Predictors of Sobriety Among Drug Abusing Offenders, Sentenced to Probation

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LOYOLA UNIVERSITY CHICAGO

PREDICTORS OF SOBRIETY AMONG DRUG ABUSING OFFENDERS, SENTENCED TO PROBATION

A DISSERTATION SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL IN CANDIDACY FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF PSYCHOLOGY

BY
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CHICAGO, ILLINOIS
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iii
TABLE OF CONTENTS

ACKNOWLEDGMENTS ........................................ iii
LIST OF TABLES ....................................... vii
LIST OF FIGURES ....................................... viii
ABSTRACT ................................................. ix

Chapter

1. INTRODUCTION ........................................ 1
   Drugs and crime: Are they associated? ........ 2
   Drug treatments and crime ......................... 4
   The IPS and the IDAP programs ................... 12
   IPS and IDAP in Illinois ......................... 15
      IPS ............................................. 16
      IDAP .......................................... 17
   Evaluations of IPS and IDAP ..................... 18
   The present evaluation of IPS and IDAP .... 20
   The present study ................................ 21
   Predictors of treatment success ............... 21
      Age .......................................... 22
      Employment ................................... 22
      Education ..................................... 23
      Length of time ................................ 23
      Social support ................................ 24
   Involvement of client and probation officer .... 26
      Self-efficacy ................................ 29
   Marlatt's model compared to the AA-model .... 33
   Hypotheses ......................................... 38
      Hypothesis one ................................ 38
      Hypothesis two ................................ 38
      Hypothesis three ............................... 38
      Hypothesis four ................................ 38
      Hypothesis five ................................ 39
Hypothesis six ........................................ 39
Hypothesis seven ...................................... 39
Hypothesis eight ...................................... 39

2. METHOD ............................................. 40
Participants ........................................... 40
Outcome measure ..................................... 41
Instruments ............................................. 41

3. RESULTS ........................................... 45
Reliability of scales ................................... 45
Description of the sample ............................. 45
Cook County residents vs. other participants 49
IPS vs. IDAP participants ............................. 52
Relationships between independent variables 54
Abstinence measure ................................... 57
Power ..................................................... 58
Tests of hypotheses ................................... 58
Age ....................................................... 58
Employment level ..................................... 61
Educational level ...................................... 61
Time in treatment ..................................... 63
Social support ......................................... 63
Therapeutic involvement with officer ............. 64
Self-efficacy for negative affect ..................... 64
Self-efficacy for social pressure ..................... 64
Predictors of sobriety ................................. 64

4. DISCUSSION ........................................ 68
The sample ............................................. 68
Age ....................................................... 70
Employment ............................................ 71
Education ............................................... 72
Time in treatment ..................................... 73
Social support ......................................... 75
Therapeutic involvement with probation officer . 76
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Educational status of participants</td>
<td>46</td>
</tr>
<tr>
<td>2. Number of hours worked in the average week by participants.</td>
<td>47</td>
</tr>
<tr>
<td>3. ANOVA differences between Cook County participants and participants from other counties</td>
<td>50</td>
</tr>
<tr>
<td>4. Crosstabulation analysis of employment by location from Cook County vs. other counties</td>
<td>51</td>
</tr>
<tr>
<td>5. Crosstabulation analysis of education by location from Cook County vs. other counties</td>
<td>51</td>
</tr>
<tr>
<td>6. Crosstabulation analysis of relationship with officer</td>
<td>52</td>
</tr>
<tr>
<td>7. ANOVA differences between IPS and IDAP participants</td>
<td>53</td>
</tr>
<tr>
<td>8. Crosstabulation analysis of employment by participation in IPS vs. IDAP</td>
<td>54</td>
</tr>
<tr>
<td>9. Correlations among predictor variables</td>
<td>56</td>
</tr>
<tr>
<td>10. Comparison of abstinence in 4 age groups, tested by a one-way ANOVA</td>
<td>59</td>
</tr>
<tr>
<td>11. Means and standard deviations of abstinence measure, based on employment level</td>
<td>62</td>
</tr>
<tr>
<td>12. Means and standard deviations of abstinence measure, based on educational level</td>
<td>62</td>
</tr>
<tr>
<td>13. Means and standard deviations of abstinence measure, based on time in treatment</td>
<td>63</td>
</tr>
<tr>
<td>14. Beta coefficients for multiple regression analysis where abstinence is the outcome measure</td>
<td>65</td>
</tr>
<tr>
<td>15. Intercorrelation among variables in regression</td>
<td>66</td>
</tr>
<tr>
<td>16. Beta coefficients and confidence intervals for multiple regression with background variables computed as an index and abstinence as the dependent variable</td>
<td>67</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age distribution</td>
<td>46</td>
</tr>
<tr>
<td>2. Months participants had spent in treatment</td>
<td>48</td>
</tr>
<tr>
<td>3. Square root taken of the number of months participants had spent in treatment</td>
<td>49</td>
</tr>
<tr>
<td>4. Histogram of the distribution of abstinence measure</td>
<td>57</td>
</tr>
<tr>
<td>5. Abstinence levels by age groups</td>
<td>59</td>
</tr>
<tr>
<td>6. Scatterplots of age by abstinence</td>
<td>61</td>
</tr>
</tbody>
</table>
ABSTRACT

Probationers in the Intensive Drug Abuser Program and the Intensive Probation Supervision in Illinois were interviewed when they came in for office visits to their probation officers. This was done for the intention of finding predictor variables for their level of abstinence from drug using. Urinalyses tests, supplied by the probation departments, were used as outcome measures. Only those diagnosed as drug dependent or having undergone drug treatment were included, leaving as participants 144 probationers out of 219. Predictor variables were age, employment, education, time in treatment, social support, self-efficacy for remaining abstinent under social pressure to use drugs, and when experiencing negative affect. Of those, only self-efficacy under both tested circumstances, social support, and age, predicted abstinence. Self-efficacy was the strongest predictor. A limited measure of social support showed some relationship with abstinence, and the age-group of 25-34 was more likely to remain abstinent than the age-group of 35-44.
CHAPTER 1

INTRODUCTION

Psycho-active substances have been associated with human activities for a long time. They have been used for various purposes, for example religious practices, pharmaceutical purposes such as anesthetizing and pain relief, and general psychological mood-altering purposes, or "getting high." Throughout history, there have always been individuals who abused these drugs, and the community consequently has had to deal with those individuals. The present study examined the means that the probation/court system in Illinois is using to deal with this problem among a sample of convicted offenders, and investigated the effectiveness of these attempts. The purpose of the study was to identify variables effectively predicting abstinence from substance abuse among those drug abusing offenders. This was done in the context of a program evaluation study of Illinois Intensive Probation Supervision (IPS) and the Intensive Drug Abuser Probation (IDAP) programs.

First, the link between drugs and crime is explored. Second, the IPS and the IDAP programs are described. Third, an evaluation of the IPS and the IDAP in Illinois is

1
described. Finally, possible predictors of successfully achieved abstinence from drug use among the drug abusing offenders in these programs are discussed. The predictors explored here are age, employment, education, time in treatment, social support, therapeutic involvement with probation officer, and self-efficacy for withstanding negative affect and social pressure to use drugs.

Drugs and Crime: Are They Associated?

Increased crime has been associated with increased drug use in the United States during the last decades (Chaiken & Chaiken, 1990; Goldstein, Brownstein & Ryan, 1992; Greenwood, 1992; Harrison & Gfroerer, 1992; Hser, Longshore, & Anglin, 1994; Hunt, 1990; Jacoby & Gramckow, 1994; Johnson, Williams, Dei, & Sanabria, 1990; Kleiman & Smith, 1990; NASADAD, 1990; Sviridoff & Hillsman, 1994; Uchida & Forst, 1994; Worden, Bynum, & Frank, 1994). The "underworld" of drugs seems to have a distinct life of its own within the community (Hobbs, 1997). A recent survey of American inmates found that 78% of them have a history of drug use and over half were under the influence of drugs, including alcohol, at the time of their most recent offense (Peters, 1993). Substance abuse among jail inmates was found to be twice as prevalent as in the general population in the United States. Even so, few inmates report having tried to participate in substance abuse programs (Peters, 1993).
The link between drugs and crime is further shown in a study to the Congress about the influence of alcohol on crime (NASADAD, 1990). Alcohol presents the biggest drug problem in America, by far. In 1983, it was found that persons under the influence of alcohol, were responsible for: (a) 49 percent of murders and attempted murders; (b) 68 percent of manslaughters; (c) 52 percent of rapes and sexual assaults; (d) 48 percent of robberies; (e) 62 percent of assaults; and (f) 49 percent of all other violent crimes.

Crime and drug use thus seem to be strongly associated. Johnson, Williams, Dei, and Sanabria (1990) have cited several such links between drugs and crime. Among those links is the initiation of criminality at an early age, which seems to predispose youngsters toward drug use as well. Second, even among persons not predisposed to criminality and those from a stable working environment, a small proportion gets hooked on drugs, commits felony crimes, and thus gets recruited into the criminal underclass. Third, drugs such as heroin and cocaine cause addicts to experience serious withdrawal symptoms including dysphoria, which may create increased pressure to commit crimes to fund continued use. Fourth, because these drugs are illegal, they are so expensive that in order to obtain them, many users have to resort to crimes to pay for them. Fifth, crime rates of users seem to increase as a function of their level of use. Sixth, the most serious crimes are
committed during periods of heavy use. Seventh, because the dealers cannot depend on the protection of law enforcement, and so have to find their own means to sort out any disputes among themselves, these means often include violence. Eighth, there are many economic incentives involved in the drug dealing economy. To summarize, the connection that has been found between drug use and crime has many explanations, including familial, societal, pharmacological, and economic.

**Drug Treatments and Crime**

Because drug use and crime are associated, it is logical to assume that drug treatments are an effective way of alleviating drug-related crime. However, this is not always as straightforward as it might seem. Criminals have been found to be quite difficult to rehabilitate, and many of them relapse into drug use and a criminal lifestyle again (Johnson et al., 1990). Drug use is in some cases not the cause of criminal activity. Although crimes and drug abuse are associated, Chaiken and Chaiken (1990) found that in some cases drug use follows the criminal activity. Even so, drug use increases offenders' criminal activity about two or three times, compared to periods of abstinence. In general, drug use and crime seem to go together in a general deviance syndrome (Harrison & Gfoerer, 1992; Peters, 1993). Those likely to engage in one form of deviant behavior (crime) are also likely to engage in another form of deviant behavior (drug use).
Thus, drug use seems to be strongly linked to criminal behavior. Furthermore, when drug abusing criminals manage to stay abstinent, their recidivism is reduced to such an extent (Wexler & Lipton, 1993) that it seems at least well worth trying to rehabilitate them. In fact, Wexler and Lipton (1993) conclude that "a relatively few severe substance abusers are responsible for an extraordinary proportion of crime" (p. 212). If these substance abusers could manage to stay abstinent, crime rates could be expected to go down. In fact, in a review of 15 years of research findings on alcohol and other drug abuse treatment outcomes (NASADAD, 1990), treatments do seem to work in this respect. In a benefit-cost analysis study by Victor Tabbush, cited in this overview, it was found that all treatment programs came out as highly cost-effective. The dimensions examined were: (1) reduced cost related to arrest and prosecution for criminal activity, (2) reduced property theft, (3) reduced cost due to improved work or school performance, and (4) reduced medical treatment costs. The costs of detoxifying users of heroin and other opiates was, for example, only 10% of the cost involved in not treating them, and the cost of residential drug-free treatment was only 4% of the cost of no treatment. Outpatient maintenance programs cost 7% of the cost of no treatment, and outpatient drug-free treatment cost 4% of the cost of no treatment. The benefit-cost ratio of drug
treatment programs taken all together was 11.54, meaning that "for every dollar of funds spent for a drug treatment service, $11.54 is saved" (NASADAD, 1990, p. 24).

Similarly, in the same overview, in another study of 10,000 individuals admitted to 37 programs in 10 cities across the USA during the years 1979, 1980, and 1981, the Treatment Outcome Prospective Study (TOPS) followed participants up for five years in three treatment modalities, methadone maintenance, residential therapeutic, and outpatient drug free treatment. The authors concluded that "there is no question that treatment works, but much more needs to be known about how and why treatment works" (p. 14).

Consequently, the authors compared the three major modalities of treatment, and did not find any significant differences in outcomes among them. But they found that any of these treatments could be very effective in reducing drug abuse up to five years after a single treatment episode. The authors of the TOPS study (NASADAD, 1990) noted that the:

...... benefits of reduced drug abuse and increased productivity justify the tax dollars expended on outpatient methadone, residential, and outpatient drug-free programs. Indeed, the costs of drug abuse treatment are substantially recovered during the time a client is in treatment, and the savings to society after a client has left treatment represent further returns on the investment.

Although abstinence is difficult to achieve because of the variety of problems suffered by clients, their long histories of deviant and
debilitating lifestyles, and a lack of support in the community, publicly funded drug abuse treatment is essential to our national effort to reduce the demand for drugs and the related social and economic costs (p.14).

According to the TOPS study, there were major cost savings involved in the drug treatments, in the following areas: (1) overall costs of drug abuse to law-abiding citizens decreased in the year after treatment by about 20 percent per client, (2) costs to society declined by about 8 percent, (3) costs to victims of drug related crime declined by 30 percent, (4) criminal justice costs declined by about 24 percent, (5) the cost of theft declined by about 11 percent.

It would seem that public investment in such programs would pay off, even in the short run, and even more so in the long run. Dole (as cited in NASADAD, 1990) suggests that arrested addicts should be treated and enforcement should target non-addicted dealers, instead of filling the jails with addicts in futile attempts to relieve society of the "drug menace." Gotthiel (as cited in NASADAD, 1990) notes that:

......the policy of spending about 1.5 percent of the total economic cost of alcoholism (then $120 billion annually) for its treatment and 98.5 percent for its consequences appears to be unreasonable and wasteful, unless it is assumed that treatment is totally ineffective in reducing the consequences of alcoholism (p.25).

And, according to the 15 years of review of treatment effects (NASADAD, 1990), treatment not only works, but is also highly cost-effective.
Treatments within the court system are by definition coerced. Inmates do not really have a choice of whether or not they attend. They often regard treatment as a better option than incarceration. Another case of coercing them into treatment is when they are sentenced to drug treatment without being given any options. Emphasis is often placed on motivation for treatment on behalf of the substance abuser. It might therefore be assumed that coerced treatments were not as successful as noncoerced treatments. However, this is not true, as surprising as it is. Coerced treatments are often as successful as noncoerced treatments, and sometimes even better (Dembo, Williams, & Schmeidler, 1993; Peters, 1993; Wexler & Lipton, 1993). Inmates tend to stay longer in these treatments, and retention in treatment is among the best predictors of reduced recidivism after treatment (Anglin & Hser, 1990; Wilson, 1990).

If treatment for criminal substance abusers is to be effective, several key issues have to be addressed. According to Wexler and Lipton (1993), these include:

1. **An isolated treatment unit.** This makes it possible to set up therapeutic communities where the environment is structured and personality restructuring is the goal (Anglin & Hser, 1990; Pan, Scarpitti, Inciardi, & Lockwood, 1993). Isolation from the general prison population is also beneficial because first, the prison subculture is often not conducive to abstinence from drugs; second, thinking
patterns, systems and norms are often connected to drug use; and third, violence is possible within the prison, distracting the offenders from their abstinence goals. In addition, the availability of drugs is a problem within prisons (Pan et al., 1993). A combination of prevention, education, and treatment approaches is generally believed to be the most effective means of reducing drug use (Anglin & Hser, 1990). For those who already are drug users, treatment is the approach of choice. Hence, it makes sense that the drug users on probation in the Illinois counties where IDAP is operated would be expected to go through drug treatment at least.

2. Motivated participants. In a therapeutic community, the main process is pressure to change thinking patterns and behavior. Peer pressure is the cornerstone of group processes (Pan et al., 1993). Thus, the primary therapist is the community itself, and if it is to be effective, some motivation for change on behalf of the individuals is necessary.

3. A committed and competent staff. The staff is a part of this community, and their role is to be models for the change that is to take place. They also have to maintain strict adherence to the rules and regulations of treatment. Rewards are given to reinforce the value of earned achievements. The treatment setting should be desirable for the offenders, compared to the prison setting in general,
even if it exerts heavy pressure for behavioral and thinking change (Anglin & Hser, 1990; Pan et al., 1993). This is an added challenge for the staff.


5. An array of treatment options. Although therapeutic communities have been found to have considerable success in reducing recidivism (Anglin & Hser, 1990; Pan et al., 1993; Peters, 1993), other options need to be taken into consideration. Jail inmates have diverse needs, no less diverse than any other group of substance abusers. They may have some areas of skills deficits inhibiting successful recovery, for example in life skills, educational or vocational skills, or mental health. These areas need to be addressed for each individual.

6. Cooperative and supportive relationships with correctional staff and administration. Other approaches that have been shown to work involve encouraging a concerted effort on behalf of everybody who is connected with the person in treatment, in order to change behavior patterns (Glasser, 1975). Staff will also have to be role models for
the inmates, and provide them with needed support when the new behaviors are fragile and self-esteem is low.

7. Continuity of care that extends into the community. It is often difficult for the offenders to get back into the community, and some structure may be helpful to make the transition. Martin and Inciardi (1993) suggest case management to ease that process and help the inmate to access an existing network of available resources. For the substance abusers, self-help groups such as Alcoholics Anonymous or Narcotics Anonymous have also been shown to be helpful when the inmates are returning to the community.

To the degree that these seven factors can be assumed to be in place within the intensive probation programs in Illinois, these programs could have the prerequisites to succeed in decreasing recidivism and increasing abstinence from drug use among the participating probationers.

There are various such programs in the state, operating individually within each county. Drug abusing probationers on those programs are usually sent to community-based drug treatments as a part of their program. Outside treatment providers are contracted for the most part. Hence, even though the participants are offenders, their treatment units are community based, and as such outside the prison context. Participants are generally screened for motivational level. The level of staff commitment and competence is not known, and it most certainly varies across so many programs. The
probationers can be pressured to remain in treatment due to their circumstances. The number of treatment options available might differ among the programs. The relationships with the correctional staff and the administration may differ as well. Many of these programs have case planning systems in place. In short, these programs could well be doing what they are meant to be doing.

The IPS and the IDAP Programs

As anyone who watches American TV and reads American newspapers can attest, the most popular political attitude toward criminality seems to be that of being "tough on crime." Politicians accuse each other of being "soft on crime" as if that was in and of itself a major offense. This attitude is reflected in the legislature on drugs and crime. No psycho-active drugs except alcohol can be purchased legally, and most of the distribution and consumption of those drugs is considered illegal and punishable by law. In the last decade, increased law enforcement attention has been given to the import, distribution, and consumption of such drugs as heroin, marijuana, and lately cocaine, "crack," and amphetamine-based substances, or "speed." For example, the number of estimated drug arrests made by state and local police increased from 471,000 in 1980 to more than 1 million in 1988. In addition, the percentage of drug prosecutions in
the largest cities in the United States rose considerably from 1982 to 1987 (Jacoby & Gramckow, 1994). Attention to drug problems is also reflected by the establishment of specialized drug courts to expedite processing of drug cases (Inciardi, McBride, & Weinman, 1993).

In concert with public opinion about crime, the typical response of the police has been increased arrests of drug users and dealers. This has resulted in prison overcrowding to the point where judges began sentencing more offenders to probation, allowing their supervision in the community under conditions limiting their freedom and requiring them to fulfill certain obligations or responsibilities (Lurigio, 1994). However, the challenge under these circumstances is to control these offenders in the community as well as facilitating their growth to crime-free lives, which is especially prominent when dealing with drug users (Turner, Petersilia, & Deschenes, 1992, 1994).

The most recent response to that challenge is the initiation of IPS. The offenders considered for that program are regarded as too serious for regular probation but not so serious that they can only be controlled in prison. The main reason for the IPS program is believed to be the cost-benefit of this sentencing alternative (Clear & Hardyman, 1990; Lurigio, 1994), as it is obviously less expensive than sending these individuals to prison.
The first attempts to set up IPS programs were made in the mid-1960s and early 1970s, built on the assumptions that caseload size determined the intensity of supervision, and more intensive supervision would result in more successful case outcomes. Neither of these assumptions held up in research (Lurigio, 1994), and the newer IPS programs now stress surveillance and compliance with probation rules. This is understandable in light of the fact that the offenders sentenced to them would probably have been sent to prison if there had been space for them there. Since the judicial system finds itself with a caseload of prison-eligible offenders in the community, the main emphasis is on their surveillance. IPS programs were being operated in forty states in the beginning of 1990, but with considerable variance in implementation (Lurigio, 1994). Some of them, as in Georgia, have tough forms of probation to which offenders can be sentenced either directly or as a suspension of a prison sentence. Others, as in New Jersey, use the program as an early release mechanism to relieve prison overcrowding, with restrictive admission criteria. Still others, as Massachusetts, use IPS as a caseload management tool for offenders already sentenced to probation.

Although the IPS programs are diverse, they all stress more than routine supervision of offenders. Supervision is extensive (there are multiple contacts, frequent arrest
checks), focused (specific behavioral regulations are made), ubiquitous (randomized drug tests and unannounced home visits occur), graduated (offenders proceed through in progressive phases), strictly enforced (non-compliance is swiftly and severely penalized), and coordinated (IPS officers are specially selected and trained) (Lurigio, 1994).

Turner, Petersilia, and Deschenes (1992, 1994) have studied outcomes of IPS. They did not find differences in recidivism between participants in the programs and routine probationers, but program participants had more technical violations, presumably because they were more closely monitored. However, those participants in the IPS programs who also participated in drug treatment programs experienced a 10 to 20% reduction in recidivism. Drug treatment is not required in the IPS programs in general. There was little difference between the time the probationers spent in prison and the prison time they would have served without being placed on probation. This was because of their strict revocation policies. Thus, the program did not seem cost-effective, except when it was coupled with drug treatment.

**IPS and IDAP in Illinois**

The IPS and the IDAP programs in Illinois were first implemented in 1984. The primary reason was the same as elsewhere in the United States: prison overcrowding. The total number of prison inmates more than tripled between
1978 and 1993, and in 1993, the prison population numbered nearly 32,000 in a system designed to hold approximately 20,000. From 1978 to 1987, felony drug cases in Cook County increased 140%, compared with non-drug felony cases, which increased only 4% (Lurigio, 1994).

**IPS**

In 1984, IPS programs were funded as a response to the prison overcrowding. This was intended to be a cost-effective alternative to prison, as the cost of a prison bed per year is $17,000, compared to a $3,600 cost per year of IPS supervision (Lurigio, 1994). In addition, those offenders who had jobs could keep them, and they could take care of their families, and contribute to the community through mandatory community service. At the end of 1993, nineteen counties in Illinois were operating IPS programs, with a combined caseload capacity of 1,125 offenders, and operating at 90% of their capacity.

The participants are generally felony offenders convicted of offenses for which it is possible to put them on probation, who would otherwise be sentenced to prison. Most of them are males under the age of 31, previously convicted, and unemployed when their last offense was committed. Half of them had drug abuse histories (Lurigio, 1994).

IPS officers use three staffing designs (Lurigio, 1994):

(a) 1 IPS officer supervises 10 offenders, (b) 2 IPS
officers supervise 25 offenders (12.5 each), and (c) 3 IPS officers supervise 40 offenders (13.33 each)

The program officers screen eligible candidates by reviewing their offenses, prior criminal records, pre-sentence investigation reports, and by assessing their potential for future criminal behavior. Criteria for inclusion differ among the programs. The sentencing court decides placement in IPS. Special conditions of the program are face-to-face contacts, periodic arrest checks, curfew restrictions and drug testing, in addition to 130 hours of mandatory community service. The program has three phases, which are completed in twelve months. The first stage is the most intense, after which the requirements of the program are gradually decreased until the offenders are committed to regular supervision for the rest of their sentence.

IDAP

The IDAP program in Illinois was developed as an alternative supervision mechanism for drug-dependent probationers, in recognition of the fact that monitoring alone may not be enough, because of their substance abuse problem. Therefore, probation officers in the IDAP program perform drug abuse assessments, implement drug-related intervention techniques, and engage in extensive supervision and surveillance activities (Lurigio, 1994). The program is assumed to enhance community safety, and improve overall
case management strategies for drug offenders, in addition to identifying drug abusing offenders correctly and serving them appropriately.

At the end of 1993, nine counties in Illinois had IDAP programs. Caseload capacity, or the number they were supposedly able to serve, was 1,010, but 1,305 offenders were participating in it, or 129% of capacity.

Evaluations of IPS and IDAP


Andersen (1991) found that judges, who decide placements in IPS, were more conservative than IPS officers in assessments of appropriate cases for IPS. Offenders on IPS were more likely to be white and female than Illinois Department of Corrections (IDOC) inmates, and violations were most likely to occur in the first phase of IPS, which is also the most stringent.

Thomson (1987) found that counties implemented the program in various ways. However, the general impression was of program strength but there were no signs of adverse impact, in spite of the differing implementations.

Lurigio (1987a) reported that IPS probationers were less likely than high-risk regular probationers to violate probation because of a new arrest. They also satisfied financial requirements better, engaged more often in
adjunctive treatment and education, and did not commit a single crime against persons during the first year of the program. This study found that the cost-benefit ratio was favorable for the program compared to prison sentences.

In a survey of judges and attorneys in Cook County, Lurigio (1987b) reported very different opinions about IPS among participants in the criminal justice system in Illinois. Public defenders, private attorneys, and criminal lawyers held positive views, whereas state's attorneys held negative views. Judges rated IPS highly, but did not utilize the program much. The same differences among these participants were found in opinions of direct sentencing to the program, and severity of offenders admissible to it. Public defenders were in favor of direct sentences and a greater range of severity in offenses being sentenced to the program, whereas state's attorneys opposed direct sentencing and wanted only less severe cases to be sentenced to the program. Judges agreed with state's attorneys on case seriousness, but public defenders on direct sentencing.

Most of these people agreed that IPS offenders should be free of drugs and non-violent, that eligibility should primarily rest on social/familial background, criminal history, and employment potential.

Lurigio and Donovan (1993) found that 39% of judges in Cook County used IPS "hardly at all" and 26% used IDAP
"hardly at all." However, those who did were mostly satisfied with the programs.

To summarize those studies, the programs showed some signs of strength. However, they could be underutilized in some places, and there does not seem to be consensus among the users of the programs as to how and when to use them.

The Present Evaluation of IPS and IDAP

The present work is part of a much larger study evaluating the IPS and the IDAP programs in Illinois. The larger study evaluated the implementation and the impact of the programs in the state. Judges, probation officers, public defenders, and state's attorneys responded to survey questionnaires and in-person interviews, and focus groups were conducted with these participants. Document analyses were used to describe original designs of the programs, and a historical description of the implementation of them in each county, along with current staffing information, decision-making process, supervisory scheme, social services availability, referral, and use were completed. Caseload information was obtained. Offenders were interviewed, and focus groups were conducted with them and their families to assess the impact of the program on them and their families. Finally, the impact of the programs were assessed with regard to their goals. For IPS, the goals are as follows: (1) serve as an alternative to incarceration to help alleviate overcrowding in the state prisons, and (2) to
reduce the subsequent criminal activities of IPS participants through structured and intensive supervision. For IDAP, the goal is to reduce the substance-abusing behavior and related criminal activities of participants through substance abuse treatment, social services, and intense supervision. Impact on the criminal justice system will be assessed, and a cost-effectiveness evaluation will be done.

The Present Study

The present study focused on the drug-abusing offenders and their likelihood of remaining abstinent from drugs while participating in the programs. Recent research indicates that participation in drug treatments in the criminal justice system is among the best predictors of reduced recidivism (Anglin & Hser, 1990; Deschenes & Greenwood, 1994; Peters, 1993; Turner, Petersilia & Deschenes, 1994; Wellisch, Anglin, & Pendergast, 1993). In order to understand that connection better, it is necessary to find out which variables are predictors of achieving sobriety through such treatment programs.

Predictors of Treatment Success

In the present study, the following possible predictors will be examined: (1) age, (2) employment status, (3) education, (4) length of time in treatment, (5) support of partner, (6) therapeutic contact with probation officer during treatment, and (7) self-efficacy.
Age. Age seems to be associated with both frequency of criminal activity and drug use (Deschenes & Greenwood, 1994; Harrison & Gfoerer, 1992) and the likelihood of a positive treatment outcome (Anglin, Brecht, Woodward, & Bonett, 1986; Anglin & Hser, 1990; Pape & Hammer, 1996). Many studies cite that patients younger than twenty-five are likely to leave treatment earlier than older patients, thus jeopardizing their likelihood of remaining abstinent. Some of these researchers (Anglin et al., 1986) suggest that addicts "mature out" of the addiction in relation to length of their addiction careers and the increasingly aversive consequences of the addiction. Thus, some of the younger offenders just do not seem ready to quit yet. And some of them die before they grow old.

Employment. According to MacCoun and Reuter (1992), unemployment is not associated with drug crimes. On the contrary, in their sample of drug dealers on probation, 64% of their sample was legitimately employed while earning extra income by selling drugs. However, in times of recession and general unemployment, it could be more of a temptation to add to one's income by illegal means if the probationers have not succeeded in getting a job. Anglin and Hser (1990) find, not surprisingly, that previous behaviors predict likelihood of future behaviors. If most drug dealers are legitimately employed while selling drugs,
they may not have serious problems securing jobs after treatment.

**Education.** In the same way as drug use is part of a general deviance syndrome (Harrison & Gfoerer, 1992; Peters, 1993), so is dropping out of school or behaving badly in school. Besides, it becomes very difficult to stay in school if drug use is already serious. However, those who do have some education are in a better position to land a job when they are not using drugs than those who have dropped out of school. And, having a job does make it easier to be self-sufficient, which also might be conducive to a sober lifestyle. Chaiken and Chaiken (1990) concluded that predatory criminals used drugs as a part of their nontraditional lifestyle. Getting a high school diploma would probably not be included in such a lifestyle.

**Length of Time.** Time in treatment is consistently related to outcomes, with longer time in treatment predicting better outcomes (Anglin & Hser, 1990; Davidsdottir, 1997; Wellisch, Anglin, & Prendergast, 1993; Wexler & Lipton, 1993). Therapeutic communities often have treatment time of up to fifteen months. Simpson (1979, 1981) has suggested that a minimum treatment length of ninety days seems to be a prerequisite for effective treatment. Beyond ninety days, treatment outcome improvement is directly related to time in treatment, but treatments lasting fewer than ninety days have limited
benefit. This author found that young delinquents had more positive outcomes from treatment if they spent more than two months there (Davidsdottir, 1997). However, none of them spent more than three months there, so it is not known if they would have benefited even more from longer stay.

Social Support. Social support refers to the perceived comfort, caring, esteem, or help a person receives from other people or groups (Sarafino, 1990; Wallston, Alagna, DeVellis, & Develli, 1983). Social support has been classified into four basic types (Cohen & McKay, 1984; Sarafino, 1990): (1) emotional support, which is the expression of empathy, care and concern, (2) esteem support, as expression of positive regard for the person, or encouragement or agreement with ideas or feelings, supposedly elevating the person's self-esteem, (3) instrumental support, which is direct assistance when needed, and (4) informational support, or giving advice, directions, suggestions, or feedback about how the person is doing.

There seems to be no doubt that social support is of help to people who are in dire circumstances of some sort. For people who are seriously ill, social support has been found to be of considerable help, emotionally as well as instrumentally (Wallston, Alagna, DeVellis, & Develli, 1983; Wortman & Dunkel-Schetter, 1987).
Social support seems to decrease stress when stress levels are uncomfortably high (Constable & Russell, 1986; LaRocco, House, & French, 1980). People who report much social support are in better health than those who report little social support (Berkman & Syme, 1979; House, Robbins, & Metzner, 1982). Social support may have direct beneficial effects on health and well-being, in the sense that people who report high levels of social support are less often ill than others (Cohen & Wills, 1985; Wortman & Dunkel-Schetter, 1987), as well as indirect effects as a buffer in times of stress, in the sense that the beneficial effects only are seen under high levels of stress (Cohen & McKay, 1984; Cohen & Wills, 1985).

When alcoholics and drug abusers go through treatment in order to achieve sobriety, one of the factors determining success is social support (Booth, Russell, Soucek, & Laughlin, 1992; Guinan, 1990; Havassy, Hall, & Wasserman, 1991; Hawkins, Catalano, & Wells, 1986; McKay & Maisto, 1993). Studies consistently show that those who perceive themselves having much social support are also more likely to remain sober after treatment than those who report little social support.

Over 70 percent of women and men who are successful in drug treatments, report support of their partners during their treatment periods (Anglin & Hser, 1990). With supportive partners, they also tend to stay longer in
treatment, which is by itself conducive to success. This finding seems to hold especially for women (see Anglin & Hser, 1990, for overview).

Involvement of Client and Probation Officer. According to Glasser's (1975) Reality Therapy, it is necessary to build a firm working alliance with any client. The client must have the feeling that it is possible to trust the therapist, who will care what becomes of him or her. In order to be able to teach new behaviors later, involvement is the necessary foundation. As it is very difficult to change existing behavior, some incentives are needed for it to work, and Glasser believes that involvement with a responsible therapist is the best incentive.

Involvement with a therapist has repeatedly been argued to be predictive of positive outcome in therapy (Bachelor, 1991; Brandchaft & Stolorow, 1990; Glasser, 1975; Hatcher & Barends, 1996; Marmar, Weiss, & Gaston, 1989; Marziali, 1984; Meissner, 1992; Rawn, 1991; Saunders & Howard, 1989). Bachelor (1991) found that clients who perceived greater levels of positive therapist characteristics improved the most. Similarly, Marziali (1984) found that patients' and therapists' positive contributions to the relationship were the best predictors of outcome. This was regardless of the therapists' experience in clinical work. A similar finding from Hatcher and Barends (1996) was that a working alliance
between patient and therapist was among the best predictors of improvement in the patient's condition.

Hawdon (1996) found that therapist involvement in clients' lives is beneficial, because through this it could be possible to change routine activity patterns which could lead to either an abstinent or a nonabstinent lifestyle.

Schottenfeld (1989) states that a therapeutic alliance with clients is especially important when the treatment is involuntary, as it most often is in the IPS and IDAP programs. This is because it is necessary to overcome denial related to substance abuse and transform external coercion into internal motivation.

Among many professionals, it is seen as essential to form a meaningful relationship with the client, and positive outcomes are consistently associated with this kind of therapeutic alliance. This has been found with antisocial patients (Gerstley, McLellan, Alterman, Woody, Luborsky, & Prout, 1989), in psychodynamic psychotherapy (Luborsky & Auerbach, 1985), and in time-limited psychotherapy, when effective methods have to be found quickly (Strupp, 1980). The concept of therapeutic alliance is similar to the psychoanalytic concept of transference, when the clients transfer to a therapist the feelings they have toward important people in their history (Jacobson & McKinney, 1982). However, there is an important difference between Glasser's concept of involvement and transference, in that
Glasser advocates that the therapist becomes emotionally involved with the client to a certain degree, whereas in psychoanalytic theory that would be held to be detrimental to both. In 1918, Freud (1955) criticized nonanalytic helpers for making the patients' life too comfortable by helping them out too much. Neopsychoanalysts have modified this stance in response to the consistent finding that a relationship that can at least be described as a working alliance seems to give the best results (Brandchaft & Stolorow, 1990; Hatcher & Barends, 1996; Marziali, 1984; Meissner, 1992; Rawn, 1991).

Epstein (1993) concluded that it would be beneficial for criminal patients to have therapists who would both see to their therapeutic needs and also set limits on their behavior in regards to their conditional release. This need for a therapist is not least due to the fact that there is limited motivation on behalf of the clients to change existing behavior, as their participation is truly involuntary. However, a therapist can only help in such cases if he or she acquires a thorough understanding of the patients' condition and knowledge of their history, and the patients can become in some way attached to the therapist. An alliance between the probation officer and the probationer, that would prompt the probationer to report that he or she can trust the officer to help when life became difficult, is probably more in accordance with
Glasser's concept of involvement with the client than
Freud's transference.

**Self-Efficacy.** Among strategies used in drug treatments is that of enhancing substance abusers' self-efficacy in maintaining their sobriety. This is based on Bandura's (1977; 1982; 1986a; 1986b; 1989; 1991) social learning theory. According to the self-efficacy component of this theory, people need corrective learning experiences to be able to change their behavior patterns. Change is mediated through cognitive processes, but the cognitive events are induced and altered most readily by experiences of mastery arising from successful performance (Bandura, 1977). People expect certain outcomes from certain behaviors, but their self-efficacy is based on the conviction that they can successfully conduct the behaviors necessary to produce these outcomes. The strength of these convictions will then determine whether they will even try to cope with situations they deem to be difficult. Efficacy expectations will determine the effort that people will put into their coping attempts, and how long they will persist even when things get rough.

Major sources of efficacy expectations are (Bandura, 1977): (1) performance accomplishments, based on one's own personal experiences, because successes raise mastery expectations, failures lower them; (2) vicarious experience, based on seeing others perform difficult activities without
adverse consequences; (3) verbal persuasion, based on things other people communicate verbally; (4) emotional arousal, because people base their expectations partly on their physiological arousal; and (5) situational circumstances, as situations call for a differing level of necessary performance and anxiety associated with it. Bandura expected the self-efficacy source of verbal persuasion to be the weakest and most short-lived.

In his later writings, Bandura moved the emphasis of his theory more toward cognitive theories (Bandura, 1986a; 1986b; 1989; 1991). He changed the name of his theory to social cognitive theory, presumably to associate it more with the cognitive movement than with the learning theories, which he found too mechanistic (Bandura, 1986b). He said that there was triadic reciprocal causation among personal, environmental, and behavioral factors, so that each of them affected the others. The behavioral factor of criminality would for example be caused by both personal factors like characteristics and also by environmental factors, like childhood experiences and work status. Behavior and personal factors affect the environment, and behavior and environment affect personal factors such as mood. Bandura also tried to explain the mechanisms underlying the predictive power of self-efficacy by operationalizing the cognitive factors underlying self-efficacy judgments. He said self-efficacy judgments influence the perceived causes
of successes and failures, so that efficacious people ascribe failures to insufficient effort, but less efficacious people ascribe them to low ability.

Goal-setting is also affected by self-efficacy. The more capable people judge themselves to be, the higher the goals they set for themselves and the more firmly committed they remain to them. Self-efficacious people also value more the activities in which they judge themselves to be self-efficacious.

Quality of analytic thinking is greatly affected by self-efficacy (Bandura, 1991). Those who perceive themselves self-efficacious make better decisions in difficult situations than those who perceive themselves less self-efficacious.

It is hoped that drug abusers who are trying to maintain abstinence would set themselves the goal of being abstinent. There are numerous setbacks in their lives as in everybody else's, so their reactions to failures would be relevant. When they perceive themselves to be good at being abstinent, then they would value abstinence more, according to Bandura. And they have to be making decisions day in and day out, like everybody else. So it seems that the main aspects of the cognitive functions underlying self-efficacy are all relevant to recovering alcoholics and drug addicts.

Bandura (1977) asserted that efficacy expectancies would vary in magnitude, strength, and scope. Tasks require
differing levels of effort from the individual, and the higher the level of expected efficacy, the higher the magnitude of the expectations. Strength also varies, and weak efficacy expectations are predictably not as long-lived as strong ones. The scope of the expectations refers to the generality of the experiences they extend to.

Bandura said that one of the components of the construct of self-efficacy is magnitude, or how much self-efficacy there is. In the context of addictive behaviors, this has been conceptualized as the temptation to continue abusing. DiClemente (1986) studied this component in relation to level of self-efficacy, or confidence that one could maintain abstinence from smoking. He found that as levels of self-efficacy increased, perceived temptation levels decreased. It thus seems that this component is simply the reversal of self-efficacy in addiction, at least with regard to smoking. Strength of efficacy has been measured by asking questions such as: "How confident are you that you can maintain abstinence when you are depressed?" Scope of efficacy can be considered the aspects of life that have been shown to be relevant to relapses. Bandura’s theory is usually employed in substance abuse treatments by giving the abusers a chance to role-play and go through successive stages of practicing coping mechanisms in response to possible relapse situations. It is expected that their self-efficacy will be raised by obtaining mastery
experiences. This type of treatment approach would be labeled as a cognitive and behavioral approach.

Recent evidence indicates that such cognitive and behavioral programs hold promise for reducing recidivism and achieving sobriety (Dembo, Williams, & Schmeidler, 1993; Deschenes & Greenwood, 1994; Peters, 1993; Weinman & Lockwood, 1993; Wellisch, Anglin, & Prendergast, 1993). Among the most popular themes underlying those programs is Marlatt and Gordon's (1985) model of relapse prevention (Anglin & Hser, 1990; Peters, 1993; Rawson, Obert, McCann, & Marinelli-Casey, 1993). For example, this model is used as a substantial component of a residential drug abuse treatment package in many prisons (Weinman & Lockwood, 1993).

Marlatt's Model Compared to the AA-Model

Marlatt and colleagues conceptualize addiction as a set of habit patterns that have been reinforced by pharmacological and social reinforcement contingencies, making addiction treatment process that of a habit change (Marlatt & George, 1984; Marlatt & Gordon, 1985; Rawson et al., 1993). This is an important distinction from the disease model of alcoholism, which is supported by Alcoholics Anonymous (AA). According to the AA model, most substance abusers must experience absolute disaster as a result of their addiction before they are ready to take steps to return to a sober life. Treatment then includes the process of rebuilding a life on the ruins that the
substance abuse caused. According to the AA model, the very first step that substance abusers have to take on their way to recovery is the realization that they are powerless over alcohol and other psycho-active drugs (Alcoholics Anonymous, 1976). The basis of recovery is to keep away from all cues that could trigger further use, in the realization that substance abusers cannot be expected to have control over their use in such situations. This is especially pertinent during the first weeks of recovery, as new behaviors have not yet been firmly established, and former cues to drug use may still be quite strong. Self-efficacy in potentially dangerous situations would therefore be considered more of a hindrance than an asset on the road to recovery, according to AA, as substance abusers might then expect that they have full control in dangerous situations, long before they actually do.

A second important distinction from the AA model is the nature of relapse. Marlatt's interpretation of a relapse is that it is the result of a predictable series of cognitive and behavioral events, leading to returning to drug or alcohol use. The AA interpretation of a relapse is that the alcoholic is allergic to psycho-active substances and the first drink or drug use can trigger an uncontrollable bout, making the first drink or drug use the most important milestone on the road to relapse. The main difference between the models is on the emphasis on the first drink or
use. According to Marlatt, serious use is mainly a habit that is active because it is reinforced, but according to AA, serious use inevitably follows the first drink or use, because it is based on uncontrollable physical reactions of allergies to psycho-active substances. This difference becomes important in relapse prevention, specifically when the substance abuser has already taken the first drink or drug. Marlatt's interpretation would allow the substance abuser to return to abstinence, regarding the incident as an isolated lapse, rather than a full-blown relapse, whereas the AA model would regard the incident as an important part of a relapse. However, a study that was done to test the effects of the first drink (Ludwig, Wikler & Stark, 1974) indicates that these effects really are profound, especially in the context of cues formerly associated with use. This study therefore supports the AA model over Marlatt's model.

A third aspect of Marlatt's model is that a relapse has clear antecedents and warning signs that can alert the substance abuser to an impending disaster and can then allow preventive measures to be taken early enough to escape a full-blown relapse.

Marlatt has demystified the process of relapse to a substantial degree and has provided a framework for studying high risk behaviors and situations. His model is the foundation for many other models for relapse prevention (Rawson et al., 1993). Among those are Gorski's CENAPS
model (Gorski, 1989; Gorski & Miller, 1986). Gorski combines Marlatt's behavioral methods of relapse prevention with a traditional twelve step approach, built on AA principles. A special addition involved in Gorski's model is his "post-acute-syndrome." This is a set of withdrawal symptoms, most often experienced up to eighteen months after abstinence. These include difficulty in thinking clearly, managing feelings and emotions, avoiding accidents, managing stress, remembering things, or sleeping restfully. These difficulties become more pronounced at times of high stress. Gorski includes methods in his model to deal with these specific difficulties experienced by recovering substance abusers.


The common theme in all these models is Bandura's concept of self-efficacy. By exposing the substance abusers to successively higher levels of risky situations under
protected or semi-protected circumstances, it is hoped that their self-efficacy will be raised sufficiently that they will expend enough effort and persistence to be able to maintain their sobriety, even under adverse circumstances. Self-efficacy has repeatedly been found to be predictive of successful abstinence from addictive behaviors (Annis, 1990; DiClemente, 1986; DiClemente, Carbonari, Montgomery, & Hughes, 1994; Gecas, 1989; Heller & Krauss, 1991; Sadowski, Long, & Jenkins, 1993). The more emphasis there is in treatment on the behavioral and cognitive aspects underlying self-efficacy, the more likely it should be that the level of self-efficacy would be raised during treatment, which should in turn be predictive of successful maintenance of abstinence.

However, if people who have only been abstinent for a short time believe that they can remain abstinent even in the presence of former using cues, they may underestimate their addiction. If, for example, they believe that they can remain abstinent even when they are in the company of their using friends, then why keep away from them? It would therefore seem that self-efficacy beliefs in circumstances associated with drug use might be a double-edged sword, at least during the first weeks or months of abstinence, when former using cues are still strong. It might be more difficult to avoid cues to negative feelings. Substance abusers often find themselves in psychological situations
that they find difficult to handle, at least in the beginning of their abstinence. They are therefore constantly in danger of experiencing negative feelings, whether they seek them out or not. Self-efficacy for dealing with these feelings might be an asset, especially in the beginning. As a consequence of the different implications of self-efficacy in former using situations on the one hand and when experiencing negative feelings on the other hand, it will be hypothesized that self-efficacy will be predictive of abstinence when experiencing negative feelings, but not in the presence of positive using cues.

Hypotheses

The hypotheses below all pertain to the prediction of sobriety among the probationers. The intention is to find out which processes and conditions are most conducive to success during treatment and afterwards.

Hypothesis One. Younger probationers were expected to be less likely to remain abstinent than older ones.

Hypothesis Two. Employed probationers were expected to be more likely to be abstinent than unemployed probationers.

Hypothesis Three. Probationers with higher educational levels were expected to be more likely to be abstinent than those with lower educational levels.

Hypothesis Four. Those probationers who spent three months or longer in treatment were expected to be more
likely to be abstinent at follow-up than those who spent less than three months in treatment.

**Hypothesis Five.** Probationers who report higher levels of social support were expected to be more likely to be abstinent than those who report lower levels of social support.

**Hypothesis Six.** Those probationers who report higher levels of a meaningful therapeutic contact with the probation officer while being on probation were expected to be more likely to be abstinent than those who have lower levels of such contact.

**Hypothesis Seven.** Probationers who report higher levels of self-efficacy for remaining abstinent when experiencing negative feelings were expected to be more likely to succeed in being abstinent than those who report lower levels of such self-efficacy.

**Hypothesis Eight.** Probationers who report higher levels of self-efficacy when experiencing social pressure to use drugs or alcohol were expected to be less likely to succeed in being abstinent than those who report lower levels of such self-efficacy.
CHAPTER 2

METHOD

The data collection in this study was conducted within probation offices in those counties in Illinois where the Intensive Drug Abuser Program (IDAP) and the Intensive Probation Supervision (IPS) were used. Probationers in these programs were interviewed when they came in for office visits to their probation officers.

Participants

Of the participants, 108 were in the IDAP program and 111 were in the IPS program. Those in the IDAP program all had been diagnosed as having drug problems. Since this study focuses on self-efficacy in staying sober, those from the IPS program who had not undergone drug treatment were excluded from the analysis (75 IPS probationers). This was done because criminal activity is not necessarily directly related to drug use, although there often seems to be a connection between the two. Thus there might be offenders in the IPS program who do not have any drug problems. Participation in a drug treatment was taken as an indicator that the IPS probationers had drug problems. The sample, therefore, consisted of 144 probationers, 108 from the IDAP program and 36 from the IPS program.
Outcome Measure

Urinalysis test outcomes, supplied by the probation departments, were used as outcome measures. The overall proportion of negative tests over the full number of tests taken during the participants' stay on IDAP or IPS were used as an outcome measure for abstinence, since too few tests had been taken after the interview to use only those tests as the outcome measure.

No drug testing had been done on 26 participants. These cases were therefore excluded from the analyses where abstinence was the dependent measure, leaving 118 cases for such analyses.

Instruments

Participants were asked their age.

Employment was measured with the question

"In your current employment, how many hours do you work in the average week?"

Responses ranged from 1 (work less than 20 hours per week) to 5 (work 35 or more hours per week).

Education was measured with the question

"How many ears of school have you completed?"

Responses ranged from 1 (less than high school) to 8 (completed college graduate degree).

Participants were asked how many months they had spent in substance abuse treatment.
Social support was assessed with only two questions. Preferably, a construct as this one should be measured by many more questions. However, in the context of this study, that was not possible, as the interview had to be kept as short as possible, and the measure of this construct was one of the constructs which had to be cut for length.

Emotional social support was measured with these questions:

"Do you feel you can count on your friends to help you or talk with you when you have problems?" and
"Is there somebody else that you feel you can count on to help you or talk with you when you have problems? Please list them."

Responses to the first question ranged from 1 (can never count on them) to 4 (can count on them a lot). Responses to the second question were a number of people listed, up to 6. In order to weight the items equally, the responses to these two items were first converted to $z$-scores and then were added together.

Involvement with the probation officer was measured with the question:

"Do you feel that you can count on your probation officer to help you or talk to you when you have problems?"

Responses ranged from 1 (can never count on him/her) to 4 (can count on him/her a lot).
Self-efficacy was measured with the Alcohol Abstinence Self-Efficacy Scale (DiClemente, Carbonari, Montgomery, & Hughes, 1992). This is a 20-item questionnaire to assess Bandura's construct of self-efficacy applied to alcohol abstinence. The items were modified to include other kinds of drugs. The scale was built on Marlatt's research on relapses (Marlatt & George, 1984; Marlatt & Gordon, 1985). Marlatt found that most of the variance in relapses could be explained by negative affect, social pressure, and interpersonal conflict. Negative affect explained 35 percent of the variance for all relapses, social pressure explained 20 percent, and interpersonal conflict explained 16 percent.

DiClemente's scale consists of the dimensions of Negative Affect and Social Pressure, and then DiClemente adds the dimensions of Physical Concerns and Withdrawals. Only the two dimensions most predictive of relapses (Negative Affect and Social Pressure) were used in this study, each had 5 items. The instructions required the participants to indicate on a 5 point Likert scale from 1 (not at all) to 5 (very) how confident they are that they will be able to be abstinent when they are in certain situations. For the Negative Affect dimension they were, for example, "feeling angry inside," or "feeling depressed." For the dimension of Social Pressure to drink or use drugs, they were for example, "seeing other people drinking/using
drugs at a bar or at a party," or when they were "excited or celebrating with others."
CHAPTER 3
RESULTS

The purpose of the study was to find possible predictors of abstinence among probationers. For that purpose, the associations between the predictor variables and a measure of abstinence were calculated. The statistical program Statistical Program for the Social Sciences (SPSS) was used for the analyses.

Reliability of Scales

Cronbach's alpha was calculated for the scales in the study. The two item scale for Emotional Social Support had a reliability of only .07. Reliability for the scale for Negative Affect was .93, and reliability for the scale for Social Pressure was .91.

Description of the Sample

Mean age of participants was 31.1 years, with a standard deviation of 8.6 years. The distribution of age was positively skewed; the median was 30 years. Figure 1 shows the distribution of age in the sample.

Table 1 shows the educational status of participants. As can be seen, 55 people had less than a high school diploma.
Figure 1

Age distribution

Table 1
Educational Status of Participants

<table>
<thead>
<tr>
<th>Education</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than high school</td>
<td>2</td>
</tr>
<tr>
<td>Some high school, did not graduate</td>
<td>53</td>
</tr>
<tr>
<td>High school graduate</td>
<td>27</td>
</tr>
<tr>
<td>Completed GED</td>
<td>21</td>
</tr>
<tr>
<td>Some college, did not graduate</td>
<td>37</td>
</tr>
<tr>
<td>College graduate</td>
<td>2</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 2 shows the occupational status of participants. Most of them work either full time (58) or not at all (54); very few of them work part-time.

<table>
<thead>
<tr>
<th>Hours worked</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>54</td>
</tr>
<tr>
<td>20-24</td>
<td>3</td>
</tr>
<tr>
<td>25-29</td>
<td>7</td>
</tr>
<tr>
<td>30-34</td>
<td>8</td>
</tr>
<tr>
<td>35 or more</td>
<td>58</td>
</tr>
<tr>
<td>Unknown</td>
<td>14</td>
</tr>
</tbody>
</table>

The mean length of time that the participants had spent in drug treatment was 4.3 months. The distribution of this variable was extremely skewed, the median being 2.0 months, and standard deviation 5.4 months. The skewness was because although the IDAP participants had all been diagnosed as having drug problems, and as such sentenced to drug treatment, 41 of them had not yet gone through treatment at the time of the interview. The distribution of this variable is shown in Figure 2.
As can be seen in Figure 2, this variable is not normally distributed. In order to be able to use it in the analyses, a square root was taken. Figure 3 shows that apart from those who had not had any treatment (the column farthest to the left in both Figure 2 and Figure 3), the distribution was much closer to being normally distributed, and so was better suited for statistical analyses.
Figure 3

Square Root Taken of the Number of Months Participants had Spent in Treatment

Cook County Residents vs. Other Participants

About half of the participants came from Cook County, including the City of Chicago. Analysis of variance (ANOVA) tests were performed to determine if Cook County residents differed from other participants on any of the tested variables. Outcomes of these tests are shown in Table 3. A difference was found between the groups in number of hours worked in the average week, and marginal differences in education and relationship with probation officer. Cook County participants were less likely to be employed than participants from other counties, they had less education than participants from other counties, and they rated their relationship with their probation officer worse than
probationers from other counties. Crosstabulation analyses of these variables are shown in Tables 4-6.

Table 3
ANOVA Differences Between Cook County Participants and Participants from Other Counties

<table>
<thead>
<tr>
<th>Variable</th>
<th>Program</th>
<th>Mean</th>
<th>CI (95%)</th>
<th>nr</th>
<th>F</th>
<th>df</th>
<th>prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Cook</td>
<td>31.05</td>
<td>28.99-33.11</td>
<td>62</td>
<td>0.00</td>
<td>1,142</td>
<td>.946</td>
</tr>
<tr>
<td></td>
<td>Outside</td>
<td>31.15</td>
<td>29.17-33.13</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td>Cook</td>
<td>2.95</td>
<td>2.32-3.57</td>
<td>58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside</td>
<td>4.27</td>
<td>3.76-4.79</td>
<td>72</td>
<td>11.02</td>
<td>1,128</td>
<td>.001</td>
</tr>
<tr>
<td>Education</td>
<td>Cook</td>
<td>3.13</td>
<td>2.81-3.45</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside</td>
<td>3.51</td>
<td>3.20-3.81</td>
<td>81</td>
<td>2.80</td>
<td>1,141</td>
<td>.096</td>
</tr>
<tr>
<td>Social support</td>
<td>Cook</td>
<td>1.86</td>
<td>1.81-1.90</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside</td>
<td>1.86</td>
<td>1.82-1.90</td>
<td>77</td>
<td>0.00</td>
<td>1,131</td>
<td>.991</td>
</tr>
<tr>
<td>Relations w/officer</td>
<td>Cook</td>
<td>3.18</td>
<td>2.95-3.41</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside</td>
<td>3.45</td>
<td>3.26-3.64</td>
<td>80</td>
<td>3.25</td>
<td>1,134</td>
<td>.074</td>
</tr>
<tr>
<td>Months treated (sqrt)</td>
<td>Cook</td>
<td>1.47</td>
<td>1.15-1.80</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside</td>
<td>1.78</td>
<td>1.44-2.12</td>
<td>82</td>
<td>1.64</td>
<td>1,142</td>
<td>.202</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>Cook</td>
<td>20.44</td>
<td>18.12-22.75</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside</td>
<td>21.97</td>
<td>20.12-23.83</td>
<td>81</td>
<td>1.64</td>
<td>1,141</td>
<td>.297</td>
</tr>
<tr>
<td>Social Pressure</td>
<td>Cook</td>
<td>20.17</td>
<td>18.03-22.32</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside</td>
<td>21.20</td>
<td>19.12-23.28</td>
<td>80</td>
<td>0.45</td>
<td>1,140</td>
<td>.501</td>
</tr>
<tr>
<td>Abstinence</td>
<td>Cook</td>
<td>0.60</td>
<td>.50-.70</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside</td>
<td>0.59</td>
<td>.50-.68</td>
<td>63</td>
<td>0.03</td>
<td>1,116</td>
<td>.860</td>
</tr>
</tbody>
</table>
Cook County participants were significantly less likely to be employed than participants from other counties ($\chi(2, N=130)=12.72, p<.01$), as shown in Table 4.

**Table 4**  
Crosstabulation Analyses of Employment by Location from Cook County vs. Other Counties

<table>
<thead>
<tr>
<th>County</th>
<th>Unemployed</th>
<th>Part time</th>
<th>Full time</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cook</td>
<td>34</td>
<td>5</td>
<td>19</td>
<td>58</td>
</tr>
<tr>
<td>Outside</td>
<td>20</td>
<td>13</td>
<td>39</td>
<td>72</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>18</td>
<td>58</td>
<td>130</td>
</tr>
</tbody>
</table>

A difference in educational level was not found between participants from Cook County and other counties ($\chi(2, N=143)=3.38, \text{ ns}$), as can be seen in Table 5.

**Table 5**  
Crosstabulation Analyses of Education by Location from Cook County vs. Other Counties

<table>
<thead>
<tr>
<th>County</th>
<th>Less than high school</th>
<th>High school or GED</th>
<th>More than high school</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cook</td>
<td>29</td>
<td>19</td>
<td>14</td>
<td>62</td>
</tr>
<tr>
<td>Outside</td>
<td>26</td>
<td>29</td>
<td>26</td>
<td>81</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
<td>48</td>
<td>40</td>
<td>143</td>
</tr>
</tbody>
</table>
Table 6 shows that participants from Cook County reported less social support from their probation officers than participants from other counties ($\chi(3, 136)=8.78, p<.01$). The scale that was used to measure this variable ranged from 1 (can never count on them) to 4 (can count on them a lot). The response categories from 1-3 were combined. This was done in order to be able to use the Chi-square, as this analysis assumes that no cells include less than 5 participants.

<table>
<thead>
<tr>
<th>County</th>
<th>Counted on less than a lot</th>
<th>Counted on a lot</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cook</td>
<td>22</td>
<td>34</td>
<td>56</td>
</tr>
<tr>
<td>Outside</td>
<td>52</td>
<td>28</td>
<td>80</td>
</tr>
<tr>
<td>Total</td>
<td>74</td>
<td>62</td>
<td>136</td>
</tr>
</tbody>
</table>

**IPS vs. IDAP Participants**

Participants from the IPS and IDAP programs were compared, as shown in Table 7. Differences were found in employment and self-efficacy for Negative Affect.
### Table 7
ANOVA Differences Between IPS and IDAP Participants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Progr</th>
<th>Mean</th>
<th>CI (95%)</th>
<th>nr</th>
<th>F</th>
<th>df</th>
<th>prob</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>IPS</td>
<td>31.06</td>
<td>27.43-34.68</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDAP</td>
<td>31.12</td>
<td>29.63-32.61</td>
<td>108</td>
<td>0.00</td>
<td>1,142</td>
<td>.969</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td>IPS</td>
<td>4.64</td>
<td>3.83-5.46</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDAP</td>
<td>3.42</td>
<td>2.96-3.89</td>
<td>102</td>
<td>6.14</td>
<td>1,128</td>
<td>.015</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>IPS</td>
<td>3.36</td>
<td>2.92-3.81</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDAP</td>
<td>3.34</td>
<td>3.08-3.60</td>
<td>107</td>
<td>0.01</td>
<td>1,141</td>
<td>.925</td>
</tr>
<tr>
<td><strong>Social support</strong></td>
<td>IPS</td>
<td>1.88</td>
<td>1.82-1.94</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDAP</td>
<td>1.85</td>
<td>1.81-1.88</td>
<td>102</td>
<td>0.78</td>
<td>1,131</td>
<td>.378</td>
</tr>
<tr>
<td><strong>Relations w/officer</strong></td>
<td>IPS</td>
<td>3.39</td>
<td>3.11-3.67</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDAP</td>
<td>3.32</td>
<td>3.14-3.50</td>
<td>103</td>
<td>0.18</td>
<td>1,134</td>
<td>.675</td>
</tr>
<tr>
<td><strong>Months treated (sqrt)</strong></td>
<td>IPS</td>
<td>1.95</td>
<td>1.48-2.43</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDAP</td>
<td>1.55</td>
<td>1.27-1.82</td>
<td>108</td>
<td>2.16</td>
<td>1,142</td>
<td>.144</td>
</tr>
<tr>
<td><strong>Negative Affect</strong></td>
<td>IPS</td>
<td>24.09</td>
<td>20.97-27.20</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDAP</td>
<td>20.41</td>
<td>18.80-22.01</td>
<td>108</td>
<td>4.83</td>
<td>1,141</td>
<td>.030</td>
</tr>
<tr>
<td><strong>Social Pressure</strong></td>
<td>IPS</td>
<td>22.64</td>
<td>19.62-25.66</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDAP</td>
<td>20.11</td>
<td>18.40-21.83</td>
<td>106</td>
<td>2.16</td>
<td>1,140</td>
<td>.144</td>
</tr>
<tr>
<td><strong>Abstinence</strong></td>
<td>IPS</td>
<td>0.64</td>
<td>.46-.81</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDAP</td>
<td>0.58</td>
<td>.51-.66</td>
<td>95</td>
<td>0.42</td>
<td>1,116</td>
<td>.516</td>
</tr>
</tbody>
</table>
No differences were found in self-efficacy for Social Pressure to drink alcohol or use drugs, but IPS participants were significantly more likely to rate their self-efficacy for Negative Affect higher than IDAP participants. As can be seen in Table 8, IPS participants were more likely to be employed than IDAP participants (χ²(2, N=130)=6.57, p<.05).

Table 8  
Crosstabulation Analysis of Employment by Participation in IPS vs. IDAP

<table>
<thead>
<tr>
<th>Program</th>
<th>No work</th>
<th>Part time work</th>
<th>Full time work</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPS</td>
<td>6</td>
<td>4</td>
<td>18</td>
<td>28</td>
</tr>
<tr>
<td>IDAP</td>
<td>48</td>
<td>14</td>
<td>40</td>
<td>102</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>18</td>
<td>58</td>
<td>130</td>
</tr>
</tbody>
</table>

Relationships Between the Independent Variables

The predictor variables in the study were intercorrelated. The results are shown in Table 9. Age correlated positively with education. The older the probationers were, the more education they were likely to have, not surprisingly. Age also correlated with relationship with officer. The older the probationers were, the more likely they were to state that they could count on their probation officer.
Employment correlated with education; however, the correlation was negative: The less education the probationers had, the more hours they worked a week. Employment also correlated with both subscales for self-efficacy. The more education the probationers had, the more self-efficacious they were, both in the circumstances of social pressure and negative affect.

The more time the probationers had spent in treatment, the higher they rated their social support and relationship with their probation officer. Time in treatment was also related to self-efficacy in withstanding social pressure to drink alcohol or use drugs. The more time they had spent in treatment, the more certain they were that they could withstand social pressure from their friends and/or families to drink alcohol or use drugs. However, time in treatment did not seem to help them deal with negative affect.

Social support was related to relationship with officer. Those who rated their social support high, also stated that they could count on their probation officer.

The two subscales from the self-efficacy scale, measuring self-efficacy in withstanding social pressure and negative affect, were correlated, $r(141) = .70$, $p < .001$. This high correlation suggests that they might logically be combined for one scale. However, since different predictions were made based on each of them, they will be used separately in the study.
Table 9
Correlations Among Predictor Variables

<table>
<thead>
<tr>
<th></th>
<th>Employment</th>
<th>Education</th>
<th>Months treated</th>
<th>Social Support</th>
<th>Rel.w/officer</th>
<th>Social Pressure</th>
<th>Neg. Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.13</td>
<td>.25</td>
<td>.10</td>
<td>-.01</td>
<td>.24</td>
<td>.03</td>
<td>-.02</td>
</tr>
<tr>
<td>(130)</td>
<td>(143)</td>
<td>(144)</td>
<td>(133)</td>
<td>(136)</td>
<td>(142)</td>
<td>(143)</td>
<td></td>
</tr>
<tr>
<td>p=.15</td>
<td>p&lt;.01</td>
<td>p=.24</td>
<td>p=.98</td>
<td>p&lt;.01</td>
<td>p=.73</td>
<td>p=.79</td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td>-.19</td>
<td>.15</td>
<td>.01</td>
<td>-.07</td>
<td>.18</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>(129)</td>
<td>(130)</td>
<td>(121)</td>
<td>(123)</td>
<td>(129)</td>
<td>(129)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p=.03</td>
<td>p=.09</td>
<td>p=.90</td>
<td>p=.45</td>
<td>p=.04</td>
<td>p=.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>.07</td>
<td>.03</td>
<td>.09</td>
<td>.07</td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(143)</td>
<td>(132)</td>
<td>(135)</td>
<td>(141)</td>
<td>(142)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p=.41</td>
<td>p=.73</td>
<td>p=.31</td>
<td>p=.40</td>
<td>p=.41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Months treated</td>
<td>.18</td>
<td>.17</td>
<td>.18</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>square root</td>
<td>(133)</td>
<td>(136)</td>
<td>(142)</td>
<td>(143)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p=.04</td>
<td>p=.05</td>
<td>p=.03</td>
<td>p=.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>.17</td>
<td>-.03</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(126)</td>
<td>(131)</td>
<td>(132)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p=.06</td>
<td>p=.73</td>
<td>p=.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship w/</td>
<td>.02</td>
<td>-.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>officer</td>
<td>(134)</td>
<td>(135)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p=.82</td>
<td>p=.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Pressure</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(141)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p&lt;.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Note: Degrees of freedom are given in parentheses)
Abstinence measure

The abstinence measure was the proportion of negative drug tests over all drug tests taken during the probationers' stay in the IPS and IDAP programs. The mean proportion was .59; the standard deviation was .37. The median proportion was .70, indicating that the distribution was somewhat negatively skewed. A histogram was drawn, as shown in Figure 4 to determine if the variable needed to be used in a square root form to correct for the skewness. The figure indicates that the variable is normally distributed, except for more measures of 0 (no drug tests showing abstinence) and 1 (all drug tests showing abstinence) than any other proportions of drug tests. Taking a square root of the variable will not correct for this, so the variable was used in its original form.

Figure 4
Histogram of the Distribution of Abstinence Measure
Power

This study had limited power to test its hypotheses. Only 118 cases could be used in hypotheses testing. According to Lipsey (1990), power of .70 with this number of cases allows detection of effect sizes no greater than around .27. If the effect size was only .10, this study only had a power of around .20 to detect it. In addition, the more reliable measurements are, the greater the power of the study. Unfortunately, the scale of social support was quite unreliable in this study, detracting further from the possible power.

Tests of Hypotheses

Age. Age was marginally related to abstinence, $r(118)=.12$, $p=.10$. Probationers less than 25 years old had been hypothesized to be less likely to remain abstinent than older probationers. A one-way ANOVA did not show a difference between these groups, $F(1,116)=.50$, ns. However, the limited power of the study justified some probing for non-linear effects. Although there was no correlation between ages within the younger age group (18-24) and abstinence ($r(32)=-.02$, ns.), there was a correlation between the older group (25 and older) and abstinence ($r(82)=.28$, $p<.01$). Since this seems to be a non-linear relationship, age was recoded into 4 categories. The level of abstinence for each of the groups is shown in Figure 5.
The age categories were then compared with regard to abstinence by a one-way ANOVA. This analysis showed a significant difference between the groups, $F(3,114)=3.89$, $p<.05$. The results are shown in Table 10.

<table>
<thead>
<tr>
<th>Group</th>
<th>Count</th>
<th>Mean</th>
<th>CI (95%)</th>
<th>St. dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24 years</td>
<td>34</td>
<td>.63</td>
<td>.50-.77</td>
<td>.39</td>
</tr>
<tr>
<td>25-34 years</td>
<td>44</td>
<td>.46</td>
<td>.35-.57</td>
<td>.37</td>
</tr>
<tr>
<td>35-44 years</td>
<td>30</td>
<td>.74</td>
<td>.63-.84</td>
<td>.28</td>
</tr>
<tr>
<td>45 and more</td>
<td>10</td>
<td>.62</td>
<td>.53-.66</td>
<td>.38</td>
</tr>
</tbody>
</table>
A Scheffé test revealed that there was a statistically significant difference between the abstinence level of two age groups, those of 25-34 years old and 35-44 years old. The age group of 25-34 years old fares the worst here with regard to abstinence, whereas those in the age group of 35-44 years old have the highest proportion of negative tests over all tests taken in the programs, indicating the best results in abstinence from all the groups. The youngest group (18-24) and the oldest group (45 years and up) had attained similar levels of abstinence. It therefore seems that although there is a difference in abstinence between age groups, this difference is not linear. According to Cohen and Cohen (1983), when the relationship between two variables is not linear, a better fit can be found by powering the independent variable either up or down (squaring or taking square roots), depending on the pattern in the distribution. Figure 6 shows scatterplots of age through the distribution of proportion of negative drug tests over all drug tests, before changing the age variable. A Lowess line shows the best fitting line through the distribution as it is. In order to get a better fit, the variable was used in it's square root form.
Employment level. The number of hours that the probationers work did not make a difference in their abstinence, as shown by a one-way ANOVA, comparing full time working, part time working, and nonemployed probationers ($F(2,103)=1.46, \text{ ns}$). Calculations for means, standard deviations, and confidence intervals are shown in Table 11. As can be seen, those probationers who work full time are most likely to abstain more. This study may not have had the necessary power to detect a possible relationship between employment level and abstinence.

Educational level. Educational level did not affect the likelihood of remaining abstinent. A one-way ANOVA was conducted, comparing probationers with less education than high school, high school or GED, and some college. No difference was found in their level of abstinence.
(F(2,113) = .94, ns). Table 12 shows a comparison of means, confidence intervals, and standard deviations between the groups. Those who had a high school degree or a GED did best, whereas those with less than a high school degree did worst. Again, power may not have allowed the detection of a possible effect of education on abstinence.

Table 11
Means and Standard Deviations of Abstinence Measure, Based on Employment Level

<table>
<thead>
<tr>
<th>Groups</th>
<th>Count</th>
<th>Mean</th>
<th>CI (95%)</th>
<th>St. dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonemployed</td>
<td>48</td>
<td>.57</td>
<td>.46-.68</td>
<td>.38</td>
</tr>
<tr>
<td>Works Part Time</td>
<td>15</td>
<td>.50</td>
<td>.32-.68</td>
<td>.32</td>
</tr>
<tr>
<td>Works Full Time</td>
<td>43</td>
<td>.66</td>
<td>.55-.77</td>
<td>.35</td>
</tr>
<tr>
<td>Total</td>
<td>106</td>
<td>.60</td>
<td>.53-.67</td>
<td>.36</td>
</tr>
</tbody>
</table>

Table 12
Means and Standard Deviations of Abstinence Measure for Probationers, Based on Educational Level

<table>
<thead>
<tr>
<th>Groups</th>
<th>Count</th>
<th>Mean</th>
<th>CI (95%)</th>
<th>St. dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than HS</td>
<td>44</td>
<td>.55</td>
<td>.44-.66</td>
<td>.36</td>
</tr>
<tr>
<td>HS or GED</td>
<td>40</td>
<td>.65</td>
<td>.54-.77</td>
<td>.36</td>
</tr>
<tr>
<td>Some College</td>
<td>33</td>
<td>.57</td>
<td>.43-.71</td>
<td>.39</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>.59</td>
<td>.52-.66</td>
<td>.37</td>
</tr>
</tbody>
</table>
Time in treatment. Time in treatment was not found to be predictive of abstinence. It was hypothesized that 3 months in treatment was the lower limit for success in treatment; consequently, the groups with less than 3 months in treatment vs. those who have had 3 months or more were compared with a one-way ANOVA. No significant difference was found ($F(1,115)=.64$, ns). Means, confidence intervals, and standard deviations for the groups are shown in Table 13. The direction of the data is in accordance with the hypothesis, but it is not known if the non-significance of the analysis indicates no relationship or lack of power.

Table 13
Means and Standard Deviations for Abstinence Measure for Probationers, Based on Time in Treatment

<table>
<thead>
<tr>
<th>Time treated</th>
<th>Count</th>
<th>Mean</th>
<th>CI (95%)</th>
<th>St.dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3 months</td>
<td>62</td>
<td>.57</td>
<td>.47-.67</td>
<td>.40</td>
</tr>
<tr>
<td>3 months or more</td>
<td>56</td>
<td>.62</td>
<td>.53-.71</td>
<td>.33</td>
</tr>
<tr>
<td>Total</td>
<td>118</td>
<td>.60</td>
<td>.53-.66</td>
<td>.37</td>
</tr>
</tbody>
</table>

Social support. Social support was positively related to abstinence. Those who rated their social support from friends and other people as high were more likely to remain abstinent than those who did not ($r(109)=.17$, $p<.05$).
Therapeutic involvement with officer. Therapeutic involvement with the probation officer was unrelated to abstinence ($r(111) = -0.03, \text{ ns}$).

Self-efficacy for negative affect. Self-efficacy for negative affect was significantly related to abstinence ($r(117) = 0.34, p < 0.0001$). Those who believed they could remain abstinent even when they experienced negative affect were also more likely to remain abstinent.

Self-efficacy for social pressure. Self-efficacy for social pressure was also significantly related to abstinence ($r(116) = 0.39, p < 0.0001$). Those who believed they could withstand social pressure to drink or use drugs were more likely to be able to do that.

Predictors of sobriety

A multiple regression was performed to find the best predictors of sobriety within the sample. The initial statistical plan called for three steps in this analysis, the first one for demographic variables, the second step for variables affecting probationers during their probation time, and the third step for personal variables tested in the study. The first step included age, employment, and education. The second step included months in treatment, relationship with officer, and social support. The third step included the self-efficacy scales. However, since only one variable from each of the first two steps was relevant, only one step was conducted, and only the relevant variables
were used. They were age(squared root), social support, and self-efficacy with regard to negative affect and social pressure to drink alcohol or use drugs. The analysis explained 26% of the variance ($R^2 = .26$), and the outcome was significant ($F(4,101) = 8.96, p < .0001$), as could be expected since the relationship for the independent variables with the dependent variable had already been established.

Table 14 shows that self-efficacy under social pressure, and social support were significant predictors of abstinence in this context, and self-efficacy for negative affect also approached significance.

Table 14
Beta Coefficients for Multiple Regression Analysis Where Abstinence is the Outcome Measure

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>b</th>
<th>T</th>
<th>CI (95%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Support</td>
<td>.367</td>
<td>.17</td>
<td>1.93</td>
<td>-.01 - .74</td>
<td>.056</td>
</tr>
<tr>
<td>Age Square Root</td>
<td>.054</td>
<td>.11</td>
<td>1.29</td>
<td>-.03 - .14</td>
<td>.200</td>
</tr>
<tr>
<td>Social Pressure</td>
<td>.014</td>
<td>.33</td>
<td>3.04</td>
<td>.00 - .02</td>
<td>.003</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>.008</td>
<td>.17</td>
<td>1.54</td>
<td>.00 - .02</td>
<td>.125</td>
</tr>
</tbody>
</table>

Since this study used some single-item variables which could have been quite unreliable, an index was constructed out of those to see if such an index would be a possible predictor of sobriety for the probationers. These items were age
(square root), employment, education, months in treatment, relationship with officer, and social support. Z-scores were derived from those items in order to make them comparable, and they were computed together to make an index. Reliability for this index was .14. Item analysis showed that employment detracted from overall reliability, so it was taken out of the index. After that, reliability was .29. A multiple regression was then conducted to see how well this index might predict abstinence. Table 15 shows the intercorrelation matrix among the variables used in the regression. As can be seen, the index has a significant correlation with abstinence, as well as with the other variables used in the study.

Table 15
Intercorrelation Among Variables in Regression

<table>
<thead>
<tr>
<th></th>
<th>Social Pressure</th>
<th>Negative Affect</th>
<th>Index</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinence</td>
<td>.39</td>
<td>.34</td>
<td>.23</td>
<td>.11</td>
</tr>
<tr>
<td></td>
<td>p&lt;.01</td>
<td>p&lt;.01</td>
<td>p=.03</td>
<td>p=.27</td>
</tr>
<tr>
<td>Social Pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.70</td>
<td>.26</td>
<td>.18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p&lt;.01</td>
<td>p&lt;.01</td>
<td>p=.04</td>
<td></td>
</tr>
<tr>
<td>Negative Affect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.23</td>
<td></td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p=.01</td>
<td></td>
<td>p=.01</td>
<td></td>
</tr>
<tr>
<td>Index</td>
<td></td>
<td></td>
<td></td>
<td>.31</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>p&lt;.01</td>
</tr>
</tbody>
</table>

A multiple regression was then performed to see if the new index would add to the prediction of abstinence in general. The results are shown in Table 16. The analysis
explained 24% of the variance ($R^2 = .24$) and was statistically significant ($F(4, 86) = 6.92, p < .001$). This time, only negative affect was a significant predictor of abstinence. However, the index did not add significantly to that prediction.

It therefore seems that unreliability of single-item variables is not the reason why they do not add to the prediction of abstinence in the sample. Even though the index had a moderate correlation with abstinence, the prediction from it is weaker than the prediction from the scales of Negative Affect and Social Pressure, as can be seen in the multiple regression.
CHAPTER 4
DISCUSSION

The most important finding from this study is the substantial effect of self-efficacy on abstinence. Although the data showed the same direction as most of the other hypotheses had forecast, these effects could have been too small to be detected with the limited power of the study. The description of the sample will be discussed first. Second, the hypotheses will be discussed. Third, practical implications and general discussions will follow.

The Sample

When Cook County participants were compared with participants from other counties, it turned out that the Cook County participants were worse off on all the variables where differences were found. Two explanations are possible for these differences: (1) that conditions were less conducive to a productive life in Cook County than in other counties in the state, or (2) that those probationers who were worse off to begin with migrated to Cook County where conditions were more favorable for their lifestyle. Whichever explanation is true, or even if both are, Cook County residents were less likely to be employed than the others, they were less educated, and had a worse relationship with their probation officer.
When IPS participants were compared to IDAP participants, the IPS participants were found to be more likely to be employed than IDAP participants. Among the requirements of the IDAP program is for the probationers to go to treatment as soon as possible. It may be more difficult to get a job and keep it under those circumstances. Also, the IDAP participants were diagnosed as drug abusers and sentenced to an intensive probation program as such, so their condition could be worse than the general condition of IPS probationers. Another indication that the IDAP probationers were worse off than the IPS probationers was the difference between their rated self-efficacy for abstinence when dealing with negative affect. Ratings from the IDAP probationers were lower than the ratings from the IPS probationers, indicating that the IDAP probationers felt more helpless about their abstinence when dealing with negative affect, which everyone will have to do now and then. This difference in self-efficacy between the groups was not found with regard to social pressure to drink or use drugs. As the scales for self-efficacy correlated highly, it would have been justifiable to combine them and use them as one scale covering the construct self-efficacy in general. However, the difference between IDAP and IPS in self-efficacy for dealing with negative affect justifies using both scales separately.
Age

Age seemed to have effects on abstinence, although not quite the hypothesized ones. The earlier finding that drug abusers younger than 25 years old had a more difficult time achieving abstinence did not hold here. However, the next age group, aged 25-34 years old, seemed to have the hardest time of all age groups in achieving sobriety. It seemed that in this sample, people "matured" out of drug abuse a few years later than earlier studies indicated, or not until after 35 years of age. The age group of 35-44 years old was the most successful with regard to sobriety, showing some signs of this phenomenon of "maturing" out of the abuse. The oldest age group, 45 years and older, was similar to the youngest age group of 18-24 years. Although age was not hypothesized to have any more effects than those earlier found on abstinence, it also correlated with education and relationship with the probation officer. It is not surprising that the older the probationers were, the more education they had, since, after all, it takes time to achieve education. A more surprising finding was that the older the probationers were, the more positive their relationship was with their probation officer. The probation officers probably were of a more similar age to the older age group among the probationers. Similarity is known to enhance attitude change. Since it ideally is the probation officers' job to bring about an attitude change in
the probationers, perhaps it was easier for the officers to establish a positive relationship with probationers who were more similar to them with regard to age. Another possible explanation is that the older probationers were more used to having to succumb to discipline, and did therefore not resent it as much as the younger probationers might have. A third possible explanation is that the probationers "mature out" of resistance to probation officers, as it may require some maturity to establish an effective relationship with the probation officer.

Employment

Even if the direction of the data was for full time workers to be more likely to be successfully abstinent, as hypothesized, this difference between them and the other groups of part-time working and nonemployed people was either not large enough to reach significance, or it came about by chance. Therefore, employment can not be said to make a difference in this respect.

Correlations between employment and other variables in the study showed a relationship between age and employment, as discussed above. Furthermore, the data indicated that the less education the probationers had, the more hours they worked each week, perhaps not surprisingly, as presumably they would get paid more for each hour with more education. Therefore, in order to make the same amount of money, they may have had to work longer hours if they had less
education. Another correlation from the study showed that time in treatment was marginally related to employment. It seems that those employed had spent somewhat longer time in treatment than those nonemployed. This effect was not strong, and did not quite reach significance. However, both employment and time in treatment had been hypothesized to help the probationers in staying abstinent. Neither of them reached significance, but perhaps this relationship between the variables indicates that both are working in the same direction. Employment also was related to self-efficacy, both in the context of social pressure to drink or use drugs and negative affect. It seemed that those employed also were more self-efficacious in general. Since it was found that those probationers who were self-efficacious with regard to abstinence also were more likely to be abstinent, this relationship between employment and self-efficacy is not surprising. It is easier to keep a job for those who are abstinent from alcohol and drugs.

Education

Those probationers who had a high school diploma or a GED had the highest proportion of drug-free tests. However, this relationship was not strong enough to reach significance, so it is not possible to know if it came about by chance or if the study did not have the power to detect the effect. Since those with some college education had a somewhat lower proportion of drug-free tests, the
relationship is not linear, if there is one. The hypothesis that more education would be helpful in staying abstinent was therefore not supported by this data. Relationships of education to age and employment have been discussed above.

Time in Treatment

The length of time that the probationers had spent in treatment was not predictive of abstinence. The direction of the data was opposite to what had been hypothesized. Former findings had indicated that longer time in treatment would predict higher levels of abstinence. If the direction of the data indicates a trend that the study did not have the power to detect, it seems to be that longer time in treatment only indicates less abstinence, instead of more likelihood of success in staying abstinent. However, the difference between the groups was not statistically significant, so it may have come about by chance.

The relationship between time in treatment and employment has been discussed already. There was a relationship between time in treatment and social support as well. Perhaps those who have spent a long time in treatment have had some abstinent time in which they have been able to make friends. It is also quite likely that those who have some social support are more likely to stay in treatment than those who do not have such support. A marginal relationship with time in treatment was found between involvement with the probation officer and time in
treatment. It seemed that the longer time the probationers had spent in treatment, the better their relationship with the probation officer was likely to be. Since the probationers who were on the IDAP program were supposed to have themselves treated, the probation officers may have had an easier time with those who stay in treatment for a substantial amount of time, and so be more cooperative with those probationers. The probationers may also have had a more positive attitude toward authority figures if they had managed to stay in treatment for a sufficient length of time to achieve some time of abstinence.

An interesting finding was for quite a substantial difference in the relationship between time in treatment and self-efficacy, depending on whether it was self-efficacy for dealing with social pressure to drink or use drugs, or self-efficacy for dealing with negative affect. The longer time the probationers had spent in treatment, the more self-efficacious they were with regard to social pressure to drink or use drugs, but time in treatment did not seem to help them deal with negative affect. This is partial support for the notion that the probationers would find negative affect harder to deal with than social pressure. Therefore the probationers had been hypothesized to be more likely to be abstinent if they were more self-efficacious with regard to negative affect than social pressure. Even if that did
not hold, it seems that time in treatment helps them address the social pressure, but not negative affect.

**Social Support**

The hypothesis that social support would help the probationers in staying abstinent was supported. This is in accordance with former findings. However, the limited reliability of the scale for social support in this study makes it necessary to interpret any findings using it with caution. Another marginal relationship was found between social support and therapeutic involvement with the probation officer. Those who rated their social support high also were more likely to have a working alliance with their probation officer. This could be a characteristic of some of the probationers; those who could make friends who gave them some social support also could establish a working alliance with their probation officer. It could also mean that those who had some social support did not need as much help from their probation officers as the others with less such support. Interestingly, Bruch, Rivet, Heimberg and Levin (1997) found that shy people consume less alcohol and experience less negative consequences from alcohol consumption than other people. It is possible that those that are less shy establish more easily socially supporting contacts with other people, which could help them remain abstinent, even if they have had negative consequences from their drug consumption. The only relationship between social
support and other variables was with time in treatment, which has been discussed already.

**Therapeutic Involvement with Probation Officer**

No connection was found between relationship with officer and abstinence. It seems that although it must be more pleasant to be on friendly terms with the officer that the probationers were supposed to see weekly, it did not help them stay abstinent. The only relationship found between this variable and other variables in the study was with social support, time in treatment, and age, all of which have been discussed above.

**Self-Efficacy for Negative Affect**

The hypothesis that self-efficacy for abstinence even when experiencing negative affect would be related to abstinence was decisively supported. It seems that this attitude makes quite a difference in results. As negative affect accounts for a substantial proportion of relapses for those striving to achieve abstinence, this is an important finding. Any tool which can aid in this task of achieving abstinence, which has proven so difficult for so many, is valuable. The results are compatible with the notion that self-efficacy helps for staying abstinent when dealing with negative affect. However, the relationship is correlational, and since the data do not rule out the interpretation that those who have been more successful in achieving abstinence simply say so in the interview, the
results have to be interpreted with caution. The effect earlier discussed, that time in treatment did not affect self-efficacy for remaining abstinent when experiencing negative affect can be understood in one of at least two ways: a) that self-efficacy for negative affect is not addressed sufficiently in treatments, and b) that this aspect can not be addressed in treatments, but is more a characteristic of the individual. Another finding from the table of intercorrelations was that employment status was related to self-efficacy for abstinence when dealing with negative affect, as was discussed above. And, as also has been discussed, the scales for self-efficacy were quite highly intercorrelated.

Self-Efficacy for Social Pressure

The strongest relationship with abstinence in the study was for self-efficacy under social pressure to drink or use drugs. The same caution applies here as earlier discussed, that this is a correlational relationship, and a causal connection cannot be assumed without further evidence. This is contrary to the hypothesis that probationers would be served better by prudence in socializing with their former drinking friends and family members. The data shows unambiguously that what is most important is their own belief that they can be abstinent even when they are under such pressure. This could seem to contradict the AA-model.
The AA-model, Marlatt’s Model, and the Findings

The first step in the AA-model tells abusers that they are powerless over alcohol and that they do not have control over their own lives. This is believed to be the prerequisite to success in the AA program, that the abuser surrenders, quits trying to self-help and self-medicate when feeling bad, and asks for help. The second step in the AA-model, on the other hand, is: “We came to believe that a power greater than ourselves could restore us to sanity.” The data from the present study tell us that the abusers’ beliefs about whether they could be restored to abstinence, which is in AA terms analogous to sanity, were very important, this was the most important of all the variables in the study.

This study tested and contrasted the first two steps in the AA-model to some degree, along with Marlatt’s model of relapses. The first step from the AA-program was not confirmed. However, there are more aspects to the first step than could be tested by these data. We do not, for example, know if the successful probationers were already beyond the first step when interviewed, and the second step was now the most important one for them. Second, we do not know if surrendering, as the first step advocates, is necessarily operationalized in not associating with former drinking partners. This may not be possible in many cases, where the drinking partners are also family members or
neighbors. In such cases, a firm belief that one can withstand the social pressure to drink with them can be the best asset. Surrendering, or seeking help, could possibly be a different construct. Therefore, even if the data did seem to counter the first step of the AA-model, this author hesitates to renounce it as an important step to recovery for abusers. The second step, however, was confirmed to some degree. Even if the second step ascribes the necessary belief to a power greater than oneself, it is a belief that one can be restored to sanity, which is, as mentioned above, analogous to abstinence in AA terms. Many abusers do not have this belief that they can abstain, and the second step becomes a difficult barrier. And a power greater than oneself is a construct that is open to a very wide range of interpretations. Many abusers, who find it difficult to believe in any deity, are able to focus their second step on the AA-group, or the AA-fellowship in general. They are advised against focusing it on any particular persons, but the group is fine. The data from the present study can not distinguish between any forms of belief systems, but a belief that one can remain abstinent, or be restored to sanity, was the most important of the tested variables in the study.

On the other hand, Marlatt's model of relapses was confirmed to a substantial degree by the data. According to Marlatt, Bandura's construct of self-efficacy is a very
important predictor of success in remaining abstinent. The data from this study showed that it is in fact the most important predictor among those tested. No other assertions from Marlatt's model were tested in the study.

Practical Implications

This study indicates that any approach which would increase abusers' belief that they can remain abstinent would work in their favor. Since self-efficacy for remaining abstinent in the face of social pressure to use drugs increased with increased time in treatment, this could possibly indicate that the probationers were taught something in these treatments which helped them to some extent. However, self-efficacy in dealing with negative affect did not increase with increased time in treatment. If this form of self-efficacy could be addressed more in treatments, this study indicates that it would work in the abusers' favor.

An important finding from this study was that among the tested variables, few other than self-efficacy successfully predict abstinence. The limited scale of social support seemed to predict some variance, and there seemed to be a specific high-risk age group (age 25-34), and another low-risk age group (age 35-44).

Employment had some relationship with self-efficacy, but it did not seem to affect abstinence. However, self-efficacy was related to abstinence. This could indicate
that it was the abstinence or the self-efficacy that affected employment, not the other way around. Therefore, one cannot assume that placing people into jobs will make them remain abstinent. They are, on the other hand, more likely to feel self-efficacious if they can keep those jobs. And abstinence is likely to help them do that.

Education and relationship with the probation officer was not associated with abstinence, and if length of time in treatment was associated, it was not accessible due to the limited power of this study. There could be confounding factors in that correlation, however, since those having the most problems might also be likely to stay longer in treatment.

The sample in this study had quite distinctive characteristics, being offenders on probation in the state of Illinois, diagnosed as having drug problems. Therefore, the results from the study may not be generalizable to other populations without qualifications.

Recommendations for Further Studies

The most important recommendation would be to have as much power as possible to isolate the small effects. Second, it is not wise to use only two questions for a scale, as had to be done here to measure social support. Third, since there is a practical need to get as much knowledge as possible about which variables make a difference in treatments for drug abusers, more studies with
measurable outcomes of abstinence are needed, linking those outcomes with variables in the treatment settings or in the abusers' background.
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VITA

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The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Aug 28, 1997
Date

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Director's Signature