	.04(-)
RACED	-.04(-)	-.20(.002)	-.07(-)	-.10(-)
RELEASED[a]				
RULE_BRK	-.01(-)	-.05(.013)	-.02(-)	-.02(-)
ARR_RATE	-.08(-)	.05(-)	-.10(-)	-.33(-)
TIME_IN	-.05(-)	.13(.023)	-.02(-)	.002(-)
DETERP	-.10(-)	-.28(-)	-.86(-)	-.71(-)
UNEMPLOY	.02(-)	-.01(-)	.03(-)	.04(-)
C. Adj. R-Square	.093	.102	.109	.018

Table B6.5--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
PRACD	189(-)	5655(.070)	5116(.089)	-5.0(-)
B. EMI Variables				
WRK_HISD	33(-)	-67(-)	-89(-)	4.3(.052)
JOB_SKLD	14(-)	220(-)	249(-)	-1.2(-)
PROPRTYD	-31(-)	679(.16)	657(.15)	-3.5(.14)
ADMD	-49(.11)	-144(-)	-90(-)	1.8(-)
C. Control Variables				
AGE	-2.3(-)	13(-)	-1.6(-)	-.08(-)
EDYEARS	-3.6(-)	-87(-)	-70(-)	1.5(.004)
MARRYD	-13(-)	121(-)	93(-)	1.6(-)
RACED	-52(.099)	363(-)	359(-)	-3.2(.15)
RELEASED[a]				
RULE_BRK	-15(.11)	-70(-)	-67(-)	-.78(-)
ARR_RATE	-94(-)	-997(-)	-1012(-)	-1.8(-)
TIME_IN	36(.11)	943(.001)	103(-)	-1.4(-)
DETERP	638(.050)	1025(-)	462(-)	-11(-)
UNEMPLOY	-2.5(-)	114(-)	80(-)	-.78(-)

Table B6.5 --continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-31(-)	645(-)	694(-)	1.3(-)
JOB_SKLD	-27(-)	-690(-)	-768(-)	.38(-)
PROPRTYD	-13(-)	-46(-)	-10(-)	3.7(-)
ADMD	4.9(-)	118(-)	94(-)	-5.3(.18)
B. Control*Treatment				
AGE	-.56(-)	-80(.16)	-67(-)	.41(.20)
EDYEARS	-7.5(-)	-74(-)	-82(-)	-.37(-)
MARRYD	74(-)	-553(-)	-443(-)	-5.6(-)
RACED	90(.092)	-652(-)	-616(-)	1.9(-)
RELEASED[a]				
RULE_BRK	7.2(-)	-63(-)	-68(-)	2.1(-)
ARR_RATE	-273(.061)	169(-)	90(-)	12(-)
TIME_IN	-26(-)	-15(-)	260(-)	.11(-)
DETERP	-455(-)	-6613(-)	-6199(-)	-11(-)
UNEMPLOY	16(-)	-164(-)	-138(-)	-1.0(-)
C. Adj. R-Square	.038	.015	-.040	.027

[a]All persons in PRAC were conditionally released; i.e., RELEASED = 1 for all observations. Therefore RELEASED is omitted from the regression equation.

TABLE B6.6

PARTICIPATION IN ALCOHOL, DRUG OR MENTAL HEALTH PROGRAMS: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
ADM_PGMD	-1.1(.050)	-.73(.048)	-.71(.061)	-.03(-)
B. EMI Variables				
WRK_HISD	- .01(-)	-.02(-)	-.01(-)	.08(.061)
JOB_SKLD	.01(-)	.03(-)	.04(.18)	.002(-)
PROPRTYD	.03(-)	.06(.090)	.07(.032)	.01(-)
ADMD	.13(.0004)	.05(.098)	.12(.0003)	-.01(-)
C. Control Variables				
AGE	-.004(.12)	-.003(.20)	-.002(-)	-.01(.051)
EDYEARS	-.02(.030)	-.01(.13)	-.02(.013)	.01(-)
MARRYD	-.01(-)	.01(-)	-.001(-)	.11(.039)
RACED	.05(.15)	.11(.001)	.05(.13)	-.03(-)
RELEASED	-.09(.068)	-.12(.005)	-.07(.11)	.19(.002)
RULE_BRK	.02(.011)	.02(.028)	.02(.014)	-.02(.11)
ARR_RATE	.67(.0001)	.57(.0001)	.76(.0001)	.06(-)
TIME_IN	.02(-)	.05(.045)	.03(.20)	.04(-)
DETERP	.06(-)	.24(-)	.32(-)	1.0(.028)
UNEMPLOY	-.02(.060)	-.005(-)	-.003(-)	-.02(.13)

Table B6.6 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-.02(-)	-.02(-)	-.03(-)	-.05(-)
JOB_SKLD	.12(.16)	.01(-)	.11(.18)	-.06(-)
PROPRTYD	.09(-)	.04(-)	.03(-)	.07(-)
ADMD	-.16(.066)	.05(-)	-.07(-)	.24(.031)
B. Control*Treatment				
AGE	.01(-)	.003(-)	.004(-)	-.002(-)
EDYEARS	.01(-)	.02(.17)	.03(.091)	-.03(-)
MARRYD	-.17(.089)	-.07(-)	-.12(-)	.15(-)
RACED	-.03(-)	-.11(.16)	-.02(-)	.15(.17)
RELEASED	.10(-)	.12(-)	.16(.18)	.26(.10)
RULE_BRK	.06(.048)	.03(-)	.05(.077)	-.01(-)
ARR_RATE	.16(-)	-.20(-)	-.41(.13)	-.88(.027)
TIME_IN	.02(-)	-.07(-)	-.07 (-)	-.07(-)
DETERP	2.4 (.011)	1.6 (.063)	1.1 (.20)	-.76(-)
UNEMPLOY	.04(.18)	.02(-)	.02(-)	.05(-)
C. Adj. R-Square	.118	.095	.112	.061

Table B6.6--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
ADM_PGMD	-723(.026)	3019(-)	3134(-)	-7.1(-)
B. EMI Variables				
WRK_HISD	29(-)	-154(-)	-167(-)	4.9(.008)
JOB_SKLD	-5.5(-)	297(-)	279(-)	-.27(-)
PROPRTYD	-50(.076)	567(.15)	521(.17)	-.59(-)
ADMD	-17(-)	-891(.007)	-833(.009)	-1.0(-)
C. Control Variables				
AGE	-2.3(-)	12(-)	2.6(-)	.02(-)
EDYEARS	-4.7(-)	-3.4(-)	7.8(-)	1.1(.010)
MARRYD	-29(-)	-62(-)	-112(-)	.12(-)
RACED	-9.5(-)	-175(-)	-163(-)	-2.2(-)
RELEASED	24(-)	-799(.068)	-788(.064)	4.8(.12)
RULE_BRK	-10(.055)	-21(-)	-20(-)	-.14(-)
ARR_RATE	-206(.002)	-1276(.14)	-1164(.17)	-.13(-)
TIME_IN	5.9(-)	873(.0002)	143(-)	-.93(-)
DETERP	258(-)	-1171(-)	-1453(-)	-12(-)
UNEMPLOY	.65(-)	220(.087)	214(.086)	-1.1(.13)

Table B6.6 --continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	33(-)	668(-)	559(-)	2.7(-)
JOB_SKLD	-20(-)	-9.7(-)	96(-)	-4.1(-)
PROPRTYD	123(.10)	-1075(-)	-915(-)	-5.3(-)
ADMD	-44(-)	1865(.042)	1859(.037)	2.2(-)
B. Control*Treatment				
AGE	7.7(.16)	-86(.20)	-83(-)	.02(-)
EDYEARS	1.0(-)	-22(-)	-46(-)	.12(-)
MARRYD	50(-)	-509(-)	-321(-)	-2.1(-)
RACED	-32(-)	623(-)	670(-)	-3.3(-)
RELEASED	77(-)	790(-)	747(-)	5.0(-)
RULE_BRK	-3.4(-)	-195(-)	-190(-)	.11(-)
ARR_RATE	495(.015)	-1975(-)	-2209(-)	-3.4(-)
TIME_IN	53(-)	-882(.16)	-986(.11)	3.7(-)
DETERP	699(-)	1297(-)	749(-)	13(-)
UNEMPLOY	18(-)	-350(-)	-330(-)	.54(-)
C. Adj. R-Square	.041	.031	.003	.022

TABLE B6.7

PARTICIPATION IN AN ALCOHOLIC REHABILITATION PROGRAM: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
ALC_PGMD	-1.2 (.015)	-.93(.037)	-.96(.036)	.24(-)
B. EMI Variables				
WRK_HISD	-.01(-)	-.02(-)	-.01(-)	.10(.022)
JOB_SKLD	.02(-)	.03(-)	.05(.12)	-.01(-)
PROPRTYD	.04(-)	.05(.11)	.07(.025)	.02(-)
ALCHD	.11(.004)	.01(-)	.12(.001)	.02(-)
C. Control Variables				
AGE	-.004(.15)	-.003(-)	-.002(-)	-.01(.10)
EDYEARS	-.02(.037)	-.01(.13)	-.02(.012)	.01(-)
MARRYD	-.01(-)	.003(-)	-.0001(-)	.11(.034)
RACED	.05(.14)	.09(.004)	.05(.096)	-.02(-)
RELEASED	-.09(.066)	-.11(.008)	-.07(.096)	.20(.001)
RULE_BRK	.03(.004)	.02(.017)	.03(.002)	-.02(.078)
ARR_RATE	.69(.0001)	.59(.0001)	.73(.0001)	.03(-)
TIME_IN	.03(-)	.05(.061)	.04(.13)	.03(-)
DETERP	.12(-)	.20(-)	.25(-)	.93(.042)
UNEMPLOY	-.02(.079)	-.002(-)	-.0001(-)	-.02(-)

Table B6.7 --continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-.10(-)	-.01(-)	-.06(-)	-.12(-)
JOB_SKLD	.15(.17)	.11(-)	.14(.18)	.06(-)
PROPRTYD	.09(-)	.06(-)	.05(-)	.05(-)
ALCHD	-.16(.14)	.10(-)	-.02(-)	.09(-)
B. Control*Treatment				
AGE	.01(-)	.002(-)	.01(-)	-.01(-)
EDYEARS	.01(-)	.03(.16)	.04(.033)	-.04(.19)
MARRYD	-.22(.050)	-.09(-)	-.19(.066)	.20(.17)
RACED	-.10(-)	-.07(-)	-.11(-)	.18(.19)
RELEASED	.10(-)	.01(-)	.19(.20)	.27(.18)
RULE_BRK	.04(-)	.02(-)	.01(-)	.02(-)
ARR_RATE	.05(-)	-.36(-)	-.61(.055)	-.86(.076)
TIME_IN	-.03(-)	-.09(-)	-.12(.090)	-.03(-)
DETERP	2.8(.014)	2.7(.008)	2.1(.042)	-.19(-)
UNEMPLOY	.06(.16)	.02(-)	.01(-)	.05(-)
C. Adj. R-Square	.116	.095	.117	.054

Table B6.7--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
ALC_PGMD	-745(.093)	1773(-)	1900(-)	11(-)
B. EMI Variables				
WRK_HISD	26(-)	-103(-)	-120(-)	4.6(.009)
JOB_SKLD	-3.0(-)	476(.16)	466(.16)	-.57(-)
PROPRTYD	-36(.19)	518(.18)	474(.20)	-1.1(-)
ALCHD	-19(-)	-600(.079)	-579(.080)	-1.8(-)
C. Control Variables				
AGE	-2.0(-)	-3.1(-)	-11(-)	.06(-)
EDYEARS	-4.2(-)	-.11(-)	9.8(-)	1.1(.006)
MARRYD	-29(-)	-179(-)	-231(-)	-.20(-)
RACED	-6.3(-)	35(-)	39(-)	-2.3(.19)
RELEASED	28(-)	-795(.068)	-789(.062)	5.6(.061)
RULE_BRK	-9.8(.065)	-43(-)	-41(-)	-.08(-)
ARR_RATE	-203(.002)	-1241(.15)	-1157(.17)	-.91(-)
TIME_IN	5.1(-)	715(.002)	-16(-)	-.81(-)
DETERP	371(.14)	-506(-)	-844(-)	-11(-)
UNEMPLOY	-.46(-)	147(-)	145(-)	-1.1(.11)

Table B6.7--continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	38(-)	130(-)	-47(-)	6.5(-)
JOB_SKLD	-72(-)	-456(-)	-329(-)	-4.2(-)
PROPRTYD	103(-)	-1422(-)	-1154(-)	-4.1(-)
ALCHD	-39(-)	637(-)	560(-)	2.6(-)
B. Control*Treatment				
AGE	12(.069)	-37(-)	-29(-)	-.28(-)
EDYEARS	2.2(-)	-26(-)	-49(-)	-1.4(-)
MARRYD	69(-)	155(-)	479(-)	-1.1(-)
RACED	-43(-)	329(-)	355(-)	-3.7(-)
RELEASED	14(-)	341(-)	235(-)	1.4(-)
RULE_BRK	-23(-)	115(-)	115(-)	-.14(-)
ARR_RATE	567(.022)	1117(-)	1048(-)	-12(-)
TIME_IN	65(-)	-376(-)	-490(-)	4.1(-)
DETERP	255(-)	1927(-)	1132(-)	35(-)
UNEMPLOY	23(-)	-237(-)	-247(-)	.95(-)
C. Adj. R-Square	.043	-.001	-.028	.024

TABLE B6.8

AGGREGATE NUMBER OF PROGRAM PARTICIPATIONS: FULL REGRESSION MODEL

Panel A: Dichotomous Dependent Variables

Variable	ARRESTD (1)	CONVICTD (2)	PRISOND (3)	EARND (4)
I. Main Effects				
A. Treatment				
ALL_PGMN	-.15(-)	.04(-)	-.03(-)	-.06(-)
B. EMI Variables				
WRK_HISD	.10(.20)	.01(-)	.01(-)	.10(-)
JOB_SKLD	.05(-)	.08(-)	.13(.081)	-.13(-)
PROPRTYD	-.04(-)	-.03(-)	-.04(-)	-.12(-)
ADMD	.26(.001)	.10(.15)	.22(.002)	-.20(.048)
C. Control Variables				
AGE	-.01(.092)	-.001(-)	-.0004(-)	.004(-)
EDYEARS	-.01(-)	.004(-)	-.01(-)	-.03(.19)
MARRYD	.09(-)	.01(-)	-.05(-)	.05(-)
RACED	-.01(-)	.14(.046)	.07(-)	.06(-)
RELEASED	-.06(-)	-.07(-)	.01(-)	.31(.015)
RULE_BRK	.005(-)	.01(-)	.02(.17)	.01(-)
ARR_RATE	.99(.0001)	.92(.0001)	1.0(.0001)	.04(-)
TIME_IN	.05(-)	.05(-)	.08(.14)	-.01(-)
DETERP	-1.6(.052)	-.69(-)	-.39(-)	.89(-)
UNEMPLOY	.01(-)	.02(-)	.004(-)	-.02(-)

Table B6.8--continued

Panel A--continued

Variable	ARRESTD (5)	CONVICTD (6)	PRISOND (7)	EARND (8)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-.06(.085)	-.01(-)	-.01(-)	-.01(-)
JOB_SKLD	-.01(-)	-.03(-)	-.03(-)	.06(.18)
PROPRTYD	.04(-)	.05(.15)	.05(.099)	.07(.12)
ADMD	-.07(.027)	-.02(-)	-.05(.12)	.10(.011)
B. Control*Treatment				
AGE	.003(-)	-.001(-)	-.0003(-)	-.01(.092)
EDYEARS	-.001(-)	-.005(-)	.001(-)	.02(.090)
MARRYD	-.06(.14)	-.005(-)	.01(-)	.04(-)
RACED	.03(-)	-.02(-)	-.01(-)	-.03(-)
RELEASED	-.01(-)	-.02(-)	-.02(-)	-.04(-)
RULE_BRK	.02(.028)	.01(-)	.004(-)	-.02(.030)
ARR_RATE	-.14(.18)	-.17(.091)	-.16(.11)	-.05(-)
TIME_IN	-.01(-)	-.002(-)	-.02(-)	.02(-)
DETERP	.92(.007)	.54(.086)	.40(-)	.001(-)
UNEMPLOY	-.01(-)	-.01(-)	-.004(-)	-.0002(-)
C. Adj. R-Square	.125	.095	.112	.069

Table B6.8--continued

Panel B: Continuous Dependent Variables

Variable	TIME OUT (9)	SERIOUS (10)	CHANGE (11)	EARNINGs (12)
I. MAIN EFFECTS				
A. Treatment				
. ALL_PGMN	-73(-)	3367(.014)	3102(.021)	5.0(-)
B. EMI Variables				
WRK_HISD	82(.15)	-590(-)	-517(-)	3.7(-)
JOB_SKLD	-7.6(-)	-109(-)	-87(-)	-3.0(-)
PROPRTYD	-2.0(-)	729(-)	508(-)	.42(-)
ADMD	-13(-)	-1964(.003)	-1877(.004)	-.97(-)
C. Control Variables				
AGE	-3.3(-)	135(.010)	115(.023)	-.24(-)
EDYEARS	4.1(-)	-28(-)	-1.0(-)	1.6(.11)
MARRYD	-63(-)	390(-)	42(-)	8.5(.11)
RACED	-61(-)	-240(-)	-288(-)	2.2(-)
RELEASED	-62(-)	-736(-)	-751(-)	13(.045)
RULE_BRK	-13(.15)	-27(-)	-27(-)	-.41(-)
ARR_RATE	-273(.083)	1700(-)	1629(-)	15(-)
TIME_IN	7.7(-)	1476(.003)	796(.10)	-2.6(-)
DETERP	159(-)	13,331(.076)	12,139(.097)	24(-)
UNEMPLOY	-14(-)	283(-)	245(-)	-2.1(.20)

Table B6.8 --continued

Panel B: Continued

Variable	TIME OUT (13)	SERIOUS (14)	CHANGE (15)	EARNINGs (16)
II. INTERACTION EFFECTS				
A. EMI*Treatment				
WRK_HISD	-21(-)	197(-)	161(-)	.70(-)
JOB_SKLD	.73(-)	245(-)	233(-)	.88(-)
PROPRTYD	-.17(-)	-132(-)	-37(-)	-.84(-)
ADMD	-8.9(-)	645(.031)	640(.028)	.25(-)
B. Control*Treatment				
AGE	.82(-)	-69(.003)	-64(.005)	.13(-)
EDYEARS	-3.9(-)	5.8(-)	-5.6(-)	-.20(-)
MARRYD	18(-)	-160(-)	-21(-)	-3.7(.073)
RACED	23(-)	203(-)	236(-)	-2.2(.20)
RELEASED	48(.16)	-32(-)	-39(-)	-3.8(-)
RULE_BRK	1.5(-)	-.78(-)	1.0(-)	.26(-)
ARR_RATE	49(-)	-1245(.16)	-1180(.18)	-6.4(-)
TIME_IN	.05(-)	-351(.12)	-382(.078)	.99(-)
DETERP	53(-)	-6437(.049)	-6073(.057)	-14(-)
UNEMPLOY	9.2(-)	-72(-)	-53(-)	.36(-)
C. Adj. R-Square	.026	.058	.025	.040

END