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JOURNAL OF OFFENDER REHABILITATION

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Rutgers University
Until recently, attempts to understand and explain criminal offending have been grounded in theories from sociological, legal, and psychological perspectives. In the preceding twenty years, or so, however, some research in the field has endeavored to look at offending from a psychobiological viewpoint. This research concerns the potential consequences of the effects of neurobiological influences on brain behavior and, consequently, human behavior. This paper discusses briefly some of the specific areas of neural research currently underway, including looking at the potential consequences for behavior, as it correlates with the age-crime curve, of the effects of neurotransmission. It also considers where the field of criminological research may be heading as a result of the insights into neurobiologically induced behavior.
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LYNN HUNT MONAHAN
University of New Haven
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University of New Haven
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PATRICIA A. NIESYN
Connecticut Department of Correction
A 40-hour education program covering the impact of crime on victims and their families was offered to sentenced offenders in a statewide prison system. Question-

naire responses from 339 males, ranging in age from 21-45 years, were examined. Results indicated that the program increased knowledge of victim rights, facts of victimization, and sensitivity to victims' plight. Age was a significant covariate, with younger offenders initially expressing less knowledge of victim legal rights and less understanding of victim suffering. Posttreatment results indicated that younger offenders changed in a positive direction to a greater degree than older offenders. Truthfulness was found to correlate with avoidance of victim blame.

KEYWORDS Restorative justice, victim-awareness, offender education program, age and program impact, pre- and posttest questionnaire

Offenders and Post-Release Jobs: Variables Influencing Success and Failure

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BYRON HARRISON

University of Illinois at Springfield

ROBERT CARL SCHEHR

Northern Arizona University

Nonviolent adult repeat offenders between the ages of 18 and 35 face nearly insurmountable obstacles to successful reintegration into dominant culture. Upon release from prison ex-offenders receive an average of \$69 from their state department of corrections, or between \$100-\$500 from the Federal Bureau of Prisons to aid their transition back into their communities. As many of them search for legitimate work opportunities, they must deal with the stigma attached to a criminal record and legally enforced employment restrictions barring them from working in several occupations. In addition, most states and the federal government prohibit ex-offenders from accessing public aid funds or financial assistance for school. Finally, many released inmates find they are forced to live in isolated, impoverished communities where there are few job opportunities. In this essay, we analyze secondary data on recidivism and employability for ex-offenders. A review of the literature and history on ex-offender vocational guidance and placement programs documents contrasting views regarding their success and failures, and the reasons for recidivism. We conclude by arguing that sustainable employment is critical to the success of a supervision program, and an ex-offender's avoidance of recidivism. Therefore, resourceful vocational guidance and assistance programs that include financial assistance and follow-up services are more effective than incarceration for some offenders in deterring perpetual recidivism.

KEYWORDS Inmate vocational guidance and placement programs, recidivism, post-imprisonment employment, offender rehabilitation

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FRANK B. HALL

Connecticut Department of Correction

Over the past two decades, the criminal justice population in the US has grown by over 200%, most of this due to an increase in drug-involved offenders. Although there is good evidence that prison-based substance abuse treatment programs can be effective in reducing rearrest, few cost-effectiveness studies have been conducted. Using data from the Connecticut Department of Correction and the Connecticut Department of Mental Health and Addiction Services (DMHAS), we compared the cost-effectiveness of four tiers (levels) of substance abuse treatment programs for a sample of 831 offenders who were released during FY1996-FY1997. Effectiveness, measured by reductions in the likelihood of rearrest within six months, one year and 18 months post-release, was compared for inmates who had received treatment while incarcerated (n = 358) and those who had not (n = 473). At all intervals, offenders who attended any of the higher tier programs (two, three and four) had significantly lower rates of re-arrest when compared to offenders who attended Tier One only or who had attended no tier programs, even after controlling for background characteristics that may have differentiated the two groups. The benefits to the State of Connecticut correctional system alone, measured in terms of the costs of avoided re-incarcerations, were from 1.8 to 5.7 times the cost of implementing the programs, ranging from \$20,098 (Tier Four) to \$37,605 (Tier Two). Since society receives a favorable return on its investment in prison-based treatment programs, we should find ways to ensure that more drug-involved inmates receive treatment.

KEYWORDS Substance abuse treatment, state prisons, cost-effectiveness analysis, program evaluation

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Onset and Desistance in Criminal Careers: Neurobiology and the Age-Crime Relationship

RAYMOND E. COLLINS

Rutgers University

ABSTRACT Until recently, attempts to understand and explain criminal offending have been grounded in theories from sociological, legal, and psychological perspectives. In the preceding twenty years, or so, however, some research in the field has endeavored to look at offending from a psychobiological viewpoint. This research concerns the potential consequences of the effects of neurobiological influences on brain behavior and, consequently, human behavior. This paper discusses briefly some of the specific areas of neural research currently underway, including looking at the potential consequences for behavior, as it correlates with the age-crime curve, of the effects of neurotransmission. It also considers where the field of criminological research may be heading as a result of the insights into neurobiologically induced behavior. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2004 by The Haworth Press, Inc. All rights reserved.]*

KEYWORDS Age-crime curve, neurotransmission, functional genomics, gamma amino-butyric acid, dopamine, age-related burnout

Theories in criminology concentrate on the relationship of crime with many variables, including social, psychological, and to some extent biological factors apparently correlating with the commission of criminal acts to various de-

gress generally without specific reference to the age of the offender. "In contrast, developmental theories assume that different factors may have different effects on offenders of different ages" (Vold et al., 1998). Developmental theories discuss crime as a function of the life course: that is, in the progression through childhood, adolescence, adulthood to old age. A focal point in this progression for looking at desistance from criminal offending appears to be during the transition period from adolescence into young adulthood. This transition period has been seen as a critical stage in the "age-crime curve."

THE AGE-CRIME CURVE

Hirschi and Gottfredson (1983) have asserted that the age-crime relationship is generally strong and invariant. Of significant interest is the contention of Hirschi and Gottfredson (1986) that criminal offending declines with age. The decline in offending holds relatively constant for even persistent offenders and the relationship between age and criminal offending has been found to hold over time and throughout different cultures (Hirschi and Gottfredson, 1986).

As early as fifty years ago, Sheldon and Eleanor Glueck reported on the fundamental importance of the age-crime relationship (Sheldon and Eleanor Glueck, 1943). The Gluecks perceived the decline in criminal activity with the aging process as a kind of maturation result. Charles Goring also noted the correlation between age and crime as early as 1913 (Charles Goring, [1913] 1972). Even those critical of Hirschi and Gottfredson have admitted that age is a significant correlate of criminal offending (Blumstein, Cohen, and Farrington, 1988: 12-13).

In more recent psychological studies the observations of the Gluecks and Hirschi and Gottfredson have received substantial support. Frank Farley (1986) found that thrill seeking "is most often found among those in the 16-to-24 age range. From then it drops off gradually . . ." with its strongest expression in the late teens to early twenties preceding a general decline with age. Evidence presented by Farley is generally in accord with other psychological studies such as those of Colligan (1989) and Hare (1988). Colligan found that scores on the psychopathic deviation scale (Pd) of the Minnesota Multiphasic Personality Inventory were negatively correlated with age (i.e., evidence of psychopathic deviation declined as age increased) among both male and female subjects in a restandardization study (1989). He also observed the same correlation on the scores of the mania (Ma) scale.

Hare (1988) performed a 25-year study of Canadian offenders who had earlier been identified as either psychopaths or non-psychopaths. Hare presented evidence that "the criminal activities of the non-psychopath were relatively constant over the years, whereas those of psychopaths remained high until around age 40, after which they declined dramatically" (Hare et al., 1988). "If

decline in impulsivity and psychopathic deviation be accepted as reasonable operational approximations to 'burn out,' those clinical impressions seem to be psychometrically verified through the Mayo Clinic database" (Pallone, 1994: 181). Finally, in a study by Eysenck and Eysenck (1977), British prisoners scored significantly higher on psychoticism and neuroticism scales of the Eysenck Personality Inventory (EPI). This phenomenon occurred across all age groups, and score differences were not significant until age 30-39 when they were significantly lower. Moreover, up until age 30 prisoners scored higher on the social desirability scale than controls at which time scores began to reverse. "[T]hese findings are remarkably congruent with the general direction of research in *career criminality* [emphasis added] . . . that one cannot help but wonder whether a naturally-occurring psychological phenomenon (which might, as Pallone and Tirman [1978] suggested, be termed 'symptom abandonment' as a function of age) is not also reflected in decrease in overt criminal behavior" (Pallone, 1994: 181).

The above cited evidence of measured decline in criminal activity occurs at two basic time periods in the age-crime curve. Offending among non-psychopathic individuals appears to peak at late adolescence and/or young adulthood and then decline, whereas offending by those described as psychopaths shows a later age of desistance (generally, between 30 and 40 years of age).

NEUROBIOLOGICAL EVIDENCE AND THE AGE-CRIME CURVE

The human neurobiological system consists of the brain and the spinal cord. The brain is highly organized and contains about 100 billion neurons. "The regulated transmission of chemical and electrical signals through circuits formed by chains of neurons is the *basis of all behavior* (emphasis added). Consequently, to appreciate current developments in psychiatry, it is necessary to have a basic understanding of the structural and molecular properties that make such intercellular communication possible" (Barondes, 1993: 65). Neurons are cells which consist of the same basic elements as other cells in higher organisms. Neurons have a nucleus which contains chromosomes and it is the area for cell transcription (transcription is the process by which DNA is replicated). The neuron cell also contains other organelles such as mitochondria (home for mitochondrial DNA which comes exclusively from the mother of the organism) and the Golgi apparatus which helps in the building of the cell plasma membrane. The plasma membrane is not only the cell's outer wall but functions as the site where neurobiological signals are sent and received.

Signaling occurs at sites called synapses which consist of signal sending areas called axons and signal receiving sites called dendrites. The space between the axon and dendrite is called the synaptic cleft. Neuronal interactions are

quite complex, consisting of about a dozen major neurotransmitters, each with distinctive properties. Some of these molecules are amino acids, including GABA (γ -aminobutyric acid), a major inhibitory neurotransmitter. Others are derivatives of amino acids (generally referred to as monoamines). These derivatives include dopamine, norepinephrine and epinephrine, which function as excitatory neurotransmitters (also called catecholamines since their composition includes a catechol ring) and serotonin (5-hydroxytryptamine or 5-HT). “These monoamines are of great importance in psychiatry, since they have been implicated in mood states, as well as in the experience of fear and pleasure” (Barondes, 1993: 80).

When neurotransmitters are released they perform their functions by binding to receptors on the postsynaptic membrane (dendrites). The effect of neurotransmission is halted when the neurotransmitter is removed from the receptors and eliminated from the synaptic cleft. This elimination occurs in two ways: enzymatic degradation and/or cellular reuptake. For example, serotonin and dopamine are degraded by the enzyme monoamine oxidase (MAO), hence the use of drugs such as Nardil (Phenelzine) and Parnate (Tranlycypromine) which function as both monoamine oxidase inhibitors and reuptake inhibitors. Also used are the SSRIs (serotonin-specific reuptake inhibitors) such as Prozac (fluoxetine), Paxil (paroxetine) and Zoloft (sertraline). Suffice it to mention there are two kinds of monoamine degrading enzymes (MAO-A and MAO-B), but a further discussion of the difference is beyond the scope of this review.

SEROTONIN AND AGE

The major central nervous system (CNS) tracts for serotonin function include the primary site of serotonergic cell bodies in the midbrain which radiates out into the basal ganglia, the *limbic system and the cerebral cortex* (emphasis added). The cerebral cortex includes the area of the frontal lobes which is the “region that determines how the brain acts on its knowledge [and is] the main feature that distinguishes the human brain from that of other primates and that lends it uniquely human properties” including judgment, comportment, executive function and motivation (Kaplan and Sadock, 1999: 94). The limbic system, “a circuit of phylogenetically ancient structures, is responsible for generating and modifying memories and for *assigning emotional weight to sensory and recalled experience*” (emphasis added) (Kaplan and Sadock, 1999: 89). One area in the limbic system, the amygdala, receives fibers from all sensory areas and is apparently the place where the brain assigns emotional significance to memories.

Studies on animals and humans suggest that serotonin is a crucial modulator of aggressive behavior. “Violent juvenile delinquents have been reported to have *decreased* [emphasis in original] platelet 5HT₂ binding in one recent

study” (Fogel et al., 1999: 338, citing Blumensohn et al., 1995). Several studies have found lowered levels of serotonin markers (CSF 5-HIAA: cerebral spinal fluid 5-hydroxyindoleacetic acid) in interpersonally violent individuals, including generally aggressive behaviors, arson and impulsive manslaughter (Fogel et al., 1999: 338).

As revealing as this evidence is in implicating low levels of serotonin in impulsive and aggressive behavior, a much more interesting finding is that “most studies report increases of MAO activity with age. According to Rogers and Bloom (1985: 657), the most consistent change observed in 5-HT metabolism is an age-dependent increase in 5-HIAA.” Serotonin, then, is found to increase with age and that increase may have a moderating effect on violent, impulsive and aggressive behavior during middle age. It is of some interest to note that as primates become aged (well into their senior years), serotonin begins a decline in the occipital cortex (Beal M., 1993: 707). This may be a contributing factor to the violence exhibited by some elderly individuals diagnosed with Alzheimer’s disease (AD).

DOPAMINE

“Generally, cholinergic and catecholaminergic mechanisms seem to be involved in the induction and enhancement of predatory aggression, whereas serotonergic and γ -aminobutyric acid (GABA) seem to inhibit such behavior” (Kaplan and Sadock, 1999: 158). Dopamine induces aggressive behavior in rodents and humans. “Apomorphine, a potent dopamine agonist (an agonist increases production of the neurotransmitter it works on), can induce fighting in rats. Dopamine antagonists tend to reduce aggression but usually at doses that also slow motor and cognitive performance” (Fogel et al., 1999: 338).

“Some of the most consistent findings in the aging literature suggest that dopamine (DA) receptors are lost . . . during aging in a variety of species including humans” (Joseph J. and G. Roth, 1983: 246). Also found in the Joseph and Roth study (1983) is that “basal activity for dopamine sensitive adenylate cyclase shows consistent linear decrements with age.” The decline in dopamine is found to begin between youth and middle age. Finally, in a 1995 study of the brain DA system, Joseph et al. obtained results which “suggest that signal transduction deficits may involve age-related structural alterations in membranes that interfere with receptor-G protein coupling and uncoupling” (Joseph et al., 1995: 185).

Since high dopaminergic activity is correlated with aggressive and manic behavior (the epitome of which is schizophrenia)—cocaine users are familiar with the uplift associated with cocaine as a dopamine reuptake blocker—there appears to be a correlation between the decreasing function with age of the DA system and the observed mellowing with age of criminal activity.

NOREPINEPHRINE

Catecholamine systems, which include norepinephrine (NE) and dopamine (DA), are associated with aggressive behavior. "Peripherally administered norepinephrine enhances shock-induced fighting in rats. α_2 -Receptor agonists (α_2 -Receptors and β -Receptors are linked to cyclic AMP [adenosine monophosphate] controlled axons which permit or inhibit passage of the catecholamines from the synaptic cleft to the cell) increase rat aggressive behavior, whereas clonidine (a catecholamine antagonist) decreases rodent aggressive behavior acutely" (Fogel et al., 1999: 338). Norepinephrine is found primarily as a regulating, excitatory neurotransmitter in the limbic system including the hypothalamus, the thalamus, the hippocampus, and the *amygdala* (emphasis added) as well as the entire neocortex.

NE shares with DA several enzymes of synthesis and catabolism and therefore shares many of the age related changes common to the DA system. Austin et al. (1978) and Ida et al. (1982) observed age-related decline of NE in the rat hypothalamus. More recently, NE decline was found in human postmortem studies (Spokes, 1979; Carlsson et al., 1980; Rogers and Bloom, 1985: 654-5). Of much interest is the finding of the loss of NE in the hypothalamus because the hypothalamus is part of the limbic system. "This system influences the perception and expression of intense emotion. It is the center for anger, terror, fear, happiness, pleasure, and sexual arousal. Nervous disorders affecting the limbic system can produce excesses or deficiencies in any of these emotions" (Christiansen et al., 1993: 227). Once again, age-related deficits of NE correlate with the decline of criminal activity between youth and middle age.

ACETYLCHOLINE

One of the major functions of acetylcholine appears to be for normal learning and memory function. Acetylcholine neurotransmitters "enervate all the cortical structures, including the neocortex, the hippocampus, and the amygdala" (Fogel et al., 1999: 89). Some of the earliest studies on neurotransmission and aggression centered on acetylcholine. Electrical stimulation causing release into the synaptic cleft of acetylcholine in the hypothalamus (part of the limbic system) of rats initiates predatory attack on mice previously tolerated by the rats in their cage. "Aggressive behavior after human exposure to cholinesterase (an acetylcholine degrading enzyme) inhibitors has been observed in several clinical case reports" (Fogel et al., 1999, citing Grossman, 1963).

Taylor (1993) reports an age-related decline in central cholinergic transmission as a direct function of the aging process. "In summary, we have reported a decline in cholinergic synaptic transmission in the hippocampus (part of the limbic system) of aged animals. This reduction was not the result of an overall decline in cholinergic function in the hippocampus but rather a specific

decline in functional synaptic transmission with age” (Taylor and Griffith, 1993: 514). What part might the decline in hippocampal cholinergic synaptic transmission play in the age-related desistance of criminal offending?

HYPERTROPHY, TESTOSTERONE AND THE LIMBIC AREA

Rance et al. (1993) found moderate hypertrophy (swelling) of infundibular neurons in older men that may be due to the reduced circulating testosterone levels associated with male aging. “Therefore, examination of infundibular neurons in aging men could be a useful paradigm to determine the sensitivity of human hypothalamic neurons to circulating levels of gonadal steroids” (Rance et al., 1993: 337). In the infundibular nuclei is located the highest concentration of GnRH (Gonadotropin-Releasing Hormone) which stimulates the release of LH (Lutenizing Hormone) and FSH (Follicle-Stimulating Hormone) which in turn affect the release of testosterone in males (Fogel et al., 1999: 136). High levels of testosterone have been correlated with greater incidence of violent offending among young adult prison inmates (Dabbs et al., 1987). Testosterone is the principle male sex hormone “and it appears related to a wide range of psychological and behavioral factors, including aggression, dominance, overall activity level, libido, sensation seeking, persistence, and sociability” (Rance, 1993: 174). The infundibular neurons are part of the hypothalamus which in turn is part of the limbic system.

γ-AMINO BUTYRIC ACID (GABA)

GABA appears to be the most abundant neurotransmitter in the human brain. GABA is synthesized from 1-glutamic acid and is catabolized by an enzymatic degrader, GABA-T (GABA-a-oxoglutarate transaminase). While most neurotransmitters found in the human brain are excitatory (i.e., promote signal transmission between neurons), GABA is the major inhibitory neurotransmitter (i.e., suppresses signal transmission between neurons) in humans. GABA regulates essentially every behavioral function of the brain, including the autonomic nervous system, sexual function, growth function, ingestive behaviors, motor functions, as well as the behavioral functions of anxiety, fear and aggression (Paredes and Agmo, 1991). Lowered levels of GABA have been found to be correlated with isolation-induced aggression, flight behavior and predatory killing behavior in rats (Paredes and Agmo, 1991). These studies have also reported that GABA has a direct effect on the brain’s learning process. “From previously presented data, it appears that GABA antagonists enhance retention in different learning tasks” (Paredes and Agmo, 1991: 157).

Moreover, “[S]everal lines of evidence suggest that γ -aminobutyric acid inhibits aggression in animals and humans. GABA injected into the olfactory bulbs in rats

(part of the limbic area) inhibits mouse killing. Benzodiazepines and other agents that facilitate GABA can decrease isolation-induced fighting in mice and attenuate aggression caused by limbic lesions (organic damage)” (Fogel et al., 1999: 338). The dampening effect that GABA has on excitatory neurotransmission is even more important in light of the assertion by Rogers and Bloom (1985) that GABA is found in large amounts in vivo prenatally and decreases from birth until age 20 when the decline in GABA levels off through middle age (Rogers and Bloom, 1985: 659). The age-related loss in GABA postnatally in animals occurs in several areas of the brain including parts of the limbic system. What effect, then, might this decline in the major inhibitory neurotransmitter have on behavioral components linked to crimes of aggression, thrill seeking, impulsiveness and violence? Moreover, consider the implications of the onset of decline of the excitatory neurotransmitters after age 20 congruent with the leveling off of the decline of GABA during the same time period. Might this phenomenon be a neurobehavioral correlate to the age-related desistance in criminal careers?

FUNCTIONAL GENOMICS: A NEW BEGINNING IN BRAIN RESEARCH

Genome analysis of brain genetics is now under way. Using a variety of methods grounded in the analysis of genemicroarray databases, “a hint to the function played by a certain gene may be obtained if that gene is coexpressed with other molecules that have a well-defined function in a signaling pathway or a regulatory circuit” (Mariani, 2003). A different method of functional genomics considers the location of brain-related gene expression and analyzes the spatially defined patterns of coexpression with other known genes (Eichele, 2003). Eichele et al. are establishing a database of the spatial-temporal expression patterns of functional brain genes (20,000-30,000 genes) at the Max Planck Institute. Using this database, researchers will attempt to provide a molecular counterpart to the histologic mapping of the brain initiated by Cajal.

These new research methods for understanding brain function will, almost inevitably, contribute to criminologists knowledge of the correlates (if not the causation) of antisocial behavior. “As daunting as genome-wide analysis of brain-related genes is, however, one notion seems to be pursued more and more. Complex biological systems and complex phenotypic traits, such as behavioral traits or ‘abnormal’ behaviors, may not represent, as in the past, insurmountable obstacles” (Mariani, 2003).

SOCIAL CONTROL THEORY AND DEVELOPMENTAL CRIMINOLOGY

The fundamental concept behind social control theory is that crime and deviance are more likely when individual bonds to society are tenuous or

breached. Laub (1996) argues for a differentiation by age over the life course and proposes that institutions of both formal and informal social control vary in their effect on individuals during the life span. Laub (1996) emphasizes the role of age graded “*informal* social control as reflected in the structure of interpersonal bonds linking members of society to one another and to wider social institutions (e.g., work, family, school). Unlike formal sanctions, which originate in purposeful efforts to control crime, informal social controls ‘emerge as by-products of role relationships established for other purposes and are components of role reciprocities’” (Laub, 1996: 246, citing Kornhauser, 1978: 24).

Grounded in the above concepts, Sampson and Laub (1993) have “developed a new theory of crime and delinquency over the life course” (Laub, 1996: 246) which consists of three components. The first component of the tripartite theory is the relationship between structural and process variables. Instead of considering structural variables as separate theoretical entities from process variables, what Sampson and Laub have done is integrate these two variables “along [with] individual characteristics like temperament and early conduct disorder into a single theoretical model” (Laub, 1996: 246). This model asserts that informal social controls derived from the family (discipline, awareness and emotional attachment) “mediate the effects of both *individual* [emphasis added] and structural background variables” (Laub, 1996: 247). In this developmental model proximate factors (family discipline, e.g.) explain more variance than distal factors (formal institutional variables such as school and law enforcement, e.g.). Otherwise stated, process variables have more impact on individuals than structural variables.

The second component of this theoretical framework “incorporates the idea of continuity in childhood and adolescent antisocial behavior over the life course. In other words, antisocial behavior in childhood *predicts* a wide range of troublesome adult outcomes” (this is a strong and possibly warranted contention to be discussed later in this paper, emphasis added) (Laub, 1996: 247). Laub further contends:

Our analysis found that independent of age, IQ, neighborhood socioeconomic status, and ethnicity, the original delinquents and nondelinquents in the Gluecks’ study displayed behavioral consistency well into adulthood. Indeed, delinquency and other forms of antisocial conduct in childhood were strongly related to troublesome adult behavior across a variety of life’s domains (e.g., crime, military offenses, economic dependence, marital discord). (Laub, 1996: 248)

The third component of the Sampson and Laub theory embraces the opposing concept of change in individual deviance and offending as one ages. “Having provided a role for continuity, we nonetheless believe that salient life events and social ties in adulthood can counteract, at least to some extent, the trajectories of early child development” (Laub, 1996: 248). Sampson and

Laub believe that social bonds in adulthood (e.g., labor force attachment and a cohesive marriage) can explain desistance in criminal behavior regardless of prior criminal propensity. “[W]e found that job stability and marital attachment in adulthood were significantly related to changes in adult crime—the stronger the ties to work and family, the less crime and deviance among both delinquents and control” (Laub, 1996: 248-9).

Apparently, then, the Sampson and Laub theory attempts a unification or fusion of “continuity and change within the context of a *sociological* understanding of crime during the life course [emphasis added]. Pathways and turning points are important concepts in the study of lives, and we have adapted this perspective to explore the lives of the disadvantaged sample of persistent adolescent delinquents” (Laub, 1996: 249). Laub continues: “Adaptation to life events is crucial, because the *same event or transition followed by different adaptations can lead to different trajectories*” (emphasis added) (Laub, 1996, citing Elder, 1985: 35). The following sections of this paper will be a critical look at some concepts leading toward a more comprehensive paradigm of developmental criminology, including a biobehavioral perspective, not included in the Sampson and Laub *sociological* paradigm.

SOME BIOBEHAVIORAL CONSIDERATIONS IN DEVELOPMENTAL CRIMINOLOGY

Wolfgang et al. (1972, 1987) in a study of juveniles in Philadelphia reported that 6% of juveniles accounted for 52% of all juvenile contacts with the police in that city and the same 6% were responsible for 70% of all felony offenses among juveniles in Philadelphia. Several other youth studies roughly confirm Wolfgang’s findings that few juveniles in a cohort are responsible for an inordinate number of offenses (about 5 to 15 percent) (Shelden and Chesney-Lind, 1993; Facella, 1983; Thornberry et al., 1995 studies in Rochester, NY; 1995 Denver, CO; and 1995 Pittsburgh, PA, among others). There are neurobiological disorder correlates for these sociological findings.

Antisocial personality disorder (APD) “is an inability to conform to the social norms that ordinarily govern many aspects of people’s adolescent and adult behavior” (Kaplan and Sadock, 1999: 784). The prevalence of antisocial personality disorder is about 3% to 7% in men and 1% in women (Kaplan and Sadock, 1999: 784; Hales and Yudofsky, 1987: 179-180). In prison populations, however, the prevalence of APD may be as high as 80% (Kaplan and Sadock, 1999: 794; Raine, 1999: 14, citing Hare, 1983; Correctional Services of Canada cited in Andrews and Bonta, 1998: 304). Recognizing the probable parameters of the APD syndrome in the offender population is important because “assessments of individual characteristics variously labeled ‘antisocial personality,’ ‘psychopathic personality,’ or ‘weak self-control’ are among the

strongest, most consistent correlates of criminality” (Andrews and Bonta, 1998: 80).

Looking at these data on the prevalence of APD in both the general population and the offender population, one is fascinated by the statistics. The largest amount of criminal offending appears to be committed by between 6% and 11% of the juvenile population. This percentage is even lower among the adult population as a direct result of desistance in criminal offending with age. In aggregate, then, criminal offending in the entire population (juvenile and adult) should average out to about 4.5% or less. This is almost exactly what would correlate to two standard deviations above the mean in a Gaussian distribution (extremely nonaggressive personalities would be found two standard deviations below the mean). Furthermore, assuming a neurobiologically induced dysfunction such as APD is a natural physical phenomenon, it would not be unreasonable to expect that it too would follow the same normal distribution in the population (see Kaplan and Sadock, 1999; Hales and Yudofsky, 1987).

NEUROBIOLOGY AND RISK-TAKING, SENSATION-SEEKING AND AGGRESSIVE BEHAVIOR IN HUMANS

It is clear from neurobiological studies that neurotransmitter dysfunction is correlated strongly with aggressive personality disorder and risk-taking behavior. Siever and Trestman (1993) found that in the noradrenergic system, clonidine-stimulated (α -adrenergic agonist) hormone responses were increased in patients with sensation-seeking and risk-taking disorders. Brown et al. (1982) reported a positive correlation between a history of aggressive behavior and deficits causing dysfunction in the β -adrenergic system (involving the neurotransmitter norepinephrine). This type of behavioral deficit is frequently associated with head injuries.

The most consistent data available involve the function of 5-HT (serotonin) in human aggression. Brown et al. (1982) reports that CSF 5-HIAA (cerebral spinal fluid 5-hydroxyindoleacetic acid), a catabolite of serotonin, was inversely correlated with clinician or self-reports of lifetime aggression. Other studies found negative correlations of CSF 5-HIAA with irritability, hostility, impulsive homicide, arson, maternal homicide, and with self-reported behavioral difficulties during childhood (Coccaro et al., 1993; Linnoila et al., 1983; and Virkkunen et al., 1989). In a more recent study, a correlation has been reported between a genotype (the gene type of an organism described by certain alleles [genes on a chromosome which may be dominant or recessive]) for a polymorphism (difference in DNA sequence among individuals) of an intron (non-coding section on a chromosome) in the gene for tryptophan hydroxylase (metabolite of 5-HT) and levels of CSF 5-HIAA in impulsive aggressive individuals (Nielsen et al., 1994). This finding suggests a connection between a

gene coding in the serotonergic system and impulsive aggression first postulated by Mednick et al. (1984).

There is also evidence that in the dopaminergic system genetic anomalies contribute to aggressive and dominant behavior. Several genes involved in dopamine function have been located and cloned including those for the DA receptors, the DA synthesizing enzymes tyrosine hydroxylase and β -hydroxylase, MAOA and MAOB, and several gene structures have been located which affect the metabolism and function of DA (Gejman et al., 1994; Itokawa et al., 1993; Rietschel et al., 1993). This is important because genetic defects in dopamine function have been found in impulsive behavior, antisocial behavior, drug abuse and aggression (Goldman et al., 1995; Comings et al., 1996).

NEUROBIOLOGICAL EVIDENCE AND ITS IMPLICATIONS FOR SOCIAL CONTROL THEORY IN DEVELOPMENTAL CRIMINOLOGY

Normal Neurology and the Age-Crime Curve

Sampson and Laub (1993) have developed a tripartite theory to explain onset and desistance in juvenile criminal offending. Based in social control theory which functions over the life course of an individual, their argument posits: (1) that structural variables should not be considered in absence of the effects of process variables; (2) that there is continuity in juvenile/adult antisocial behavior over the life course; and (3) that this continuity may be interrupted by structural and process variables. What their theory does take into account, then, is the environmental variables acting on juvenile/adult continuity in antisocial behavior. Social control theory sees the age-crime curve as a given phenomenon without asking why the phenomenon exists. But it is important to know that the age-crime curve may have a strong basis in normal neurochemistry.

For example, Farley's (1986) finding that "thrill seeking" is most common among the 16- to 24-age group (and has neurobiological correlates) should be of interest to social scientists who are attempting to influence that behavior. The neurobiological components of juvenile behavior (both social and antisocial) include the findings that a major inhibitory neurotransmitter called GABA begins to decline after birth and the decline begins to slow in adulthood. As juveniles age, 5-HT begins to increase in the brain, and this neurochemical has been found to inhibit aggressive behavior. Moreover, while 5-HT begins to increase, DA activity begins to wane throughout the life course of an individual. Norepinephrine, too, begins to decline with age. NE is an excitatory neurotransmitter functioning in the limbic lobe (the seat of the brain's initial response impulses) as well as other areas of the brain (Christiansen, 1993).

Concurrent to the neurotransmitter changes in the brain there occurs moderate hypertrophy of the infundibular neurons linked to reduced circulating testosterone associated with male aging (Rance et al., 1993). Testosterone is related to such behavioral factors as aggression, dominance, and sensation seeking. Finally, Duffy et al. (1993) found an age-related decline in both male and female slow brain wave activity as measured by EEG (electroencephalogram).

Further research into the behavioral aspects of the neurobiology of the brain should shed more light on adolescent/adult transitional behavior. But it appears for now that neurobiological functions are distributed in the human population according to a normal curve with violent offenders at about two standard deviations above the mean. What does this assumption hold for the Sampson and Laub continuity of behavior theory?

Dysfunctional Neurology and Continuity of Behavior Through Life Course

There is probably much substance to the contention of the Sampson and Laub social control theory that institutions such as a strong marriage and attachment to solid employment contribute to the desistance of criminal offending into adulthood—for most juveniles. Those juveniles who do not make a successful transition to desistance in offending may be the ones, for the most part, who are found with a neurobiological system statistically two standard deviations above the mean toward aggressiveness. It may not be the case that these offenders do not make the transition to desistance because they do not avail themselves of society's normalizing institutions. It may be that these offenders do not make the transition to normal institutional attachment because of their rare neurobiology which may be a causal factor (variable) in failure to desist from antisocial behavior. As presented earlier in findings by Farley (1986), Colligan (1989), Hare (1988) and others, aggression as a function of neurobiology may run its course. But in a small number of individuals (Kaplan and Sadock, 1999; Raine 1999, citing Hare, 1983; Hales and Yudofsky, 1987; Andrews and Bonta, 1996) researchers have found links to disordered, or abnormal, neurobiological function in about 3% of the general population and (not surprisingly) much higher percentages of neurobiological dysfunction among convicted offenders. These may be among the individuals (though not exclusively) who fail to make the transition into desistance from criminal activity.

A Bio-Psycho-Social Paradigm for Developmental Criminology

It is becoming clearer to many of those in the criminal justice field that contributory causal variables to the onset of criminal offending should include what Pallone and Hennessy (1996) term “intrapersonal” variables (psychological

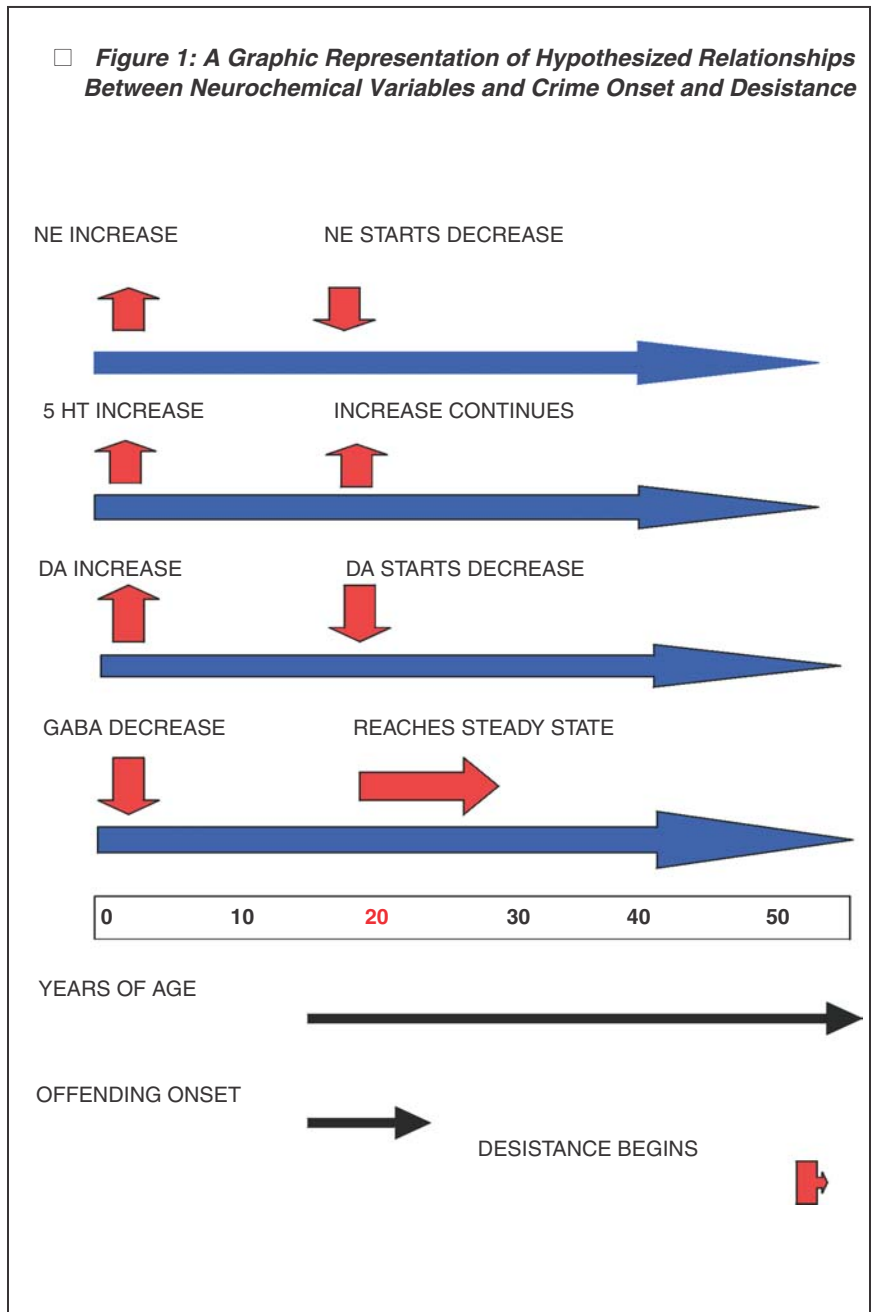
variables linked to the neurology of individuals) as well as “extrapersonal” variables (social control institutions). This kind of paradigm is somewhat illustrated by Felson (1986) in linking routine activities, informal control, and rational choice in onset and persistence in criminal offending (although neuro-psychiatrists would take exception to calling all criminal decisions a function of “rational choice” even though those decisions may appear rational to individual offenders).

Figure 1 is a graphic representation for the beginnings of a model representing the interactive process that links neurology, demography and patterns of socialization and social influence as interactive precursors to each other and to criminal offending. This paradigm supposes that neurological influences are necessary but not sufficient variables for the onset/desistance of criminal offending. This chart represents basic normal neurology correlating to key focal points in the onset and desistance of antisocial behavior and/or criminal offending. A notable variant in this paradigm is the apparent desistance period which begins for psychopaths (in the late thirties or early forties) somewhat later than for offenders in general. Some (but certainly not all) of those who persist in criminal offending beyond the normal period of desistance may be found to reflect the psychopathic profile, but whatever the case it seems that most youthful offenders follow the normal neurological profile for desistance beginning in early adulthood.

THE BEGINNINGS OF A NEW PARADIGM FOR CRIMINAL OFFENDING

Until recently, criminal justice has been dominated by theories from the fields of law and sociology. During the last two decades, however, there have been attempts to develop an interdisciplinary criminology grounded not only in law and sociology but in biology (especially the neurosciences) as it inflects on psychology, sociology and the law. “These new sciences of behavior must be integrated into an interdisciplinary system with the environmental sciences of geography, urban-planning ecology, and sociology, and with the policy sciences of law, ethics, and political science” (Jeffrey, 1996).

Criminal justice practitioners might well heed the observations of Pallone and Hennessy (2000: 22-1) that “it is an unexceptionable proposition that paradigm shifts within any single discipline radiate outward to (as well as inward from) adjacent disciplines rather slowly, at least as those disciplines are represented . . . in the trappings of academic structure [and insulated as specific disciplines]. Hence, we have come to expect a palpable ‘paradigm lag’ between analytic models of behavior anchored in contemporary scientific psychology [with intellectual exchange from the neurosciences] and those anchored in other social science disciplines; what remains less clear is the typical duration of such a paradigm lag and its implications for interdisciplinary communica-



tion and conceptual cross-fertilization.” According to Coyle (1988), “the nearly logarithmic growth in neuroscience research” since the 1960s has yielded a major paradigm shift, producing in the process new methods for understanding the neurological functions of the brain. In resounding the view of Pallone (2000: 22-11), it becomes evident that identifying neurologic variables associated with criminal behavior can only provide risk markers at the psychological level: “What needs to happen next to apply such knowledge to social and personal betterment will be largely the work of the applied social sciences” (2000: 22-11). There is much to consider in the argument that any effort by the applied social sciences to alter human criminal conduct “in the absence of appropriate attention to . . . neurologic variables associated with [criminal behavior] will necessarily remain fragmentary until the communication gap between the neurosciences and the social sciences is securely bridged” (2000: 22-12).

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AUTHOR'S NOTES

Raymond E. Collins is a candidate for the PhD at the Graduate School of Criminal Justice at the Newark campus of Rutgers–The State University of New Jersey. His core area of research is in the effects of neuropsychological inflections on offending behavior.

Address correspondence to Raymond E. Collins, 765 Myrtle Street, Elizabeth, NJ 07202 (E-mail: raymondcollins@msn.com).

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Victims' Voices in the Correctional Setting: Cognitive Gains in an Offender Education Program

LYNN HUNT MONAHAN

University of New Haven

JAMES J. MONAHAN

University of New Haven

MARIO T. GABOURY

University of New Haven

PATRICIA A. NIESYN

Connecticut Department of Correction

ABSTRACT A 40-hour education program covering the impact of crime on victims and their families was offered to sentenced offenders in a state-wide prison system. Questionnaire responses from 339 males, ranging in age from 21-45 years, were examined. Results indicated that the program increased knowledge of victim rights, facts of victimization, and sensitivity to victims' plight. Age was a significant covariate, with younger offenders initially expressing less knowledge of victim legal rights and less understanding of victim suffering. Posttreatment results indicated that younger offenders changed in a positive direction to a greater degree than older offenders. Truthfulness was found to correlate with avoidance of victim blame. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2004 by The Haworth Press, Inc. All rights reserved.]

KEYWORDS Restorative justice, victim-awareness, offender education program, age and program impact, pre- and posttest questionnaire

The concept of restorative justice has, at its core, the premise that there are four central constituents when a crime is committed: the victim, the offender, the community-at-large, and the government (Van Ness & Strong, 1997, p. 37). In addition to the specific harm and, oftentimes, tragic loss that the victim has endured, the community as a whole is damaged. For example, citizens may be more fearful for their own safety, family and relatives may lose time from work and suffer emotional disturbance, and property values may decrease. The restorative model proposes that the offender has a responsibility to repair the harm done, to be accountable rather than simply “do time.” Victims are central to this process under the restorative approach.

The process of addressing and repairing the damage done by criminal offending is believed to help not only the victim and the community but also the offender in terms of competency development, accountability, and improved ability to understand others. The government is also viewed as a “stakeholder” in the restorative model. Criminal justice agencies are charged with preserving order in society and are required to accomplish this within budget constraints, and these objectives can be aided greatly by an effective and cost-efficient restorative justice program.

Restorative justice philosophy can be found throughout history and in a variety of settings but is just recently being incorporated into a range of sentencing and offender treatment approaches for some types offenses and offenders in the United States. Strategies can range from “minimally restorative” to “maximally restorative” depending on the extent to which they contribute to the central elements of community and victim safety, offender accountability, and competency development (Lehman, Beatty, Maloney, Russell, Seymour & Shapiro, 2002; Seymour, 2001).

Restitution, in itself, is considered to be minimally restorative since it does not allow for direct contact between the victim and the offender (which may, of course, be most appropriate depending on the victim’s wishes). Further, restitution by itself does not meet many of the goals of restoration, which is posited as a more interactive process among mutual stakeholders. Direct victim-offender dialogs have a number of inherent difficulties, including the considerable and intensive preparation required for both victims and offenders, the need to customize each encounter, and the risk of re-victimizing the victim (Umbreit, 1985, 1993, 1996).

A promising strategy that avoids some of the above-mentioned risks and deficiencies and that can reach a large number of offenders efficiently is a program in which offenders are educated more generally about victims’ issues. The approach combines live presentations by victims and survivors of crimes, film presentations related to victimization, class discussions directed by cor-

rectional counselors, and written material devoted to instruction about the experience of victims. In addition, offenders often engage in some form of "homework" and, as a group, conduct some kind of "community service" project related to the classes. The program offers the inmate an opportunity to know about the scope of victimization as well as to develop insight or awareness into its aftereffects in the life of a victim. Such a program is variously called a "victim-impact" class or "victim-awareness" program.

The California Youth Authority developed the first victim-awareness education program for juvenile offenders in 1984 (Weston, personal communication, September 6, 2002). The program covers a range of crimes, including property crimes, robbery, assault, child abuse, elder abuse, domestic violence, sexual assault, homicide, drunk driving, and gang- and drug-related violence (California Youth Authority, 2002); however, there are no formal evaluations of its effectiveness. The Washington State Department of Corrections initiated a similar program in 1990. An unpublished assessment (Stutz, 1994) followed 75 prerelease offenders who completed the program and 75 who did not. Assessment measures included a pre-/post-education attitude questionnaire, re-offense rates, restitution payment, and community placement violations. Specific results of the questionnaire were not reported; however, a majority of offenders who attended the education program were described as having improved their attitude. There was some evidence that lower re-offense rates and higher restitution payment rates were associated with the program; however, comparisons of community violation rates were equivocal, and the study did not come to a conclusion regarding this form of recidivism.

A third program was begun in 1992 for the Riker's Island correctional system in New York City. The Riker's Island program delivers a 40-hour education program, over a 10- to 12-week period, to offenders in various correctional settings. Once again, there has been no formal assessment of the effects of the program.

There is a significant need for empirical inquiry in this area. In addition to large state and municipal correctional systems (e.g., California and New York City) other jurisdictions are either planning or have already implemented similar programs. The United States Department of Justice's Office for Victims of Crime (OVS) has provided support to the California Youth Authority and Mothers Against Drunk Driving (MADD) to develop and distribute a generic victim-impact training program and manual. OVS hopes to encourage use of the program and materials by correctional departments across the country (MADD & California Youth Authority, 1998).

When the Connecticut Department of Correction initiated a victim-awareness education program, there was clearly an excellent opportunity to conduct a systematic assessment of the effects of the program. The Connecticut program was initiated in 1997 and was modeled after the Riker's Island program. After an initial planning period, the first group of DOC staff was trained to conduct the program in the summer of 1998, and classes began in correctional

facilities thereafter. The program is entitled "VOICES," which is an acronym for "Victim Offender Institutional Correctional Education System" and was intended to convey the idea that crime victims' voices were being heard within the Connecticut correctional system.

METHOD

The Program

Sixty-one Department of Correction education and treatment staff were trained to deliver a 40-hour education program to offenders throughout the state's correctional system. A "training of trainers" model was used: University faculty served as the initial trainers while subsequent training sessions utilized staff who had been trained earlier and were already delivering the program to inmates. The training was delivered in one-week, 40-hour blocks, over three years.

Some staff expressed interest in being part of the program; most were selected by their facility supervisors/wardens based on their job title and availability. Of the 61, 23 were male, and 38 female. Forty-six of the group were white, eight African American, and seven Hispanic. Level of education varied from high diploma to postgraduate study.

The VOICES program was offered to inmates on a voluntary basis in twelve different facilities. Identical materials were used, and the classes spanned a 7- to 10-week time period. The program was ongoing and was offered several times at some facilities. This study analyzes data from fall 1998 to December 2001.

Five hundred and ninety-four offenders completed the program by the study cutoff date. One to two percent dropped out for a variety of reasons, including disciplinary problems requiring segregation, early releases, transfers to other institutions, or behavioral problems in the education sessions. Ten facilities are included in this analysis, representing approximately half of all the correctional institutions in the state.

Participants in the VOICES program were given a questionnaire before beginning the program and again after its completion. A Control group of offenders also completed the questionnaire twice, with an approximate 10-week interval, but did not participate in the program. Participation was voluntary for both groups. All offenders were serving time sentenced in minimum-, medium-, and maximum-security institutions.

The Questionnaire

A 50-item questionnaire was developed to measure knowledge of and sensitivity to the impact of crime on victims. Items were adapted from similar

questionnaires already used in correctional victim-impact/awareness programs and were also derived from the specific content of the curriculum. Although the Riker's Island questionnaire has a True or False format, a Likert scale format was used in this study to reflect a greater sensitivity to change.

Responses to each question were indicated on a 5-point scale, ranging from "Strongly Disagree" to "Strongly Agree." The direction of the correct answers was varied throughout the document. Three questions that measure a tendency to present an unrealistically positive picture were included and were combined to form a "truthfulness" scale. Finally, several questions were repeated to check the inmate's care in reading the questions and/or a tendency to answer all the questions in a particular direction (e.g., all "strongly agree").

The Sample

The sample was obtained from program participants from the inception date in 1998 to December 2001. The original group of participants included 594 individuals: adult men, women, and youth. However, since adult males represented the largest group, they were chosen as a focus for this analysis.

Questionnaires with completed data were obtained from 355 adult male VOICES participants and 92 adult male Controls. Sixteen VOICES participants over the age of 45 were removed so that the age range (21-45) for both groups was comparable. This resulted in a final sample of 339 for the VOICES group and 92 for the Control group.

Table 1 summarizes age distribution and racial composition for both groups.

A t-test for equality of means for age was not significant, nor was Levene's Test for Equality of Variances. The racial or ethnic composition of the two groups was roughly equivalent, with the largest proportion of offenders in both being African American, followed by Caucasian and then Hispanic.

Pretreatment Questionnaire Analysis

As part of the initial data analysis, questionnaire responses that had poor ability to reflect change were identified, using all 431 respondents. Six items for which more than 85% of both the control and VOICES respondents gave the correct answer in the pretest were eliminated, leaving 44 questions.

Next, the three questions reflecting a tendency to give socially desirable or "untruthful" answers were examined. Pearson product-moment correlation coefficients between these items were all significant, ranging from .205 to .252. These three questions were then added together and reversed to create a "truthfulness" index that was later used as a covariate in the MANCOVA analysis. The three pairs of questions phrased as opposites of one another and designed to measure care in reading were also significantly correlated with their

□ Table 1: Sample Characteristics				
	VOICES (%) (n = 339)		Control (%) (n = 92)	
Age:				
21-25 years	95	(28)	32	(35)
26-30 years	99	(29)	18	(20)
31-35 years	63	(19)	19	(20)
36-40 years	52	(15)	11	(12)
41-45 years	30	(9)	12	(13)
	M	30.39	30.46	
	SD	6.44	7.01	
Race/Ethnic Background:				
African American	171	(50)	42	(46)
Caucasian	83	(25)	29	(32)
Hispanic	74	(22)	16	(17)
American Indian	2	(1)	2	(2)
Asian	1	(-)	1	(1)
Missing/Other	8	(2)	2	(2)

matched items (Pearson $r = .140$ to $.463$). The difference between each paired item was calculated and added to create a total “consistency” score.

Initially, the questionnaire items were intended to reflect two general areas: (a) knowledge of facts relating to victimization and (b) sensitivity to the suffering caused by crime. Closer inspection revealed what appeared to be two subgroups within each area, and, therefore, two two-part groupings were used:

Knowledge Questions

(1.1) Knowledge of facts regarding victimization: e.g., “Five out of every six people will be the victim of an attempted or completed violent crime in their lifetime.”

(1.2) Knowledge of facts relating to victims’ rights: e.g., “Victims can have a say in the sentencing of their offender.”

Sensitivity Questions

(2.1) Sensitivity to the plight of victims: e.g., “When someone’s house is burglarized, he/she often never feels safe there again.”

(2.2) Insensitivity to victims in terms of blaming victims and/or demonstrating a lack of personal accountability: e.g., “Women who wear sexy clothes are asking to be raped.” Note that the insensitivity-to-victims or

“blame” questions were transformed so that higher scores reflected answers which *avoided* blaming the victim.

Intercorrelations were calculated between items within each subgroup; questions were retained if they were significantly correlated with the other items in the group. Seven “facts” questions, *Pearson r* = .103-.357, and three “rights” questions, *Pearson r* = .179-.428, were retained in this way. Seven “plight” questions, *Pearson r* = .117-.308, and eleven “blame” questions, *Pearson r* = .103-.328, were retained.

RESULTS

Pre-Education Comparisons

A one-way MANCOVA was conducted to determine whether the VOICES group differed significantly from the Control group on questionnaire responses before attending the education program. Box’s test indicated homogeneity of variance-covariance, $M = 32.49$, $F(21,103962) = 1.509$, $p < .063$. There were no significant differences between groups on truthfulness, consistency, knowledge of victimization facts, knowledge of victims’ rights, and avoidance of victim blame; however, the VOICES group was significantly higher on sensitivity to victim’s plight in this pretest administration (Table 2). Age was significantly related to knowledge of victims’ rights. To examine this relationship further, 5-year age groupings were created and are summarized in Table 3. In both VOICES and Control groups, younger offenders are less aware of victims’ rights. Age was also significantly related to sensitivity to victims’ plight. These findings are summarized in Table 6.

Post-Education Comparisons

To assess the degree of change in knowledge and sensitivity following the education program, difference scores were calculated by subtracting each pretest response from the posttest response and adding the differences. If an offender’s scores changed in the negative direction, this would be reflected in a negative score on the four measures; otherwise the change was in a positive direction.

A one-way MANCOVA was conducted to determine whether there was significant change in the VOICES participants on the two knowledge and the two sensitivity scales, while controlling for age and truthfulness. Results reflect a significant main effect for group, Pillai’s Trace $\Lambda = .050$, $F(4, 424) = 5.635$, $p < .000$, multivariate $\eta^2 = .050$. The covariate of age significantly influenced the combined scales, Pillai’s Trace $\Lambda = .026$, $F(4, 424) = 2.810$, $p < .025$, multivariate $\eta^2 = .026$, and truthfulness, Pillai’s Trace $\Lambda = .023$, $F(4, 424) = .023$, $p < .040$, multivariate $\eta^2 = .023$.

□ **Table 2: Multiple Analysis of Covariance Comparison of Pre-Education Group Mean Scores**

	VOICES (n = 339)		Control (n = 92)		F
	M	SD	M	SD	
Consistency	2.71	1.93	2.99	2.08	0.198
Truthfulness	9.98	2.49	9.77	2.22	0.137
Knowledge of victim facts	26.95	4.14	26.78	3.94	2.765
Knowledge of victims' rights	11.93	2.48	11.12	2.96	1.527
Avoidance of victim blame	48.04	5.62	46.21	6.58	1.060
Sensitivity to victims' plight	29.35	4.05	28.14	4.90	4.822*

* $p < .05$

□ **Table 3: Knowledge of Victims' Rights as a Function of Age**

Age Group	VOICES		Control	
	n	M pre	n	M pre
21-25 years	95	11.42	32	10.62
26-30 years	99	12.05	18	10.72
31-35 years	63	12.14	19	11.36
36-40 years	52	12.31	11	12.45
41-45 years	30	12.07	12	11.42

Note. MANCOVA main effect: knowledge by age, $F(1, 427) = 5.8, p < .05$.

Univariate ANOVA results indicate that VOICES education had a significant main effect on three scales: knowledge of facts of victimization, knowledge of victims' rights, and sensitivity to victims' plight (see Table 4). The groups did not differ significantly on avoidance of victim blame and this was the only dimension significantly related to change in truthfulness $F(1,427) = 8.499, p < .004$, partial $\eta^2 = .020$. Change in sensitivity to victims' plight was the only dimension significantly affected by age $F(1,427) = 9.401, p < .002$, partial $\eta^2 = .022$.

Truthfulness and Avoidance of Victim Blame

Changes in truthfulness and changes in avoidance of victim blame reflect a small but significant negative relationship, Pearson $r = -.146, p < .002$. When

scores on the truthfulness measure were grouped into quartiles and compared with original pre- and post-program scores on avoidance of victim blame, it became apparent that respondents who initially gave more truthful answers also had a greater tendency to avoid victim blame on the pretest and changed less on the posttest (Table 5).

Age and Sensitivity to Victims' Plight

Table 6 compares sensitivity to victims' plight scores, before and after the VOICES education, by age. From Table 6 it can be seen that the amount of change is inversely related to age, with younger offenders changing more than older ones. Younger inmates tended to be less sensitive to victims' suffering initially, and the VOICES program appears to have a greater impact on the younger groups.

□ **Table 4: Group Means for Changes in Knowledge and Sensitivity Scales**

Scale	VOICES (n = 339)		Control (n = 92)		ANOVA	
	M	(SD)	M	(SD)	df	F
Knowledge of victim facts	2.17	(4.44)	-0.17	(4.72)	1	20.20**
Knowledge of victims' rights	1.10	(2.51)	0.49	(2.64)	1	4.10*
Sensitivity to victims' plight	2.55	(4.08)	1.33	(3.88)	1	6.33*
Avoidance of victim blame	1.88	(5.79)	0.79	(4.44)	1	1.97

*p < .05. **p < .001.

□ **Table 5: VOICES Avoidance of Victim Blame Scores and Change as a Function of Truthfulness**

Truthfulness Quartile	n	M	
		pre	post (change)
1	94	47.43	50.40 (2.97)
2	57	48.11	50.02 (1.91)
3	25	48.17	49.57 (1.40)
4	63	48.65	49.81 (1.15)

Note. Quartile 1 contains the responses of offenders who were the most unwilling to admit to common personal faults.

□ **Table 6: VOICES Group Victims' Plight Mean Scores and Change as a Function of Age**

Age Group	n	Sensitivity to Victims' Plight		
		M pre	M post	(change)
21-25 years	95	28.39	31.32	(2.92)
26-30 years	99	29.64	32.42	(2.79)
31-35 years	63	29.42	31.81	(2.38)
36-40 years	52	30.15	32.38	(2.23)
41-45 years	30	29.86	31.33	(1.46)

Note. MANCOVA main effect: sensitivity to plight by age, $F(1, 427) = 14.36, p < .001$

DISCUSSION

The results of this study give substantial support to the hypothesis that the VOICES program would produce increases in specific aspects of offender knowledge of and sensitivity to crime victims. Offenders exposed to the program had a significant increase in knowledge of the facts of victimization and increased knowledge of victim rights and were more sensitive to the plight of victims after completing the program as compared with the control group.

It is interesting that avoidance of victim blame did not appear to be affected by the program, while the other three measures were. It may be that these items are more sensitive to manipulation, since the less truthful respondents changed more on victim blame than the more truthful ones. However, one might expect that the observed increased sensitivity to victims' plight would relate to decreases in blaming the victim, which was not seen here. The relationship between knowledge and victim blame clearly requires more study.

The voluntary nature of the program clearly raises the question of whether or not participants were more sensitive and open to change to begin with; the finding that the pre-education VOICES group scores were significantly higher on Sensitivity to Victim's Plight supports this possibility. On the other hand, the VOICES group did not differ significantly from the Control group on the other dimensions before attending the education program.

The finding that offenders who are more truthful are less likely to blame victims raises the possibility that "truthfulness" might be more accurately called "willingness to admit to faults in self." The intent of the "truth" items was to obtain a measure of a respondent's wish to present an unrealistically positive image of himself; for example, "I always tell the truth." If an offender is unwilling to admit to any personal faults, it seems likely that he will also view others, including victims, as responsible for his transgressions.

Of particular interest are the findings with respect to age. The VOICES program appeared to have had the greatest impact on the 21-25-year-old group with respect to sensitivity to victims' suffering. After the program, the younger men appear to be very similar to the older men. Since crime and, more particularly, violent crime are a "young man's game," this impact may be particularly important.

The findings regarding the significant positive change in sensitivity to victims' plight may relate to some of the research on offending and deficits in interpersonal empathy, the ability to share another person's emotional state or context (Eisenberg and Fabes, 1998; Eisenberg and Strayer, 1987). Coleman and Hendry (1990) found that adolescent sex offenders were deficient in empathy and postulated an early developmental failure. Similar findings were reported by Burke (2001), who concluded that sex-offending teens had lower empathy levels than non-offending teens. Finally, Pithers (1999) has stated that any treatment of sex offenders must include the enhancement of empathy in order to reduce the likelihood of re-offense. If future research reveals that VOICES training correlates with increased levels of empathy and this, in turn, leads to decreases in subsequent criminal behavior, then the program would have important implications for correctional policy. Prisons might become "centers for new learning" with more favorable outcomes.

The questionnaire itself is in obvious need of further refinement. Consistency over time and inter-item reliability should be examined further. Since the items were derived from the educational program content and were grouped first conceptually and then according to their correlation with one another, there is some basis for believing that content validity is present on a basic level. However, it is not possible to assess criterion-related validity until behavioral follow-up results are analyzed. Concurrent validity could be explored by determining the extent to which the questionnaire dimensions correlate with other constructs, such as empathy (Davis, 1980; Ellis, 1982), psychopathy (Hare, 1989), or criminal thinking styles (Walters, 1995a, 1995b, 1996).

Future Research

Part II of this project will investigate incarcerated offenders' behavioral changes over the longer term, using a variety of recidivism and behavior measures. This dimension of the research is particularly important. As useful as contemporaneous changes in knowledge and attitude may be, meaningful behavioral change thereafter, both while in the facility (e.g., infractions) and after release (e.g., recidivism), will be more instructive regarding the impact of the program.

In addition to the longer-term behavioral follow-up, there are other offender subgroups of particular interest, i.e., youth from 14 to 20 years of age and women. The authors are currently formulating research on these popula-

tions in Connecticut. In the introduction, it was noted that the California Youth Authority developed the original victim-awareness program and it will be interesting to examine the differences between youth and adults in their response to the VOICES program. Connecticut Department of Correction staff who have been involved in the education program for women have noted that since women offenders have such a high incidence of being victimized themselves, their sensitivity to victims' issues may already be much higher, and alternative program materials may be required for female inmates. Finally, the Department of Correction is interested in determining whether the program can be offered in different formats, including a shorter time frame of 20 as opposed to 40 hours, and the use of videotapes as replacements for some of the time spent in class. The questionnaire and behavioral follow-ups will provide a basis of comparison for these variations.

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AUTHORS' NOTES

Lynn Hunt Monahan, PhD, is an associate professor of criminal justice at the University of New Haven. She is also the chair of the department and is currently interested in strategies for evaluating batterers' programs.

Dr. James J. Monahan is an associate professor of criminal justice at the University of New Haven and coordinates the Crime Analysis concentration in the department.

Dr. Mario T. Gaboury is an associate professor of criminal justice at the University of New Haven and the director of the Center for the Study of Crime Victims' Rights, Remedies, and Resources at the university. He is also the director of the Human Services and Professional Counseling programs.

Patricia A. Niesyn is a correctional counselor for the Connecticut Department of Correction, Office of Victim Services. She organized the entire data collection system for the project.

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Address correspondence to Lynn Hunt Monahan, PhD, Department of Criminal Justice, University of New Haven, 300 Orange Avenue, West Haven, CT 06516.

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Offenders and Post-Release Jobs: Variables Influencing Success and Failure

BYRON HARRISON

University of Illinois at Springfield

ROBERT CARL SCHEHR

Northern Arizona University

ABSTRACT Nonviolent adult repeat offenders between the ages of 18 and 35 face nearly insurmountable obstacles to successful reintegration into dominant culture. Upon release from prison ex-offenders receive an average of \$69 from their state department of corrections, or between \$100-\$500 from the Federal Bureau of Prisons to aid their transition back into their communities. As many of them search for legitimate work opportunities, they must deal with the stigma attached to a criminal record and legally enforced employment restrictions barring them from working in several occupations. In addition, most states and the federal government prohibit ex-offenders from accessing public aid funds or financial assistance for school. Finally, many released inmates find they are forced to live in isolated, impoverished communities where there are few job opportunities. In this essay, we analyze secondary data on recidivism and employability for ex-offenders. A review of the literature and history on ex-offender vocational guidance and placement programs documents contrasting views regarding their success and failures, and the reasons for recidivism. We conclude by arguing that sustainable employment is critical to the success of a supervision program, and an ex-offender's avoidance of recidivism. Therefore, resourceful vocational guidance and assistance programs that include financial assistance and follow-up services are more

effective than incarceration for some offenders in deterring perpetual recidivism. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2004 by The Haworth Press, Inc. All rights reserved.]

KEYWORDS Inmate vocational guidance and placement programs, recidivism, post-imprisonment employment, offender rehabilitation

THE PROBLEM

The debate over how to effectively deter recidivism began more than 200 years ago and continues today (Cole 2002). The combined state and federal inmate population increased from 319,598 in 1980 to 1,284,894 by 1999 (Beck 2000). As of 2000, the United States had the largest inmate population in the world with a total of 2,026,596 million incarcerated, including 144,750 in federal detention, 1.1 million held by states and 605,943 under local jail supervision. Nevertheless, despite these high numbers of incarcerated offenders, incarceration as a deterrent has ultimately failed a good portion of this population (Gainsborough and Mauer 2000: 12,15). Roughly 70% of state and federal inmates in the U.S. are recidivists and continually contribute to the rising prison population (Dyer 2000: 102). It is plausible that failed rehabilitative efforts contribute to steady recidivism rates.

Current State of Rehabilitative Efforts

Despite increased attention to incarceration and crime control by federal and state corrections officials as a solution to reducing crime, contemporary criminal justice data presents a seeming paradox. Incarceration and crime rates have not corresponded with this paradigm of lockup rehabilitation for the last several years (Gainsborough and Mauer 2000: 5). While many states have embarked on intensive prison construction efforts ostensibly as a way to reduce recidivism and lower crime rates, little has been accomplished with regard to these two objectives (Schlosser 1998: 5). Since 1985, the combined jail and prison population has increased 130% (Egan 1999: 2). The State of California is significant in this regard. It has the highest prison population (141,114 inmates), the highest crime index (1.2 million crimes per year) and the highest recidivism rate (54.5%). In addition, as of 1999 the top 10 states with the highest prison populations also had the highest state-wide crime rates. Are there any alternatives to incarceration to address recidivism and crime rates?

State-1991	
Violent offenses	48.8%
Nonviolent offenses	31.9%
State-1997	
Violent offenses	46.8%
Nonviolent offenses	29.1%
Federal-1991	
Violent offenses	22.6%
Nonviolent offenses	34.1%
Federal-1997	
Violent offenses	23.2%
Nonviolent offenses	37.8%

Source: Sourcebook on Criminal Justice Statistics 1999, 514

In the data section discussed later we present an extensive review of recent developments and innovative programs that have been utilized to address specific variables contributing to ex-offender recidivism. Drug courts and boot camps have been popular tools used in recent years to divert first time, nonviolent offenders from serving lengthy sentences in prison. States such as Texas, and also the government of Canada, have implemented intensive supervision programs with follow-up services to monitor low-risk offenders (Eisenberg 2001; Gendreau, Paparazzi, Little and Goddard 1999). The Safer Foundation in Chicago has been placed at the forefront of providing effective services such as vocational guidance and assistance to ex-offenders, due to its outstanding record of reducing recidivism (Finn 1998: 91-94).

Most states also require inmates to work for their prison industry programs. These programs are directed at developing work ethic, while teaching valuable vocational skills. Finally, prison ministry and social work programs have been implemented to introduce changes to inmate consciousness by promoting techniques that tap into subjective remorse, and a commitment to law (Schlosser 1998; Finn 1998; Heinrich 2000). The goal of all of these efforts is to find efficient, cost-effective ways to reduce recidivism and prison populations. The essay that follows is an exploration of effective programs that enhance ex-offender employability, and thus, reduce recidivism rates.

Considerable empirical support exists to demonstrate that increased prison populations do not significantly lower state or national recidivism rates, or

necessarily have a direct correlation with decreasing crime rates. Because approximately 70% of inmates are recidivists who return within 1 to 3 years and are not new offenders (Dyer 2000: 102), at least 26 state correctional programs are failing this segment of the inmate population with above average recidivism rates. In order for ex-offenders to become self-sufficient, employability is critical to addressing the problem of high recidivism rates (Rahill-Beuler and Kretzer 1997: 1).

The first part of this essay consists of a literature review that covers both criticism and support for vocational guidance and assistance programs, as well as identification of structural and demographic variables affecting their success. The second part of the essay consists of program reviews where we identify those programs that have not succeeded, followed by identification of those that have. We then discuss those variables most likely to generate successful outcomes. This essay concludes with recommendations for creating successful programs.

LITERATURE REVIEW

Debate continues over the demonstrated degree of success of vocational guidance and placement programs for ex-inmates. Inherent in the academic discourse is the question of whether or not being unemployed produces any correlation with recidivist criminal behavior. The following five topics will be discussed: (a) the relationship between unemployment status and criminal behavior, (b) the effectiveness of vocational guidance and placement programs in reducing recidivism, (c) the role that employment plays in the success of a supervision program, (d) components and services that have been included in programs with a successful record of reducing recidivism, and (e) those criteria used to determine a "successful" vocational guidance and assistance program.

Literature Proclaiming Vocational Guidance and Assistance Ineffectual

James Q. Wilson is often considered to be the most influential conservative figure in criminal justice policy. His views are representative of academicians and public officials who believe the decrease in crime rates throughout the 1990s was a direct result of increasing incarceration (Schlosser 1998). In accordance, scholars who hold this view disregard the argument that a criminal background negatively affects employability, or that there is a relationship between unemployment and recidivism (Martinson 1974; Murray 1997: 4; Wilson 1983; Homant 1984; Finn and Willoughby 1996).

For example, Wilson (1983) refers to three major studies from the Universities of Illinois, North Carolina, and Florida State University. In search of a re-

relationship between unemployment and crime for ex-offender recidivism, none of the three studies of ex-offender vocational guidance and assistance programs showed a significant correlation with, nor any reduction in, recidivism rates. Wilson also provided examples of programs such as the Neighborhood Corps, Baltimore LIFE and Supported Work (MDRC), each of which failed to significantly reduce recidivism. Ultimately, he blamed methodological problems as the major reason for not finding any relationship between unemployment and recidivism. This included research design problems and weak measurement instruments. In addition to the difficulty in trying to clarify the complex relationship between unemployment and crime, Wilson also cites the weak evidence that using aggregate data provides (17).

With regard to the effectiveness of vocational guidance and assistance programs lowering recidivism, the difference between control and experimental groups has been examined. Homant (1984: 6) found poor results related to this effect. Comparisons were made in his work between control and experimental groups to distinguish if there was any difference. He cites one program where the reconviction rate for the experimental group was one point above the control group at 36%. While they stop short of saying that nothing is effective in lowering recidivism for ex-offenders, these authors do believe that sufficient services are available within the prison institution to assist the offender with prerelease employment.

There has also been some discussion in the literature concerning the role, if any, that stable employment plays in minimizing ex-offender recidivism (Homant 1984: 7; Rahill-Beuler and Kretzer 1997: 1; Heinrich 2000: 4-6). Some researchers have pointed to minimal positive results. For example, although Wilson (1983: 18) is very skeptical, he does note two programs that demonstrated positive results for reducing recidivism—the Job Corps program, which provides intense remedial education and job training, and the Great Society’s “satisfactory job” placement program. Homant (1984: 7) also concedes that employment is critical to the success of a released offender, but insists that they don’t have as many problems obtaining jobs as has been claimed by some researchers (11, 12). He also concluded that programs do not change the criminal behavior of every participant simply because the ex-offender is employed (11, 13).

Federal community treatment centers, or halfway houses, have had some success in improving unemployment and recidivism rates, particularly for minority offenders. In a study of 974 halfway house ex-offenders, both the employment and recidivism rates improved within the first year (Homant 1984: 11). In another 1996 evaluation of employment outcomes for ex-offenders in the Job Training Partnership Act (JTPA) programs, Finn and Willoughby cite past studies supporting a positive correlation between employment status and criminal behavior. Furthermore, they cite research indicating that participants in JTPA programs who receive employment and vocational training have lower recidivism rates than those who do not (Finn and Willoughby 1996: 67).

In a brief review of the literature, they cite studies revealing some of the difficulties that a criminal record can pose in obtaining employment (68-69). Nevertheless, they determine that there is no conclusive evidence proving that a criminal record affects an ex-offender's ability to attain employment. A study by Homant is also cited to support this claim indicating that 97% of 209 companies surveyed reported that they had no policies prohibiting the hiring of candidates with criminal backgrounds (69).

In summary, authors critical of the efficaciousness of vocational guidance and assistance programs reject the claim that they significantly affect recidivism. Emphasis is placed instead on improving self-esteem and the affects of harsh prison environments (Homant 1984: 14, 16). Finally, they do not believe that there is any significant correlation between employment status and criminal behavior.

Literature Supporting the Efficaciousness of Vocational Guidance and Assistance Programs

An extensive and, in our view, more credible literature argues in support of the ex-offender vocational guidance and assistance program models, and demonstrates their success in reducing recidivism. Scholarship supporting vocational guidance and assistance programs provides evidence that links the stable recidivism rate to increasing incarceration rates (Miller 1998; Sherman 1998: 1; Dyer 2000: 4-6; Gainsborough and Mauer 2000: 20; Schlosser 1998; Heinrich 2000: 4-7; Rahill-Beuler and Kretzer 1997: 36; Uggen 1999; Rauma and Berk 1987). In addition, these scholars argue that sustainable wages, not just employment, are important for ex-offenders to avoid recidivism. Finally, emphasis is centered on those features of vocational guidance and assistance programs that have proven successful (e.g., post-release follow-up services, job referrals and transition funds).

In a 1998 review of three programs, recidivism is examined as a significant factor that contributes to the stable U.S. prison population, which was at over 1 million in 1996. Peter Finn (1998) cites several studies that have indicated unemployment and low-wage temporary jobs contribute to recidivism. Poor research methodology in evaluating past vocational guidance and assistance programs was pinpointed as the primary reason for obstacles in determining their success in improving employment status or recidivism. Moreover, he does agree that there is no conclusive evidence indicating that vocational guidance and assistance programs successfully reduce recidivism for large numbers of ex-offenders (105).

Finn (1998: 91) argues that traditionally vocational guidance and assistance programs were not direct or thorough enough. Ex-offenders continued to experience substance abuse, mental illnesses, and inadequate housing and job placement. Results indicated full-time jobs that compensate relatively well help to reduce recidivism for ex-offenders (89). The three programs that Finn

reviewed also provide intensive follow-up services during the critical first year after the ex-offender secures employment. In addition, these programs focus on changing ex-offender belief systems by demonstrating that a crime-free life is better for them. Finally, the importance of providing basic skills in life management before the ex-offender is released back into society is paramount to their success (105).

Authors critical of vocational guidance programs also argue for the necessity of ex-offenders to earn a living wage that can sustain their minimum living expenses when they do become employed. Uggen's (1999) work stressed the importance of having a good quality job in reducing the propensity for criminal behavior and recidivism. He contends that several studies have indicated a relationship between low quality jobs, unemployment and criminal behavior (127). The hypothesis that he tested and found to be true in his study suggests that quality jobs with higher wages and better working conditions, which apply a skill the ex-offender has attained in prerelease training, will provide more opportunities that enhance life chances (135). Uggen ultimately argued that higher quality jobs reduce recidivism and substance abuse (145).

Finally, the work of Rauma and Berk (1987) emphasizes the importance of providing transition funds in addition to vocational guidance and assistance and follow-up services for ex-offenders during the interim period time of release of realization of employment (3). Based on the hypothesis that some crimes are committed out of economic necessity, they reviewed the Baltimore LIFE and TARP programs (4-5). They contend that most major studies have indicated the 12 months after release are the most critical for preventing recidivism. Since many ex-offenders may go several months before they secure employment, transition funds are extremely helpful in covering their expenses for this period. Rauma and Berk's results also indicated that during the first five years after release ex-offenders who utilized unemployment benefits had lower recidivism rates than those who did not (4). They found that the payments provide an incentive for the ex-offenders to stay out of jail or prison since they will not receive them if re-incarcerated (8). That said, to date, ex-offenders only receive an average of \$69 for their transition when they are released.

Although the literature is discordant with respect to the success of vocational guidance and assistance programs, we would argue that programs constituted by a set of key components are more effective in reducing recidivism for ex-offenders. Those components include (1) prerelease life management and job readiness training, (2) job referral assistance, (3) transition funds to assist ex-offenders with expenses during their job search, and (4) follow-up services for at least six months. These components of a successful vocational guidance and assistance program specifically address variables that contribute to ex-offender employability and recidivism.

VARIABLES THAT AFFECT EX-OFFENDER EMPLOYABILITY AND RECIDIVISM

When looking at the issue of employability and the impact that it has on ex-offender reintegration and deterrence, there are nine predominant sociological variables to consider: race/ethnicity; gender; age; education; the prisonization effect; disparate sentencing laws; legal restrictions prohibiting employment; the economy and labor market; and the geographic community of residence. We will briefly discuss each of these variables and the functional relationship they may have with someone returning to prison. While race/ethnicity, gender and age profile the core adult ex-offender population, others, such as education and legal restrictions, combine to effectively outline the attributes of ex-offender recidivism and problems with employability.

Race and Ethnicity

Overwhelmingly, the data on race and ethnicity reveals that most of the ex-offenders returning to prison are either African-American or Hispanic. Consequently, these two race/ethnic groups dominate the national prison population primarily because they are arrested, convicted and sentenced more frequently (Dyer 2000: 185-6). This can be attributed to poor legal representation, targeted policing practices, prior convictions, and sentencing laws that have a disparate impact in their communities.

African-Americans and Hispanics currently account for 70% of all prison admissions, 40% of whom are recidivists (Dyer 2000: 6). One-third of all African-American males ages 20 to 29 are involved in the criminal justice system in some fashion (probation, parole, jail, or prison). In Washington, D.C. and Baltimore, 50% of African-American men ages 18 to 35 are under correctional supervision (6). African-Americans, who make up only 13% of the U.S. population and 13% of monthly drug users, comprise an overwhelming 35% of drug arrests, 55% of drug convictions, and 74% of prisoners serving time for drug offenses (Parenti, 1999: 239). In state prisons, African-Americans constitute 60% of drug offenders (Egan 1999: 7). Policing practices and sentencing policies that were intended for the most visible target of the war on crime, the urban innercity, continue to have a significant impact on who gets arrested and sent to prison (Dyer 2000: 6). As a result, the number of African-Americans incarcerated throughout the 1980s and early 1990s has soared.

A common misconception is that African-Americans and Hispanics are committing more crimes and, thereby, deserve elevated rates of incarceration. However, as data from the U.S. Department of Health and Human Services reveals, 64% of crack users are White, while only 26% are Black. Nevertheless, by 1992 African-Americans accounted for 91% of those who were sentenced

under disparate drug laws (Dyer 2000: 183). Race/ethnicity is a strong factor that plays into employability and recidivism for ex-offenders.

Gender

Men have traditionally represented most of the ex-offender and inmate populations. Most of the research presented in this essay will specifically address men. However, recent research shows that the number of women in the prison population has slightly increased over the last 20 years. From 1980 to 1994, the number of incarcerated women increased from 12,331 to 64,403 (Donziger 1996: 147). As of 1999, women constituted 16% of the correctional population (U.S. BJS 1999). In addition to the inequities that women already face in the workplace, they can also have difficulty finding employment after their release due to a lack of child care and their criminal record.

Age

Age is another characteristic of jail, state, and federal prison inmates that is consistent and fairly undisputed. The data indicates that most adult, nonviolent offenders are under the age of 40, with the bulk being under age 35. Also, research indicates that younger ex-offenders recidivate at a higher rate than older ones, primarily because they experience more difficulty in attaining post-release employment.

In 1991, 65% of state prison inmates were under age 35. In 1996, 24% of jail inmates were between ages 35-44. Finally, in 1991, only 22% of federal inmates were over the age of 45 (U.S. BJS 1998). In addition, a study of Florida inmates released in December of 1999 reinforced the contention that younger inmates recidivate at a higher rate. Although employment may become more difficult the older an inmate gets, especially for labor-intensive jobs, criminal behavior also becomes less likely with age. Various studies have confirmed that private sector employers perceive young minority ex-offenders as a risk, and are reluctant to hire them (Donziger 1996: 126). Employment difficulties, especially at a young age, can significantly contribute to recidivism (Rahill-Beuler 1997: 1).

Education

Education, needed to develop valuable skills for the labor market, is among the most important variables impacting ex-offender employability and recidivism. Reports consistently show that most offenders are poorly educated with over half of them not completing high school. Although education does not guarantee employment, at a minimum a high school diploma is now integral to the post-release success of an ex-offender.

A 1998 federal report concluded that only 54% of jail inmates had a high school diploma in 1991. Comparably, 59% of state inmates had high school diplomas that same year. By 1995, three-fourths of all high school dropouts, ages 25-34, were under correctional supervision. During that same year, three-fourths of African-American prison inmates did not finish high school (Hagan and Peterson 1995: 16). In addition, the 1998 Compendium of Federal Justice Statistics reported that the average rate of inmates who had not completed high school, including those on probation, supervised release, or parole was 31.8%. These figures demonstrate the correlation between education and incarceration, largely due to the difficulty gaining viable employment.

“Prisonization” Effect

Although there have not been very many studies conducted on the psychological affects of prison, there has always been an understanding of the sociological consequences that the atmosphere of a controlled, isolated space can have on inmates. The affects of prisonization can be seen on programs such as *Scared Straight*, which document how inmates can become more violent and volatile in the prison environment (Dyer 2000: 102; Homant 1984: 16). In addition, prison can also make inmates financially dependent so that they may have difficulty with becoming self-sufficient when they are released.

Violent prison subcultures foster coping mechanisms that enhance the likelihood inmates will adopt violent responses to conflictual situations. Moreover, for many inmates prison induces psycho-emotional internalization of basic emotions. This makes transitions to healthy relationships beyond prison at best a challenging intrapersonal adventure. Largely because prison subculture fosters social Darwinism, inmate survival instincts generate or maintain gang affiliations and alliances, thereby creating an additional obstacle to successful rehabilitation (Dyer 2000: 44). Finally, inmates who serve several years become accustomed to the subculture of prison regimentation and isolation and may face serious obstacles while adapting to life outside the structured prison environment. Subsequently, even if it is minimal, the prisonization effect negatively impacts recidivism and employability after offenders are released.

Disparate Sentencing Laws

In recent years, several changes to criminal sentencing statutes have been enacted at the state and federal levels resulting in the disenfranchisement of large sectors of the American population. With respect to recidivism, longer sentences make it more difficult for the ex-offenders to obtain post-release employment. Disparities in mandatory-minimum sentencing statutes for crimes such as the use of crack-cocaine and powdered cocaine have resulted in longer sentences for African-Americans. These disparities were initiated with legislation that was enacted during the “get tough on crime” era. Mandatory

minimums may end up being applied to cases where they were not legislatively intended to be (Silverman 2000: 5).

In Illinois, for example, Governor George Ryan signed a state law that mandates a 6-year sentence for armed robbery, adds 15 years for the possession of a gun during a felony, 20 years if the gun is fired and 25-life if someone is injured or killed. Although this may have been directed at hard-core, violent criminals, there are a number of other circumstances where this could be applied such as in a self-defense or gang cross fire case (Silverman 1999: 1). California's proposition 21 was approved by voters last year, which gave prosecutors the ability to charge juveniles 14 years and older with felonies, without a judge's approval. Although this may have been targeted for a specific group, the result will most likely be that a lot more kids get sentenced to adult prison (DiIulio 2000: 1).

Finally, the federal government eventually passed other measures such as truth-in-sentencing, which gave state mandates and financial incentives to hold certain violent offenders for at least 85% of their sentence (Tonry 1999: 1). As a result of mandatory minimums, over 90% of defendants plead guilty for fear of getting the book thrown at them if they are convicted (Petersilia 2000: 6). Ultimately, the law serves as a mechanism to target certain groups and punish them. The end result will make it more difficult for the ex-offender to obtain employment.

Legal Restrictions

A different kind of legislation directed not at crimes but at ex-offenders presents considerable obstacles. Employment restrictions, codified and enforceable by law, regulate those occupations considered by public policy makers to be off limits to ex-offenders. Employment restrictions may bar certain offenders from working in various fields such as health care, child care, or law enforcement. Companies use background checks to exclude ex-offenders from employment opportunities. While the intention is to protect the general public and employees of host companies from physical or financial harm, legal restrictions result in labeling and consequent black listing of ex-offenders on the job market. For their participation in nonviolent crimes (e.g., drug offenses), ex-offenders are effectively barred from job opportunities that they otherwise may have had. Collectively, legal restrictions contribute to an unemployment rate for ex-offenders as high as 60% one year after their release (Petersilia 2000: 3).

In her article "Confronting the Employment Barriers of Criminal Records," Mukamal (2000) outlines the barrage of state and federal laws that impose employment and public assistance restrictions against ex-offenders. The 1996 federal welfare reform law mandated all states to permanently bar people with drug felony convictions from receiving public aid or food stamps. Forty-two states have now adopted some form of this federal law. Secondly, federal laws

released by the U.S. Sentencing and Parole Commissions, such as the Landrum-Griffin Act and Employees Retirement Income Security Act of 1974 allow any local, state or federal court to impose employment restrictions on inmates released back into society.

Several states also have laws that restrict felons from working in certain occupations (Mukamal 2000: 598). Among those restricted occupations are child care, child welfare, youth detention, youth correction, school worker, home health, nursing home aid, pawnbrokers, police officers, security guards, corrections officers, commercial vehicle locators, nuclear workers and lottery employees (Rothstein 1999: 29-30). One particular law intended for felons convicted of property and aggravated violent crimes prohibits them from working in any capacity for an employee benefit plan. This would ban them from working in most human resource occupations. In addition, people who are found guilty on appeal while working in human resource-related occupations must turn over all salary earned during the appeal process (29 US Code. Sec. 1111. 2000).

It has become standard procedure for companies to perform criminal background checks on all prospective employees. In 1993, the National Child Protection Act created the National Criminal History Background Check System. Although specifically intended to be used for child abuse background checks, it is now used as a system that is accessible by any employer wanting to check someone's criminal background (Rothstein 1999: 28). Most prospective state and federal employees must clear a background check before they are hired. Because the public sector is the largest employer in the country, a valuable job market for probationers or parolees seeking government employment is eliminated.

Although some employers handle each case objectively and take all information under consideration, some may be required to follow a company policy or state law that bans all convicted felons from employment in that field. Some employers will automatically dismiss a felon's application without question. In an article written for the National Institute of Justice, Petersilia (2000: 3) cites a survey of five U.S. cities in which 65% of all employers indicated they would not hire an ex-offender. Employers can also perform criminal background checks for private school, public utilities, university security, and bank and credit union employees (Rothstein 1999: 31).

Laws have been established to prevent employment discrimination against ex-offenders subject to occupational restrictions. However, considerable latitude exists to legally restrict employment. Most felons will be blacklisted from many public and private sector jobs. The impact of legal employment restrictions, along with employer ostracism, can have a tremendous effect on the livelihood of an ex-offender. Understanding that ex-offenders must overcome the stigma of their criminal background and obtain sustainable employment to avoid recidivism, McAuley (1999) highlighted the importance of business workforce development for ex-offenders: "Many inmates are incarcerated be-

cause of economic crimes—they chose to sell drugs or commit burglaries rather than work for minimum wage at fast-food restaurants. The work must have meaning while the inmates are performing it as well as provide promise that it will make a difference in their futures” (2).

A 1979 study by the Coordinated Community Offender Employment Program, which provided employment services to inmates released from local jails, reached the following conclusion: “Frequently unskilled and undereducated, with poor work histories and the stigma of crime and incarceration, and barred from 75 different occupations through regulatory and licensing laws, ex-offenders are often the last to get a steady job and the first to be laid off and show an unemployment rate four times that of the population generally” (*Program Manual and Resource Guide*). Although labor-market flexibility and employment restriction policies do not exclusively contribute to all ex-offender unemployment, substantial evidence has been provided which shows that these two components can severely limit their job opportunities.

The Economy and Labor Market

Mostly due to their poor education and acquired skills, people formerly under criminal justice supervision have severe difficulty acquiring and retaining a sustainable job. Overall, research has revealed that there is a positive relationship between joblessness and criminal activity in economically depressed areas. Also, a poor labor market can impact crime rates and the propensity for criminal behavior (Freeman 1995: 191). Finally, research from the U.S. Department of Justice has proven ex-offenders to have very poor employment and salary histories (“Special Report: Profile of Jail Inmates 1996”). Although the U.S. Justice Department reports that as much as 65% of state and local offenders were employed at the time of their arrest, criminal defendants and convicted felons remain one of the most disenfranchised groups in the labor market.

Numerous studies have examined the relationship between unemployment and crime.¹ Richard Freeman (1995) published an extensive review of the literature and concluded that there is a general positive relationship between joblessness and criminal activity, especially when the crime and unemployment rates of different economic areas are compared. He also concluded that the labor market can impact crime rates and the propensity to commit crimes (191). This model has been demonstrated in recent activities of the U.S. economy. For example, over the past several years, the United States has enjoyed a steady, downward slope in unemployment rates. In addition to decreasing unemployment rates, the United States has also undergone an increase in employment from 1948-2000, and hourly earnings from the 1980s to the 1990s. However, while there has been unprecedented prosperity for some, this information creates the illusion that everyone in the country has benefited from the healthy economy.

Together, a labor market that is not very flexible, criminal justice employment policies that do not benefit felons, and poor education mean that ex-offenders have been virtually locked out of any job market that can sustain a minimum quality of life. One federal report concluded that 36% of jail inmates were unemployed, 20% were looking for work and 16% were not looking for employment at the time of their arrest ("Special Report: Profile of Jail Inmates 1996"). A special report by Harlow (1998) of the U.S. Justice Department profiled jail inmates in 1996. The study found that although 64.3% of inmates were employed at the time of their arrest, only about 50% of that group was employed full time.

Of the 35.8% who were not employed, 19.6% were looking for work and 16.2% were not looking for work. Income for those inmates working prior to arrest is telling. Although half of the 6,000 inmates in the study were employed full time at the time of their arrest, 46% of them earned less than \$600 a month. Another 18.7% earned \$600-\$999 a month. Finally, 15.2% of the inmates got their income from an illegal source (Harlow 1998: 3-4). Although these figures do not provide conclusive evidence that local, state and federal ex-offenders are overwhelmingly unemployed, they do suggest that a slight majority of them experience fluctuating employment stability, and earn low wages. Together, these experiences make it difficult of ex-offenders to avoid recidivating.

Demographics and Geographic Community of Residence

The community ex-offenders return to is critical to their post-release success. This is especially the case since released offenders often return to the same communities and subcultures that influenced the cultivation of their non-normative behavior in the first place. For example, Petersilia (2000) contends that most ex-offenders return to the isolated, urban neighborhoods they came from when they are released, where the same problems and temptations are (2). Chronic unemployment in urban and rural working class and poor communities signifies an additional stressor for those transitioning to dominant culture (Wilson 1990, 1997). Rival gang disputes generated in prison often continue when inmates return to the community. Finally, largely concentrated on minorities in poor urban communities, the most counter-productive impact the war on drugs has had is on the viability and quality of life of ex-offenders in their communities of residence.

Lyons and Scheingold (2000) have argued that the prison boom and focus on punitive policies have been responsible for the destruction and alienation of urban communities and families (114-115, 134). The combination of the "surplus population" of the impoverished and unemployed, and the impact of urban arrest and sentencing policies, fostered a "police state" where young minorities were targeted, arrested, charged, and convicted of nonviolent offenses. Fagan (1993) refers to this as the "political economy" of urban gangs

(22). The increased visibility and activity of the gang culture in the 1980s ultimately destroyed the social organization and infrastructure of the inner city. As these areas were policed more and fewer public resources were generated, they became breeding grounds of recidivism for ex-offenders.

To sum up, substantial scholarship identifies regional economy, poverty, and unemployment rates as key factors impacting ex-offender employability and recidivism. Consider one final example. Neustrom, Jamieson, Manuel and Gramling (1998) examined Lafayette, Louisiana, which had a strong local economy in the 1960s and '70s due primarily to the prosperous oil industry there. However, fluctuations in the market in the 1980s produced unemployment rates as high as 14.5% by 1986 (399). They concluded that in a community where the economy is highly dependent on a local industry, economic instability and dislocation stimulate a direct correlating link between unemployment and crime rates (401). As of June 2000, Lafayette's unemployment rate was at 5.6%, which translates into 9,972 unemployed people out of a total labor force of 179,290 (U.S. BLS 2000). Lafayette saw slight reductions in property crimes from 1998-1999 (*FBI UCR 1999*), which may be a sign of improvement due to its independence of the mining industry for the local economy. Nevertheless, the substantially high crime rates in Lafayette can be attributed to the number of unemployed people and the weak industry there that once drove the economy.

All nine of these variables work to make reintegration and employment more difficult for ex-offenders. Increased incarceration has only resulted in higher prison populations and stable recidivism rates. The Federal Bureau of Prisons and some state correctional agencies have utilized vocational guidance and assistance programs as one solution for offsetting these variables, decreasing prison populations and reducing ex-offender recidivism for the last forty years ("Job Placement for Offenders in Relation to Recidivism"). Vocational guidance and assistance programs are post-release programs that offers job readiness skills and employment referral services, or vocational training for offenders that have recently been released from incarceration. The program can be a residential work-release facility, or a program outside of the prison environment for ex-offenders on probation or parole. The program must also provide at least 6 months follow-up. The goal of an employment assistance program is to successfully reintegrate an ex-offender into society, while maintaining gainful employment (Homant 1984: 7).

Consequently, there is an extensive body of literature that has explored the extent to which, if at all, these programs have been successful in achieving those goals.

PROGRAM REVIEW

In this section we provide an extensive review of past and present employment assistance programs that have been utilized to address employability and

recidivism for ex-offenders. To begin, we provide a brief discussion of programs considered to be failures. In each case we attempt to document those aspects of the programs that seemed most problematic. This section is followed with a more thorough analysis of key concepts and programs leading to effective employment assistance and reduced recidivism.

Failed Vocational Guidance and Assistance Programs

In the 1960s, '70s and '80s, the U.S. Congress began to focus more on providing labor market skills to ex-offenders with the passage of the Manpower Demonstration and Training Act of 1962 (MDTA) and the Economic Opportunity Act of 1964. These two legislative vehicles provided government support and funding for hundreds of vocational guidance and assistance programs for inmates and released offenders. These programs were created with the intended goal to integrate offenders into the job market, and thus, reduce overall recidivism (Finn 1998: 4). In 1973, Congress passed the Comprehensive Employment and Training Act (CETA), which was another training and employment program. CETA also provided severely needed funding for job creation in the recession years of the mid-1970s (Bovard 1986: 4). Finally, Congress passed the Job Training Partnership Act in 1982 (JTPA).

The JTPA, which eventually became the Job Corps Program, was targeted for unskilled youth and adults, the economically disadvantaged, and those facing significant barriers to employment. The intent was to provide federal funds for state and local governments to establish and operate training programs for these groups, and then place them into private sector employment. The services provided by JTPA were job readiness skills, remedial education, vocation, job search assistance and counseling (Bovard 1986: 10-13). Other federal programs spurred by legislation are the Youth Entitlement Demonstration and Training Program (YEDTP), Alternate Youth and Employment Strategies (AYES) and Special Training and Employment Assistance for Disadvantaged Youth (STEADY) (Bovard 1).

In the mid-1970s, the federal government and private firms began to evaluate some of these programs for their effectiveness in reducing recidivism and assisting ex-offenders with permanent employment (Finn and Willoughby 1996: 69-71). Overall, reviews of these programs have been mixed and polarizing, especially when it comes to how data is interpreted. An evaluation by Martinson (1974) of 231 rehabilitative programs indicated no effect on recidivism. This report was regarded as highly influential in discrediting employment assistance programs in corrections policy.

In a 1998 report to Congress entitled "Labor Markets and Crime Risk Factors," Bushway and Reuter present an extensive literature review of research conducted on vocational guidance and assistance programs for ex-offenders. Reviews of the following programs were found to show no relationship between crime and unemployment, or a reduction of recidivism for participants:

STEP (Specialized Training and Employment Project), JTPA (Job Training Partnership Act) programs, TARP (Transitional Aid Research Project) and Baltimore LIFE (Living Insurance for Ex-Offenders) (“Labor Markets and Crime Risk Factors”).

In an analysis of 17 studies of ex-offenders on probation, Clear and Braga (1995) concluded that members of the experimental groups did not have lower recidivism rates at the close of a one-year follow-up period. One-third of the offenders in the experimental and control groups had been rearrested and 21% were convicted again. One interesting point is that property crime offenders committing auto theft, forgery, larceny and burglary comprised the second largest group of recidivists behind felony offenders (Geerken and Hayes rpt. in Clear and Braga 1995: 432).

Another summary of 15 federally funded vocational guidance and assistance programs throughout the 1980s and '90s also had mixed results. The programs provided pre- and post-release services to offenders such as vocational training, job counseling, unemployment subsidies, life management skills and job placement. It also encouraged use of the Targeted Jobs Tax Credit; which gives employers a tax incentive to hire ex-offenders. The evaluators used the difference between control and experimental groups in number of rearrests and periods of employment to measure the programs' success. Of the 15 programs, 6 were effective in reducing recidivism, 8 were not, and 1 program had mixed results. One of the programs in this summary is the Transitional Aid Research Project (TARP).

The TARP program was initiated in 1973 as a result of a U.S. Labor Department mandate from the Manpower Development and Training Act of 1962, to provide employment services to ex-offenders. Given the fact that property crime offenders comprised most of the state prison inmates in the 1970s, and they had recidivism rates as high as 60%, TARP provided modest subsidies to support released offenders as they searched for employment (Rossi, Berk and Lenihan 1980: 5). Approximately 4,000 released offenders from Texas and Georgia state prisons received weekly payments of \$63 and \$70, respectively. The payments were intended to decrease the propensity of ex-offenders to re-commit property crimes during their transition to employment (212). Eligibility rules for the payments required that the ex-offenders be unemployed, but actively searching for a job. Evaluators concluded the following: TARP payments for 3-6 months decreased rearrests within a year by 25-50%, and because the TARP payments allowed participants to search longer for employment, their minimum wages and working conditions once they found work were better than those for the control group (7).

Texas and Georgia TARP participants earned average weekly wages of \$148 and \$110, respectively, within a year of their release (Rossi, Berk and Lenihan 1980: 9). Overall, the TARP payments also reduced the number of arrests (112). However, although the goals of the program were met, there was an unanticipated failure to reduce property crime arrests (100). Although over-

all rearrests did decrease, TARP participants actually had an increase in property crime arrests (16). Needless to say, the face value perceptions of the TARP results ignited vast skepticism among criminal justice professionals for federal investment in ex-offender vocational guidance and assistance programs that rendered weak results for reducing recidivism.

In August of 1986, the CATO Institute, a politically influential conservative think tank in Washington, D.C., released a policy analysis entitled "The Failure of Federal Job Training" by James Bovard. In the essay, Bovard harshly criticizes all of the federal manpower and labor market integration programs in the 1970s and 1980s for wasting over \$100 billion of taxpayer dollars on programs that produced little or no results. Bovard contends that federal programs (MDTA, CETA, YEDTP, JTPA, AYES, STEADY and Job Corps) were merely bureaucratic spin machines, used for political gain, that yielded no reduction in recidivism or an improved job outlook for targeted groups (1).

Bovard cites measurement flaws such as using low standards to measure program success, broad eligibility guidelines and low participation as components that contributed to the failure of federal job training programs (1-2). Poor management and oversight also contributed to using some of the programs such as CETA for job creation, rather than its intended use of training (4). Although most of the programs were targeted for disadvantaged groups, Bovard also claims that broad eligibility guidelines allowed middle-income groups to utilize them for job retraining (3). Finally, Bovard cited the two-thirds dropout rate of the Job Corps program and the failure to provide needed skills as other problems (6). Overall, he claims that most of the programs had no impact on wages, job outlook or recidivism. In 1982, CETA funds ceased and most of the federal employment assistance programs for ex-offenders dissolved (4). This occurred with a mixed and controversial understanding of what positive impact these programs had on reducing recidivism.

A Brief Response to Criticism of Failed Vocational Guidance and Assistance Programs

Although many of the negative claims from reviewers like Bovard are well supported with data, much of the rhetoric is inflammatory and subjective, and now outdated. Many of the reviews were also sponsored and funded by highly partisan organizations, such as the CATO Institute, where partisanship precluded a thorough analysis. For example, making an argument *in defense* of the TARP Program, Rossi, Berk and Lenihan (1980) suggest that the increase in property offenses for the experimental group was based on the program eligibility requirements. The federal guidelines of the TARP program required participants to be unemployed to receive payments. They contend that this created a work-disincentive, and the extended period of unemployment made

TARP participants more susceptible to recidivism. Because they were not working and received public aid funds, it was more beneficial to remain unemployed than to work and receive only \$30-\$80 more per week in wages. Also, because the payments were so low, and most of the participants returned to live in impoverished areas with many opportunities to commit property crimes, the payments had a counter effect. The profits from property crimes were deemed more attractive than the low payments the program subjects received.

Miller (1989), a very well-respected criminologist and social worker, explored the debate on effective rehabilitative methods for criminals in the March edition of the *Washington Post*. He agrees that most of the federal vocational guidance and assistance programs of the 1970s and '80s were statistical failures. He also cites the U.S. Supreme Court case of *Mistretta vs. U.S.*, in which the court ruled that rehabilitation did not have to be included in federal sentencing guidelines. Also, Miller agrees with conservatives such as Wilson and Martinson who concluded that most programs had no massive impact on recidivism (1).

Miller's (1989) core criticism stems from the fact that most of the programs had poor recidivism reduction due to inefficient delivery of the post-release services they offered to ex-offenders. In addition, he points out how programs that take place in prison only further institutionalize the inmates, and do not help to reduce recidivism. He contends that the best environment for rehabilitative services is outside of the harsh prison environment (2-3). As an alternative, Miller makes a case for a different measurement of "success." Rather than use rearrest or conviction rates as the benchmark, he argues that any sign of a reduction in offenses should be a success.

To emphasize this, Miller (1989) points to a study where 30 delinquents received therapy and 44 in a control group did not. Although 60% in the experimental group re-offended, 93% in the control group recidivated as well. By his standard, this 33% difference between the experimental and control group is a success (3). Miller encourages intense programs that offer behavioral therapy and job assistance for ex-offenders (4-5). In light of Miller's research, there have been a number of rehabilitative programs, most of which take place outside of prison, that have been very successful in providing permanent employment and reducing recidivism for ex-offenders. We will highlight four noteworthy model programs and provide examples of some of the six critical components of a successful vocational guidance and assistance program they feature.

VOCATIONAL GUIDANCE AND ASSISTANCE PROGRAMS THAT WORK

Of the programs we have reviewed, four feature a combination of resources leading to employment, and reintegration with their respective communities.

The programs are Project CRAFT, Project RIO, Project Re-Enterprise, and the Safer Foundation. What follows is a brief description of each program, followed by reference to the implementation of key resources and techniques within specific programs.

Project CRAFT (Community Restitution and Apprenticeship Focused Training) began in 1994 with grants from the U.S. Labor Department in North Dakota, Tennessee and Maryland. The model program was also duplicated in Florida and Texas with state funding. The program works with the Home Builders Institute to provide on-the-job training, as well as employment in the home building industry for youth ages 17 and older. Program participants complete 21 weeks of training and receive job placements with the 185,000 members of the Home Builders Association. Support services are also given to juveniles referred from the court (Hamilton and McKinney 1999: 1).

Project RIO (Re-Integration of Offenders), a federally supported program operated by the Texas Workforce Commission and Criminal Justice Department, commenced operation in 1985. RIO provides job readiness assessment and training to inmates two years before their release. RIO also provides job placement and follow-up services when the inmates are released. The program serves almost 16,000 parolees every year from all of the state's 108 prison facilities, and is funded entirely from state funds. In addition, the RIO program also has a youth counterpart called RIO-Y that provides the same services to juveniles (Finn 1998).

Project Re-Enterprise (PRE) is another innovative program from Texas, administered by the Crime Prevention Institute in Austin. The program links ex-offenders and the business community by helping inmates complete job applications and providing interview practice forums at mock job fairs (Heinrich 2000: 11). Over 300 employers voluntarily attend the job fairs and interview inmates at their prison facilities, which helps to alter any preconceived fears they may have had about hiring ex-offenders (Moses 1997: 1). There is also the possibility that interviewed inmates may be offered jobs when they are released.

Finally, the Safer Foundation in Chicago has been in operation since 1972; its primary mission is to provide services for a successful re-integration of the ex-offender into society. The Safer Foundation has a particular interest in reducing recidivism by providing permanent work for ex-offenders. All of the foundation's programs operate within a \$14 million budget that is dispersed to six locations including Chicago, Rock Island, Illinois and Davenport, Iowa. A staff of 200 administers the various programs and services that Safer offers. Eighty-eight percent of Safer's clients are African-American.

What follows is a breakdown of the six components of vocational guidance and assistance programs that appear most relevant to preventing recidivism, and how these four programs incorporate them. The six components are (a) programs offered outside of the prison environment, (b) intensive follow-up, (c) temporary funds for reintegration, (d) employer referral services

and job readiness skills, (e) vocational training and (f) independent living skills training. The section will end with a brief discussion of federal intervention programs.

Programs Offered Outside of the Prison Environment

It is very important that inmates receive quality services while they are serving their terms. However, because of the isolation and prison subculture, it is even more critical that ex-offenders have access to programs and resources after their release. Many states operate work-release centers that require inmates to work while living in a minimum-security setting. Offering a program outside of prison gives ex-offenders an opportunity to learn independence while maintaining employment.

One of the primary features of Project CRAFT is that it is an alternative to incarceration. Program participants perform service projects in the community, which is where they also learn the skills of their trade. Community agencies that work with at-risk youth also offer CRAFT services through the Home Builder's Institute. Project RIO is designed to specifically target and serve parolees, and provide them with the resources they will need to survive outside of prison. The program assesses inmates before they are released and prepares a specialized treatment plan to reintegrate them back into society and maintain employment. RIO-Y serves juveniles after their release with youth development and career oriented programs. Finally, although the Safer Foundation does offer services to inmates in jail and prison, one of its key components are the post-release employment and educational services offered to youth and adults. The central office for Safer is located in downtown Chicago, which is where most of the ex-offenders come to see caseworkers and access the Foundation's services. This location makes Safer easily accessible to all program participants and makes them feel responsible as they continue to work.

Intensive Follow-Up

Intensive, long-term follow-up and supervision is absolutely critical to ensure that ex-offenders remain active in a program and do not resort to behavior that will lead to recidivism. Follow-up is also utilized to monitor an ex-offender's performance in a job placement, and continually address any issues they have such as substance abuse or a mental illness.² Programs that follow-up with their participants for a minimum period of 3-6 months have lower attrition rates because the participants know they are being monitored and can return to incarceration if they fall out of line.

Project CRAFT offers long-term follow-up services to the program participants, including case management, education, and substance abuse treatment. Project RIO prides itself on employment specialists that follow-up with employers for at least three months to monitor placements. The follow-up takes

place in the form of phone calls to participants and employers and progress reports to check compliance with assessment plans. Critical transition services are also offered such as medical care, food, clothing and housing resources (Finn 1998). Finally, the Safer Foundation follows up with its clients for at least six months after their release. For the most part, caseworkers maintain consistent contact with clients by way of phone calls and progress reports from employers. This allows caseworkers to monitor an employment placement and provide intervention before an ex-offender falls back into recidivism.

Temporary Funds for Reintegration and Transition

As Table 2 indicates, most states do a very poor job of providing released inmates with sufficient funds for their transition until they are able to obtain employment. The average release gratuity amount given to offenders is \$69, with several states providing ex-offenders with no more than a bus or plane ticket to their next destination. Because they may not obtain employment for several months after their release, having some kind of income is critical to discourage recidivism during this interim period.

The vouchers that Project RIO provides to its clients for food, medical care and clothing are essential for their transition. Because all of these items were provided for them while they were incarcerated, having them on the outside makes it easier to search for employment, or until they begin earning a salary. The Safer Foundation also provides reimbursement and monetary allowances for transportation, critically associated with employment. In addition, Safer also provides funds to ex-offenders for new clothing, and related personal items needed to procure and retain jobs.

Employer Referral Services and Job Readiness Skills

Unfortunately, even for people without criminal records today's job market is one that is heavily dependent on personal references and resourceful contacts for job seekers. In addition, to ensure longevity and low turnover, ex-offenders must be socialized to conduct themselves as professionals in the workforce. Job search skills and workplace decorum are valuable skills ex-offenders can benefit from when they are released and begin to pursue employment.

Project RIO provides assessment testing, job readiness training and job placement services to ex-offenders. RIO has an extensive network of employers it works with to set up interviews for ex-offenders. Initially, participants are given detailed testing to assess their career skills, interests, and goals. Phone calls are made by caseworkers before an interview takes place, and the company usually trusts the quality of candidates that are sent by RIO (Finn 1998). Success has been reflected in the numbers. As of September 2000, RIO had a pool of 12,000 employers that regularly hire up to 15,000 Texas parolees

each year (Heinrich 2000: 12). A 1992 evaluation of Project RIO concluded that 69% of RIO participants obtained employment within one year, compared to 36% of nonparticipants. Forty-eight percent of “high-risk” RIO participants were rearrested within a year and 23% were re-incarcerated, compared to 57% and 38% for nonparticipants (Finn 1998: 4). Clearly, the data from Project RIO indicates an overwhelming success of job placement and minimizing recidivism for program participants.

Project Re-Enterprise has also been very successful in developing relationships with over 300 businesses that regularly hire ex-offenders from the program (Moses 1996: 2). Similar to Project RIO, Re-Enterprise taps into its employer network to regularly interview and hire clients from the program. In addition, Project CRAFT has developed relationships with members of the Home Builders Association that regularly hire participants from the program. CRAFT also offers numerous training workshops that prepare juveniles to work in the home building industry and maintain positive attitudes (Hamilton and McKinney 1999: 1). Finally, the Safer Foundation has developed an extensive database of employers that the organization works with to hire its clients. The Safer Foundation also conducts workshops to prepare ex-offenders for a professional career in the workforce.

Vocational Training

It is vitally important that ex-offenders have a marketable skill or trade to make them valuable to employers. Learning a vocation such as carpentry or plumbing provides the ex-offender with a sense of self-worth and purpose in the workplace.

Project CRAFT is the one program of the four that specifically focuses on teaching a marketable skill that will make the ex-offender employable. Trades such as carpentry, apartment maintenance, and home construction are fields where there is a large demand for skilled labor. Students must prove their mastery of home construction skills by completing 840 hours in preemployment classes and on site training before they are placed into a job. Participants learn about safety, workplace decorum and trade mathematics (Hamilton and McKinney 1999: 1). After four years, Project CRAFT had a total recidivism rate of only 26% (2). The combination of training and employment has kept the vast majority of the program participants from returning to prison.

Independent Living Skills

Finally, in conjunction with follow-up services, programs that offer opportunities for ex-offenders to develop independent living skills are vital to their success. After serving several months or years in a controlled, structured prison, the most important transition component is for ex-offenders to be able to support themselves. Work-release centers provide a relatively structured

<input type="checkbox"/> Table 2: State Prisoner Release Gratuity Rates	
Alaska	\$150
Alabama	\$10, plus \$2 for each year past five years served
Arizona	\$50
Arkansas	\$50
California	\$200
Colorado	\$100, and a set of clothes
Connecticut	\$50
Delaware	\$50
Florida	\$100, more available with a hardship request
Georgia	\$25 and a bus ticket
Hawaii	\$100 if they have no savings
Idaho	\$0, bus or plane ticket
Illinois	\$50
Indiana	Amount determined by Indiana DOC to meet inmate's immediate needs, and transportation costs
Iowa	\$100
Kansas	\$40 and transportation costs
Kentucky	\$0
Louisiana	\$10 and a bus ticket
Maine	\$50-\$500 (depending on work hours accumulated)
Maryland	\$40
Massachusetts	Varies upon facility based on amount in inmate's savings account, train fare
Michigan	Determined by the facility
Minnesota	\$100
Mississippi	\$15-\$100 (0-20 years)
Missouri	Bus ticket and money in inmate's account
Montana	\$100, more if necessary, upon request
Nebraska	\$100
Nevada	\$100
New Hampshire	Less than 90 days, \$0; 90-179 days, \$50; 180-270 days, \$75; over 270 days, \$100
New Jersey	\$100 upon release, \$100 30 days after release and \$100 within 12 months of release. Maximum of \$300.
New Mexico	\$50
New York	\$40
North Carolina	\$45

North Dakota	25% of inmate's labor earnings for duration of incarceration, and bus ticket
Ohio	1-90 days, \$25; 91-180 days, \$40; 181-365 days, \$65; Over 365 days, \$75; paroled or conditional release, \$75
Oregon	\$25 and a bus ticket
Oklahoma	\$50
Pennsylvania	Bus ticket
Rhode Island	\$20
South Carolina	\$0, bus ticket
South Dakota	\$50 and a bus ticket
Tennessee	\$30-\$75
Texas	Bus ticket, \$50 upon release and \$50 when destination is reached
Utah	\$100
Vermont	Not to exceed \$300, determined by facility, also subsidized housing
Virginia	\$25, if there is no money in their account
Washington	\$40 and a bus ticket
West Virginia	90% of their work savings, and a bus ticket
Wisconsin	\$500
Wyoming	Males—Bus ticket and meal money for the duration of the trip. Females—\$35, if inmate has less than \$100 in their account and meal money. She purchases her own bus ticket.
Federal Bureau of Prisons	Based on inmate's needs and financial resources; up to \$100 if offense was committed before Nov. 1, 1987, and up to \$500 if offense was committed after Nov. 1, 1987.
State Average	\$69.5

The cited data in figures 12 and 13 were collected and documented from the sources listed below by Byron Harrison through various methods of correspondence with state and federal officials, including posted Website data, receiving information via e-mail from the respective public information officer, telephone calls, and receiving information requested by mail. The information was collected over a course of one year from February 2000-February 2001. All data is accurate to the best of the authors' knowledge.

Sources: Alabama Department of Corrections, Alaska Department of Corrections, Arizona Department of Corrections, Arkansas Department of Corrections, California Department of Corrections, Colorado Department of Corrections, Connecticut Department of Corrections, "Crime in the United States," 1999, FBI Uniform Crime Reports, Delaware Department of Corrections, D.C. Department of Corrections, Florida Department of Corrections, Georgia Department of Corrections, Hawaii Attorney General, Hawaii Department of Corrections, Idaho Department of Corrections, Illinois Department of Corrections, Indiana Department of Corrections, Iowa Department of Corrections, Kansas Department of Corrections, Kentucky Department of Corrections, Louisiana Department of Corrections, Maine Department of Corrections, Maryland Department of Corrections, Massachusetts Department of Corrections, Michigan Department of Corrections, Minnesota Department of Corrections, Mississippi Department of Corrections, Missouri Department of Corrections, Montana Department of Corrections, Nebraska Department of Correctional Services, Nevada Department of Prisons, New Hampshire Department of Corrections, New Jersey Department of Corrections, New Mexico Department of Corrections, New York Department of Correctional Services, North Carolina Department of Corrections, North Dakota Department of Corrections and Rehabilitation, Ohio Department of Rehabilitation and Correction, Oklahoma Department of Corrections, Oregon Department of Corrections, Pennsylvania Department of Corrections, Rhode Island Department of Corrections, South Carolina Department of Corrections, Tennessee Department of Corrections, Texas Department of Criminal Justice, Utah Department of Corrections, Vermont Department of Corrections, Virginia Department of Corrections, Washington Department of Corrections, West Virginia Division of Corrections, Wisconsin Department of Corrections, Wyoming Department of Corrections.

environment where inmates serve their time, but work full time and begin to assimilate dominant cultural values regarding work responsibilities. The freedom of this less structured environment makes it easier for ex-offenders to make a smooth transition to life outside of prison.

In Project RIO, ex-offenders are given resources to assist them with obtaining housing. Before they are released, inmates are also given assistance with preparing vital documents needed for employment such as identification, birth certificates, social security cards and resumes (Heinrich 2000: 11). Because these are tasks that would usually be the ex-offender's responsibility after release, this affords the opportunity to obtain vital documents they will need to secure employment. The follow-up by caseworkers monitors the participant for recidivism prevention, while encouraging independence. Finally, in both Project CRAFT and the Safer Foundation, ex-offenders are offered training workshops in life management skills to help with their transition.

Federal Services and Programs to Reduce Ex-Offender Recidivism

In addition to all of the programs that are supported by the U.S. Department of Labor, the Violent Crime Control and Law Enforcement Act of 1994 created the Office of Correctional Job Training and Placement under the National Institute of Corrections to oversee ex-offender reintegration at the federal level, and to coordinate and fund state programs (Moore 1999: 1). The OCJTP also maintains a clearinghouse of information that is available for professionals interested in ex-offender reintegration programs (Moore 1999: 2). In 1996, the Federal Bureau of Prisons created the Inmate Placement Branch, which was charged with sponsoring the mock job fair model from Project Re-Enterprise to facilitate "post release employment opportunities." In July of 2000, the Workforce Investment Act replaced the Job Training Partnership Act to provide federal funding to states for ex-offender employment assistance. The Work Opportunity Tax Credit has remained as an attractive tax incentive for employers to hire ex-offenders since 1998 ("Hiring Welfare-to-Work Employees: A Step-By-Step Guide for Small Businesses"). All of these federal resources have all been very beneficial to ex-offenders and employers.

Although some programs in the past may have been viewed as failures, it is clear that many effective programs offering job skills training and reintegration services combined with intense follow-up have a positive impact. Not only do these programs place ex-offenders in jobs with livable wages, they also reduce the propensity to recidivate by improving quality of life and offering a second chance.

DISCUSSION AND RECOMMENDATIONS

As outlined in Miller's work, the degree of "success" an employment assistance program displays can be demonstrated with even minor indications of reduced recidivism rates for program participants. Our review of the four

highlighted programs leads to the conclusion that vocational guidance and assistance programs for ex-offenders with the following components can be successful in reducing overall recidivism between 10-50% for some participants over the first five years of post-release. The necessary components for success follow below. The sociological variables they address are included in parentheses.

Structure:

- offered outside of the prison environment (prisonization effect and disparate sentencing laws)
- have intensive follow-up supervision for at least six months and (geographic community of residence)
- provide some temporary funds for immediate reintegration needs (i.e., clothing, transportation, etc.) (the economy and labor market)

Services:

- provide employer referral services and job readiness skills (education, legal restrictions, the economy and labor market) or
- provide vocational training (education, legal restrictions, the economy and labor market) and
- teach independent living skills (race, gender, age and geographic community of residence)

These components are vital to a successful employment assistance program because they specifically address and serve all nine of the aforementioned variables that contribute to recidivism (race, gender, age, education, prisonization effect, disparate sentencing laws, legal restrictions, the economy and labor market, and geographic community of residence) for adult ex-offenders. In addition to these variables, the restorative justice model can be implemented into the mission and operations of correctional systems to further reduce recidivism and prison populations.

CONCLUSION

Accelerated prison construction has substantially failed to reduce crime and recidivism rates in several states, with at least 26 states experiencing above average recidivism. National recidivism rates for nonviolent, adult ex-offenders between the ages of 18-35 remain at 70%, not because all of them are prone to criminal behavior, but because they are not provided with the necessary tools either in prison or outside to live independently and maintain employment. The six aforementioned structural and service components should be added to voca-

tional guidance and assistance programs to successfully address the nine variables that impact employability. It is our belief, based on the material surveyed, that if the strategies leading to enhanced occupational opportunities are implemented the national recidivism rate can be substantially reduced.

NOTES

1. Crutchfield, R. 1997. "Labor Markets, Employment and Crime." Research Preview, U.S. Department of Justice–National Institute of Justice, July 1997; Freeman, R.B. "The Labor Market." In J.Q. Wilson and J. Petersilia (eds.) *Crime*. ICS Press, Institute for Contemporary Studies, c1995; Fagan, J. 1997. "Legal and Illegal Work." In A. Burton, Weisbrod & J.C. Worthy (eds.) *The Urban Crisis*. Evanston, IL: Northwestern University Press; Lester, B.Y. "Property Crime and Unemployment: A New Perspective." *Applied Economic Letters*, 1995, 2, 159-162; Gramling, R., Forsyth, C., and Fewell, J., 1988. "Crime and Economic Activity: A Research Note." *Sociological Spectrum* 8:187-195; Neustrom, M., Jamieson, J., Manuel, D., and Gramling, B. 1988. "Regional Unemployment and Crime Trends: An Empirical Examination." *Journal of Criminal Justice* Vol. 16, pp. 395-402; Neustrom, M. and Norton, W., 1995. "Economic Dislocation and Property Crime." *Journal of Criminal Justice* Vol. 23, No. 1, pp. 29-39; Pyle, D. 1998. "Crime and Unemployment: What Do Empirical Studies Show?" *International Journal of Risk, Security and Crime Prevention*; Land, K.C., Cantor, D. and Russell, S., 1995. "Unemployment and Crime Rate Fluctuations in the Post-World War II United States." In Hagan, J. and Peterson, R. (eds.) *Crime and Inequality*. Stanford: Stanford University Press.

2. Substance abuse affects many ex-offenders, often inhibiting their employability while contributing to recidivism. Many judges across the U.S. have realized after seeing the same repeat drug offenders in their courtrooms that treatment may serve them better than incarceration. In June of 2000, the Chief Judge of the New York Court of Appeals Judith Kaye implemented a plan to divert nonviolent drug addicts to treatment programs. If they remain drug free, they are not incarcerated. A similar program has been implemented in Brooklyn where Deputy District Attorney Patricia Gatling gives ex-offenders the option to receive services such as job counseling and drug treatment in a program called ComALERT (Community and Law Enforcement Resources Together). Diversion from prison is the component that makes these two programs innovative. Offering diversion from incarceration is a highly effective incentive to reduce recidivism for nonviolent drug offenders.

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AUTHORS' NOTES

Byron Harrison received his master's degree from the University of Illinois–Springfield and is presently working as a mentor for the Houston-based Families Under Urban and Social Attack (FUUSA), a nonprofit organization dedicated to working with at-risk youth. FUUSA is dedicated to matching at-risk youth with adult mentors to deter gang activity and youth involvement with juvenile correction. In addition, emphasis is placed on improving academic and social skills.

Robert Carl Schehr is the chair of the Department of Criminal Justice at Northern Arizona University. Current research interests include wrongful conviction, Fourth Amendment, and restorative justice. Most recent publications include *French Connection* (2003, with Bruce Arrigo and Dragon Milovanovic: SUNY Press), and "Innocence Projects as the New Civil Rights Movement" (forthcoming in *Critical Criminology*).

Address correspondence to Robert Carl Schehr, Department of Criminal Justice, Northern Arizona University, P.O. Box 15005, Flagstaff, AZ 86011-5005.



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Cost-Effectiveness of Connecticut's In-Prison Substance Abuse Treatment

MARILYN DALEY

Brandeis University

CRAIG T. LOVE

Westat, Inc.

DONALD S. SHEPARD

Brandeis University

CHERYL B. PETERSEN

Hesser College

KAREN L. WHITE

Connecticut Department of Correction

FRANK B. HALL

Connecticut Department of Correction

ABSTRACT Over the past two decades, the criminal justice population in the US has grown by over 200%, most of this due to an increase in drug-involved offenders. Although there is good evidence that prison-based substance abuse treatment programs can be effective in reducing rearrest, few cost-effectiveness studies have been conducted. Using data from the Connecticut Department of Correction and the Connecticut Department of Mental Health and Addiction Services (DMHAS), we compared the cost-effectiveness of four tiers (levels) of substance abuse treatment pro-

grams for a sample of 831 offenders who were released during FY1996-FY1997. Effectiveness, measured by reductions in the likelihood of rearrest within six months, one year and 18 months post-release, was compared for inmates who had received treatment while incarcerated (n = 358) and those who had not (n = 473). At all intervals, offenders who attended any of the higher tier programs (two, three and four) had significantly lower rates of rearrest when compared to offenders who attended Tier One only or who had attended no tier programs, even after controlling for background characteristics that may have differentiated the two groups. The benefits to the State of Connecticut correctional system alone, measured in terms of the costs of avoided re-incarcerations, were from 1.8 to 5.7 times the cost of implementing the programs, ranging from \$20,098 (Tier Four) to \$37,605 (Tier Two). Since society receives a favorable return on its investment in prison-based treatment programs, we should find ways to ensure that more drug-involved inmates receive treatment. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2004 by The Haworth Press, Inc. All rights reserved.]*

KEYWORDS Substance abuse treatment, state prisons, cost-effectiveness analysis, program evaluation

Over the past two decades, the criminal justice population in the United States has grown by over 200%, most of the increase due to an escalation in the number of drug-related offenders (Belenko & Peugh, 1998). Increased enforcement and mandatory minimum sentences for drug trafficking and cocaine possession caused the number of offenders serving sentences for drug crimes to increase nine-fold between 1982 and 1996 (Belenko & Peugh, 1998). By midyear 2000, there were over 1.9 million people in prisons and jails (Beck & Barber, 2001) representing an incarceration rate of 702 people per 100,000 in the general population. The rise in prison population exacts enormous costs on taxpayers, who spend an increasing amount each year to warehouse offenders who commit drug-related crimes. For example, the government spent \$38 billion in 1996 to incarcerate criminals in state, local and federal prisons (Mumola, 1998). Since there is good evidence that substance abuse treatment can significantly reduce the likelihood of rearrest and reconviction (CASA, 1999; Belenko et al., 1998; Hiller et al., 1999), providing treatment to addicted offenders may be a more cost-effective alternative to longer sentences. This report compares the cost-effectiveness of different levels (tiers) of substance abuse treatment programs that have been implemented in state prisons throughout Connecticut.

The relationship between drugs and crime has been a topic of much research and speculation. Although it is obvious that drug possession and sales are themselves punishable offenses, it is also clear that drug abuse tends to accelerate criminal activity in several other ways as well (Goldstein, 1982). For example, many addicts commit crimes in their efforts to raise funds for drug procurement, violence frequently accompanies illegal drug transactions and the physiological effects of drugs and alcohol serve to impair judgment, making crime more appealing. For states participating in the Arrestee Drug Abuse Monitoring (ADAM) program (Bureau of Justice Statistics, 2000b), an average of 66% male arrestees and 64% of female arrestees tested positive for an illicit drug at arrest. Nationwide, it is estimated that 80% of prison inmates have serious alcohol or drug problems (Mumola, 1998).

Fortunately, many offenders respond positively to drug treatment. Summarizing 20 years of federally funded research, the Office of National Drug Control Policy (ONDCP) estimated that prison-based treatment followed by community aftercare reduced recidivism by approximately 50% (ONDCP, 1998). Despite the documented success of prison-based treatment programs (Belenko & Peugh, 1998; Federal Bureau of Prisons, 2000; Field, 1984; 1989; 1998; Gaes et al., 1998; Griffith et al., 1999; Hanlon et al., 1998; Hiller et al., 1999; Inciardi et al., 1995; 1997; Knight et al., 1999; Lipton, 1995; 1998a; 1998b; Pearson & Lipton, 1999; Pelissier et al., 2002; Wexler, 1990; 1999a; 1999b; Bureau of Justice Assistance (BJA), 1997; 1998; 2000), the number of treatment slots does not even approach a level that meets the needs of inmates. In a recent review of the literature regarding access to treatment for incarcerated offenders, Mumola (1998) reported that only 15% of the prison inmates with a demonstrable need for treatment are receiving that treatment. In addition, treatment programs comprise less than 5% of the state prison budget, a figure that is shrinking each year (Mumola, 1998).

How does one explain this paradox? In times of limited resources, providing treatment to addicted offenders may be perceived as a low priority by the public. If taxpayers could be shown that expenditures on treatment programs are not only justified but produce substantial monetary and nonmonetary benefits, they might be persuaded to shift their priorities. Cost-effectiveness analysis (CEA) is a powerful economic tool that can assist taxpaying citizens, policy makers and other stakeholders in determining the economic value of investing in prison-based treatment programs. Using data from the State of Connecticut Department of Correction (DOC) and the State of Connecticut Department of Mental Health and Addiction Services (DMHAS), this study contributes to this literature by studying the costs and effectiveness of four levels of substance abuse treatment in Connecticut prisons for a sample of 831 inmates who were released in FY1996-97.

DESCRIPTION OF TIER PROGRAMS

At the time of this study, over four-fifths (83%) of the inmates serving time in Connecticut state prisons had problems with alcohol or drugs (AOD) (Communication with Frank Hall, October 2002). To address these problems, the Connecticut Department of Correction provided four levels or tiers of prison-based treatment at increasing levels of intensity. Within 30 days of admission, prisoners are assessed for a need for substance abuse treatment. With scores ranging from 1 (low) to 4 (high), the assessment describes the extent, nature and pattern of AOD use related to criminal activity and general life functioning. The following criteria would define a score of 4: "chronic history of AOD use, used habitually for two or more years, been medically detoxified at least twice, has had at least one unsuccessful attempt at treatment, and caused major disruption in at least two life areas." Inmates classified as needing treatment may participate in the following programs:

- Tier One consists of a one-week session of drug/alcohol education. Although Tier One is not mandatory, attendance is strongly encouraged for all inmates who are assessed as having a substance abuse problem. The level of involvement includes six group sessions or four group sessions plus two fellowship meetings. Tier One, offered at seven correctional facilities, was received by 8,780 inmates in FY1996 (State of Connecticut, 1997).
- Tier Two consists of 30 outpatient group sessions three days a week for ten weeks. The optimal staff to client ratio of 1:20 is often achieved. This level of service is provided at fifteen correctional facilities. The Department of Correction's Annual Report for FY1996 indicated that 4,911 inmates participated in Tier Two programs in FY1996.
- Tier Three involves a fairly intensive day treatment program, consisting of four sessions a week for four months or a total of 64 sessions. The optimal staff to inmate ratio is 1 to 15. This level of treatment is provided at eight correctional facilities; 526 inmates participated in FY1996.
- Tier Four is a residential treatment program consisting of full-time daily treatment for six months in a separate housing unit. It is a therapeutic community (TC) model that engages in more eclectic activities than does a more traditional TC like Amity House (Weller et al., 1999b). The ideal staff to client ratio is 1 to 10. Six correctional facilities offered Tier Four programs and 905 inmates participated during FY1996.

The availability of one or more tiers at any prison depends on resource allocation by the Department of Correction. Participation in all tier programs is voluntary.

METHODS

Sample Selection

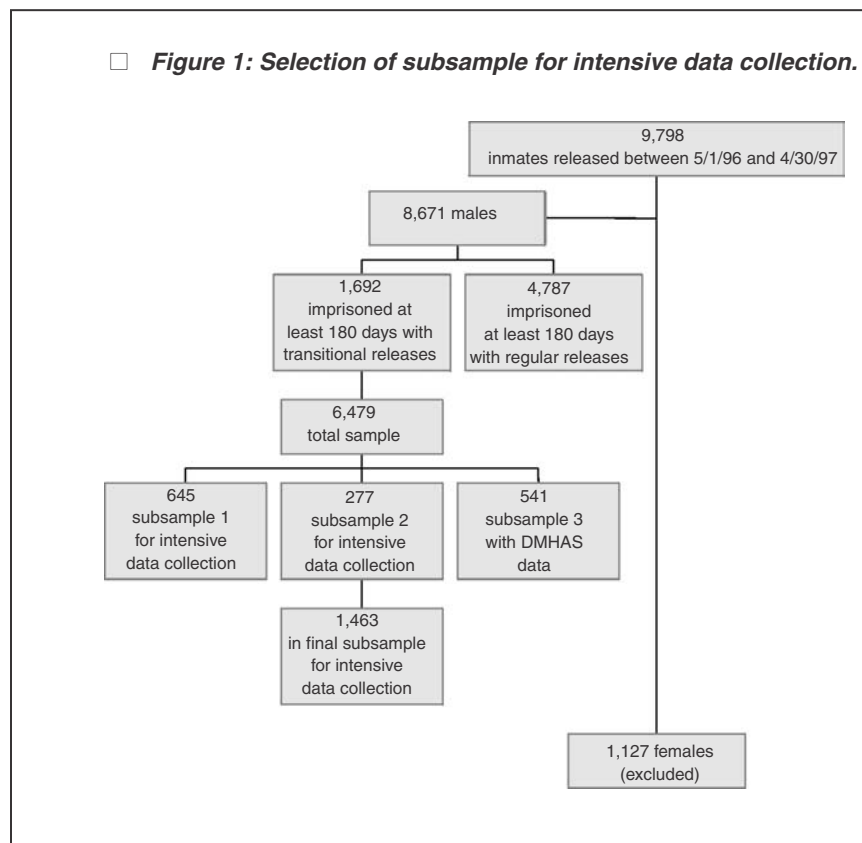
All male inmates who were released between May 1, 1996, and April 30, 1997, and who had been incarcerated for at least 180 consecutive days were eligible for the study (N = 6,479). The requirement on days was to ensure that the individuals had adequate opportunity to engage in treatment programming. By comparison, on July 1, 1997, 15,588 inmates and accused offenders were confined in 19 correctional facilities throughout the State of Connecticut (State of Connecticut, 1997).

The Connecticut Department of Correction does not keep complete automated records on attendance in tier programs; these data were available only in the inmate's paper file kept in the document room of the last prison in which the inmate had been housed. We determined that time and budgetary constraints would make it impossible to collect data by hand on all 6,479 eligible inmates. The original sampling plan was to randomly select approximately 1,500 inmates with drug need scores of 2 or greater, identify those who had attended tier programs and compare their rearrest records with those who had not. Because only about 12% of state prison inmates enter tier programs, however, this strategy did not yield enough participants in the experimental group for meaningful statistical analysis, particularly when the effectiveness of the different tier levels was a major consideration. To ensure that tier program attendees were adequately represented, records for the 545 male inmates who had been released during FY 1996-1997 and who had been admitted to programs in tiers two, three and four were requested from the Connecticut Department of Mental Health and Addiction Services (DMHAS), who maintains detailed electronic files on individuals these tiers. Combining these 545 "higher" tier program participants from the DMHAS sample with our first two random samples from the Connecticut Department of Correction yielded a final subsample of 1,463 after duplicates were removed (see Figure 1). Matching these 1,463 with data on program attendance, risk/needs classification and recidivism resulted in a final sample of 831 inmates with complete data.

Data Sources

Records of Programs Attended While Incarcerated

Two PhD level research associates collected extensive program data on-site from records maintained by the various correctional facilities. The task was highly technical and time-consuming because each file had to be located and examined thoroughly to ensure that all program participation documentation had been reviewed. Information was collected on all programs the inmates had attended while incarcerated, including non-tier substance abuse



treatment programs, mental health, educational, religious and recreational programs to identify potentially confounding effects on outcomes. Records of program attendance were transcribed onto forms, coded, and entered into a database. The manually collected data were supplemented with the comprehensive automated data on tier program attendance obtained from DMHAS.

Records of Recidivism Within Two Years of Release

For the purposes of this study, recidivism includes rearrest only. Our hypothesis was that tier program attendance would reduce the percent of inmates who were rearrested within six months, 12 months and 18 months following release. Thus, reliable data on criminal records was collected for two years prior to entering and two years following release from the index incarceration.

To ensure confidentiality and compliance with the Criminal Offender Record Information Act (CORI), all information was retrieved from the Connecticut State Police database and the National Crime Information Center (NCIC) database at a secure terminal at the Department of Correction by an off duty correctional staff person consulting to the research team through Brandeis University. Since the last possible release date for a participant was April 30, 1997, the collection of recidivism data was initiated in April of 1999 to ensure that all inmates had at least a two-year, post-release period of observation within which to recidivate. In cases where the severity of an inmate's crime had been reduced through plea-bargaining, we used the actual crime committed (as opposed to the crime for which the individual was convicted) to establish the severity of offense committed.

Need and Risk Assessment Scores

As mentioned earlier, all inmates received two assessments at intake: a risk assessment to determine overall risk of violence, escape or disruption of the orderly functioning of a facility; and an assessment of need for medical care, mental health care, education, vocational training, substance abuse treatment, sex offender treatment and family/residence or community resources. We used scores from the mental health and substance abuse "needs assessments" as control variables to account for individual variation in involvement in substance abuse treatment and other confounding factors that could affect treatment outcomes. The overall risk assessment score is used by the prison system as a guide to assign inmates to institutions. We used this data element as one of several proxy variables for criminal investment. Other variables in the criminal investment measures include number of prior arrests, number of prior convictions and number of prior incarcerations.

Other Data:

Demographic Information, Disciplinary Records and Movement Files

Information on inmate demographics, disciplinary records and movement files were available from automated databases maintained by the Connecticut Department of Correction. These data were linked through the unique Department of Correction identifier to files maintained by other state and federal agencies, including tier program attendance information from DMHAS and recidivism information from the National Crime Information Center (NCIC) and the State Police.

Costs of Substance Abuse Treatment Programs

Monthly activity data were obtained for each facility and included the number of inmates admitted to each tier program, the number completing each tier

program, the number of sessions attended by inmates, the number of counseling staff and other relevant information. Interviews with tier program staff members at each correctional facility provided a detailed accounting of the time the inmate spent on various tier and non-tier activities during the course of each day. Prison system budgets were reviewed to identify both direct and indirect costs of tier programs and incarceration. These accounting data were used to determine staff salaries, fringe benefits, hours worked per week, vacation time, holidays and overhead costs. Costs of incarceration were not included because they are a constant in these analyses. Thus, all costs presented below represent the added costs of offering tier programs over and above the costs of staffing and security that are necessary to operate the prisons. Program related added costs were aggregated across facilities within each tier level to obtain estimates per program completer and per participant. Costs are always higher for program completers than participants because the former spent more time in the program, consuming more staff hours and material resources, and because the former represents a smaller number of inmates over which to spread the total costs of the program.

Benefits of Substance Abuse Treatment Programs

The benefits, presented from the perspective of the Connecticut Department of Correction, are the avoided costs of re-incarceration. The benefit assumes that each inmate who successfully avoids rearrest as a result of tier program attendance would have returned to prison and served a sentence of 646 days, which is the average length of current sentences for the inmates in the sample, at a cost of \$70.49 per day, the average amount expended per day for inmates in Connecticut prisons (Connecticut Department of Correction Annual Report, FY1996-97) at a cost of \$45,536 per inmate. The marginal costs of implementing programs at each tier level will be subtracted from this figure to yield the net benefit. The costs of implementing tier programs at each level will be divided by this figure to yield the benefit to cost ratio.

Analysis Plan

Cost-effectiveness analysis (CEA) is a systematic comparison of the negative and positive consequences of alternative means of addressing a given social problem in relation to the costs of each alternative. Employed primarily for public expenditures, CEA provides policy makers with information needed to make intelligent resource allocations decisions in situations where market forces are absent or imperfect. When comparing two or more programs, the difference in costs is divided by the difference in effectiveness, yielding the cost-effectiveness ratio, i.e., the cost per treatment success. The benefit-cost ratio, a useful measure when there are many, seemingly incom-

mensurate benefits, is obtained by dividing the dollar benefit of the program by its incremental cost.

Since random assignment of inmates to tiers was not possible, this evaluation employed a variant of CEA that used logistic regression to statistically control for baseline differences between the groups that might have an independent effect upon outcomes (Shepard et al., 1995). In these analyses, the regression model controlled for age, race, drug need, mental health need, overall security risk, grades completed, number of sentences as an adult (measure of prior criminal justice involvement) and number of non-tier programs attended during index incarceration, used as a proxy measure for motivation level. Odds ratios from the regressions were then multiplied by the average recidivism score for each time interval to derive the actual rate of recidivism for each explanatory variable. These adjusted rates were used in the cost-effectiveness analyses.

FINDINGS

Sample Description

Table 1 shows that the typical inmate in our final sample of 831 was an African-American (43%) male between 25 and 35 years of age who had not com-

□ **Table 1: Characteristics of inmates who attended tier programs vs. inmates who did not attend tier programs (N = 831).**

Characteristic	Tier Program Attendees (n = 286)	Non-Attendees (n = 545)
Race		
Black	42.3%	43.8%
White	32.2	32.7
Hispanic	24.1	23.1
Other	1.4	.4
Age at Intake (In Years)	30.6	31.6
% Graduated from High School	33.2%	36.1%
Grades Completed	10.43	10.48
Need for Drug Treatment Score (1-5)	2.95	2.85
% Motivated for Drug Treatment**	66.4%	53.6%
Need for Mental Health Treatment (1-4)	1.44	1.38
Overall Risk Score (1-5)	2.74	2.66
Number of Prior Sentences as an Adult	5.41	5.92
Length of Current Sentence (In Days)***	849	541
Number of Non-Tier Programs Attended	.81	.60

pleted high school and who had served nearly 6 prior sentences. The majority of inmates (60%) were currently serving sentences of more than a year. Logistic regressions comparing the characteristics of inmates in the final sample (N = 831) to the pool of eligible inmates who had been released in FY1996-97 (N = 5,648) indicated that the sampled inmates were significantly younger and had higher drug need scores. Since higher drug need scores were one criterion for sample selection, the first finding was expected. However, the age difference might have introduced bias since other studies have reported that older clients were less likely to recidivate. Therefore, age was used as a control variable in all multivariate analyses.

Table 1 suggests that by over-sampling inmates with high drug need scores, the treatment and control groups were remarkably similar on most demographic variables (race, age, education, prior sentences) and risk assessments (overall security risk, mental health need, drug treatment need) at baseline. Actually, only two variables differed: length of current sentence and motivation for substance abuse treatment, as determined by clinicians from the substance abuse treatment unit. It is logical that sentences might be longer for offenders who attended tier programs, since the extra time would allow them an opportunity to access treatment. Similarly, the inmates who entered tier programs were more likely to be motivated for treatment.

Impact of Tier Programs on Recidivism

By one-year post-release, 41.3% of the sample of 831 had been rearrested. Inmates who participated in tier programs of all levels (including Tier One) were significantly less likely to be rearrested for periods up to two years. Table 2 illustrates the differences in rearrest rates at 6 to 24 months post-release be-

<input type="checkbox"/> Table 2: Reductions in rearrest rates at various time points for inmates who attended any tier program (1, 2, 3, 4) during their index incarceration (N = 831).		
Recidivism	No tier programs (N = 545)	Attended any tier programs during index incarceration (N = 286)
Rearrested at 6 months**	28.8%	17.8%
Rearrested at one year**	45.9%	32.5%
Rearrested at 18 months*	57.1%	47.2%
Rearrested at two years*	64.9%	57.7%
* Differences significant at $p < 0.05$ ** Differences significant at $p < 0.01$		

tween inmates who attend any tier program versus those who had attended none. All of these differences were significant at $p < .05$.

After using logistic regression (Table 3) to control for baseline differences between the groups, the inmates who attended any tier program were still half as likely to be rearrested by one-year post-release when compared to inmates who did not attend tier programs. The average rearrest rate of 0.459 was multiplied by the odds ratio of 0.562 (as an approximation to the risk ratio) to derive the actual percentage of tier attendees who were arrested within one year (25.8%). This estimate is more precise than that derived from the bivariate analysis in Table 2 because it adjusts for differences between tier attendees and non-tier attendees that might independently influence the likelihood of recidivism.

Caucasians, older inmates, and inmates who had attended more non-tier programs during the index incarceration were also less likely to be rearrested (Table 3). The number of sentences the inmate had served as an adult was also positively associated with rearrests. Each year of age reduced recidivism by about 1.7 percentage points and the rate of rearrest for Caucasians (27.4%) was about 18 percentage points lower than that of minorities. Each non-tier program that an inmate attended reduced his chances of being rearrested by about 4 percentage points. Controlling for these variables increased the precision of our regression analyses. However, as the attendees and non-attendees did not differ significantly on these characteristics, they introduced little bias in the crude analyses in Table 1. The following variables had no significant effect on recidivism and were dropped from the final regression model: drug need score, mental health need score, overall security risk assessment, length of current sentence, motivation, years of education, and the number of days between release and data collection.

□ **Table 3: Logistic regression testing the impact of any tier attendance (1, 2, 3 or 4) during index incarceration on the likelihood of rearrest by one-year post-release (N = 831).**

Explanatory Variables	Odds Ratio	95% Confidence Limits	Chi-Square	p
Intercept			3.99	0.0457
Attending tiers 1, 2, 3, 4	0.562	0.411-0.768	13.07	0.0003
Number of sentences	1.121	1.082-1.161	40.87	0.0000
Age	0.963	0.945-0.980	17.02	0.0019
Race (Caucasian)	0.598	0.433-0.827	9.65	0.0000
Number of non-tier programs attended	0.903	0.817-0.998	4.02	0.0449

Highest Tier Attended

Since the tier programs are not equal in intensity, they should vary in their ability to reduce recidivism. Tier One, the one-week drug and alcohol education program that is attended by the vast majority of inmates with high drug need scores, is not considered formal treatment. To explore the relationship between tier level and the risk of rearrest, Table 4 provides a survival chart showing rearrest rates at different time periods by highest tier attended. Although there were reductions in recidivism for all of the tier levels when examined separately, these reductions were especially pronounced for inmates in Tier Four (22.2% of Tier Four participants were rearrested versus 45.9% of those who did not attend tier programs). The decline in the likelihood of rearrest continues to be significant for periods of up to two years, although the strongest effect is seen at six and twelve months post-release.

Finally, logistic regression was used to describe the impact of different tier levels on the likelihood of recidivism at one year. One year was chosen since the effects of the tier programs appear to be strongest at that point. As Table 5 illustrates, compared to non-attendees, the Tier One program attendance has no significant relationship with rearrest, Tier Two is associated with a small but nonsignificant decline in recidivism (to 32.4% at $p < .07$), Tier Three was associated with a significant reduction in recidivism (to 20.2%, $p < .04$), and individuals who participated in a Tier Four program had the lowest rates of rearrest at 16.6% ($p < .001$). These figures show a near lin-

□ **Table 4: Highest tier attended during index incarceration and recidivism at different time points (N = 831, with column %).**

Time to First Rearrest	No Tier Programs	Tier One	Tier Two	Tier Three	Tier Four	Total
3 months	14.5%	7.3%	10.5%	10.0%	5.6%	104 (12.5%)
6 months**	28.8%	17.1%	23.1%	13.3%	9.7%	208 (25.0%)
12 months**	45.9%	34.1%	37.1%	33.3%	22.2%	343 (41.3%)
18 months*	57.1%	41.5%	53.2%	40.0%	41.7%	446 (53.7%)
24 months*	65.1%	46.3%	62.9%	56.7%	52.8%	519 (62.5%)
Total	545	41	143	30	72	831

* Differences significant at $p < 0.05$

** Differences significant at $p < 0.01$

ear relationship between the level of treatment obtained and the likelihood of recidivism.

Costs of Tier Programs

The figures in Table 6 present the initial estimate of the average per inmate costs for each tier level program. Since tier program completers remained in treatment longer, consuming more staff hours and material resources, they consistently entailed higher costs than the average tier attendee (except for the programs which all inmates complete). As expected, the least expensive program is the Tier One program which costs \$189 per inmate, which is the same for attendees and completers. The most expensive program is the Tier Four program at \$15,258 per program completer and \$5,699 per attendee. Note that we compute costs and benefits for all tier program attendees, whether or not the inmate completed the program. Since treatment completion was considered to be an intermediate outcome, we believe this paints a more realistic pic-

□ **Table 5: Logistic regression comparing the impact of different tier levels on the likelihood of rearrest within one year (N = 831).**

Explanatory Variables	Odds Ratio	95% Wald Confidence Limits	Chi-Square	p
Intercept			3.25	0.0716
Tier one attendance	1.144	0.657 - 1.992	0.23	0.6333
Tier two attendance	0.705	0.486 - 1.023	3.38	0.0659
Tier three attendance	0.440	0.201 - 0.963	4.22	0.0400
Tier four attendance	0.362	0.200 - 0.656	11.25	0.0008
Race = Caucasian	0.573	0.413 - 0.795	11.10	0.0009
Age	0.961	0.943 - 0.979	18.28	0.0000
# Sentences as an adult	1.129	1.089 - 1.170	44.28	0.0000

□ **Table 6: Cost per tier level for tier program completers and discharges.**

Tier level	Cost per completer	Cost per attendee
One	\$189	\$189
Two	\$1,599	\$672
Three	\$6,882	\$2,667
Four	\$15,258	\$5,699

ture of the programs' effectiveness and the funds expended by the Connecticut Department of Correction in offering these programs on a voluntary basis.

Cost-Effectiveness Analysis

Table 7 provides a detailed description of costs and effectiveness by tier level. In this table, the regression coefficients have been used to adjust the probability of rearrest for client characteristics and criminal involvement.

The cost-effectiveness analysis uses the Equation 1, and the cost-benefit analysis uses Equation 2 (letters in parentheses refer to the columns in Table 7).

$$\text{Marginal cost (column f)} = (\text{column d}) / (\text{column e}) \quad (\text{Equation 1})$$

$$\text{Benefit to cost ratio (column i)} = \text{Marginal benefit (g)} / \text{Marginal cost (f)} \quad (\text{Equation 2})$$

Here column d equals adjusted benefits of tier x (column c) minus benefits of no tier program (column c), and column e equals costs of tier x (column e) minus costs of no program (value is 0).

While there is a near linear relationship between tier level and effectiveness (column c), there is also a near linear relationship between tier level and costs (column e). Even after taking these additional costs into consideration, however, benefit to cost ratios for all the tier levels were in excess of unity, mean-

□ **Table 7: The adjusted costs and effectiveness of tier programs by level of treatment obtained.**

(a) Tier level	(b) Crude probability of rearrest within one year	(c) Adjusted probability of rearrest within one year ^a	(d) Difference in probability of rearrest from no tier	(e) Mean program cost per attendee	(f) Cost per treatment success	(g) Dollar benefit of treatment in avoided costs of incarceration	(h) Dollar benefit of treatment costs	(i) Benefit to cost ratio
None	45.9%	45.9%	0.0%	\$0				
One	34.1%	49.3%	-3.4%	\$189	\$(5,635)			
Two	37.1%	37.4%	8.5%	\$672	\$7,931	\$45,536	\$37,605	5.74
Three	33.3%	27.2%	18.7%	\$2,677	\$14,303	\$45,536	\$31,233	3.18
Four	22.2%	23.5%	22.4%	\$5,699	\$25,438	\$45,536	\$20,098	1.79

^a Adjusted through regression analysis for race, age, drug need score, security risk, prior arrests and other programs attended.

ing that the dollar benefits of avoided re-incarcerations were in excess of the costs of providing the program. In fact, Connecticut taxpayers receive a return on their investment that is nearly six times as great as the cost of implementing the Tier Two programs, about three times greater than the cost of investing in a tier three program, and about twice as great as the cost of operating a Tier Four program. Dollar benefits net of program costs range from \$37,605 for Tier Two programs to \$20,098 for the Tier Four programs. These findings are particularly impressive because costs and benefits were computed for program dropouts as well as program completers.

Note that the adjusted probability of rearrest by one year (49.3%) is higher than the crude probability of rearrest at one year (34.1%) for inmates who participated in Tier One only. This finding suggests that inmates who attend Tier One programs may have characteristics that make them less resistant to change than those who enter the higher tier programs, who may be more seriously involved in drugs. After adjusting for these characteristics, the inmates in Tier One programs were actually more likely to recidivate than those who did not attend tier programs. Since the Tier One programs appeared ineffective, they receive a negative value in column (f), indicating that these programs entailed costs but produced no benefits.

DISCUSSION

A primary goal of corrections is to reduce recidivism—in other words, to modify the behavior of offenders so as to substantially decrease the likelihood of a return to prior patterns of criminal involvement. This cost-effectiveness analysis suggests that incarcerated offenders who attended substance abuse treatment programs in Connecticut state prisons, particularly the more intensive outpatient, day treatment and residential programs offered in tiers two, three and four, were significantly less likely to be arrested in the year following release than similar offenders with identified drug/alcohol problems who did not attend treatment programs. These findings persisted even after controlling for personal characteristics that might have differentiated the experimental and comparison groups at baseline, including race, age, criminal history, prior sentences, drug treatment needs, mental health needs, security risk, and the effects of other programs inmates had attended while incarcerated. Furthermore, the benefits of the higher tier programs far exceeded their costs, suggesting that society receives a sizeable return on their investment in substance abuse treatment programs for incarcerated offenders.

In a review of the literature on the effectiveness of treatment programs in correctional settings, Gaes et al. (1998) commented that it was difficult to draw conclusions about causality because almost all studies had problems with some type of selection bias. To partially address these issues, outcomes were measured for all inmates who entered tier programs during their current

incarceration whether or not he completed the program or left prematurely. Additionally, this study used multiple regression to control for demographic and risk differences between non-attendees and attendees of each of the tiers studied. The findings of the current study are particularly encouraging because they suggest that the benefits of tier programs were not limited to the subset of individuals with the ability and motivation to complete programs or continue on to additional treatment. This procedure also allowed us to calculate the cost per successful client, rather than the average cost per client, which provides a more realistic assessment of the costs and benefits of treatment programs than has been available to date.

A major focus of our evaluation was to provide information on the costs and effectiveness of some lower intensities of treatment that have been implemented by the Connecticut Department of Correction. Partially in response to budgetary concerns, Connecticut and some other states have recently begun experimenting with prison-based variants of outpatient and day treatment programs as less expensive alternatives to the more traditional therapeutic community (TC) model. Although several large evaluations conducted in state and federal prisons have demonstrated that TCs can reduce recidivism and yield considerable economic benefits to society in terms of reduced crime, increased employment and enhanced public safety (Harwood et al., 1994; MacKenzie, 1997; Rajkumar & Franch, 1997; Wexler & Love, 1995), other types of institutional treatment have received little attention in the published literature. In evaluations of community-based treatment, however, outpatient programs have generally not been as effective as residential programs for reducing crime and consequent rearrest among clients (Chantasilpa et al., 2000). One theory is that residential programs have a stronger impact than outpatient programs because they geographically separate clients from associations that reinforce addictive behavior and criminal activity. Since TCs are usually located in a separate unit within the prison, they partially isolate the offender from the rest of the population and increase group pressure to commit to the program. It is therefore quite promising that the Tier Two (regular outpatient) and Tier Three (intensive outpatient) programs were almost as successful in reducing rearrest as the TC model Tier Four. Although the tier four programs were associated with the lowest rates of rearrest of the four programs examined, the two outpatient programs produced higher benefit to cost ratios because of their lower operating costs. Tier Two, a 30-session outpatient program that served over 4000 clients in FY1996 had the highest cost-benefit ratio of 5.74. At a cost of only \$672 per client (or about \$8,000 per treatment success), it would be a very cost-effective strategy to expand Tier Two programs so they could reach more inmates.

There are several limitations to this study. Our ability to use regression analysis to control for variables that might have differentiated the treatment and comparison group was restricted by the limited amount of secondary data that was available to us. Aside from inmates' scores on the needs/risk assess-

ments and a few demographic characteristics, there was no information on prior drug/alcohol use, psychological or health-related problems, employment history, family supports, living arrangements and other factors that may affect these inmates' ability to abandon criminal careers and successfully reenter society. Some studies have found, for example, that married inmates were less likely to return to crime, but having no information on marital status, we were unable to include that factor (Pelissier et al., 2002). Therefore, unmeasured variables may have distinguished the groups and caused the treatment group to be more or less successful. Second, there was no attempt to identify the specific elements of the tier programs that might have contributed to improved outcomes for treated inmates. To address this problem, we are currently preparing a companion piece, targeted toward practitioners, that will explore in greater depth the content of the tier programs and the specific staff characteristics and program components that might have caused inmates to change their behavior in response to treatment. Third, while we had no information on the number of released offenders who had further treatment in the community, we expect that rearrest rates might have been even lower for those individuals, as has been found in several previous investigations (Martin, Butzkin & Inciardi; Hanlon et al., 1998; Petersilia, 2000).

Previous studies have shown that the intensity and duration of prison-based substance abuse treatment programs were inversely related to the likelihood of recidivism (Knight, Simpson & Hiller, 1999; Wexler et al. 1990, 1999a; 1999b; Inciardi et al., 1995; Inciardi & Poettinger, 1997; Lipton, 1995). We found that the higher tier programs were significantly better than no tier program, whereas Tier One had no such advantage. In hindsight, this result was not surprising since Tier One programs supply only basic drug and alcohol education and are not considered formal treatment.

There were many inmates who had drug and alcohol problems that they were unable or unwilling to address through further treatment within the prison setting. This is regrettable because some other studies have found that untreated drug dependent offenders are likely to escalate their criminal behavior following release and are responsible for an excessive amount of violent and property crime (Ball, 1983; Lipton, 1994; Inciardi et al., 1979; Inciardi & Poettiger, 1997). Although most inmates have the opportunity to complete the one-week Tier One program, an inmates' ability to continue on to Tiers Two, Three or Four can be affected by the availability of programming at the facility to which he is assigned, the frequent transfer of inmates from one prison to another, and time constraints as his release date approaches. In addition, many inmates are unwilling to continue on to further treatment even if such treatment is readily accessible.

Because very few inmates receive chemical dependency treatment before or after their imprisonment, some experts have suggested that prison is a "window of opportunity" to expose drug-involved offenders to treatment (Brooke et al., 1998; Lipton, 1994). Studies of street populations indicate that the vast

majority (70%) of criminally involved street addicts have never received treatment nor do they have any desire to enter treatment (Lipton et al., 1989). At the same time, active heroin and crack addiction accelerates predatory criminal activity by a factor of 4 to 8 (Ball et al., 1983, cited in Lipton, 1994) resulting in as many as 60 robberies, 100 burglaries and 4000 drug transactions a year. Given the reductions in criminal behavior, rearrest and attendant improvements in public safety that were associated with treatment, it might be prudent to devise strategies to ensure that more inmates are exposed to such services while under correctional supervision.

The evaluation contained a process component in which focus groups were used to gather inmates' perceptions of their ability to access, participate and benefit from tier programs. Since most inmates felt that access to higher tier levels was not a problem, a lack of motivation may be a principal reason why many inmates do not continue on to further treatment. This hypothesis was, in fact, confirmed by our multivariate regression analysis. Although motivation was one variable that distinguished inmates who enrolled in tier programs from those who did not, it is interesting that motivation did not predict recidivism. This suggests that once a drug-involved offender had entered the treatment program he was able to glean substantial benefits from this experience regardless of their initial skepticism, lack of enthusiasm or desire for treatment. If treatment appears effective even in the absence of motivation, one suggestion would be to expand the duration of Tier One programs—from one week to two weeks for example—to expose drug-involved inmates to treatment over a longer period of time. This could represent a major step toward interrupting the cycle of rearrest and re-incarceration that seems to afflict so many drug-dependent offenders.

There were several demographic and lifestyle characteristics that contributed to recidivism. The number of sentences the inmate had served as an adult, used as a marker for prior criminal justice involvement, was the lifestyle factor that was most closely associated with recidivism. The finding that younger inmates were more likely to be rearrested has frequently been reported in the literature (Bureau of Justice Assistance, 1997; Lipton, 1994; Travis, 1997; Martin, Butzin & Inciardi, 2002; Pellisier et al., 2001). In focus groups conducted by the investigators, a few inmates reported that they placed higher priority on obtaining an educational diploma, which conflicted in schedule with tier programs.

For a variety of reasons, a criminal career becomes less appealing to an offender as he approaches middle age, and recidivism drops off precipitously. Using regression analysis to control for the impact of education, our study found that Caucasian inmates were significantly less likely to be rearrested when compared to minorities (both Blacks and Hispanics). Although a large evaluation of the residential treatment programs in the Federal Bureau of Prisons also found that African-American offenders had less favorable treatment

outcomes, findings regarding have generally been mixed (BJA 1997; Pelissier et al., 2002).

In a prior evaluation, inmates at high risk for recidivism fared considerably better in drug rehabilitation programs (Griffith et al., 1999). The Griffith study compared treatment costs and recidivism for inmates in prison-based drug treatment programs but found no differences between the groups in three-year re-incarceration rates until the sample was stratified by risk of recidivism scores. Program attendees who were higher security risks were significantly less likely to be rearrested than program attendees who were low security risks. This explanatory variable would correspond roughly to our overall risk score, but it was not significant in any of our regression analyses even when interaction effects with tier level were examined. The assessment scores summarizing each inmate's need for drug treatment and mental health treatment also did not predict recidivism at any time point. Since one requirement for our sample selection was a drug need score of two or higher, this finding may be an artifact of our inclusion criteria. Although high rates of psychiatric co-morbidity among incarcerated populations have been associated with poor outcomes in some previous research (Swartz & Lurigio, 1999), the mental health need score was also not significantly related to recidivism.

Crime is very expensive to society. Prison-based treatment programs can be expensive to implement and maintain, however, and taxpayers, as well as the Department of Correction, want to know that expenditures on these programs are worth the investment. If they are not, scarce public dollars can be better expended elsewhere. In view of these considerations, it is certainly encouraging that inmates who attended tier programs were less likely to be rearrested at all time points up to 18 months. Comparing the dollar benefits of tier programs as measured through the avoided costs of re-incarcerations alone we find all of the programs, except for Tier One, more than paid for themselves by reducing crime, rearrest, re-incarceration and attendant costs. In addition, when expressed in terms of the avoided costs of repeat incarcerations, the dollar benefits of the higher tier programs ranged from 2 to 6 times their costs. However, we feel that Tier One also confers benefits to society, by serving as a gateway to the higher tier programs.

Since the cost-effectiveness analysis was conducted from the perspective of the Connecticut Department of Correction, the costs and benefits that we reported were only those that concerned the criminal justice system. In fact, society realizes many, many other benefits as a result of lower crime rates—for example, savings from reduced police investigation costs; less pain, suffering and medical expenditures for victims; increased productivity as ex-offenders enter the legitimate economy; fewer legal/adjudication/sentencing costs; less prison overcrowding and increased safety and security in the community.

To summarize, the drug-involved inmates in our sample were less likely to commit crimes after attending Tier Two, Three and Four programs while incarcerated in Connecticut prisons and these effects endured up to 18 months

post-release. This outcome is particularly encouraging since some other cost-effectiveness analyses have reported that institutional treatment programs were not cost-effective unless the inmates completed the program under investigation and/or went on to community aftercare following release. However, the current study is among the first to report that attending prison-based treatment programs, including less intensive outpatient and day treatment programs, can substantially reduce crime, recidivism and attendant costs to the criminal justice system.

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AUTHORS' NOTES

Marilyn Daley, PhD, is a senior research associate at the Schneider Institute for Health Policy, Brandeis University. With over 14 years of experience in addictions research, her work has focused on enhancing the effectiveness and availability of treatment for high-risk populations, including pregnant women, drug-involved offenders, Medicaid enrollees and the dual-diagnosed. Prior to receiving her PhD from the Heller School of Social Policy and Management, Dr. Daley conducted research and evaluation on behalf of the Massachusetts Department of Public Health, Bureau of Substance Abuse Services (BSAS), where she served as the research director for the MOTHERS Project, part of a multisite investigation into the costs and effectiveness of alternative treatment programs for pregnant women and their families. Since coming to Brandeis, she has completed an evaluation of the first four years of managed behavioral health care for Massachusetts Medicaid enrollees and studied the cost-effectiveness of substance abuse treatment programs in Connecticut prisons. Her articles have recently appeared in *Health Services Research*, the *Journal of Substance Abuse Treatment* and the *Journal of Psychoactive Drugs*.

Craig T. Love, PhD, is the senior project director at Westat in Rockville, Maryland. In his current capacity, he is managing the Data Coordinating Center for CSAP, developing FAS programs in Indian Country, participating in evaluating prevention programs and assisting in a treatment program evaluation for Native American women. Until 2002, he was on the teaching faculty of the Brown University Center for Race and Ethnicity in America and a lecturer in psychiatry at Harvard University. Over the past 30 years, Dr. Love has conducted research and evaluation studies on Native American populations, AIDS prevention, and treatment and prevention of drug and alcohol abuse among prisoners and other criminal justice settings including drug courts. He is currently completing an evaluation of an aftercare program for incarcerated female offenders. He was the principal investigator of the 4-year Robert Wood Johnson Foundation project on the cost-effectiveness of drug abuse treatment in prisons underlying this paper, and led two NIH-funded prison treatment program evaluations. Over the years, Dr. Love has written numerous articles on drug treatment in prisons, alcohol and drug treatment outcomes, methadone maintenance and treatment, substance abuse prevention programs in Native American and other communities, and AIDS prevention.

Donald S. Shepard, PhD, is a health economist and leads the cost-effectiveness group at the Schneider Institute for Health Policy. He was the principal investigator (PI) at Brandeis of the study from which this paper came, and is currently the PI for Brandeis studies for NIAAA, NIDA, CMS, and other sponsors. The author of several

books and over 100 peer-reviewed publications, he focuses on the economic evaluation of substance abuse treatment programs and preventive health services and innovative ways of reimbursing health services in both the United States and developing countries. He served as a member of the scientific review group in health services for NIAAA from 2000 to 2002. His research has recently appeared in *Substance Use and Misuse*, *Alcoholism Treatment Quarterly*, and *Studies in Family Planning*.

Cheryl B. Petersen, PhD, is currently finishing her Juris Doctor (JD) and is beginning work on a diplomat program with the United Nations in Peacekeeping Operations with a focus on terrorism. In addition, Dr. Petersen is involved in research on cyber crime, and a University of New Hampshire/Family Research Laboratory cost-effectiveness study of an innovative drug treatment program for parents involved with DCYF for neglect or abuse.

Karen L. White, MA, at the time of this study, was an analyst with the Addiction Services Program, Connecticut Department of Correction, working on planning and evaluation. She is currently a certified teacher for the Department, allowing inmates to further their education while they serve their sentences.

Frank B. Hall, MPA, was formerly an addiction services program manager with the Connecticut Department of Correction. He recently retired after almost 30 years of service in correctional substance abuse treatment. His expertise is in evaluating substance abuse treatment programs within the correctional environment.

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Address correspondence to Marilyn Daley, PhD, Senior Research Associate, Schneider Institute for Health Policy, Heller School for Social Policy and Management, Brandeis University, Mail Stop 035, P.O. Box 9110, 415 South Street, Waltham, MA 02454-9110 (E-mail: daley@brandeis.edu).