

# **The Georgia Cognitive Skills Experiment Outcome Evaluation Phase One**

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March 2001

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This study was funded by a subgrant from the Edward E. Byrne Law Enforcement Block Grant Program to the Georgia Board of Pardons and Paroles. The report reflects conclusions drawn by the authors and not the Georgia Board of Pardons and Paroles.

## ACKNOWLEDGEMENTS

I am pleased to submit this final report for Phase I of the Georgia Cognitive Skills Program Evaluation. In doing so, I also want to take the opportunity to acknowledge the skill and hard work of those who contributed to this research. My staff joins me in thanking the staff and administrators of the Georgia Board of Pardons and Paroles for the constructive and enjoyable partnership that we share. Several GBPP staff were key to these efforts. A major portion of the on-site work was performed by Renita Seabrook, who coordinated the data collection efforts throughout Georgia. Renita tracked cases through various stages of program completion and follow-up; she answered countless questions; patiently resolved occasional data inconsistencies; and fixed the problems that are endemic to applied research. In addition John Prevost, Assistant Division Director of Computer Services and Research, facilitated our access to automated data. George Braught, Program Evaluation and Research Coordinator, smoothed out procedures for collecting follow-up data. Renita, George, and John were active participants to the design of this research. Finally no project of this nature can be executed without effective leadership and support from agency administrators. We are especially grateful to Beth Oxford, Director of Community-Based Services, and to Shelandra Robertson, Program Manager of Community-Based Services, for their clear support of our efforts and their assistance in encouraging the cooperation of GBPP line staff.

I also wish to extend my deep appreciation and admiration to the research team at the University of Cincinnati. Most notably, the Project Coordinator, Lisa Spruance, managed data preparation, data analysis, and a major portion of the final report. The project benefited tremendously from her strong attention to detail as well as her technical expertise. Shelley Johnson served as a Research Analyst for this project and also devoted many hours to data preparation and analysis. I also wish to thank Jennifer Pealer for her assistance in data entry and preparation. P. Neal Ritchey, from the University of Cincinnati's Department of Sociology served as a statistical consultant. As usual, his expertise was invaluable.

Finally, the very core of the study consists of those individuals who participated in the programs and the comparison groups. We thank the parolees for their cooperation. And we

extend special recognition to the cognitive coaches who facilitated groups and the field officers who assisted data collection in their districts. We also hope that these field staff are pleased with the results of this research; thanks to their efforts, long-term outcomes for those who completed Cognitive Skills Programs were far more favorable than for those who never attended or those who were not assigned to the groups. I am sure that their communities join us in thanking them for their efforts.

Pat Van Voorhis

Principal Investigator

# **The Georgia Cognitive Skills Experiment**

## **Outcome Study**

### **Phase I**

#### **EXECUTIVE SUMMARY**

Increasingly popular cognitive-behavioral interventions are widely regarded to be a major advance in correctional programming. In recent years, these initiatives have been promoted through a host of nationwide training workshops sponsored by both government agencies and professional organizations. Cognitive skills and cognitive restructuring programs are also supported rather impressively by several recent meta-analyses of correctional effectiveness (see Andrews, Zinger, Hoge, Bonta, Gendreau, & Cullen, 1990; Lipsey, 1992; Losel, 1995).

The Georgia Board of Pardons and Paroles (GBPP) moved to implement cognitive programming in May of 1997 when the agency adopted Ross and Fabiano's (1985) Reasoning and Rehabilitation Program (R&R). Referred to as the Georgia Cognitive Skills Program, this intervention endeavors to modify offenders' impulsive, egocentric, illogical and rigid thinking patterns. In doing so, the program shares assumptions common to the larger field of cognitive-behavioral psychology: that dysfunctional thought (cognitive) processes can lead to maladaptive behavior. Specific objectives of the Georgia Cognitive Skills Program include improving offenders' interpersonal problem-solving, consequential thinking, means-end reasoning, social perspective-taking, critical and abstract reasoning, and creative thinking (Ross, Fabiano, and Ross 1989). To date, approximately 50 Georgia parole officers have been trained as coaches by Elizabeth Fabiano and Frank Porporino. In June, 1998, many of these officers were retrained and others were trained for the first time.

An ambitious research and evaluation project parallels the State's investment in cognitive-behavioral programming. In 1997, the GBPP embarked on an experimental study of the impact of the Georgia Cognitive Skills Program on offender attitudes, employment, technical violations, returns to prison, re-arrests, and revocations. This research expanded to a second phase in 1998 with the receipt of research monies from the National Institute of Justice. In Phase I, 468 participants were randomly assigned to treatment and comparison groups. The Phase I experimental participants completed the Cognitive Skills Program by July 1998. Participants and members of the comparison groups were followed through the four-month program and for 12 months thereafter, as called for in the evaluation design. Phase II, currently underway, seeks to identify program and offender characteristics that differentiate effective programs from ineffective programs. Research findings from Phase II will endeavor to help practitioners and administrators "fine tune" programs with knowledge of the conditions under which cognitive programs work best.<sup>1</sup> Together these studies promise to make substantial contributions toward the State's efforts to advance high quality programs to offenders.

This executive summary highlights results of an outcome study of the program's effects on offender attitudes, recidivism, technical violations, and employment.

## Research Methods

The evaluation of the Georgia Cognitive Skills Program employed an experimental design whereby 468 male, parolees were randomly assigned to either an experimental (N = 232) or comparison group (N = 236). During the time from May 1997 to July 1998, 16 parole districts across Georgia participated in the study. Program selection criteria screened out parolees with IQ scores lower than 80 as well as those with histories of sexual offending or debilitating substance abuse. Data were collected by staff of the GBPP and sent to the University of Cincinnati for preparation and analysis. Findings address the effects of cognitive skills programming on parolees': 1) cognitive skills and offender thinking patterns as measured by the Colorado Offender Attitude Survey (Johnson & Hunter, 1992); 2) returns to prison; 3) re-arrests and revocations; 4) technical violations; and 5) employment.

**Sample characteristics:** Research participants ranged in age from 18 to 62 (mean=30.3). The majority of participants were African American (71%) and nearly half of the study pool (46%) were employed full time prior to their incarceration. Counselors identified 53% of the sample as living at the minimum standard of living or below. Most of the parolees were single (never married) (60%). Notwithstanding the screening criteria to limit participation to those parolees with IQ scores of 80 or above (Culture Fair Test, 1960), 6% of the participants scored below 80; the average IQ for the sample was 102.1. Sixty-four percent of the sample had not completed high school by the time of their admission to prison.

A history of substance abuse characterized 50% of the sample and prior records were extensive. All participants had at least one felony on record, and for 51% of the sample, these were violent offenses. Upon their admission to prison for the present offense, 46% of the participants had already served at least one prior prison term. Sixty-eight percent of the offenders were classified as low risk on a scale created by the research staff to simulate the Salient Factor Score (Hoffman, 1994).

Due to the successful implementation of the randomization procedures, the experimental and control groups do not differ significantly in terms of age, race, education, employment status at prison intake, IQ, history of substance abuse, marital status, risk assessment scores, number of prior incarcerations, prior felony convictions, or prior violent offenses

**Statistical analyses:** Our analyses proceed through three steps. The first step compares results for the experimental group to those for the comparison group. Second, the findings for medium/high risk experimental participants are compared to those for medium/high risk comparison participants. The same is done for low risk experimental and comparison participants.

The third stage of this analysis examines the effects of group completion on parolee outcomes. While some would fault the decision to examine results for three groups (dropouts,

completers, and comparisons) as violating the mandates of the experimental design, we nevertheless assert a need to examine the program's effectiveness when delivered in full dosage or to its full potential. Such findings have extremely important policy implications. Recognizing the possibility of group differences which are not present when analyzing data according to the experimental design, the effects of key social and criminal history factors are removed statistically (controlled for), making outcome findings attributable to the group itself. It should be noted, however, that there were few differences between the three groups. The program dropouts were significantly more likely to be middle class and over the age of 38. Moreover, many of the dropouts left the programs for reasons other than re-arrest, including illness, childcare, employment conflicts with the meeting times, and other reasons totally unrelated to failing the terms of supervision.

Statistical strategies were dictated by the outcome measures. We utilized: a) random effects modeling for pre/post test analyses; b) event history (survival) analysis for recidivism analyses, and c) logistic regression for assessments of the program's effects on technical violations and employment.

## **RESULTS**

### **Program Participation Characteristics**

Sixty percent of the experimental group participants completed the Cognitive Skills Program. Across parole districts, however, completion rates varied from a low of 42% to a high completion rate of 80%. A majority of the group participants were characterized by their coaches as attentive, enjoying the class, and understanding the material well enough to offer examples. The group atmosphere was generally rated as positive and cohesive.

### **Pre/Post Tests**

A comparison of pretest and posttest scores across comparison and experimental groups showed very few instances where group participation affected an improvement in posttest scores. Analyses showed some instances where offenders who completed the program achieved similar scores on their posttests while scores worsened for those who dropped out or were members of the comparison group. Most tests, however, produced insignificant results. Even so, test results were generally better for those who were rated as active participants by their coaches.

### **Recidivism**

An overview of the re-offense data finds no statistically significant difference between experimental and comparison subjects until we examine results for those who completed the program. As shown in Figure 1, rates of returns to prison were slightly lower (approximately 4% lower) for experimentals than for comparisons by 24 months following program completion. A similar difference (4%) is seen on measures pertaining to revocations/re-arrests (see Figure 2). Differences shown in Figures 1 and 2 were not statistically significant.

Figure 1. Return to prison rates by group & time

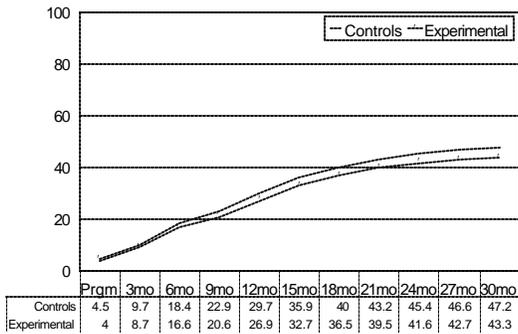
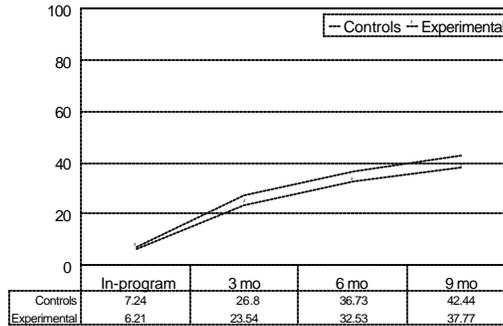


Figure 2. Rearrest/revocation rates by group & time



Experimental participants who *completed* the Cognitive Skills Program, however, performed far better than either the comparison group participants or the experimental participants who did not complete the program. Figure 5, for example, shows that rates of return to prison (by 24 months) were 17% lower for those who completed the program than for the comparisons. Re-arrest/revocation effects are consistent with the return to prison findings. As shown in Figure 8, rates were approximately 19% lower for program completers than for comparisons by nine months following the end of the program. Statistical tests of these group differences were significant for both returns to prison and re-arrests/revocation. This pattern of improvement was similar for low risk and medium/high risk offenders. Although medium/high risk offenders committed new offenses at a faster and more prevalent rate than low risk offenders, the treatment gains of medium/high risk offenders were not greater than for low risk offenders.

Figure 5. Return to prison rates by group & time

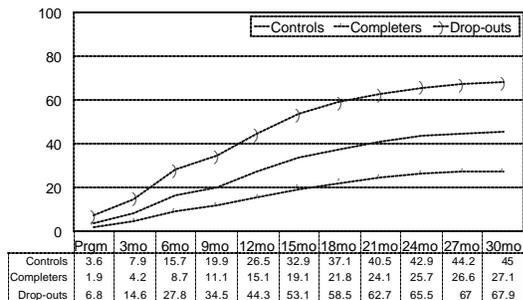
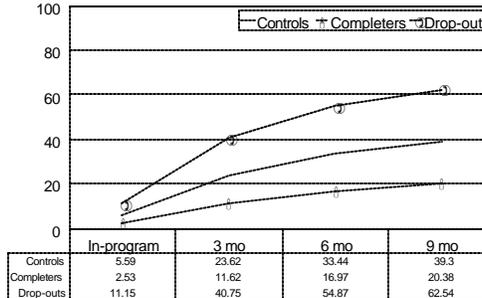


Figure 8. Rearrest/revocation rates by group & time



## Technical Violations

Technical violations are examined across three time periods, three, six, and nine month time frames. In contrast to the recidivism analyses, above, technical violations were only examined for those offenders who were on parole supervision. They are not cumulative across

time periods. Figure 11 reports slightly higher technical violation rates for comparison versus experimental subjects during the second and third time periods. Differences were not statistically significant, however.

Figure 11. Technical violations by group & time

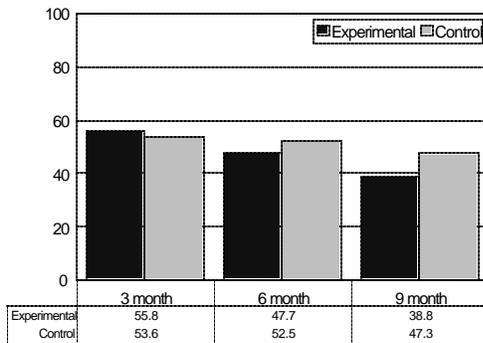
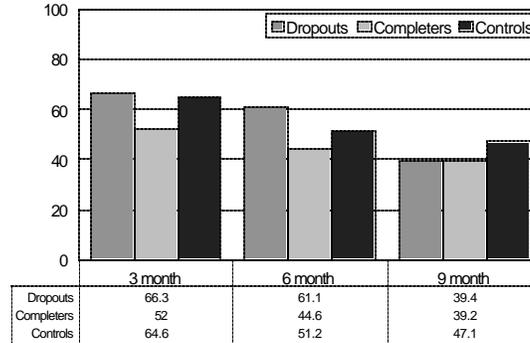


Figure 12. Technical violations by group & time



Group differences are somewhat more pronounced for those who completed the program than for the comparison and the dropout groups (Figure 12), but they are not statistically significant. Offender risk levels did not affect these findings.

## Employment

The Georgia Cognitive Skills program produced a positive impact upon post-program employment rates for those who completed the program. Figure 15 shows that employment rates for completers were significantly greater than for the dropouts in each of the three follow-up periods. They were also significantly greater than the employment rate of the comparison subjects during the first follow-up period. A comparison between experimentals and controls, not accounting for program completion (see Figure 13) showed no statistically significant differences between the groups. Again, there were no

Figure 13. Employment by group & time

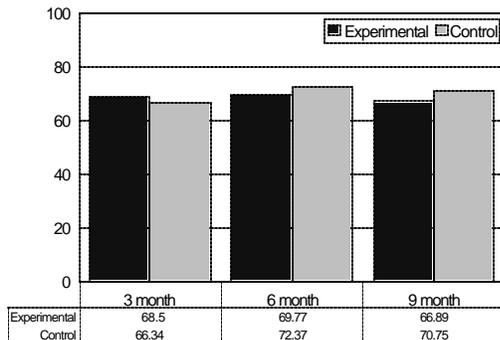
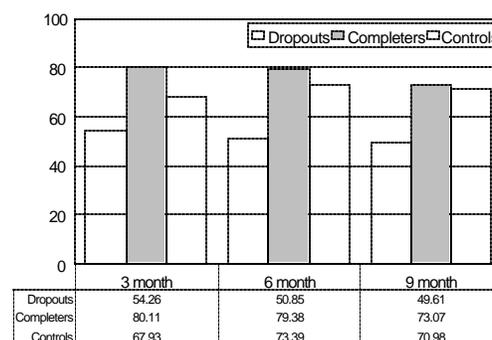


Figure 15. Employment by group & time



risk effects on employment outcomes.

## DISCUSSION AND RECOMMENDATIONS

Results for Phase I of the Georgia Cognitive Skills Program show modest but not significant differences between those randomly assigned to the program and comparison groups. Whether we discuss these differences in terms of returns to prison or rearrests/ revocations, they are typically in the range of 4%. That is recidivism rates for experimental group members are generally 4% lower than those for comparison group members. It is important to note that these findings are remarkably close to the results of the only other large-scale, cognitive interventions of R & R conducted to date (e.g., Johnson & Hunter, 1995 and Porporino & Robinson, 1995). The emerging patterns across evaluations of cognitive programs finds largest effects for smaller programs (e.g., see Wilson et al., 2000). Subsequent researchers have speculated that the difference in treatment effects from small to large programs may be attributable to the reduced ability to maintain treatment integrity in larger interventions (e.g., Van Voorhis, 1999; Wilson et al., 2000).

It is only when we look at the effects for those who complete the program that we start to see significant differences between groups. These results suggest that program completion substantially reduces offender recidivism. We approach these results with caution, because analyses of differences between three groups required a quasi-experimental design with statistical controls for group differences, rather than the controls afforded by random assignment. Even so, results appear to recommend against premature dismissal of group members from participation in the Cognitive Skills groups. Although some of these dismissals were attributable to new offenses, many were not and even those experimental parolees who left the program for non-offense reasons committed new offenses at a faster and more prevalent rate than those who graduated.

**Recommendation:** Results suggest strengthening requirements of program participation and attendance. This would discourage voluntary participation or dismissal for purposes of employment or other reasons, especially when such reasons do not need to preclude group participation. Programs in other states, for example, have increased program completion rates by requiring participation as a condition of supervision and requiring participants to schedule works hours to accommodate the conditions of supervision.

Notwithstanding the potential for any treatment or educational program to interfere with work, the Georgia Cognitive Skills program had a favorable impact on employment during the follow-up period. Especially during the three and six months follow-up periods, parolees who completed the program were considerably more likely to be employed than those who dropped out or were members of the comparison group. GBPP generally appears to be quite successful in placing its parolees in full or part-time work. The employment rates achieved by participants to the Cognitive Skills Program, however, surpasses even the favorable rates already achieved by the State.

Effects of the cognitive skills program on technical violations were not significant even when examined in the three group models. Such findings are not unusual in correctional settings. Technical violations reflect organizational norms and perhaps subtle differences in practices across districts (Van Voorhis, 1995). The resulting instability of the measure then attenuates relationships between technical violations and independent factors such as program participation.

Pre/posttest results of the Colorado Offender Attitude Survey (Johnson & Hunter, 1992) were disappointing. Psychometric properties of the scales (Chronbach's alpha) were weak, and differences across groups were minimal. We can entertain several reasons for these findings. First, the survey is new and has not been widely tested or validated. Second, with low scale reliabilities, error is larger for the comparison of posttest measures with pretest measures than it is when we analyze only the posttest results. Third, the instrument simply may not be sensitive to change, which is a requirement of pre/ posttests. Fourth, the scales may not be properly mapping onto the intervention, i.e., tapping domains that are not addressed by the program (see Van Voorhis, Cullen, & Applegate, 1995). Finally, it may prove worthwhile to examine the procedures used to administer the survey. Adequate administration requires strict adherence to time constraints -- pretests prior to group participation and posttests immediately upon the completion of the group. Poor readers sometimes have difficulty with scantron formats, and test administrators need to check for response bias and reading difficulties.

**Recommendation:** It would be worthwhile either to continue to examine the adequacy of the Colorado Offender Attitude Survey and the procedures used to administer it or to identify an alternative assessment. Such tests provide valuable feedback to coaches and districts regardless of whether or not they are part of a larger evaluation.

Finally, we do not observe a "risk effect" suggesting that the program is more suitable to medium and high risk offenders than low risk offenders. Results were beneficial for both groups. Failure to detect this expected finding may be attributable to the nature of our sample. Low risk parolees, especially when identified through a non-standardized risk measure, may not be as "low risk" as other offender populations, e.g., probationers. In addition, Georgia's screening mechanisms and risk assessment procedures may have affected the composition of the "low risk" group. For example, as officers identified their "most problematic" inmates for participation in the Cognitive Skills Program, they may have screened out the "least problematic" offenders of the low risk group. If this is the case, we do not have a proper test of the risk effect.

**Recommendation:** If current screening and risk assessment policies remain in place, officers need not be concerned about screening "low risk" parolees out of the program.

With the exception of conclusions pertinent to risk and program completion, this report has said little about the conditions under which the cognitive program works best. What types of offenders gain the most by participating in this intervention? Do some types of offenders gain very little? Is the program as effective with women as well as men? How effective are those programs that are favorably rated by participants? What are the most effective programs doing right? Answers to these questions will provide the information needed to "fine tune" and improve the administration and execution of the Cognitive Skills Program. These questions will be addressed in the next and last phase of this study.

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## INTRODUCTION

Increasingly popular cognitive-behavioral interventions for offenders represent a major advance in correctional programming. In recent years, these initiatives have been promoted through a host of nationwide training workshops sponsored by both government agencies and professional organizations.<sup>2</sup> Cognitive skills and cognitive restructuring programs are supported rather impressively by several recent meta-analyses of correctional effectiveness (see Andrews, Zinger, Hoge, Bonta, Gendreau, & Cullen, 1990; Lipsey, 1992; Losel, 1995). These studies concur that programs most effective in reducing offender recidivism are those that seek to change the way that offenders think. Such thinking, or cognition, entails a broad array of processes and skills, including: a) problem solving, b) planing for the future, c) empathy, d) flexibility, and e) anticipating the consequences of one's actions. Cognition also refers to the content of thought, attitudes, beliefs, values and the relatively stable manner in which we "cognitively" make sense of our surroundings. Given their strong theoretical foundation (e.g., Beck, Rush, Shaw, & Emory, 1979; Ellis, 1973; Miechenbaum & Jaremko, 1982; Goldstein, 1988; Ross & Fabiano, 1985; Yochelson & Samenow, 1976) and empirical support, emerging cognitive behavioral programming for offenders represents a marked improvement over atheoretical, "magic bullets" that have characterized much of the history of correctional programming (Andrews & Bonta, 1994; Palmer, 1992; Van Voorhis, 1987; Van Voorhis, Cullen, & Applegate, 1995). A recent meta-analysis of cognitive behavioral programs, for example, finds recidivism reductions ranging from 8 to 16% (Wilson, Allen & MacKenzie, 2000) over those observed for comparison group subjects.

The Georgia Board of Pardons and Paroles (GBPP) moved to implement cognitive programming in May of 1997 when the agency adopted Ross and Fabiano's (1985) Reasoning and Rehabilitation Program (R&R). The R&R model was tested initially among a pilot group of probationers in Canada and was then implemented throughout Canada. Evaluations of both efforts report favorable reductions in recidivism (see Research and Statistics Branch, Correctional Services of Canada, 1991; Porporino, Fabiano, & Robinson, 1991; Robinson, 1995). As one of the most well known cognitive interventions for offenders, R&R has been implemented in Spain, New Mexico, Texas, Colorado, and Great Britain, primarily in probation and institutional settings. The Colorado Judicial Department project is perhaps the largest community-based (probation) application of this program in the United States. The Georgia

Cognitive Skills Program, however, is the first known statewide effort to employ cognitive skills training with parolees.

To date, approximately 50 Georgia parole officers have been trained as coaches by Elizabeth Fabiano and Frank Porporino who are considered to be among the foremost authorities in cognitive skills programming for offenders.<sup>3</sup> In June, 1998, many of these officers were retrained and others were trained for the first time. Administrators of the GBPP maintain an ongoing working relationship with Fabiano and Porporino to conduct retrainings as needed.

An ambitious research and evaluation project parallels the State's investment in cognitive-behavioral programming. In 1997, the GBPP embarked on an experimental study of the impact of the Georgia Cognitive Skills Program on offender attitudes, employment, technical violations, returns to prison, re-arrests, and revocations. This research expanded to a second phase in 1998 with the receipt of research monies from the National Institute of Justice. In Phase I, 468 participants were randomly assigned to treatment and comparison groups. The Phase I experimental participants completed the Cognitive Skills Program by July 1998. Participants and comparison groups were followed through the four-month program and for 12 months thereafter, as called for in the evaluation design. Phase II, currently underway, seeks to identify program and offender characteristics that differentiate effective programs from ineffective programs. Research findings from Phase II endeavor to help practitioners and administrators "fine tune" programs with knowledge of the conditions under which cognitive programs work best.<sup>4</sup> Together these studies promise to make substantial contributions toward the State's efforts to advance high quality programs to offenders as well as to the larger field of corrections. To underscore the importance of this research: a) the Georgia Cognitive Skills Experiment is one of very few efforts to conduct an experimental evaluation of a large-scale initiative; and b) the Phase II study of what programmatic qualities work best for what types of offenders will furnish important information which is not currently available to the field (see Palmer, 1992).

This report presents outcome results for Phase I. Findings address the effects of cognitive skills programming on parolees': 1) cognitive skills and offender thinking patterns as measured by the Colorado Offender Attitude Survey (Johnson & Hunter, 1992); 2) returns to prison; 3) rearrests and revocations; 4) technical violations; and 5) employment.

## DESCRIPTION OF THE GEORGIA COGNITIVE SKILLS PROGRAM

The Georgia Cognitive Skills Program is based upon the R&R program developed by Robert Ross and Elizabeth Fabiano (1985). R&R provides training to modify offenders' impulsive, egocentric, illogical and rigid thinking patterns. In doing so, R&R shares assumptions common to the larger field of cognitive-behavioral psychology, which currently is considered the dominant therapeutic paradigm in mental health (Dobson & Khatri, 2000). Cognitive psychology assumes that dysfunctional thought (cognitive) processes can lead to maladaptive behavior. Therefore, teaching offenders to recognize and change criminogenic thinking (e.g., Yochelson & Samenow, 1976) and to develop more mature thinking skills (Ross & Fabiano, 1985) should reduce their propensity to crime. Specific objectives of the R&R program include improving offenders' interpersonal problem-solving, consequential thinking, means-end reasoning, social perspective-taking, critical and abstract reasoning, and creative thinking (Ross, Fabiano, and Ross 1989). R&R focuses more upon the processes involved in thinking as opposed to the content of thinking (or *what* offenders actually think).

The program is structured into 35 lessons that cover seven key components: problem-solving, creative thinking, social skills, management of emotions, negotiation skills, values enhancement, and critical reasoning. Each component is broken into sub-skills. For example, to improve problem-solving skills, participants engage in activities that target specific skills such as gathering information, conceptualizing dilemmas, alternative thinking, and assertive communication. The class sessions build on each other in such a way that new skills are presented along with opportunities to practice previously introduced skills. Activities include role-playing, thinking games, homework assignments, and group discussions.

The facilitators' handbook (Ross, Fabiano, and Ross 1989), in addition to their intensive training, attempts to foster consistency across program sites. The manual provides detailed lesson plans and techniques for running the program sessions. Included in these lessons are suggestions on how coaches may verbalize the material to the program participants, possible comments and questions, and scheduled activities for learning new skills and practicing previously introduced skills. Furthermore, the program coaches are instructed to reinforce participants' demonstration of skills as well as their effort. Class interaction is encouraged. The curriculum is designed to cultivate an informal yet structured group atmosphere, with the participants engaging in lively, debate-like dialogues.

Subsequent sections of this report provide further description of the Cognitive Skills Program along with an account of the interventions received by members of the comparison group. In addition, readers are referred to the Process Evaluation for Phase I (Van Voorhis, Murphy, and Johnson, 1999). We turn now to a discussion of the methodology of the study.

## **METHODOLOGY**

### **Research Design**

The evaluation of the Georgia Cognitive Skills Program employed an experimental design whereby 468 parolees were randomly assigned to either an experimental (N = 232) or comparison group (N = 236)<sup>5</sup>. During the time from May 1997 to July 1998, 16 parole districts across Georgia participated in the study.<sup>6</sup> Each class included between 8 to 13 parolees.

The pool of study participants were male parolees identified by parole officers as “problematic”. Program selection criteria also screened out parolees with IQ scores lower than 80 as well as those with histories of sexual offending or debilitating substance abuse. Parole officers in each participating district submitted lists of 20 to 30 eligible parolees to the evaluation unit in Atlanta, where random assignment was made to either the experimental or comparison group. Comparison of the two groups on numerous demographic and criminal history variables (obtained at prison intake) confirms the integrity of the experimental design (Van Voorhis, Murphy and Johnson 1999). Due to the successful implementation of the randomization procedures, the experimental and control groups do not differ significantly in terms of age, race, education, employment status at prison intake, IQ, history of substance abuse, marital status, level of risk of re-offending, number of prior incarcerations, prior felony convictions, or prior violent offenses (see Tables 1 and 2).

### **Data Collection**

Data were collected by staff of the GBPP and sent to the University of Cincinnati for preparation and analysis. Information obtained during the parolees’ prison intake and diagnostic interviews, and subsequently entered into Georgia’s offender information tracking system (OTIS), provided background measures of social and demographic characteristics. OTIS also furnished data pertaining to the criminal histories of parolees, (e.g., prior incarcerations, prior

felonies and prior violent felonies). Complete sets of social and demographic data derived from OTIS were available for 91.9% (N = 430) of the sample. Criminal history data were available for all offenders.

The process evaluation (see Van Voorhis, Murphy, and Johnson, 1999) presented data on program characteristics. Some of the Phase I process measures are relevant to this outcome study. These include data characterizing the participation levels and program completion of experimental subjects and data relevant to the treatment experiences of members of the comparison group.

At the end of each class session, coaches completed a “session evaluation form” for the group of participants. This form rates each parolees’ level of participation, level of enjoyment, level of understanding, and use of skills taught in earlier sessions; it also evaluates the group atmosphere for that day. For the purposes of the evaluation, session evaluation forms from only five sessions (the same sessions for each group) were selected and sent to the University of Cincinnati. The five sessions identified span the full cognitive skills course, and represent five of the sections taught in the course (e.g., problem-solving, creative thinking, social skills, values enhancement, and critical reasoning). Session evaluations of at least two of the five sessions were available for 192 parolees (83%) of the program participants.<sup>7</sup>

Subsequent to the time that the R&R programs were held, some parolees participated in other treatment programs.<sup>8</sup> Although we lack detailed accounts of these additional interventions, supervising parole officers completed checklists indicating whether a parolee participated in a program during the follow up time frame, and if so, the general focus of the program(s) (e.g., substance abuse, education, mental health, etc.). These data span the nine months following the completion of the Cognitive Skills Program and are organized into three-month periods. Hence, the data report program participation during three time periods: 1) completion date of R&R through three months after completion date, 2) four through six months after completion date, and 3) seven through nine months after completion date. These data were available for 95.9%, 94.4%, and 90.8% of the sample at the three follow-up periods, respectively.

This project examined both intermediate and long-term parolee outcomes. Intermediate outcomes tap offender changes in attitudes and thinking patterns from the time experimental participants are admitted to the program to their completion of the program. At this time, both experimental and comparison group participants completed the Colorado Offender Attitude Survey (Johnson & Hunter, 1992). Pretest data were available for 436 (93.2%) of the parolees.

Three-hundred and twenty-three parolees, or 69% of the sample, were available to complete the survey at the time that the Cognitive Skills courses reached completion.

Long-term outcome data tapped returns to prison, rearrests and revocations, technical violations, and employment. These data were obtained: 1) through OTIS and 2) from follow-up forms completed by parole supervisors and a program coordinator at the GBPP. The follow up forms were completed for experimentals and controls at three, six, and nine, months after the date that their Cognitive Skills class ended. These forms cover several indicators of performance while on parole, including: compliance with conditions of parole, employment status, residence and living arrangements,<sup>9</sup> criminal involvement, technical violations, hearings, and participation in other treatment programs.

Once parolees were either discharged or recidivated, the rearrest/revocation data were censored for the subsequent follow-up periods. Readmission data were censored following a return to prison. On other indicators, such as employment, technical violations, and participation in programs (other than the Cognitive Skills Program), the follow-up measures describe only those parolees who remain on supervision during the three month period in question. Analyses of employment, technical violations, and participation in programs, in other words, do not include those who had been discharged or returned to prison prior to the follow up period under examination. Data unavailable due to discharge/revocation are as follows: a) three-month, 10.4%; six-month, 23.5%; and nine-month, 35.0%. These are cumulative percentages. Only four cases (1% of the sample) are missing follow-up data for reasons other than attrition through discharge or revocation.

The GBPP tracks parolee returns to prison through OTIS. These data were available for all study participants for times ranging from the beginning of their participation in the study until the conclusion of our data collection period.<sup>10</sup> The follow up time frame for this variable is longer than for data obtained through the follow-up forms completed by staff. Because the Cognitive Skills classes were held at different times throughout the study period and the readmission to prison data were collected at one point in time (April, 2000), the length of time covered on the readmission to prison data varies; parolees in groups that began their classes earlier in the study have lengthier follow up time on this outcome variable than those who entered into the study later. Data on returns to prison were available for all participants up to 18 months. For subsequent time periods (21, 24, 27, and 30 months), this variable characterizes

smaller proportions of the sample, so that the 30 month time period describes only 303 offenders or 65% of the sample.

## **Sample**

Tables 1 and 2 present demographic, social and prior record characteristics of the sample. Research participants ranged in age from 18 to 62 (mean=30.3). The majority of participants were African American (71%) and nearly half of the study pool (46%) were employed full time prior to their incarceration. Social class was determined by counselors during prison intake interviews. They identified 53% of the sample as living at the minimum standard of living or below. Most of the parolees were single (never married) (60%). Notwithstanding the screening criteria to limit participation to those parolees with IQ scores of 80 or above (Culture Fair Test, 1960), 6% of the participants scored below 80; the average IQ for the sample was 102.1. Even so, 64% of the sample had not completed high school by the time of their admission to prison.

A history of substance abuse characterized 50% of the sample and prior records were extensive. All participants had at least one felony on record and for 51% of the sample, these were violent offenses. Upon their admission to prison for the present offense, 46% of the participants had already served at least one prior prison term. Sixty-eight percent of the offenders were classified as low risk on a scale created by the research staff to simulate the Salient Factor Score (Hoffman, 1994).

Throughout the course of the study, participants were afforded the opportunity to participate in programs other than Cognitive Skills. These other programs were used both by parolees assigned to the Cognitive Skills Program and parolees assigned to the control group. Table 3 presents the distribution of program participation during the three follow up time periods for the experimental and control groups. The top of the table provides the count and percent of experimentals and controls that participated in at least one program during the time periods. Proportionately more members of the control group participated in at least one program during the follow up periods (33.2 % at three-months, 34.6 % at six-months, 35.0 % at nine-months) than experimental group members (29.5 % three-month, 28.8 % six-month, 25.4 % nine-month). These differences, however, are not statistically significant. The bottom half of the Table 3 illustrates the types of programs parolees participated in during the follow up time periods. The majority of parolees involved in programs received substance abuse treatment. Other programs

included education, employment, sex offender, mental health and Alcoholics or Narcotics Anonymous.

**Table 1. Description of participants and controls across background characteristics.**

| Characteristic  | Experimental |       | Control |       | Total |       |
|---|--------------|-------|---------|-------|-------|-------|
|   | N            | %     | N       | %     | N     | %     |
| Age: 18 - 25  | 90           | 38.8  | 76      | 32.2  | 166   | 35.5  |
| 26 – 36   | 87           | 37.5  | 101     | 42.8  | 188   | 40.2  |
| 36 - 50   | 49           | 21.1  | 56      | 23.7  | 105   | 22.4  |
| 51+   | 6            | 2.6   | 3       | 1.3   | 9     | 1.9   |
| Total   | 232          | 100.0 | 236     | 100.0 | 468   | 100.0 |
| Average Age   | 30.1         |       | 30.5    |       | 30.3  |       |
| Race: White   | 71           | 30.6  | 66      | 28.0  | 331   | 29.3  |
| Black   | 161          | 69.4  | 170     | 72.0  | 137   | 70.7  |
| Total   | 232          | 100.0 | 236     | 100.0 | 468   | 100.0 |
| Employment Status:  |              |       |         |       |       |       |
| Employed full time  | 110          | 48.7  | 100     | 43.9  | 210   | 46.3  |
| Employed part time  | 22           | 9.7   | 32      | 14.0  | 54    | 11.9  |
| Unemployed for less than 6 mo   | 41           | 18.1  | 57      | 25.0  | 98    | 21.6  |
| Unemployed for 6+ months  | 43           | 19.0  | 31      | 13.6  | 74    | 16.3  |
| Never worked (capable, non Student)   | 4            | 1.8   | 3       | 1.3   | 7     | 1.5   |
| Student   | 2            | 0.9   | 0       | 0.0   | 2     | 0.4   |
| Incapable of work   | 3            | 1.3   | 0       | 0.0   | 3     | 0.7   |
| Other   | 1            | 0.4   | 5       | 2.2   | 6     | 1.3   |
| Total   | 226          | 100.0 | 228     | 100.0 | 454   | 100.0 |
| Social Class (as determined by counselor During prison diagnostic interview): |              |       |         |       |       |       |
| Welfare   | 11           | 4.9   | 17      | 7.8   | 28    | 6.3   |
| Occasionally employed   | 12           | 5.4   | 21      | 9.6   | 33    | 7.4   |
| Minimum standard  | 88           | 39.3  | 84      | 38.4  | 172   | 38.8  |
| Middle class  | 113          | 50.4  | 96      | 43.8  | 209   | 47.2  |
| Other   | 0            | 0.0   | 1       | 0.5   | 1     | 0.2   |
| Total   | 224          | 100.0 | 219     | 100.0 | 443   | 100.0 |

Table 1. Continued.

| Characteristic             | Experimental |       | Control |       | Total |       |
|----------------------------|--------------|-------|---------|-------|-------|-------|
|                            | N            | %     | N       | %     | N     | %     |
| <b>Marital Status</b>      |              |       |         |       |       |       |
| Single (never married)     | 146          | 62.5  | 136     | 58.4  | 281   | 60.4  |
| Married                    | 26           | 11.2  | 32      | 13.7  | 58    | 12.5  |
| Separated                  | 9            | 3.9   | 14      | 6.0   | 23    | 4.9   |
| Divorced (not remarried)   | 16           | 6.9   | 24      | 10.3  | 40    | 8.6   |
| Widowed                    | 2            | 0.9   | 0       | 0.0   | 2     | 0.4   |
| Common law                 | 34           | 14.7  | 27      | 11.6  | 61    | 13.1  |
| Total                      | 232          | 100.0 | 233     | 100.0 | 465   | 100.0 |
| <b>Education</b>           |              |       |         |       |       |       |
| Less than high school      | 16           | 6.9   | 25      | 10.9  | 41    | 8.9   |
| Some high school           | 129          | 55.6  | 126     | 54.8  | 255   | 55.2  |
| High school                | 59           | 25.4  | 49      | 21.3  | 108   | 23.4  |
| Some technical school      | 14           | 6.0   | 19      | 8.3   | 33    | 7.1   |
| Completed technical school | 2            | 0.9   | 2       | 0.9   | 4     | 0.9   |
| Some college               | 4            | 1.7   | 0       | 0.0   | 4     | 0.9   |
| Baccalaureate degree       | 8            | 3.4   | 9       | 3.9   | 17    | 3.7   |
| Total                      | 232          | 100.0 | 230     | 100.0 | 462   | 100.0 |
| <b>Substance abuse:</b>    |              |       |         |       |       |       |
| No history of abuse        | 119          | 51.3  | 117     | 49.6  | 236   | 50.4  |
| History of abuse           | 113          | 48.7  | 119     | 50.4  | 232   | 49.6  |
| Total                      | 232          | 100.0 | 236     | 100.0 | 468   | 100.0 |
| <b>IQ:</b>                 |              |       |         |       |       |       |
| < 80                       | 15           | 6.5   | 12      | 5.1   | 27    | 5.8   |
| 81 to 99                   | 70           | 30.2  | 77      | 32.6  | 147   | 31.4  |
| 100 to 115                 | 108          | 46.6  | 116     | 49.2  | 224   | 47.9  |
| 116+                       | 39           | 16.8  | 31      | 13.1  | 70    | 15.0  |
| Total                      | 232          | 100.0 | 236     | 100.0 | 468   | 100.0 |
| Average IQ                 | 101.9        |       | 102.4   |       | 102.1 |       |

**Table 2. Description of participants and controls across prior record characteristics.**

| Characteristic                             | Experimental |       | Control |       | Total |       |
|--|--------------|-------|---------|-------|-------|-------|
|  | N            | %     | N       | %     | N     | %     |
| <b>Risk</b>                                |              |       |         |       |       |       |
| Low  | 165          | 71.1  | 152     | 64.4  | 317   | 67.7  |
| Medium/High                                | 67           | 28.9  | 84      | 35.6  | 151   | 32.3  |
| Total                                      | 232          | 100.0 | 236     | 100.0 | 468   | 100.0 |
| <b>Number of prior incarcerations</b>      |              |       |         |       |       |       |
| None                                       | 138          | 59.5  | 114     | 48.3  | 252   | 53.8  |
| One  | 52           | 22.4  | 70      | 29.7  | 122   | 26.1  |
| Two  | 20           | 8.6   | 27      | 11.4  | 47    | 10.0  |
| Three                                      | 11           | 4.7   | 14      | 5.9   | 25    | 5.3   |
| Four                                       | 6            | 2.6   | 8       | 3.4   | 14    | 3.0   |
| Five or more                               | 5            | 2.2   | 3       | 1.2   | 8     | 1.7   |
| Total                                      | 232          | 100.0 | 236     | 100.0 | 468   | 100.0 |
| <b>Number of prior felony convictions</b>  |              |       |         |       |       |       |
| One  | 73           | 31.5  | 68      | 28.8  | 141   | 30.1  |
| Two  | 68           | 29.3  | 66      | 28.0  | 134   | 28.6  |
| Three                                      | 40           | 17.2  | 45      | 19.1  | 85    | 18.2  |
| Four                                       | 26           | 11.2  | 23      | 9.7   | 49    | 10.5  |
| Five                                       | 12           | 5.2   | 18      | 7.6   | 30    | 6.4   |
| Six  | 6            | 2.6   | 8       | 3.4   | 14    | 3.0   |
| Seven or more                              | 7            | 3.0   | 8       | 3.4   | 15    | 3.2   |
| Total                                      | 232          | 100.0 | 236     | 100.0 | 468   | 100.0 |
| <b>Number of prior violent convictions</b> |              |       |         |       |       |       |
| None                                       | 119          | 51.3  | 112     | 47.5  | 231   | 49.4  |
| One  | 43           | 18.5  | 41      | 17.4  | 84    | 17.9  |
| Two  | 29           | 12.5  | 21      | 8.9   | 50    | 10.7  |
| Three                                      | 13           | 5.6   | 21      | 8.9   | 34    | 7.3   |
| Four                                       | 6            | 2.6   | 18      | 7.6   | 24    | 5.1   |
| Five                                       | 8            | 3.4   | 9       | 3.8   | 17    | 3.6   |
| Six or more                                | 14           | 6.0   | 14      | 5.9   | 28    | 6.0   |
| Total                                      | 232          | 100.0 | 236     | 100.0 | 468   | 100.0 |

**Table 3. Program participation during follow-up periods across experimental and control groups.**

|   | Three Month Period |      |         |      | Six Month Period |      |         |      | Nine Month Period |      |         |      |
|---|--------------------|------|---------|------|------------------|------|---------|------|-------------------|------|---------|------|
|   | Experimental       |      | Control |      | Experimental     |      | Control |      | Experimental      |      | Control |      |
|   | N                  | %    | N       | %    | N                | %    | N       | %    | N                 | %    | N       | %    |
| Study members who participated in at least one program during the follow up period <sup>a</sup>   | 54                 | 29.5 | 62      | 33.2 | 42               | 28.8 | 54      | 34.6 | 30                | 25.4 | 43      | 35.0 |
| The <u>specific type of program</u> parolees participated in, of those parolees who participated in at least one program during the follow up period <sup>b</sup> |                    |      |         |      |                  |      |         |      |                   |      |         |      |
|   | Experimental       |      | Control |      | Experimental     |      | Control |      | Experimental      |      | Control |      |
|   | N                  | %    | N       | %    | N                | %    | N       | %    | N                 | %    | N       | %    |
| Substance abuse   | 44                 | 81.5 | 49      | 79.0 | 30               | 71.4 | 39      | 72.2 | 21                | 70.0 | 23      | 53.5 |
| Education   | 5                  | 9.3  | 11      | 17.7 | 3                | 7.1  | 8       | 14.8 | 5                 | 16.7 | 10      | 23.3 |
| Employment  | 5                  | 9.3  | 7       | 11.3 | 2                | 4.8  | 9       | 16.7 | 2                 | 6.7  | 3       | 7.0  |
| Sex offender  | 0                  | 0.0  | 0       | 0.0  | 1                | 2.4  | 0       | 0.0  | 0                 | 0.0  | 0       | 0.0  |
| Mental Health   | 1                  | 1.9  | 2       | 3.2  | 1                | 2.4  | 3       | 5.6  | 1                 | 3.3  | 1       | 2.3  |
| AA/NA   | 2                  | 7.1  | 2       | 9.5  | 7                | 16.7 | 6       | 11.1 | 3                 | 10.0 | 6       | 14.0 |
| Other   | 2                  | 3.8  | 1       | 1.7  | 2                | 4.8  | 2       | 3.8  | 1                 | 3.3  | 2       | 4.7  |

<sup>a</sup> The denominators of the percentages participating in “at least one program” are the number of parolees in each study group 1) for which data were available and 2) who were available to participate in a program. Parolees were considered unavailable for program participation under the following circumstances: they had absconded or were detained throughout the follow up period, were discharged from parole, or had been revoked.

<sup>b</sup> The denominator of the percentages participating in “specific types of programs” are the number of parolees in each study group who participated in at least one program in the follow up period. Because a parolee may have participated in more than one program during a follow up period, the percentages may not sum to 100 and the Ns may not sum to the total that participated in at least one program.

## Measures

Dependent variables. Five indicators of parole performance constitute the dependent variables for this study: 1) cognitive skills and offender attitudes, 2) readmission to prison (OTIS), 3) a composite measure of whether parolees were either revoked or arrested for a felony, 4) technical violations, and 5) employment status.

The Colorado Offender Attitude Survey (Johnson & Hunter, 1992) results in 18 scales measuring either cognitive skills or offender attitudes. These scales and their corresponding measures of internal consistency are reported in Table 4. Questions comprising each scale are shown in Appendix A. At the outset, we should note that the reliabilities for several of these scales are atypically low. Understandably, we are not entirely confident of these data.

As can be seen in Table 4, only 9 of the 18 scales showed sufficient internal consistency (Chronbach's  $\alpha > .60$ ) for use in the present study. Most of the omitted scales were measures of cognitive skills (e.g., problem-solving, empathy, self-control, sense of powerlessness, and general susceptibility to external influence). While these separate scales failed to show sufficient scale properties, a combination of all cognitive skill items did ( $\alpha=.67$ ). This scale is particularly relevant to the present study because the program is essentially a cognitive skills program rather than a cognitive restructuring program. All items reflecting criminal sentiments or their opposite, prosocial sentiments, were also combined to form a global measure ( $\alpha=.83$ ). Finally, scale 18 is not included as a separate dependent variable or in a summary variable because of concerns related to the face validity of its items. Questions contained in this scale (e.g., "If you wanted to plan a crime, you know some people who would help you plan it.") could be answered affirmatively by virtue of participating in the Cognitive Skills group. As a result, the analysis utilizes eight scales: a) Belief that criminal behavior/drug use is wrong; b) Favorable attitudes toward police; c) Belief that your parole officer is supportive; d) Belief that others regard you positively; e) Perceived prospects of achieving life goals; f) Acceptance of rationalizations for crime; g) Susceptibility of peer influences toward crime; and h) Exposure to criminal friends--- and two summary scales (Prosocial sentiment scale and Cognitive skills scale).

**Table 4. Attitude scales and corresponding alpha reliabilities (Colorado Offender Attitude Survey).**

| Scale Name & Items                                    | Pretest   |                 |      |       | Posttest  |                 |      |       |
|---|-----------|-----------------|------|-------|-----------|-----------------|------|-------|
|   | Range     | Mean/<br>Median | S.D. | Alpha | Range     | Mean/<br>Median | S.D. | Alpha |
| 1. Belief that criminal behavior/drug use is wrong    | 2.00-5.00 | 4.50/4.57       | .56  | .81   | 2.00-5.00 | 4.45/4.62       | .61  | .83   |
| 2. Favorable attitudes toward police                  | 1.00-5.00 | 3.10/3.20       | .70  | .66   | 1.00-4.00 | 3.20/3.20       | .69  | .68   |
| 3. Favorable attitudes toward courts and judges       | 1.00-5.00 | 2.96/3.00       | .71  | .61   | 1.00-4.75 | 3.03/3.00       | .61  | .49   |
| 4. Belief that your parole officer is supportive      | 1.50-5.00 | 3.68/3.67       | .65  | .72   | 1.33-5.00 | 3.63/3.67       | .63  | .73   |
| 5. Belief that others regard you positively           | 1.80-5.00 | 3.81/3.80       | .58  | .61   | 2.20-5.00 | 3.80/3.80       | .57  | .62   |
| 6. Perceived prospects for achieving life goals       | 3.00-5.00 | 4.67/4.75       | .38  | .57   | 3.00-5.00 | 4.67/4.75       | .43  | .72   |
| 7. Problem solving ability                            | 2.43-5.00 | 3.48/3.43       | .47  | .33   | 2.29-5.00 | 3.55/3.57       | .48  | .35   |
| 8. Empathy for others                                 | 1.00-5.00 | 3.64/3.67       | .64  | .25   | 1.67-5.00 | 3.61/6.67       | .63  | .35   |
| 9. Awareness and sympathy toward victims of crime     | 1.00-5.00 | 3.68/3.75       | .68  | .25   | 1.75-5.00 | 3.65/3.75       | .65  | .39   |
| 10. Self control                                      | 1.75-5.00 | 3.89/4.00       | .63  | .49   | 1.75-5.00 | 3.92/4.00       | .60  | .55   |
| 11. Acceptance of rationalizations for crime          | 1.00-3.71 | 1.97/2.00       | .58  | .71   | 1.00-4.71 | 1.99/2.00       | .63  | .80   |
| 12. Tolerant attitudes toward drug use                | 1.00-5.00 | 2.43/2.50       | .70  | .41   | 1.00-4.00 | 2.38/2.25       | .70  | .49   |
| 13. Sense of powerlessness/fatalism                   | 1.00-4.17 | 2.42/2.33       | .60  | .51   | 1.00-4.33 | 2.38/2.33       | .58  | .51   |
| 14. Normlessness/accepting illegitimate means         | 1.00-4.33 | 2.09/2.00       | .74  | .48   | 1.00-4.33 | 2.10/2.00       | .72  | .44   |
| 15. Susceptibility of peer influences toward deviance | 1.00-4.33 | 1.95/2.00       | .71  | .61   | 1.00-5.00 | 1.94/2.00       | .69  | .65   |
| 16. General susceptibility to external influence      | 1.00-4.20 | 2.38/2.40       | .65  | .44   | 1.00-4.20 | 2.41/2.40       | .56  | .27   |
| 17. Exposure to criminal friends                      | 1.00-5.00 | 1.71/1.50       | .76  | .90   | 1.00-4.38 | 1.62/1.38       | .70  | .89   |
| 18. Access to criminal resources                      | 1.00-4.50 | 2.29/2.25       | .77  | .73   | 1.00-4.50 | 2.29/2.25       | .77  | .71   |

Table 4. Continued.

| Scale Name & Items         | Pretest   |                 |      |       | Posttest  |                 |      |       |
|----------------------------|-----------|-----------------|------|-------|-----------|-----------------|------|-------|
|                            | Range     | Mean/<br>Median | S.D. | Alpha | Range     | Mean/<br>Median | S.D. | Alpha |
| Prosocial sentiments scale | 2.45-4.79 | 3.73/3.76       | .42  | .82   | 2.70-4.90 | 3.79/3.81       | .42  | .83   |
| Cognitive Skills Scale     | 2.79-4.73 | 3.85/3.88       | .34  | .64   | 2.66-4.72 | 3.86/3.88       | .35  | .67   |

As noted above, arrest/revocation, technical violations, and employment data were collected through follow up forms at three month intervals. As a result, these variables indicate the behavior or status of parolees during discrete periods of time. In the interest of consistency, the data on readmission to prison also are coded into multiple discrete periods of the study. Each follow up time period spans three-months, with the exception of the “during program” time frame, which averaged four months.

Data on readmission to prison were available during the program time frame through as much as 30 months after the program end date. As a result, the “readmission to prison” measure indicates whether a parolee was returned to prison (Y/N) during one of the 11 time periods (one in program period and 10 follow up periods of three-months).

The second recidivism variable measures whether a parolee had been re-arrested or revoked during one of the discrete follow-up periods of the study. The data do not afford the opportunity to differentiate misdemeanor arrests, felony arrests and revocations. Differentiation between misdemeanor and felony arrest often was not noted on the follow-up forms. Moreover, as is common to parole practice, the distinction between an arrest and a revocation is often a matter of the parole agency’s discretion. For example, two parolees may engage in similar behavior yet elicit different responses from the parole agency due to factors such as prior performance during the parole sentence; hence one person may have his parole revoked while the other parolee is merely arrested. Therefore, it was necessary to create a broader variable to capture more serious outcomes related to offending behavior which may or may not have resulted in a return to prison. A decision rule was created which coded the variable as “yes” if: a) an arrest was clearly noted as a felony, b) a revocation was noted; or c) an arrest not noted as a felony or misdemeanor occurred along with an additional action, such as jail or revocation. Even though the follow-up forms were not completed until the Cognitive Skills class ended, information on parolee arrests or revocations during the program time frame could be determined by post-dated arrests and revocations noted on the three month-follow-up forms and by reports that the parolee was detained at the start of the three-month

time period. Thus, the “felony arrest/revocation” dependent variable indicates whether a parolee was revoked and/or arrested for a felony during one of four periods of the study, including a during-program period and three post-program periods. Seven parolees (four controls and three experimentals) were discharged so early in the study (i.e., within the first half of the time that the class was being held) that they are excluded from analysis pertaining to arrest/revocation.<sup>11</sup>

An additional long-term outcome measure indicates whether the parolee incurred at least one technical violation during each three-month period. The types of technical violations include: electronic monitoring violation, positive drug test, employment violation, reporting violation, absconding, special condition violation, or “other”.<sup>12</sup> Technical violations rendered during the program period were not collected. As a result, these data are limited to the three-month periods included in the nine months following program completion.

Finally, employment data were collected to indicate the following variations of employment status: employed full-time, employed part-time, student full-time, student full-time, not required to work, unemployed/not in school, and “other” which includes having been detained or absconded throughout the three-month follow up period. Of interest in these analyses is whether the proportion of parolees employed, including full- and part-time employment, differs by experimental condition. Information on employment were not available during the program time period. As such, the measure of employment indicates whether, during specific three-month periods of the nine month follow up, a parolee was employed either full- or part-time as opposed to the other variations of employment status mentioned above. Parolees who were discharged or revoked during the three-month follow up period or earlier are not included in these analyses.

Independent and control variables. Additional independent measures were collected to enable an analysis of their effects on outcome variables or to serve as control variables for certain portions of the analysis.

Program participation measures represent Cognitive Skills coaches’ reports of parolees’ level of participation, level of enjoyment, level of understanding, and group atmosphere during the class session. These data were collected at five different time periods. Parolees’ level of participation were scored as: 1 = attentive, volunteers; 2 = attentive, responds; 3 = generally attentive, quiet and reluctant to answer; 4 = attentiveness wavered; or 5 = not attentive. The assessment of level of enjoyment indicated if the parolee: 1 = expressed enjoyment and joined in willingly; 2 = showed some enjoyment; 3 = were noncommittal; 4 = expressed some dislike; or 5 = expressed strong dislike and was disruptive. Level of understanding was ranked as: 1 = understands

and can offer examples of the skills; 2 = understands, cannot offer own examples but agrees with examples; 3 = seems to understand but cannot apply; 4 = questions the concepts and applications; 5 = is confused, resistant and quiet. Group atmosphere was characterized as: 1 = cohesive, participating; 2 = agreeable, some participation; 3 = listening, little active participation; 4 = some disagreement, not listening; or 5 = divisive, quiet. These indicators of parolees' performance were reverse-coded so that higher scores represent more positive characterizations and were then averaged across the five sessions. Hence, the measures (e.g., level of participation, level of enjoyment, level of understanding, and group atmosphere) represent mean scores for the five time periods (rounded to the nearest whole score) with greater scores indicating more favorable performance. Scores can range from 1 to 5.

An additional dimension of parolees' during-class performance captures their use of previously taught skills during the class session (1 = yes, used previous skills). Unlike the other four variables derived from the session evaluation forms which are averaged across the five session evaluation periods, use of previous skills is reported individually for three of the sessions (sessions 1, 3 and 5).

In addition to focusing on program characteristics, this study examines the impact of parolee's level of risk for re-offending. In accordance with Andrews, Bonta and Hoge's (1990) "risk principle", we seek to determine whether outcomes were more favorable for medium- to high-risk subjects than for low risk subjects. Because risk scores, as computed by the GBPP, were available for only 322 study participants (68.8% of the sample), we reconstructed a risk score that approximated the Salient Factor Risk Score of the U.S. Parole Commission (Hoffman 1994) by using variables available through OTIS.<sup>13</sup> The risk-level dummy variable used in the following analyses distinguishes between low risk and medium/high risk offenders (medium/high risk = 1).

Pre-arrest, demographic and criminal history variables are incorporated into various portions of the analyses as control variables. These include employment, education, socioeconomic status, age, race, and number of prior incarcerations. The employment and education data reflect parolees' self-reported characteristics at prison intake. Subjects reported their employment status as one of the following: employed full-time, part-time, unemployed for less than six months, unemployed for six months or more, never had a job but were capable of working, student, incapable of work and "other". For purposes of multivariate analysis this variable was collapsed into four dummy variables: employed full-time, employed part-time, unemployed less than six months, and "other".

The ordinal-level education variable, which measures the highest level of education reached by parolees, is comprised of the categories “less than high school,” “some high school,” “completed high school,” or “beyond high school.” Parolees’ socioeconomic statuses were ascertained by prison diagnostic counselors who categorized inmates<sup>14</sup> as “welfare,” “occasionally employed,” “minimum standard,” or “middle class.” This information was collapsed into a dummy variable indicating whether parolees are middle class.

Age is represented in the analyses as a set of dummy variables because we do not assume a linear relationship between age and the various indicators of parole success. The age dummy variables indicate whether parolees are 18-22, 23-27, 28-32, 33-37, and 38 years old and older at the time that the Cognitive Skills Program began.

The two categories of the race dummy variable are “white” and “nonwhite” (nonwhite = 1). The nonwhite category is comprised almost solely of African Americans; the only exception is one Hispanic parolee. The number of prior incarcerations variable is ratio level and varies from no prior incarcerations to eight incarceration experiences .

Few problems with missing data occurred [e.g., employment (2.9%), education (1.2%), and SES (5.3%)]. To retain these cases in the analyses, a mean substitution procedure was used to impute values.<sup>15</sup> No data were missing on the remaining independent/control variables (age, race, and number of prior incarcerations).

## **Data Analysis**

Our analyses proceed through three steps. The first step compares results for the experimental group to those for the comparison group. Second, the results are examined with the addition of offender risk as a covariate. We compare the findings for medium/high risk experimental participants to those for medium/high risk comparison participants. We do the same for low risk experimental and comparison participants.

The third stage of this analysis examines the effects of group completion on parolee outcomes. Because this analysis creates three groups (completers, dropouts, and comparisons), it clearly changes the group composition created through random assignment. Understandably, critics could assert that favorable results are not caused by the cognitive program but rather by the fact that some groups have “better” members than others. To accommodate the likelihood of group differences, we control for key demographic and offender background variables (e.g., number of prior incarcerations, race, education, SES, employment, and age). In other words, recognizing the

existence of group differences which are not present when we analyze data according to the experimental design, we statistically remove the effects of these differences, making outcome findings attributable to the group itself. This is a conservative approach given that a comparisons between program dropouts and program completers finds statistical significance on only 2 variables (SES and one of the age categories). The dropouts were statistically more likely than the completers to be middle class and above the age of 38.<sup>16</sup> Chi square tests of differences between all three groups find significant group differences pertaining only to age. The dropouts had significantly more offenders who were older than 38.

While some would fault the decision to examine results for three groups (dropouts, completers, and comparisons) as violating the mandates of the experimental design, we nevertheless assert a need to examine the program's effectiveness when delivered in full dosage or to its full potential. Such findings have extremely important policy implications. While we cannot address the question without utilizing a quasi-experimental design, we nevertheless: a) control for all relevant differences between the newly created groups, and b) find group differences which work in favor of the dropouts (i.e., older, middle class offenders should actually show *better* employment and reoffense rates than younger, lower class males). We also recognize that parolees may drop out of programs for reasons other than rearrest, including illness, childcare, employment conflicts with the meeting times, and other reasons totally unrelated to failing the terms of supervision. Many dropouts, in other words, remained on parole supervision, even though they were no longer in the Cognitive Skills Program. Unfortunately, the actual reasons for dropping out are not available for all the Phase I program dropouts.

**Colorado Offender Attitude Survey (Pre/Posttest Analyses).** Random Effects Modeling is used in the analyses of change in scale scores from pretest to posttest. The statistical tests ask whether or not the program effected an improvement in offender attitudes over those indicated on the pretests. In doing so, we control for the pretest score and identify program effects through a comparison between experimental and comparison group subjects. Random effects modeling, like repeated measures ANOVA, deals with the lack of independence between the pretest and the posttest measures. In other words, the procedure accounts for the similarities between pre-test and posttest scores that occur due to any unmeasured characteristics of the individuals taking the tests that would persist from pretest to posttest and would exert an effect on both sets of scale scores.

Six statistical models are specified for each of the ten test scales. The first four are consistent with the steps outlined above. A comparison is made between the experimental and comparison groups, then risk is added as a covariate to test whether risk interacts with group membership on changes in scale scores. The groups then are reconfigured to determine the effects of program completion on the test results. To do so, models are created that examine differences in scale score changes across three study groups – class completers, dropouts, and the comparison group – while controlling for variables listed above (e.g., SES, employment, education, age and prior incarceration). The fourth set of models focus on interactions between the three groups and risk to examine for possible risk effects. The final two sets of models examine the effect of level of participation in the program (e.g., high, medium, and low) on changes in scale scores. One model includes all experimental parolees for whom pretest and posttest data are available, while the other model includes only those who completed the program for whom pretest and posttest data are available.

**Readmission and Arrested/Revoked.** The effects of the cognitive program on the likelihood of being arrested/revoked or readmitted to prison are revealed through the use of (discrete time) event history analysis. This statistical procedure provides the probability or likelihood of an event happening (e.g., arrest/revocation) while considering the different lengths of time that the parolees are available or “at risk” for the event to occur. By using event history analyses we are able to see whether the proportion of study members who fail at the various discrete time periods differs for parolees assigned to the experimental conditions compared to the control group, and whether the rates at which parolees recidivate varies during the follow-up period.

The discrete time periods by which the events are organized are, for the most part, three-month time periods. The “during program” time period when the Cognitive Skills course is underway is an exception. The length of program varies from 1.61 months to 6.31, with the modal duration being 4.04 months; 15 of the 23 classes held (65.2%) lasted for four months. Hence the typical “during program” time frame is slightly longer than the other discrete time periods of the analysis.

Three factors contribute to variation in the length of parolees’ time at risk. First, some parolees fail sooner than others in the evaluation. It would be inaccurate to treat the length of time at risk as equivalent for parolees who fail on parole within the first three months after the program compared to parolees who still had not recidivated at 30 months. The second scenario that leads to

variation in the length of parolees' time at risk is availability of data. As mentioned above, readmission to prison data are available up to 30 months after class completion for only the groups that began their Cognitive Skills courses early in the study. By the 21 month follow-up period, groups start to fall out of the analysis. Finally, some parolees are discharged. In the analysis of arrest/revocation data, once a parolee is discharged, he is considered a success during a specific time period, but data for subsequent time periods are no longer available.

Event history analysis accounts for these different lengths of time at risk by changing the units of analysis from persons to person-periods at risk. A case is created for each parolee at each discrete time period up to the point when he either fails or there no longer is recidivism data on him due to discharge or conclusion of his follow-up time frame. For example, a "person" unit for a parolee who did not fail on parole and for whom data extend from "during the program" through 30 months after the program is completed (a total of 11 discrete time periods), would be transformed into 11 "person-period" units. A parolee who recidivates during the six month period would be represented by only three "person-period" units: 1) during program, 2) three-months following the program, and 3) six months following the program. Once a parolee fails on parole or the span of data are exhausted, he is censored from subsequent time periods of the analysis. Survival (recidivism) curves shown in the analyses are nevertheless cumulative functions, reflecting success or failure during earlier time periods.

**Technical Violations and Employment.** Outcomes pertaining to employment and technical violations are analyzed at each follow-up time period. The analysis examines whether or not the event in question (technical violation or employment) occurred during the time period. We employ chi square analysis for assessments of the differences between comparison and experimental participants. Logistic regression is used to compare completers, dropout, and comparison groups. As with the recidivism analysis, the latter employs controls for number of prior incarcerations, race, education, SES, employment, and age.

## RESULTS

### Program Participation Characteristics

As Table 5 illustrates, Georgia's implementation of R&R appears to have been successful in terms of creating cohesive class units with high levels of parolee participation, enjoyment, and understanding. Across the five sessions used to create average levels of participation, enjoyment, and understanding, the clear majority of parolees were characterized by coaches as attentive, enjoying the class, and understanding the material well enough to offer examples. Not only were 95.5% of the parolees attentive during the classes, but over half (57.8%) participated by voluntarily contributing to class activities and discussions. Over 80% expressed enjoyment during class. All of the parolees averaged an acceptable level of understanding throughout the course, with 59.9% being able to offer examples in class. The proportion of parolees using previously learned skills during class sessions ranged from 79.5% to 88.6%. Finally, the group atmosphere generally was rated as positive for the 23 groups of parolees who participated in Phase 1 of the evaluation. The typical group atmosphere for 16 of the groups was reported as "cohesive". Five groups were characterized as "agreeable with some participation." Two groups did not report on group atmosphere.

Of the parolees assigned to the Cognitive Skills Program, 60% completed the class. Across distinct parole districts, however, these rates varied from a low completion rate of 42% to a high of 80%. Table 6 shows program completion rates per district.

**Table 5. Percentage and frequency distributions of class session characteristics.**

| Characteristic                                  | N                | %           |
|---|------------------|-------------|
| Average level of participation:                 |                  |             |
| Not attentive                                   | 0                | 0.0         |
| Attentive, yet wavered                          | 1                | 0.5         |
| Generally attentive                             | 22               | 11.5        |
| Attentive, responsive                           | 58               | 30.2        |
| <u>Attentive, volunteers</u>                    | <u>111</u>       | <u>57.8</u> |
| Total   | 192 <sup>a</sup> | 100.0       |
| Average level of enjoyment:                     |                  |             |
| Expressed strong dislike                        | 0                | 0.0         |
| Expressed some dislike                          | 1                | .5          |
| Non-committal                                   | 31               | 16.1        |
| Expressed some enjoyment                        | 68               | 35.4        |
| <u>Expressed strong enjoyment</u>               | <u>92</u>        | <u>47.9</u> |
| Total   | 192 <sup>a</sup> | 99.9        |
| Average level of understanding:                 |                  |             |
| Confused and resistant                          | 0                | 0.0         |
| Questions the concepts                          | 0                | 0.0         |
| Understands, cannot apply                       | 27               | 14.1        |
| Understands, cannot offer examples              | 50               | 26.0        |
| <u>Understands, can offer examples</u>          | <u>115</u>       | <u>59.9</u> |
| Total   | 192 <sup>a</sup> | 100.0       |
| Parolees reported to be using skills at time 1: |                  |             |
| No  | 34               | 20.5        |
| <u>Yes</u>                                      | <u>132</u>       | <u>79.5</u> |
| Total   | 166 <sup>b</sup> | 100.0       |
| Parolees reported to be using skills at time 3: |                  |             |
| No  | 17               | 11.4        |
| <u>Yes</u>                                      | <u>132</u>       | <u>88.6</u> |
| Total   | 149 <sup>b</sup> | 100.0       |
| Parolees reported to be using skills at time 5: |                  |             |
| No  | 14               | 11.7        |
| <u>Yes</u>                                      | <u>106</u>       | <u>88.3</u> |
| Total   | 120 <sup>b</sup> | 100.0       |
| Average group atmosphere                        |                  |             |
| Divisive, quiet                                 | 0                | 0.0         |
| Some disagreement, not listening                | 0                | 0.0         |
| Listening, little active participation          | 0                | 0.0         |
| Agreeable, some participation                   | 5                | 23.8        |
| <u>Cohesive, participating</u>                  | <u>16</u>        | <u>76.2</u> |
| Total   | 21 <sup>c</sup>  | 100.0       |

<sup>a</sup>The N for average level of participation, enjoyment, and understanding includes parolees who attended at least one of the five class sessions used to calculate the mean.

<sup>b</sup>The N for use of skills includes parolees who attended the particular session.

<sup>c</sup>The unit of analysis for the average group atmosphere is class or group. A total of 23 groups participated in Phase 1 of the evaluation. Two groups did not report on group atmosphere.

**Table 6. Proportion of Cognitive Skills Program complete by district and region.**

| Location                               |   | Up to 1/3 of Course (N) <sup>1</sup> | More Than 1/3 and up to 2/3 of Course (N) | More Than 2/3 but Did Not Complete Course (N) | Completed Course (N) |
|--|---|--------------------------------------|---|---|----------------------|
| <u>Southwest Region</u>                |   |                                      |   |   |                      |
| #42                                    | Valdosta                                  | 50.0 (6)                             | 8.3 (1)                                   | 0.0 (0)                                       | 41.7 (5)             |
| <u>Southeast Region</u>                |   |                                      |   |   |                      |
| #11                                    | Savannah Parole District                  | 30.0 (6)                             | 20.0 (4)                                  | 0.0 (0)                                       | 50.0 (10)            |
| #37                                    | Lyons Parole District                     | 22.2 (2)                             | 22.2 (2)                                  | 11.1 (1)                                      | 44.4 (4)             |
| #25                                    | Brunswick Parole District                 | 13.6 (3)                             | 13.6 (3)                                  | 4.5 (1)                                       | 68.2 (15)            |
| #38                                    | Statesboro Parole District                | 11.1 (3)                             | 3.7 (1)                                   | 11.1 (3)                                      | 74.1 (20)            |
| <u>Central Region</u>                  |   |                                      |   |   |                      |
| #20                                    | Jonesboro Parole District                 | 39.1 (9)                             | 17.4 (4)                                  | 0.0 (0)                                       | 43.5 (10)            |
| #32                                    | Griffin Parole District                   | 18.2 (2)                             | 9.1 (1)                                   | 0.0 (0)                                       | 72.7 (8)             |
| <u>Northwest Region</u>                |   |                                      |   |   |                      |
| #31                                    | LaGrange Parole District                  | 0.0 (0)                              | 16.7 (2)                                  | 8.3 (1)                                       | 75.0 (9)             |
| #34                                    | Lafayette Parole District                 | 21.4 (3)                             | 14.3 (2)                                  | 0.0 (0)                                       | 64.3 (9)             |
| #44                                    | Adairsville Parole District               | 33.3 (4)                             | 16.7 (2)                                  | 0.0 (0)                                       | 50.0 (6)             |
| #54                                    | Carrollton Parole District                | 10.0 (1)                             | 10.0 (1)                                  | 0.0 (0)                                       | 80.0 (8)             |
| <u>Northeast Region</u>                |   |                                      |   |   |                      |
| #9                                     | Thomson Parole District                   | 12.5 (1)                             | 12.5 (1)                                  | 0.0 (0)                                       | 75.0 (6)             |
| <u>Metro Region</u>                    |   |                                      |   |   |                      |
| #22                                    | Lawrenceville Parole District             | 36.4 (4)                             | 9.1 (1)                                   | 0.0 (0)                                       | 54.5 (6)             |
| #29                                    | North Fulton Parole District <sup>2</sup> | 15.7 (3)                             | 10.5 (2)                                  | 10.5 (2)                                      | 42.1 (8)             |
| #47                                    | South Metro Parole Center                 | 25.0 (3)                             | 0.0 (0)                                   | 8.3 (1)                                       | 66.7 (8)             |
| #48                                    | Dekalb Parole Center                      | 30.0 (3)                             | 10.0 (1)                                  | 0.0 (0)                                       | 60.0 (6)             |
| Mean percent completed per district    |   | 60.1                                 |   |   |                      |
| Minimum percent completed per district |   | 41.7                                 |   |   |                      |
| Maximum percent completed per district |   | 80.0                                 |   |   |                      |

<sup>1</sup> The proportions presented refer to those who dropped out of the program during the indicated portion of the class.

<sup>2</sup> Data are missing on four cases in district 29. The four parolees did not complete the class, but the proportion of class completed is unknown.

### **Colorado Offender Attitude Survey (Pre/Posttest)**

To assess whether the Cognitive Skills Program improves measured cognitive skills and fosters prosocial attitudes, an analysis was undertaken to determine: 1) if program participants change in the ten scores from pretest to posttest, and 2) if the amount of change in scale scores experienced by those attending the program (experimentals) is greater than changes for the comparison group. For example, it is not enough to detect favorable change in scale scores for the treatment group from pretest to posttest. A comparison must be made with the change in scores demonstrated by the control group to determine whether the change for the treatment group likely would have occurred in the absence of treatment. Similarly, it is possible that the amount of change across study groups (experimentals and controls) is significantly different (relative change), yet the amount of change from pretest to posttest (absolute change) does not reach statistical significance. When using these two criteria together to conclude that the intervention alters cognitive skills and attitudes as measured by the Colorado Offender Attitude Survey, the results are largely unresponsive.

The model comparing change in scale scores across the experimental and control groups reveals three instances where changes from pretest to posttest scores for experimental participants were statistically significant (Table 7). The experimentals improved on scales 2 and 17, and their scores worsened on scale 4. These differences, however, were not significantly different from the pretest to posttest changes achieved by the comparison group participants. As we examine these changes for medium/high risk groups and low risk groups, Table 8, we notice some significant changes, but these are not changes that support either a risk effect or a treatment effect. We note, for example, that high risk experimentals achieved significantly higher posttest scores than pretest scores. These gains, however, were not significantly different from the gains achieved by the other groups (e.g., medium/high risk controls, low risk experimentals, low risk controls). In addition, on scale 6, change scores for medium/high risk controls were significantly worse than those for low risk controls, but neither of the experimental groups achieved significant gains either in comparison to their pretest scores, or in comparison to the other groups.

**Table 7. Change in attitude scale scores by group assignment: experimental and control groups.**

| Scale  | Group        | Pretest Means | Posttest Means | Difference <sup>1</sup> | Summary of Nature of Change   |
|--|--------------|---------------|----------------|-------------------------|---|
| 1 Belief that criminal behavior/<br>drug use is wrong<br>(increase) <sup>2</sup> | Experimental | 4.47          | 4.45           | -0.02                   | No change.  |
|  | Control      | 4.54          | 4.46           | -0.08                   |   |
| 2 Favorable attitudes toward<br>police<br>(increase)                             | Experimental | 3.09          | 3.22           | 0.13 <sup>A</sup>       | Experimentals improved, but not significantly greater than comparisons. |
|  | Control      | 3.14          | 3.20           | 0.06                    |   |
| 4 Belief that your parole<br>officer is supportive<br>(increase)                 | Experimental | 3.72          | 3.62           | -0.10 <sup>A</sup>      | Experimentals worsened, but not significantly worse than comparisons.   |
|  | Control      | 3.62          | 3.66           | 0.04                    |   |
| 5 Belief that others regard you<br>positively<br>(increase)                      | Experimental | 3.81          | 3.81           | 0.00                    | No change.  |
|  | Control      | 3.84          | 3.81           | -0.03                   |   |
| 6 Perceived prospects for<br>achieving life goals<br>(increase)                  | Experimental | 4.66          | 4.65           | -0.01                   | No change.  |
|  | Control      | 4.71          | 4.70           | -0.01                   |   |
| 11 Acceptance of<br>rationalizations for crime<br>(decrease)                     | Experimental | 2.01          | 2.02           | 0.01                    | No change.  |
|  | Control      | 1.92          | 1.92           | 0.00                    |   |
| 15 Susceptibility of peer<br>influences toward crime<br>(decrease)               | Experimental | 2.07          | 1.98           | -0.09                   | No change.  |
|  | Control      | 1.88          | 1.89           | 0.01                    |   |
| 17 Exposure to criminal<br>friends<br>(decrease)                                 | Experimental | 1.78          | 1.67           | -0.11 <sup>A</sup>      | Experimentals improved, but not significantly greater than comparisons. |
|  | Control      | 1.62          | 1.55           | -0.07                   |   |
| Prosocial Sentiment Scale<br>(increase)  | Experimental | 3.76          | 3.76           | 0.00                    | No change.  |
|  | Control      | 3.83          | 3.83           | 0.00                    |   |
| Cognitive Skills Scale<br>(increase)   | Experimental | 3.84          | 3.85           | 0.01                    | No change.  |
|  | Control      | 3.85          | 3.87           | 0.02                    |   |

<sup>1</sup> None of the differences in attitude scores from pretest to posttest are significantly different between experimental and control groups.

<sup>2</sup> Desired direction for change.

<sup>A</sup> Change in the attitude scale scores from pretest to posttest for the indicated group is statistically significant.  $p < .05$ .

**Table 8. Change in attitude scores by level of risk and group assignment: experimental and control groups.**

| Scale  | Group            | Pretest Mean | Posttest Mean | Difference         | Summary of Nature of Change                                    |
|--|------------------|--------------|---------------|--------------------|--|
| 1 Belief that criminal behavior/ drug use is wrong (increase) <sup>1</sup> | <u>High Risk</u> |              |               |                    | No change.   |
|  | Experimental     | 4.60         | 4.53          | -0.07              |  |
|  | Control          | 4.53         | 4.41          | -0.12              |  |
|  | <u>Low Risk</u>  |              |               |                    |  |
|  | Experimental     | 4.42         | 4.42          | 0.00               |  |
|  | Control          | 4.54         | 4.49          | -0.05              |  |
| 2 Favorable attitudes toward police (increase)                             | <u>High Risk</u> |              |               |                    | High risk experimentals improved.                              |
|  | Experimental     | 3.18         | 3.37          | 0.19 <sup>A</sup>  |  |
|  | Control          | 3.07         | 3.22          | 0.15               |  |
|  | <u>Low Risk</u>  |              |               |                    |  |
|  | Experimental     | 3.06         | 3.17          | 0.11               |  |
|  | Control          | 3.18         | 3.19          | 0.01               |  |
| 4 Belief that your parole officer is supportive (increase)                 | <u>High Risk</u> |              |               |                    | No change.   |
|  | Experimental     | 3.80         | 3.70          | -0.10              |  |
|  | Control          | 3.67         | 3.63          | -0.04              |  |
|  | <u>Low Risk</u>  |              |               |                    |  |
|  | Experimental     | 3.69         | 3.59          | -0.10              |  |
|  | Control          | 3.60         | 3.67          | 0.07               |  |
| 5 Belief that others regard you positively (increase)                      | <u>High Risk</u> |              |               |                    | No change.   |
|  | Experimental     | 3.83         | 3.84          | 0.01               |  |
|  | Control          | 3.78         | 3.70          | -0.08              |  |
|  | <u>Low Risk</u>  |              |               |                    |  |
|  | Experimental     | 3.81         | 3.79          | -0.02              |  |
|  | Control          | 3.87         | 3.87          | 0.00               |  |
| 6 Perceived prospects for achieving life goals (increase)                  | <u>High Risk</u> |              |               |                    | High risk control change differs from low risk control change. |
|  | Experimental     | 4.66         | 4.64          | -0.02              |  |
|  | Control          | 4.74         | 4.63          | -0.11 <sup>B</sup> |  |
|  | <u>Low Risk</u>  |              |               |                    |  |
|  | Experimental     | 4.65         | 4.65          | 0.00               |  |
|  | Control          | 4.69         | 4.73          | 0.04 <sup>B</sup>  |  |

<sup>1</sup> Desired direction for change.<sup>A</sup> Change in the attitude scale scores from pretest to posttest for the indicated group is statistically significant.  $p < .05$ <sup>B</sup> Pretest to posttest change for the indicated group is significantly different from the change for another group.  $p < .05$

Table 8. Continued.

| Scale  | Group            | Pretest Mean | Posttest Mean | Difference | Summary of Nature of Change |
|--|------------------|--------------|---------------|------------|-----------------------------|
| 11 Acceptance of rationalizations for crime (decrease)       | <u>High Risk</u> |              |               |            | No change.                  |
|  | Experimental     | 1.91         | 2.03          | 0.12       |                             |
|  | Control          | 1.95         | 1.89          | -0.06      |                             |
|  | <u>Low Risk</u>  |              |               |            |                             |
|  | Experimental     | 2.04         | 2.01          | -0.03      |                             |
|  | Control          | 1.90         | 1.93          | 0.03       |                             |
| 15 Susceptibility of peer influences toward crime (decrease) | <u>High Risk</u> |              |               |            | No change.                  |
|  | Experimental     | 1.97         | 1.89          | -0.08      |                             |
|  | Control          | 2.01         | 1.94          | -0.07      |                             |
|  | <u>Low Risk</u>  |              |               |            |                             |
|  | Experimental     | 2.10         | 2.02          | -0.08      |                             |
|  | Control          | 1.82         | 1.87          | 0.05       |                             |
| 17 Exposure to criminal friends (decrease)                   | <u>High Risk</u> |              |               |            | No change.                  |
|  | Experimental     | 1.73         | 1.57          | -0.16      |                             |
|  | Control          | 1.68         | 1.56          | -0.12      |                             |
|  | <u>Low Risk</u>  |              |               |            |                             |
|  | Experimental     | 1.80         | 1.71          | -0.09      |                             |
|  | Control          | 1.60         | 1.54          | -0.06      |                             |
| Prosocial Sentiment Scale (increase)                         | <u>High Risk</u> |              |               |            | No change.                  |
|  | Experimental     | 3.82         | 3.82          | 0.00       |                             |
|  | Control          | 3.81         | 3.80          | -0.01      |                             |
|  | <u>Low Risk</u>  |              |               |            |                             |
|  | Experimental     | 3.74         | 3.74          | 0.00       |                             |
|  | Control          | 3.84         | 3.85          | 0.01       |                             |
| Cognitive Skills Scale (increase)                            | <u>High Risk</u> |              |               |            | No change.                  |
|  | Experimental     | 3.85         | 3.86          | 0.01       |                             |
|  | Control          | 3.82         | 3.81          | -0.01      |                             |
|  | <u>Low Risk</u>  |              |               |            |                             |
|  | Experimental     | 3.84         | 3.84          | 0.00       |                             |
|  | Control          | 3.87         | 3.90          | 0.03       |                             |

A number of the experimental subjects who took the posttests had not, in fact, finished the program; 26% (N = 45) of the experimental group for which pretest and posttest data are available dropped out of the class. When changes in scale scores are compared across program completers, program dropouts, and the comparison group members, while controlling for potential group differences, significant changes on two of the ten scales are revealed (see Table 9). On scale 2, group differences are primarily attributable to the significantly worse performance of the dropouts. On Scale 5, posttest results of the completers group are significantly greater than their pretest scores, and significantly different from the other groups. The examination of the three study groups within categories of risk does not effect the totality of the results (see Table 10). On only one scale, "Susceptibility to peer influences toward crime," does the completer group demonstrate a significant improvement; the low risk completer group improved on the scale from pretest to posttest and relative to the low risk dropout and low risk control change. The dropout group worsened on two scales. High and low risk dropouts decreased from pretest to posttest on scale 4 and relative only to low risk control change. Low risk dropouts also worsened from pretest to posttest on scale 5 and relative to the low risk completer group.

Does group participation as rated by the cognitive coaches affect test results? The final stage of analysis examines the impact of level of group participation on test results for the experimental group. Table 11 reports that parolees rated as participating at medium and high levels outperformed those participating at low levels. This occurred on 3 of the 10 test scales. This general pattern does not change when we examine the effects of participation on test outcomes for those who complete the program.

In sum, we see very few instances where experimental subjects/group completers performed significantly better than members of the other test groups. At best, we might conclude that the posttest results for experimental subjects (and in other tests, group completers) did not deteriorate over their pretest scores which was often the case for the other groups, especially the dropouts. In the conclusion to this report, we offer possible explanations for these findings.<sup>17</sup>

**Table 9. Change in attitude scale scores by group membership: completer, dropout, and control groups.**

| Scale  | Group      | Pretest Mean | Posttest Mean | Difference            | Summary of Nature of Change   |
|--|------------|--------------|---------------|-----------------------|---|
| 1 Belief that criminal behavior/ drug use is wrong (increase) <sup>1</sup> | Completers | 4.48         | 4.45          | -0.03                 | No change.  |
|  | Dropouts   | 4.44         | 4.45          | 0.01                  |   |
|  | Control    | 4.54         | 4.46          | -0.08                 |   |
| 2 Favorable attitudes toward police (increase)                             | Completers | 3.14         | 3.25          | 0.11                  | No change.  |
|  | Dropouts   | 2.96         | 3.13          | 0.17                  |   |
|  | Control    | 3.14         | 3.20          | 0.06                  |   |
| 4 Belief that your parole officer is supportive (increase)                 | Completers | 3.72         | 3.68          | -0.04 <sup>B</sup>    | Dropouts worsened. Dropout change differs from completer and control change.                      |
|  | Dropouts   | 3.70         | 3.42          | -0.28 <sup>A, B</sup> |   |
|  | Control    | 3.62         | 3.66          | 0.04 <sup>B</sup>     |   |
| 5 Belief that others regard you positively (increase)                      | Completers | 3.80         | 3.85          | 0.05 <sup>A, B</sup>  | Completers improved. Dropouts worsened. Completer change differs from dropout and control change. |
|  | Dropouts   | 3.85         | 3.68          | -0.17 <sup>A, B</sup> |   |
|  | Control    | 3.84         | 3.81          | -0.03 <sup>B</sup>    |   |
| 6 Perceived prospects for achieving life goals (increase)                  | Completers | 4.65         | 4.64          | -0.01                 | No change.  |
|  | Dropouts   | 4.66         | 4.68          | 0.02                  |   |
|  | Control    | 4.71         | 4.70          | -0.01                 |   |
| 11 Acceptance of rationalizations for crime (decrease)                     | Completers | 2.01         | 1.99          | -0.02                 | No change.  |
|  | Dropouts   | 2.00         | 2.11          | 0.11                  |   |
|  | Control    | 1.92         | 1.92          | 0.00                  |   |
| 15 Susceptibility of peer influences toward crime (decrease)               | Completers | 2.07         | 1.97          | -0.10                 | No change.  |
|  | Dropouts   | 2.04         | 2.02          | -0.02                 |   |
|  | Control    | 1.88         | 1.89          | 0.01                  |   |
| 17 Exposure to criminal friends (decrease)                                 | Completers | 1.79         | 1.62          | -0.17                 | No change.  |
|  | Dropouts   | 1.75         | 1.79          | 0.04                  |   |
|  | Control    | 1.62         | 1.55          | -0.07                 |   |
| Prosocial Sentiment Scale (increase)                                       | Completers | 3.79         | 3.79          | 0.00                  | No change.  |
|  | Dropouts   | 3.70         | 3.68          | -0.02                 |   |
|  | Control    | 3.83         | 3.83          | 0.00                  |   |
| Cognitive Skills Scale (increase)  | Completers | 3.84         | 3.86          | 0.02                  | No change.  |
|  | Dropouts   | 3.83         | 3.82          | -0.01                 |   |
|  | Control    | 3.85         | 3.87          | 0.02                  |   |

<sup>1</sup> Desired direction for change.<sup>A</sup> Change in the attitude scale scores from pretest to posttest for the indicated group is statistically significant.  $p < .05$ <sup>B</sup> Pretest to posttest change for the indicated group is significantly different from the change for another group.  $p < .05$

**Table 10. Change in attitude scale scores by level of risk and group membership: completers, dropouts, and control groups.**

| Scale  | Group   | Pretest Means    | Posttest Means | Difference            | Summary of Nature of Change |
|--|---|------------------|----------------|-----------------------|-----------------------------|
| 1 Belief that criminal behavior/ drug use is wrong (increase) <sup>1</sup> | <u>High Risk</u>                                      |                  |                |                       | No change.                  |
|  | Completers  | 4.64             | 4.53           | -0.11                 |                             |
|  | Dropouts  | 4.46             | 4.51           | 0.05                  |                             |
|  | Control   | 4.53             | 4.41           | -0.12                 |                             |
|  | <u>Low Risk</u>                                       |                  |                |                       |                             |
|  | Completers  | 4.42             | 4.42           | 0.00                  |                             |
|  | Dropouts  | 4.44             | 4.43           | -0.01                 |                             |
|  | Control   | 4.54             | 4.49           | -0.05                 |                             |
|  | 2 Favorable attitudes toward police (increase)        | <u>High Risk</u> |                |                       |                             |
| Completers   |   | 3.27             | 3.45           | 0.18                  |                             |
| Dropouts   |   | 2.93             | 3.15           | 0.22                  |                             |
| Control  |   | 3.07             | 3.22           | 0.15                  |                             |
| <u>Low Risk</u>  |   |                  |                |                       |                             |
| Completers   |   | 3.09             | 3.18           | 0.09                  |                             |
| Dropouts   |   | 2.97             | 3.13           | 0.16                  |                             |
| Control  |   | 3.18             | 3.19           | 0.01                  |                             |
| 4 Belief that your parole officer is supportive (increase)                 |   | <u>High Risk</u> |                |                       |                             |
|  | Completers  | 3.80             | 3.80           | 0.00                  |                             |
|  | Dropouts  | 3.76             | 3.38           | -0.38 <sup>A, B</sup> |                             |
|  | Control   | 3.67             | 3.63           | -0.04                 |                             |
|  | <u>Low Risk</u>                                       |                  |                |                       |                             |
|  | Completers  | 3.69             | 3.64           | -0.05                 |                             |
|  | Dropouts  | 3.69             | 3.44           | -0.25 <sup>A, B</sup> |                             |
|  | Control   | 3.60             | 3.67           | 0.07 <sup>B</sup>     |                             |
|  | 5 Belief that others regard you positively (increase) | <u>High Risk</u> |                |                       |                             |
| Completers   |   | 3.91             | 3.94           | 0.03                  |                             |
| Dropouts   |   | 3.62             | 3.55           | -0.07                 |                             |
| Control  |   | 3.78             | 3.70           | -0.08                 |                             |
| <u>Low Risk</u>  |   |                  |                |                       |                             |
| Completers   |   | 3.76             | 3.82           | 0.06 <sup>B</sup>     |                             |
| Dropouts   |   | 3.93             | 3.73           | -0.20 <sup>A, B</sup> |                             |
| Control  |   | 3.87             | 3.87           | 0.00                  |                             |

<sup>1</sup> Desired direction for change.

<sup>A</sup> Change in the attitude scale scores from pretest to posttest for the indicated group is statistically significant.  $p < .05$

<sup>B</sup> Pretest to posttest change for the indicated group is significantly different from the change for another group.  $p < .05$

Table 10. Continued.

| Scale  | Group  | Pretest Means    | Posttest Means | Difference            | Summary of Nature of Change  |  |
|--|--|------------------|----------------|-----------------------|--|--|
| 6 Perceived prospects for achieving life goals (increase)    | <u>High Risk</u>                                       |                  |                |                       |  |  |
|  | Completers   | 4.68             | 4.65           | -0.03                 | High risk control change differs from the low risk control change. |  |
|  | Dropouts   | 4.60             | 4.60           | 0.00                  |  |  |
|  | Control  | 4.74             | 4.63           | -0.11 <sup>B</sup>    |  |  |
|  | <u>Low Risk</u>  |                  |                |                       |  |  |
|  | Completers   | 4.64             | 4.63           | -0.01                 |  |  |
|  | Dropouts   | 4.68             | 4.70           | 0.02                  |  |  |
|  | Control  | 4.69             | 4.73           | 0.04 <sup>B</sup>     |  |  |
|  | 11 Acceptance of rationalizations for crime (decrease) | <u>High Risk</u> |                |                       |  |  |
| Completers   |  | 1.86             | 1.96           | 0.10                  |  |  |
| Dropouts   |  | 2.10             | 2.24           | 0.14                  |  |  |
| Control  |  | 1.95             | 1.89           | -0.06                 |  |  |
| <u>Low Risk</u>  |  |                  |                |                       |  |  |
| Completers   |  | 2.07             | 2.00           | -0.07                 |  |  |
| Dropouts   |  | 1.97             | 2.06           | 0.09                  |  |  |
| Control  |  | 1.90             | 1.93           | 0.03                  |  |  |
| 15 Susceptibility of peer influences toward crime (decrease) |  | <u>High Risk</u> |                |                       |  | Low risk completers improved.<br><br>Low risk completer and high risk dropout change differ from low risk dropout and low risk control change. |
|  | Completers   | 1.76             | 1.79           | 0.03                  |  |  |
|  | Dropouts   | 2.58             | 2.19           | -0.39 <sup>B</sup>    |  |  |
|  | Control  | 2.01             | 1.94           | -0.07                 |  |  |
|  | <u>Low Risk</u>  |                  |                |                       |  |  |
|  | Completers   | 2.19             | 2.03           | -0.16 <sup>A, B</sup> |  |  |
|  | Dropouts   | 1.85             | 1.97           | 0.12 <sup>B</sup>     |  |  |
|  | Control  | 1.82             | 1.87           | 0.05 <sup>B</sup>     |  |  |
|  | 17 Exposure to criminal friends (decrease)             | <u>High Risk</u> |                |                       |  |  |
| Completers   |  | 1.76             | 1.50           | -0.26 <sup>A</sup>    |  |  |
| Dropouts   |  | 1.68             | 1.76           | 0.08                  |  |  |
| Control  |  | 1.68             | 1.56           | -0.12                 |  |  |
| <u>Low Risk</u>  |  |                  |                |                       |  |  |
| Completers   |  | 1.80             | 1.67           | -0.13                 |  |  |
| Dropouts   |  | 1.80             | 1.80           | 0.00                  |  |  |
| Control  |  | 1.60             | 1.54           | -0.06                 |  |  |
| Prosocial Sentiment Scale (increase)                         |  | <u>High Risk</u> |                |                       |  | No change.   |
|  | Completers   | 3.91             | 3.91           | 0.00                  |  |  |
|  | Dropouts   | 3.59             | 3.58           | -0.01                 |  |  |
|  | Control  | 3.81             | 3.80           | -0.01                 |  |  |
|  | <u>Low Risk</u>  |                  |                |                       |  |  |
|  | Completers   | 3.74             | 3.75           | 0.01                  |  |  |
|  | Dropouts   | 3.76             | 3.73           | -0.03                 |  |  |
|  | Control  | 3.84             | 3.85           | 0.01                  |  |  |

Table 10. Continued.

| Scale                                | Group            | Pretest Means | Posttest Means | Difference | Summary of Nature of Change |
|--------------------------------------|------------------|---------------|----------------|------------|-----------------------------|
| Cognitive Skills Scale<br>(increase) | <u>High Risk</u> |               |                |            | No change.                  |
|                                      | Completers       | 3.94          | 3.93           | -0.01      |                             |
|                                      | Dropouts         | 3.61          | 3.67           | 0.06       |                             |
|                                      | Control          | 3.82          | 3.81           | -0.01      |                             |
|                                      | <u>Low Risk</u>  |               |                |            |                             |
|                                      | Completers       | 3.80          | 3.83           | 0.03       |                             |
| Dropouts                             | 3.92             | 3.88          | -0.04          |            |                             |
| Control                              | 3.87             | 3.90          | 0.03           |            |                             |

**Table 11. Change in experimental group attitude scale scores by level of participation.**

| Scale  | Level of Participation | Pretest Means | Posttest Means | Difference            | Summary of Nature of Change                                       |
|--|------------------------|---------------|----------------|-----------------------|---|
| 1 Belief that criminal behavior/ drug use is wrong (increase) <sup>1</sup> | High                   | 4.56          | 4.58           | 0.02                  | No change.  |
|  | Medium                 | 4.33          | 4.36           | 0.03                  |   |
|  | Low                    | 4.23          | 4.10           | -0.13                 |   |
| 2 Favorable attitudes toward police (increase)                             | High                   | 3.19          | 3.38           | 0.19 <sup>A, B</sup>  | Highs improved. High change differs from Medium change.           |
|  | Medium                 | 3.03          | 2.96           | -0.07 <sup>B</sup>    |   |
|  | Low                    | 2.94          | 3.07           | 0.13                  |   |
| 4 Belief that your parole officer is supportive (increase)                 | High                   | 3.77          | 3.72           | -0.05                 | No change.  |
|  | Medium                 | 3.70          | 3.54           | -0.16                 |   |
|  | Low                    | 3.53          | 3.52           | -0.01                 |   |
| 5 Belief that others regard you positively (increase)                      | High                   | 3.88          | 3.90           | 0.02                  | No change.  |
|  | Medium                 | 3.72          | 3.76           | 0.04                  |   |
|  | Low                    | 3.78          | 3.60           | -0.18                 |   |
| 6 Perceived prospects for achieving life goals (increase)                  | High                   | 4.68          | 4.69           | 0.01                  | No change.  |
|  | Medium                 | 4.63          | 4.65           | 0.02                  |   |
|  | Low                    | 4.57          | 4.44           | -0.13                 |   |
| 11 Acceptance of rationalizations for crime (decrease)                     | High                   | 1.89          | 1.89           | 0.00                  | No change.  |
|  | Medium                 | 2.06          | 2.01           | -0.05                 |   |
|  | Low                    | 2.44          | 2.41           | -0.03                 |   |
| 15 Susceptibility of peer influences toward crime (decrease)               | High                   | 2.04          | 1.91           | -0.13 <sup>B</sup>    | Lows worsened. Low change differs from High and Medium change.    |
|  | Medium                 | 2.18          | 1.91           | -0.27 <sup>B</sup>    |   |
|  | Low                    | 2.04          | 2.40           | 0.36 <sup>A, B</sup>  |   |
| 17 Exposure to criminal friends (decrease)                                 | High                   | 1.68          | 1.61           | -0.07 <sup>B</sup>    | Mediums improved. Medium change differs from High and Low change. |
|  | Medium                 | 2.00          | 1.57           | -0.43 <sup>A, B</sup> |   |
|  | Low                    | 1.78          | 2.02           | 0.24 <sup>B</sup>     |   |
| Prosocial Sentiment Scale (increase)                                       | High                   | 3.84          | 3.86           | 0.02                  | No change.  |
|  | Medium                 | 3.77          | 3.75           | -0.02                 |   |
|  | Low                    | 3.49          | 3.49           | 0.00                  |   |

<sup>1</sup> Desired direction for change.<sup>A</sup> Change in the attitude scale scores from pretest to posttest for the indicated group is statistically significant.  $p < .05$ <sup>B</sup> Pretest to posttest change for the indicated group is significantly different from the change for another group.  $p < .05$

Table 11. Continued.

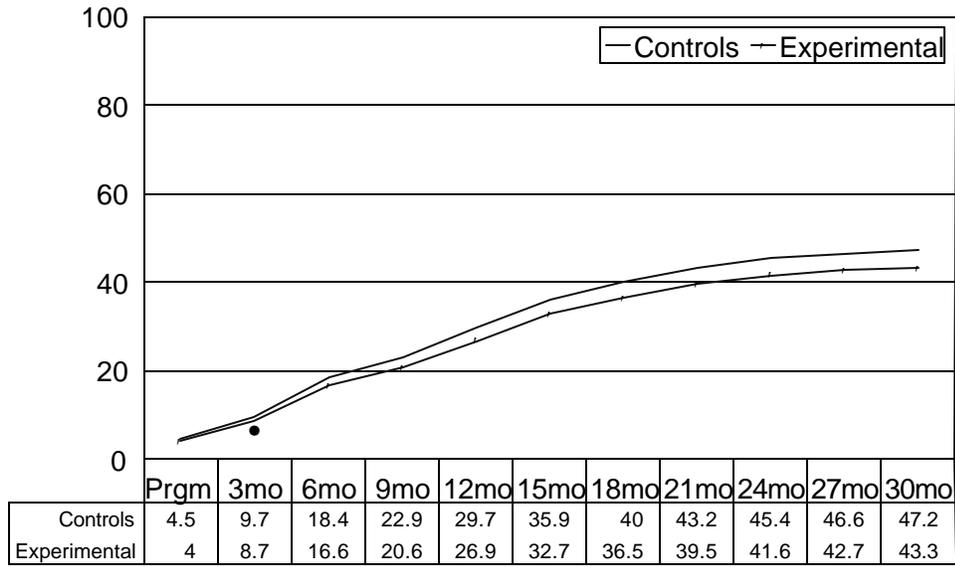
| Scale                             | Level of Participation | Pretest Means | Posttest Means | Difference | Summary of Nature of Change |
|-----------------------------------|------------------------|---------------|----------------|------------|-----------------------------|
| Cognitive Skills Scale (increase) | High                   | 3.88          | 3.92           | 0.04       | No change.                  |
|                                   | Medium                 | 3.83          | 3.81           | -0.02      |                             |
|                                   | Low                    | 3.71          | 3.69           | -0.02      |                             |

## **Recidivism**

If a treatment effect exists it would be indicated by a statistically significant difference in rates of failure on parole, with the control group experiencing the heightened failure rates. An overview of the re-offense data finds no significant difference between experimental and comparison subjects. However, experimental participants who completed the Cognitive Skills Program performed far better than either the comparison group participants or the experimental participants who did not complete the program. Statistical tests of these group differences were significant for both returns to prison and re-arrests/revocation.

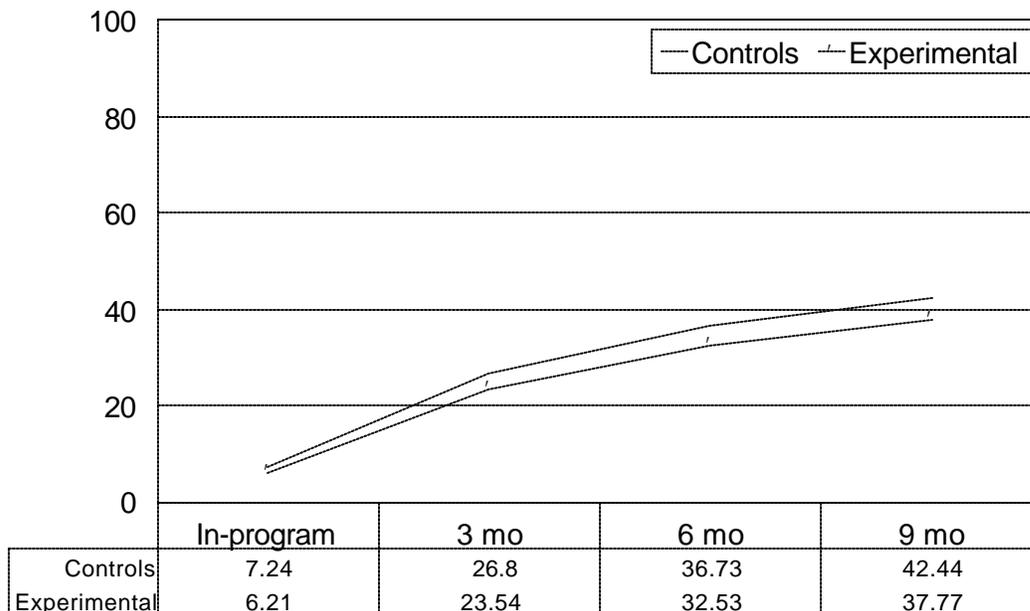
**Experimental and Control Group Comparisons—Returns to Prison.** Results of event history analysis for parolees randomly assigned to experimental and comparison groups are shown in Figure 1. The readmission to prison analyses focuses on 3,590 person-period units (experimentals = 1,812, controls = 1,778) derived from 468 parolee units. The curves shown in Figure 1 represent the predicted cumulative failure rates (inverse of a cumulative survival function) for each group by length of time (months) from the beginning of the Cognitive Skills Program. Throughout the 11 follow-up periods of the analysis, the control group members were readmitted to prison at a slightly elevated rate compared to the experimental group subjects. By end of the 30-month period, differences between the predicted return rates for experimental (43.3%) and comparison (47.2%) participants were minimal. The rates derived from the logistic regression equation are presented in Appendix C. Group differences on rates specific to each time period (i.e., non cumulative) are presented in Appendix D. In addition to the actual rates of failure, we do not detect significant differences between experimental and comparison subjects in terms of their times to failure, or return to prison.

Figure 1. Return to prison rates by group & time



**Experimental and Control Group Comparisons—Rearrest/Revocations.** The rearrest/revocation analyses uses 1,491 person-period units derived from 461 parolee units (experimentals = 742; controls = 749 ). As shown in Figure 2, the follow up covers four discrete time periods: “during program,” zero through three, four through six, and seven through nine months after the program’s conclusion. By end of the nine-month period 40.2% of parolees were readmitted to prison. Similar to readmission model discussed above, group membership did not significantly affect rates of rearrest/revocation or time to failure. The control group parolees were rearrested/revoked at slightly greater and faster rates than the experimentals but the differences were not statistically significant. At the end of the nine-month period 42.4% of controls were rearrest/revoked compared to 37.8% of the experimental group. The logistic model and rates are located in Appendices E and F.

Figure 2. Rearrest/revocation rates by group & time



What did the arrest/revocation rates look like in each of the districts which offered the Cognitive Skills Program? Table 12 shows the rearrest/revocation rates for each district, nine months following program completion. The rates are not estimated rates comparable to those shown above. They are the absolute number and proportion of offenders who were arrested/revoked by the nine month follow-up period. In addition, readers are cautioned that small numbers adversely affect the stability of group proportions.

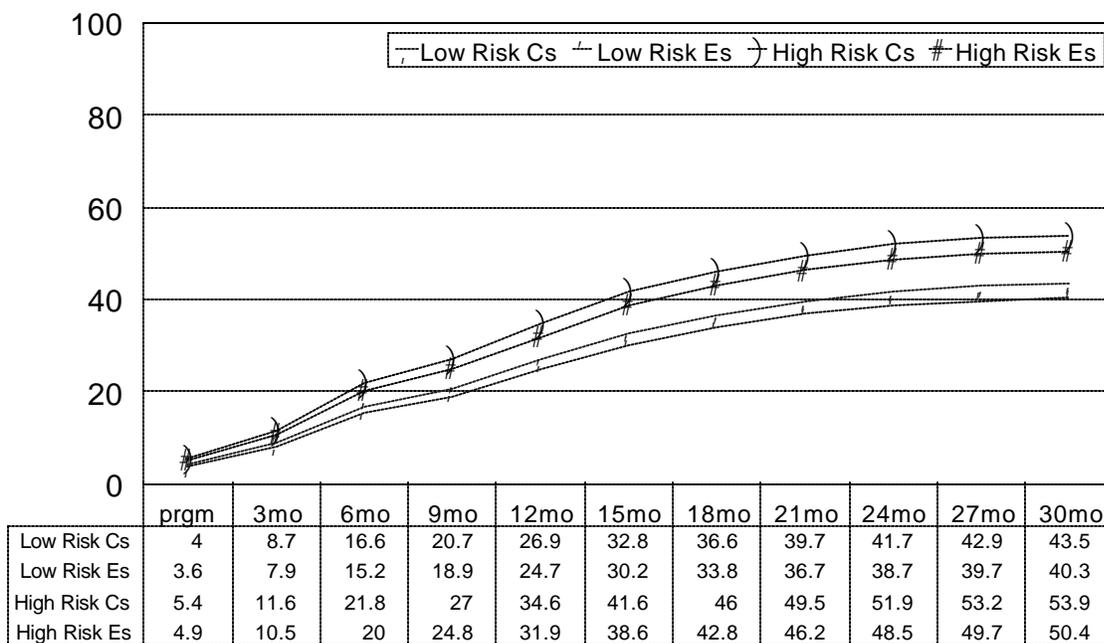
**Table 12. Proportion of study groups within districts rearrested or revoked by nine months after class end.<sup>1</sup>**

| Location                          | Completers (N) | Dropouts (N) | Controls (N) | Total (N) |
|-----------------------------------|----------------|--------------|--------------|-----------|
| <u>Southwest Region</u>           |                |              |              |           |
| #42 Valdosta                      | 40.0 (2)       | 33.3 (2)     | 22.2 (4)     | 27.6 (8)  |
| <u>Southeast Region</u>           |                |              |              |           |
| #11 Savannah Parole District      | 0.0 (0)        | 60.0 (6)     | 23.5 (4)     | 27.0 (10) |
| #37 Lyons Parole District         | 25.0 (1)       | 60.0 (3)     | 57.1 (4)     | 50.0 (8)  |
| #25 Brunswick Parole District     | 20.0 (3)       | 42.9 (3)     | 60.0 (12)    | 42.9 (18) |
| #38 Statesboro Parole District    | 20.0 (4)       | 57.1 (4)     | 51.9 (14)    | 40.7 (22) |
| <u>Central Region</u>             |                |              |              |           |
| #20 Jonesboro Parole District     | 10.0 (1)       | 69.2 (9)     | 45.5 (10)    | 44.4 (20) |
| #32 Griffin Parole District       | 37.5 (3)       | 66.7 (2)     | 58.3 (7)     | 52.2 (12) |
| <u>Northwest Region</u>           |                |              |              |           |
| #31 LaGrange Parole District      | 55.6 (5)       | 100.0 (3)    | 66.7 (8)     | 66.7 (16) |
| #34 Lafayette Parole District     | 44.4 (4)       | 60.0 (3)     | 16.7 (2)     | 34.6 (9)  |
| #44 Adairsville Parole District   | 0.0 (0)        | 50.0 (3)     | 45.5 (5)     | 34.8 (8)  |
| #54 Carrollton Parole District    | 12.5 (1)       | 50.0 (1)     | 18.2 (2)     | 19.0 (4)  |
| <u>Northeast Region</u>           |                |              |              |           |
| #9 Thomson Parole District        | 33.3 (2)       | 100.0 (2)    | 62.5 (5)     | 56.3 (9)  |
| <u>Metro Region</u>               |                |              |              |           |
| #22 Lawrenceville Parole District | 33.3 (2)       | 60.0 (3)     | 25.0 (2)     | 36.8 (7)  |
| #29 North Fulton Parole District  | 0.0 (0)        | 50.0 (5)     | 30.4 (7)     | 29.3 (12) |
| #47 South Metro Parole Center     | 37.5 (3)       | 66.7 (2)     | 38.5 (5)     | 41.7 (10) |
| #48 Dekalb Parole Center          | 0.0 (0)        | 25.0 (1)     | 54.5 (6)     | 33.3 (7)  |

<sup>1</sup> Presented in this table are descriptive statistics as opposed to the predicted probabilities presented elsewhere in the report in survival curves.

**Experimental and Control Group Comparisons by Risk ---Returns to Prison.** The “risk effect”, a term coined by Canadian criminologists Andrews, Bonta, and Hoge, (1990) maintains that intensive correctional programs are likely to be more appropriate to the needs of medium to high risk offenders than to low risk offenders. In fact meta-analyses by the same authors (Andrews et al., 1990) report that intensive programming can sometimes be detrimental to low risk offenders. In the second step of the event history analysis, parolees’ risk level is added to the readmission to prison and rearrest/revocation models. While rates are significantly different for medium/high risk offenders than for low risk offenders ( $p < .05$ ) (see Figure 3), there are no significant differences in return rates for experimental versus control group parolees within categories of risk. In other words, there is no evidence of a risk effect showing greater gains for medium to high risk experimental participants (over medium to high risk comparisons) than for low risk experimental participants as compared to low risk comparison participants. Although predicted readmission rates for medium/high controls (53.9%) are slightly higher than for medium/high experimental parolees (50.4%), the difference is not significant. Moreover, these differences do not substantially surpass the difference between low risk controls (43.5%) and low risk experimentals (40.3%). The model for Figure 3 is located in Appendix G; rates for each time period are shown in Appendix D.

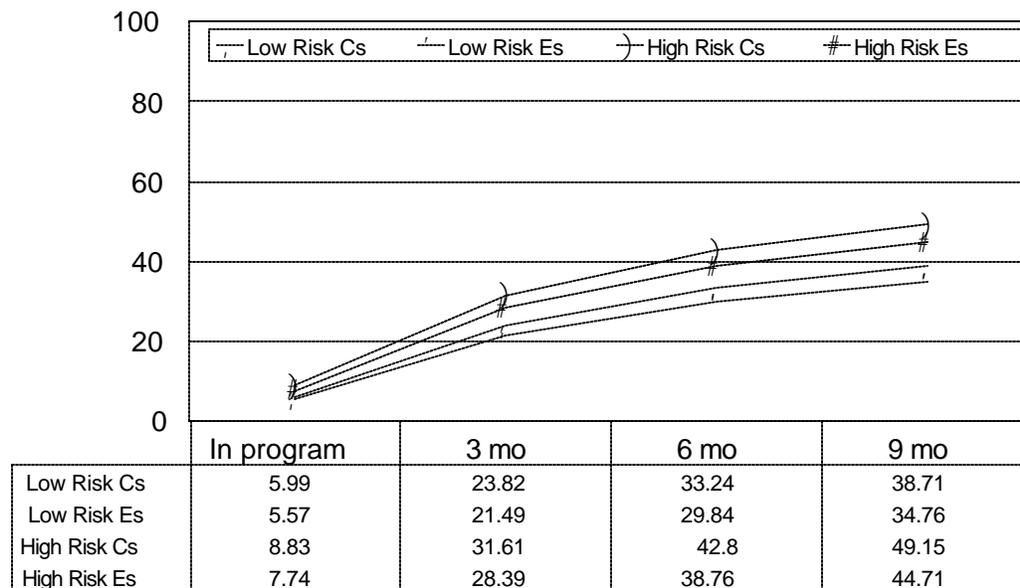
Figure 3. Return to prison rates by group, risk, & time



**Experimental and Control Group Comparisons by Risk ---Revocations/Rearrests.**

As with the readmission models above, the rates of rearrest/revocation for controls compared to experimentals within categories of risk level did not differ significantly. Shown in Figure 4, by the end of the nine-month follow up period 38.7% of low risk controls had been rearrested/revoked compared to 34.8% of the low risk experimentals, and 49.2% of medium/high risk controls were rearrested/revoked compared to 44.7% of medium/high risk experimentals. There is no “risk effect” in these data (see Appendices H & F).

Figure 4: Rearrest/revocation rates by group, risk, & time

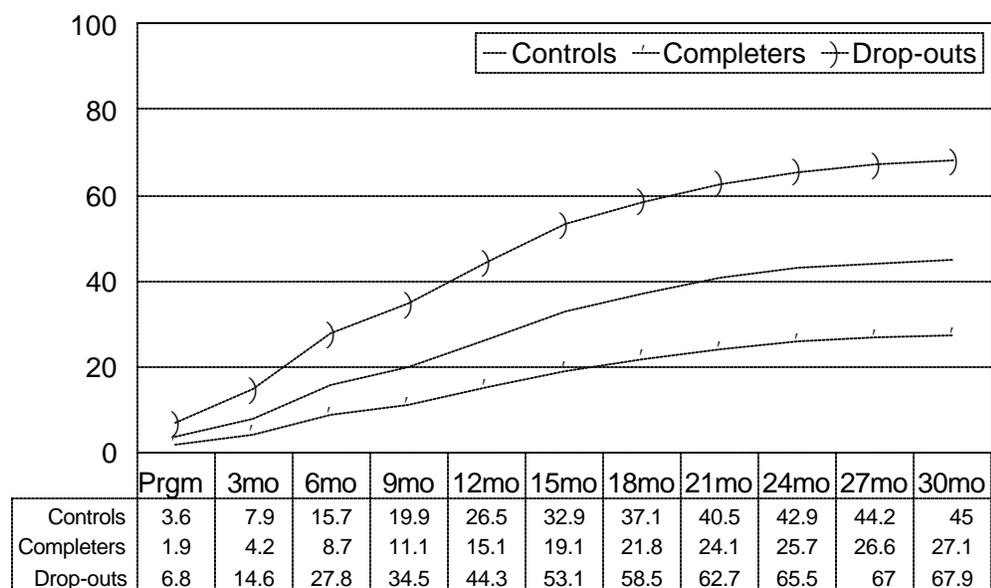


**Effects of Program Completion ---Returns to Prison.** The third stage of the analyses examines the effects of completing the Cognitive Skills course as opposed to simply being assigned to the experimental condition. Results shown in figures 1-4, above, include in the experimental group both those who completed the program and those who dropped out. Of the 232 parolees assigned to the Cognitive Skills course, however, 40.5% did not complete the program and therefore did not actually receive the full “dosage” of the treatment. In an attempt to test for the effects of group completion, this portion of the analyses focuses on three study groups: completers (N = 138), dropouts (N = 94), and controls (N = 236). As noted above, these analysis required holding possible sources of group differences constant, i.e., controlling for number of prior incarcerations, race, education, SES, employment, and age. In looking at outcomes for those who completed the

Cognitive Skills Program, we see that the Cognitive Skills Program substantially reduced recidivism and time to recidivism over results from those who did not participate in the program.

As shown in Figure 5, the rates of return to prison were highest for those dropping out of the program and lowest (by far) for those who completed the program in its entirety. Differences in rates of failure between all three of the study groups are significant. This ranking holds for proportions of parolees that fail at the end of the various study periods and the length of time to failure.

Figure 5. Return to prison rates by group & time



As can be seen in Figure 5, only 27.1% of completers, compared to 45.0% of controls and 67.9% of dropouts were readmitted to prison at the end of the study. By the six-month period of follow up, 25% of dropouts were returned to prison. It was not until the 12-month period and 24-month period that the controls and completers, respectively, reached a 25% failure rate. The treatment effect (difference between completers and controls) is now 18%. The equation for this model is shown in Appendix I. See Appendix J for rates per period.

We examined these findings for a risk effects (see Figures 6 & 7) and found none. Treatment effect sizes were similar for low and high risk offenders, although failure rates were significantly elevated ( $p < .05$ ) for high risk offenders as a group (including completers, comparisons, and experimental subjects) than for low risk offenders as a group. The readmission model that

includes risk as a covariate with the three study groups is presented in Appendix K. Appendix J presents rates per period.

Figure 6. Return to prison rates by group & time: low risk

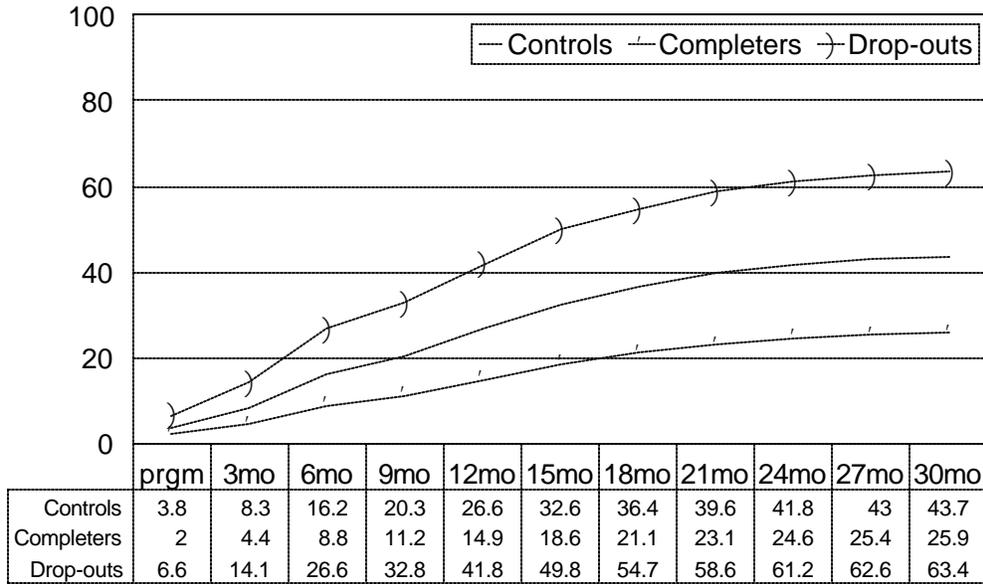
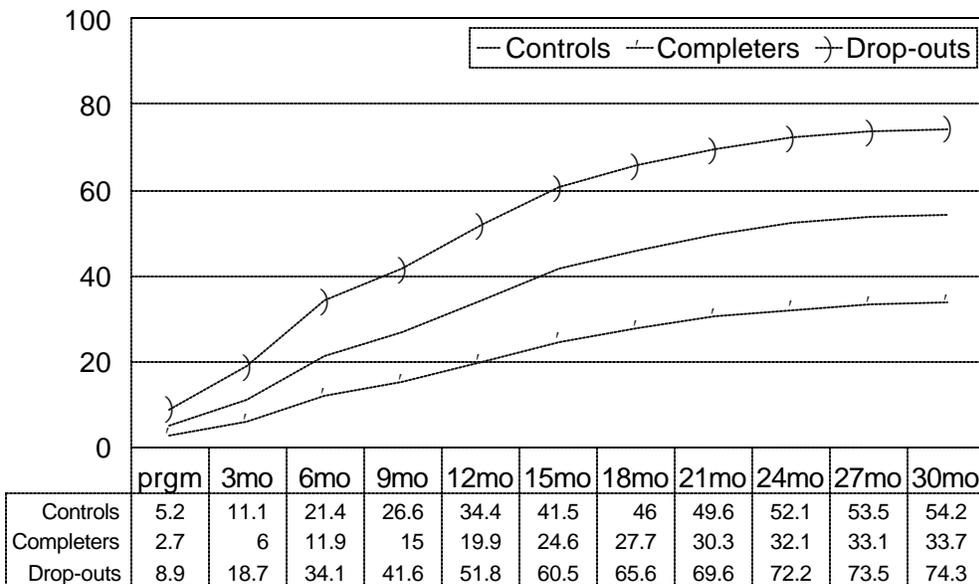


Figure 7. Return to prison rates by group & time: high risk



**Effects of Program Completion--Revocations/rearrests.** Figure 8 presents the failure curve for the rearrest/revocation analysis. The findings for the rearrest/revocation model mirror those for readmission to prison. By the end of the study 20.3% of completers, 39.3% of controls, and 62.5% of dropouts were rearrested/revoked (see Appendix K & M for equation and rates).

Again, entering the risk variable into the analyses does not affect the relationships between study group membership and parole performance, except that medium/high risk offenders (as a group) generally failed faster and at higher rates than low risk offenders. Figure 9 shows that 58.1% of low risk drop outs were rearrested/revoked, compared to 38.7% of low risk controls and 20.2% of low risk completers. Among the medium to high risk parolees (Figure 10), 69.5% of dropouts, 49.4% of controls, and 27.3% of completers were rearrested/revoked (see also Appendixes M and N).

Figure 8. Rearrest/revocation rates by group & time

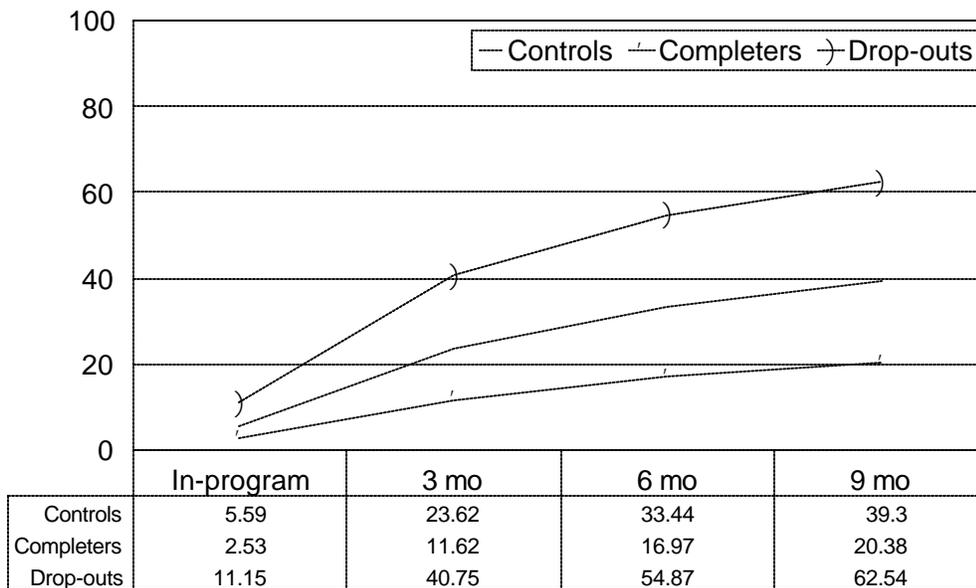


Figure 9. Rearrest/revocation rates by group & time: low risk

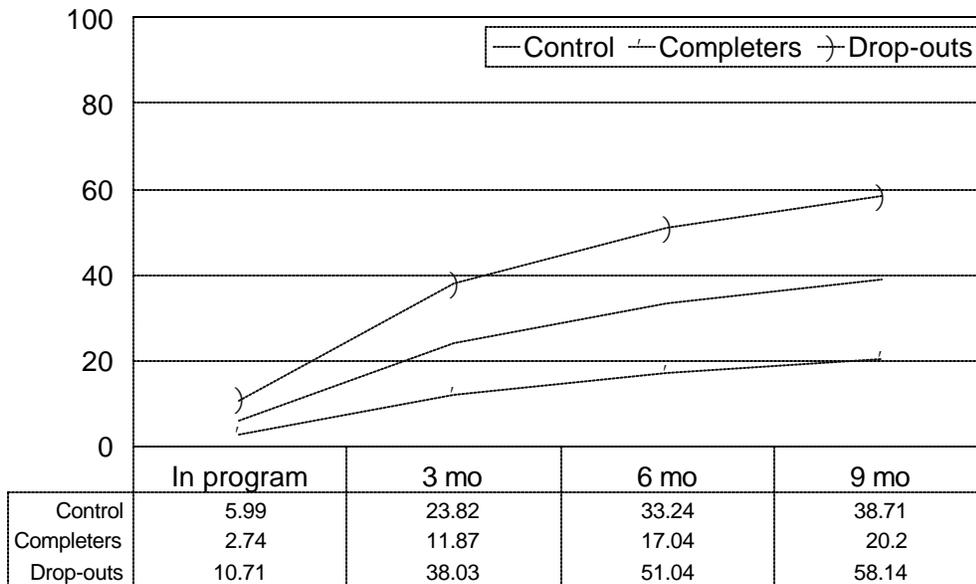
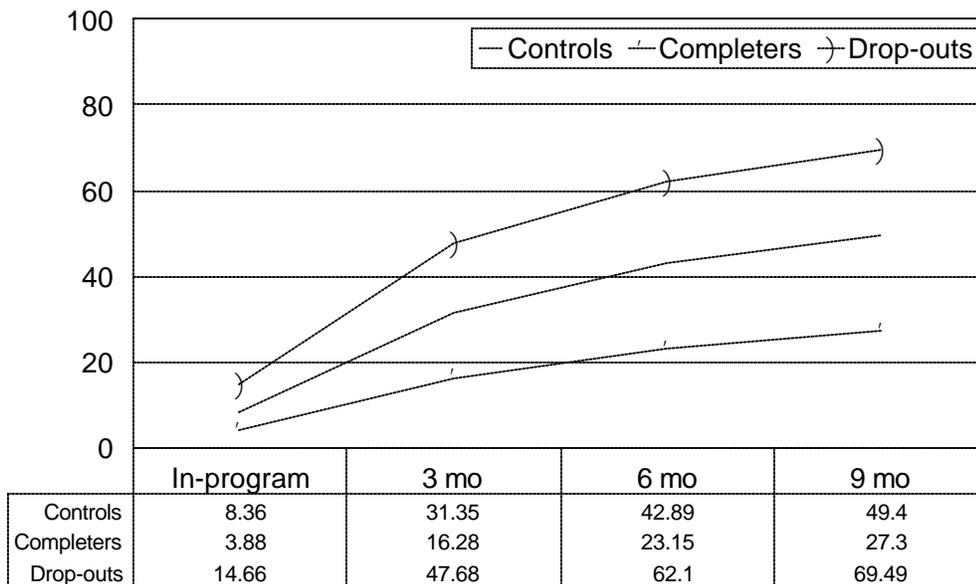


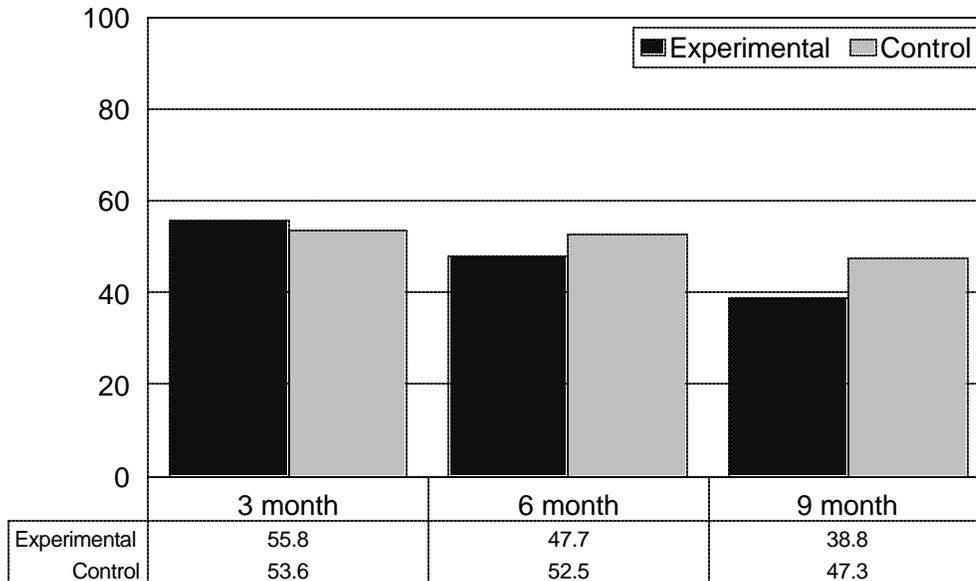
Figure 10. Rearrest/revocation rates by time & group: high risk



## Technical Violations.

**Experimental and Control Group Comparisons.** Technical violations are examined across three time periods, three, six, and nine month time frames. In contrast to the recidivism analyses, above, technical violations are only examined for those offenders who are on parole supervision. Moreover, results in these analyses are not cumulative across time periods. Figure 11, reports slightly higher technical violation rates for comparison versus experimental subjects during the second and third time periods. These differences were not significant, however. Rates were similar for the first time period (2.2% difference). During the nine month time period, 47.3% of the comparisons were reported to have at least one technical violation as opposed to 38.8% of the experimental participants; the difference, however, is not significant.

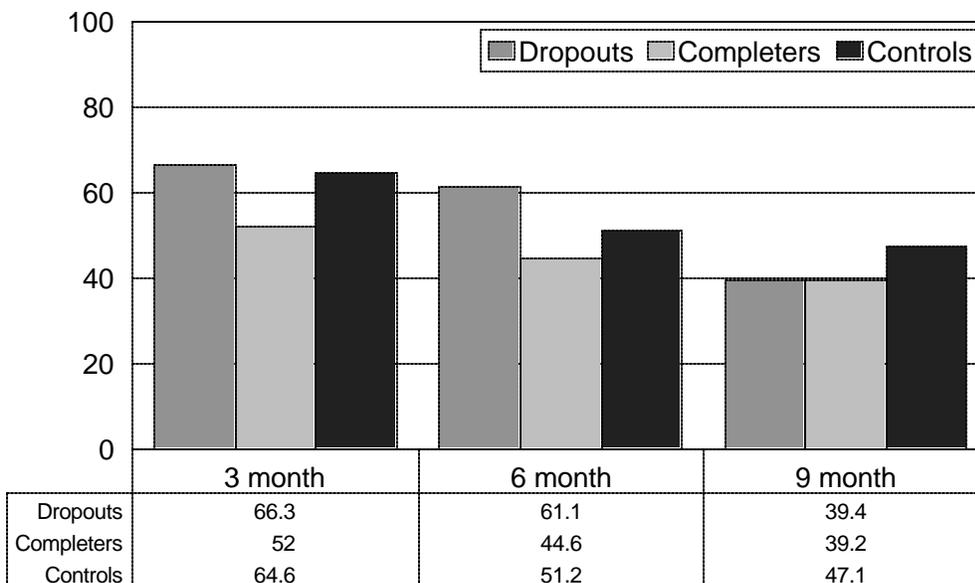
Figure 11. Technical violations by group & time



**Three-Group Comparisons.** Differences are generally better for those who complete the program than for those who dropout or for members of the comparison group. As noted in Figure 12, in each of the time periods, proportionately fewer program completers have at least one technical violation than dropouts or comparison group participants (controlling for group differences). Group differences are not significant during any of the time periods, and by the ninth month, results for completers are identical to those for program drop outs.

Entering risk into these models does not change the magnitude of group results over those shown in Figures 11 and 12. Therefore these results are not reported.

Figure 12. Technical violations by group & time

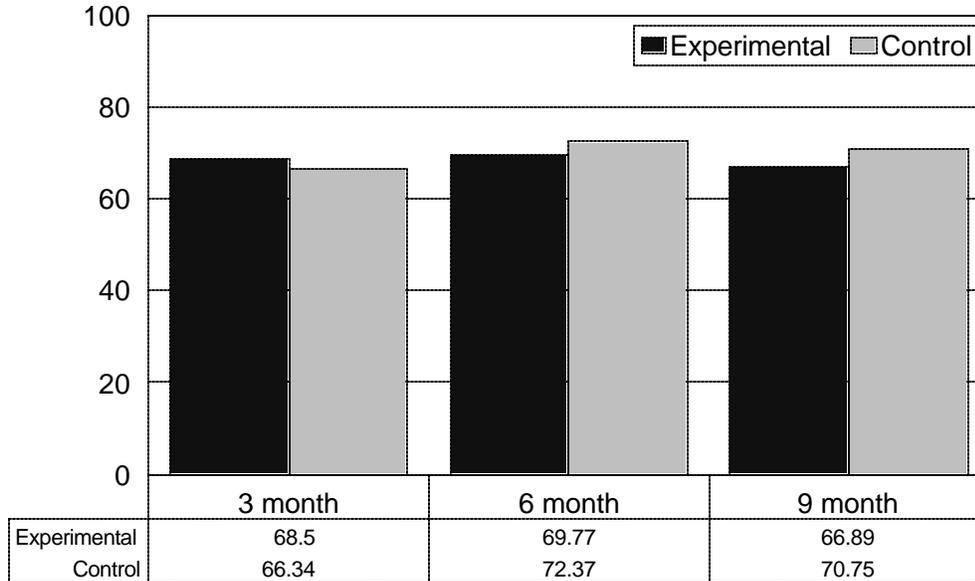


## Employment

**Experimental and Control Group Comparisons.** Through each of the three time periods examined, rates of employment were high (greater than 65%) for all of the parolees on supervision. Moreover, similar proportions of experimental and control group participants were employed at each time period. Chi square analyses indicates that assignment to either the experimental or comparison group does not affect whether parolees are employed during the three-, six-, or nine-month follow-up periods. Figure 13 presents the employment trends across the three time periods. Although a slightly greater proportion of experimental subjects were employed during the three month period (68.5% compared to 66.34% of the comparison group), comparison group

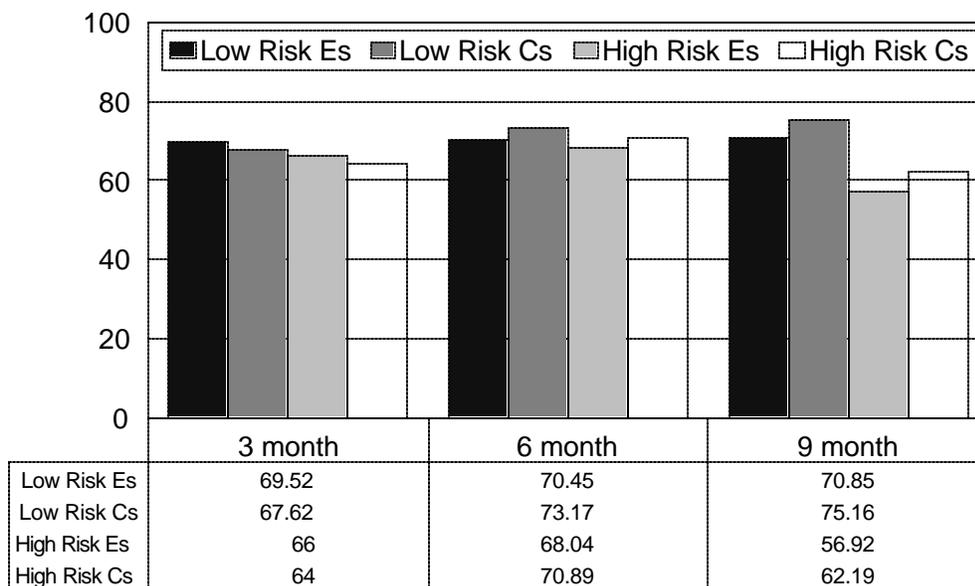
employment figures were slightly better than the experimental group during the six- and nine-month time frames. None of these group differences are statistically significant.

Figure 13. Employment by group & time



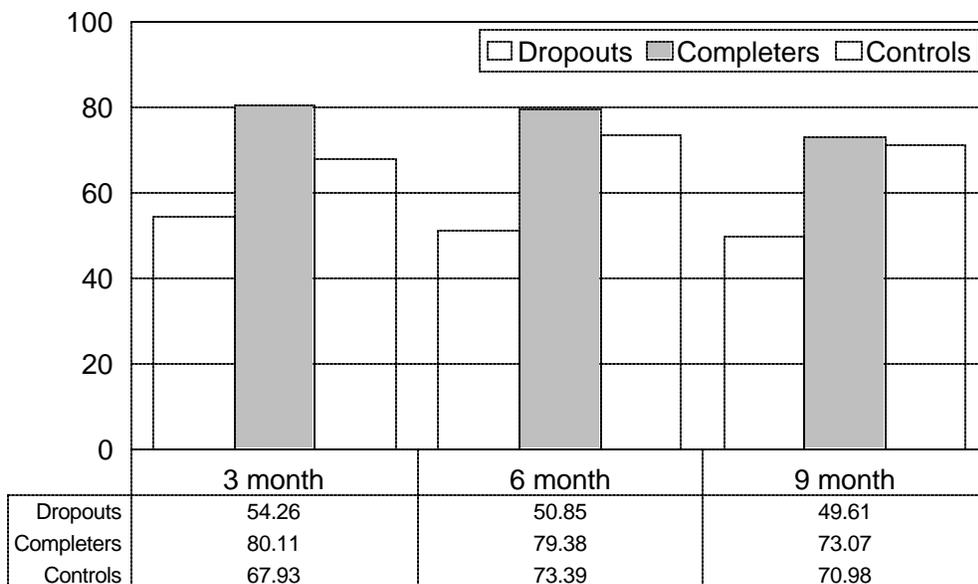
Group effects for different risk levels are shown in Figure 14. There are no significant treatment effects for different categories of risk.

Figure 14. Employment by group, risk & time



**Three Group Comparisons.** This picture changes considerably when we examine the effects of group completion. Significant differences in employment status emerge when class dropouts are distinguished from those who completed the Cognitive Skills course. As can be seen in Figure 15, a significantly greater proportion of completers were employed compared to the dropouts for all three follow up periods ( $p < .05$ ). A clear majority of completers were employed throughout the follow up (80.11% at three-months, 79.38% at six-months, and 73.07% at nine-months), while only around half of the dropouts were employed (54.26% at three-months, 50.85% at six-months, and 49.61% at nine-months). The proportion of the control group employed (67.93%) was significantly lower than the completers (80.11%) at the three month period but not significantly different than the completer group at the six and nine-month periods.

Figure 15. Employment by group & time



The patterns of employment for the three study groups across categories of risk are presented in Figures 16 and 17. Adding the covariate “level of risk” into the model does not alter the relationships between study group membership and employment at any point in the follow up.

Figure 16. Employment by group & time: low risk

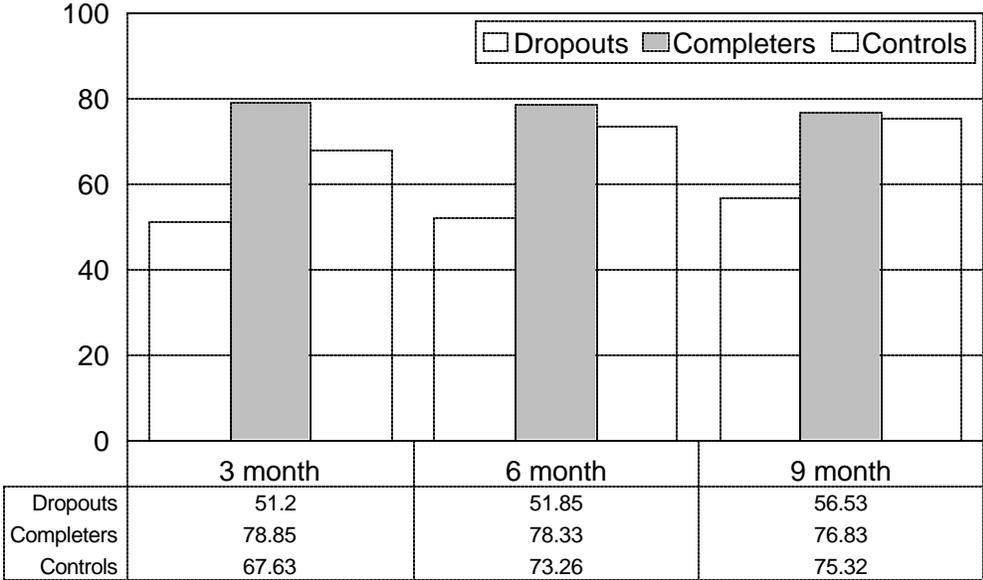
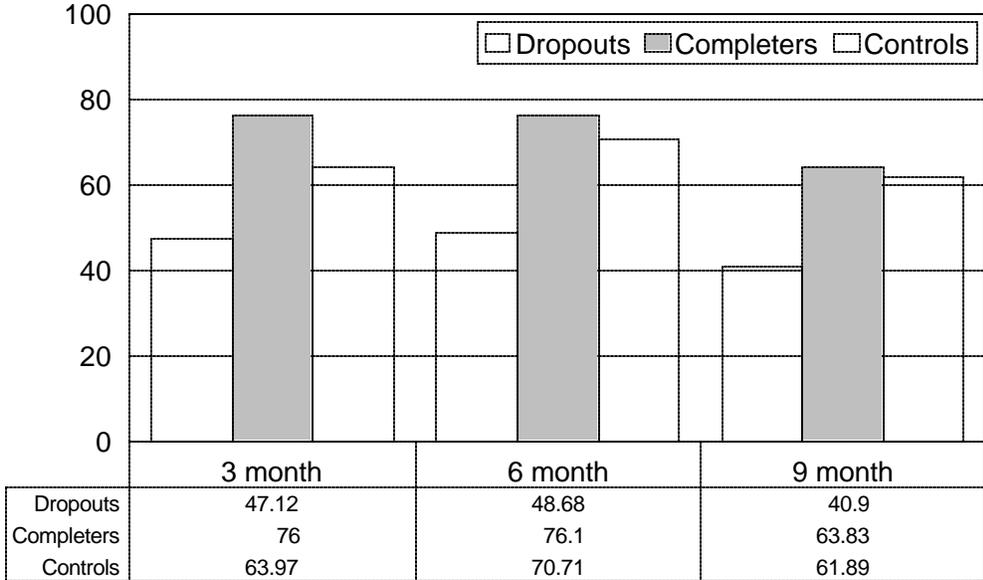


Figure 17. Employment by group & time: high risk



## DISCUSSION AND RECOMMENDATIONS

Results for Phase I of the Georgia Cognitive Skills Program show modest (but not significant) differences between those randomly assigned to the program and comparison groups. Both the differences in terms of returns to prison or rearrests/revocations are typically in the range of 4%. That is recidivism rates for experimental group members are generally 4% lower than those for comparison group members. It is important to note that these findings are consistent with other large-scale, cognitive interventions of R&R (e.g., Johnson & Hunter, 1995 and Porporino & Robinson, 1995). The emerging pattern across evaluations of cognitive programs finds the largest effects for smaller programs (e.g., see Wilson et al., 2000).

It is only when looking at the effects for those who complete the program that significant differences between groups appear. By these analyses, those completing the Cognitive Skills Program had recidivism rates that were roughly 20% lower than comparison group members. The results suggest that program completion substantially reduces offender recidivism.

These results are consistent with research conducted in other settings. For example, when R&R was studied among a large group of Canadian community correctional clients (Robinson, 1995), the difference in recidivism rates between experimentals and controls was only 5% until researchers re-analyzed the data for program completers versus comparison group subjects. In the Canadian study, however, researchers did not statistically control for possible group differences once dropouts were removed from the analysis.<sup>18</sup> Even so, subsequent researchers have speculated that the difference in treatment effects from small to large programs may be attributable to the reduced ability to maintain treatment integrity in larger interventions (e.g., Van Voorhis, 1999; Wilson et al., 2000).

These results should be viewed with caution. Analyses of differences between three groups are possible through a quasi-experimental design with statistical controls for group differences, rather than through the controls afforded by random assignment. Even so, results appear to recommend against premature dismissal of group members from participation in the Cognitive Skills groups. Even though some of these dismissals were attributable to new offenses while offenders were in the program, many were not. In fact, the factors differentiating the two groups (class and age) were such that we would expect the program drop outs to do *better* than those in the other groups. Program dropouts were more likely to be older than 38 and middle class. Even those

experimental parolees who left the program for non-offense reasons committed new offenses at a faster and more prevalent rate than those completing the group.

**Recommendation:** Results suggest strengthening requirements of program participation and attendance. This would discourage voluntary participation or dismissal for purposes of employment or other reasons, especially when such reasons do not need to preclude group participation. Programs in other sites, for example, have increased program completion rates by requiring participation as a condition of supervision and requiring participants to schedule works hours to accommodate the conditions of supervision.

Notwithstanding the potential for any treatment or educational program to interfere with work, the Georgia Cognitive Skills Program had a favorable impact on employment during the follow-up period. Especially during the three and six months follow-up periods, parolees who completed the program were considerably more likely to be employed than those who dropped out or were members of the comparison group. This rate even surpasses the fairly high employment rate achieved for comparison group participants, which averaged 71% for the three time periods. In other words, GBPP appears to be quite successful in placing its parolees in full or part-time work. The employment rates achieved by participants to the Cognitive Skills Program, however, surpasses even the favorable rates already achieved by the State.

A number of findings warrant additional discussion and explanation. First, the effects of the Cognitive Skills Program on technical violations were not significant even when examined in the three group models. Such findings are not unusual in correctional settings. Technical violations and misconducts really measure the behavior of two individuals---the offender and the practitioner who files the violation (see Van Voorhis, 1994). As outcome measures, in other words, technical violations reflect organizational norms and perhaps subtle differences in practices across districts. The resulting instability of the measure then attenuates relationships between technical violations and independent factors such as program participation.

Second, results of the Colorado Offender Attitude Survey (Johnson & Hunter, 1992) were disappointing. Psychometric properties of the scales (Chronbach's alpha) were weak, and differences across groups were minimal. Several reasons for these findings may be entertained. The survey is new and has not been widely tested or validated. Scales may not be stable. With low scale reliabilities, error is larger for the comparison of posttest measures with pretest measures than it is when we use only one test. In addition, the instrument simply may not be sensitive to change, which is a requirement of pre/posttests (Van Voorhis et al., forthcoming). Moreover, the scales may

not be properly mapping onto the intervention, i.e., tapping domains that are not addressed by the program (see Van Voorhis, Cullen, & Applegate, 1995). Finally, it may prove worthwhile to examine the procedures used to administer the survey. Adequate administration requires strict adherence to time constraints -- pretests prior to group participation and posttests immediately upon the completion of the group. Poor readers sometimes have difficulty with scantron formats, and test administrators need to check for response bias and reading difficulties.

**Recommendation:** It would be worthwhile either to continue to examine the adequacy of the Colorado Offender Attitude Survey and the procedures used to administer it or to identify an alternative assessment. Such tests provide valuable feedback to coaches and districts regardless of whether or not they are part of a larger evaluation.

Finally, a “risk effect” was not found to suggest that the program is more suitable to medium and high risk offenders than low risk offenders. Results were beneficial for both groups. Failure to detect this expected finding may be attributable to the nature of our sample. Low risk parolees, especially when identified through a non-standardized risk measure, may not be as “low risk” as other offender populations, e.g., probationers. In addition, Georgia’s screening mechanisms and risk assessment procedures may have affected the composition of the “low risk” group. For example, as officers identified their “most problematic” inmates for participation in the Cognitive Skills Program, they may have screened out the least problematic of the low risk group.

**Recommendation:** If current screening and risk assessment policies remain in place, officers need not be concerned about screening “low risk” probationers out of the program.

With the exception of conclusions pertinent to risk and program completion, this report has said little about the conditions under which the cognitive program works best. What types of offenders gain the most by participating in this intervention? Do some types of offenders gain very little? Is the program as effective with women as well as men? How effective are those programs which are favorably rated by participants? What are the most effective programs doing right? Answers to these questions will provide the information needed to “fine tune” and to improve the administration and execution of the Cognitive Skills Program. These questions will be addressed in the next and last phase of this study.

## References

- Andrews, D. & Bonta, J. (1994). The Psychology of Criminal Conduct. Cincinnati, OH: Anderson Press.
- Andrews, D. Zinger, I., Hoge, R., Bonta, J., Gendreau, P., & Cullen, F. (1990). Does Correctional Treatment Work? A Psychologically Informed Meta-Analysis. Criminology, 28, 369-404.
- Beck, A., Rush, A., Shaw, B. & Emory, G. (1979). Cognitive Therapy of Depression. New York: Guilford.
- Carey, M. (1997). Cog Probation. APPA Perspectives, Spring, 27-42.
- Dodson, K. & Khatri, N. (2000). Cognitive Therapy: Looking Backward, Looking Forward. Journal of Clinical Psychology, 56, 907-923.
- Ellis, A. (1973). Humanistic Psychotherapy. New York: Julian.
- Goldstein, A. (1988). The Prepare Curriculum: Teaching Prosocial Competencies. Champaign, IL: Research Press.
- Johnson, G. & Hunter, R. (1992). Evaluation of the Specialized Drug Offender Program. Boulder, CO: Center for Action Research, University of Colorado.
- Hoffman, P. (1994). Twenty Years of Operational Use of a Risk Prediction Instrument: The United States Parole Commission's Salient Factor Score. Journal of Criminal Justice, 22, 477-494.
- Lipsey, M. (1992). Juvenile Delinquency Treatment: A Meta-Analytical Inquiry into the Variability of Effects. In T. Cook, H. Cooper, D. Cordray, H. Hartmann, L. Hedges, R. Light, T. Louis, & F. Mosteller (Eds.) Meta-Analysis for Explanation. New York: Russell Sage Foundation.
- Losel, F. (1995). Increasing Consensus in the Evaluation of Offender Rehabilitation? Lessons from Recent Research Synthesis. Psychology, Crime, & Law, 2, 19-39.
- Meichenbaum, D. & Jaremko, M. (1982). Stress Prevention and Management: A Cognitive Behavioral Approach. New York: Plenum.
- Palmer, T. (1992). The Re-emergence of Correctional Intervention, Newbury Park: Sage.
- Porporino, F., Fabiano, E. & Robinson, D. (1991). Focusing on Successful Reintegration: Cognitive Skills Training for Offenders, Ottawa, Ontario: Correctional Services of Canada, R-19.
- Research and Statistics Branch of Correctional Services of Canada (1991) Effectiveness of the Cognitive Skills Training Program: From Pilot to National Implementation, Ottawa: Correctional Services of Canada, R-07.

Robinson, D. (1995). The Impact of Cognitive Skills Training on Post-Release Recidivism among Canadian Federal Offenders. Ottawa: Correctional Services of Canada, R-41.

Ross, R. & Fabiano, E. (1985). Time to Think: A Cognitive Model of Delinquency Prevention and Offender Rehabilitation, Ottawa, Ontario: Air Training and Publications.

Ross, R. & Fabiano, E., Ewles, C. (1988). Reasoning and Rehabilitation. International Journal of Offender Therapy and Comparative Criminology. 32(1): 29-35.

Samenow, S. (1984). Inside the Criminal Mind. New York: Times Books.

Simourd, D. (1997) Criminal Sentiments Scale-Modified and Pride in Delinquency: Psychometric Properties and Construct Validity of Two Measures of Criminal Attitudes. Criminal Justice and Behavior. 24(1): 52-70.

Van Voorhis, P. (1987). Correctional Effectiveness: The High Cost of Ignoring Success. Federal Probation. 51: 56-62.

Van Voorhis, P. (1994). Psychological Classification of the Adult, Male, Prison Inmate. Albany, NY: SUNY Press.

Van Voorhis, P. and Brown, K. (1996). Risk Classification in the 1990s. Washington, DC: National Institute of Corrections.

Van Voorhis, P., Johnson, S., Spruance, S., and Sutherland, J. (forthcoming). The Need to Measure Intermediate Outcomes, The ICCA Journal on Community Corrections.

Van Voorhis, P., Murphy, L., and Johnson, S. (1999). Process Evaluation of the Georgia Cognitive Skills Program: Phase I. Unpublished Manuscript. Cincinnati, OH: University of Cincinnati.

Van Voorhis, P. Cullen, F. & Applegate, B. (1995). Evaluating Interventions with Violent Offenders: A Guide from Practitioners and Policy Makers. Federal Probation, 59, 17-28.

Wilson, D., Allen, L, & MacKenzie, D. (2000). Quantitative Review of Cognitive Behavioral Programs, Unpublished Manuscript. College Park, MD: University of Maryland.

Yochelson, S. & Samenow, S. (1976). The Criminal Personality (vol 1): A Profile for Change. New York, NY: Jason Aronson.

## Appendix

## Appendix A. Questions comprising attitude scales (Colorado Attitude Survey).

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### Scale Name & Items

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#### 1. Belief that criminal behavior or drug use is wrong

How wrong is it for someone your age to:

- Cheat on their income tax?
- Purposely damage or destroy property?
- Use marijuana or hashish?
- Drink alcohol to point of being drunk?
- Use hard drugs such as cocaine, heroine, or LSD?
- Break in to a car or building to steal something?
- Steal something worth more than \$5

#### 2. Favorable attitudes toward police

- Police almost always have a good reason when they stop someone.
- Police rarely try to help people
- If the cops don't like you, they will get you for anything
- On the whole, cops are honest.
- You have a lot of respect for the police in the community you live in.

#### 3. Favorable attitudes toward courts and judges

- On the whole, judges are honest and kindhearted
- Almost anything can be fixed in the courts if you have enough money
- Court decisions are almost always just
- A person who does not have enough money to hire a lawyer can still get a fair trial in this state

#### 4. Belief that your parole officer is supportive

- You regard your parole officer as a source of help when you have a problem
- Your parole officer does not understand your situation very well
- Your parole officer cares about you like a son
- Your parole officer tries hard to help you stay out of trouble
- Advice that you get from your parole officer usually is not worth much
- You feel good about yourself when you live up to the expectations your parole officer has for you

#### 5. Belief that others regard you positively

- How much of the time would your friends think you:
  - Are a good person?
  - Are messed up?
  - Are likely to succeed?
  - Get into trouble?
  - Have a lot of personal problems?

#### 6. Perceived prospects for achieving life goals

- What do you think your chances are:
  - To be a success in your work or career?
  - To provide a good home to your family?
  - To have children and a relationship with them?
  - To earn an annual salary of at least \$20,000/year?

7. Problem solving ability

You have the ability to solve most problems, even when at first no solution is obvious.  
You don't like to work on a problem unless you can expect to come out with a clear cut solution.  
Thinking of similar past problems does not help much when you are trying to solve a new problem.  
Sometimes you get so charged up emotionally that you can't think of many ways of dealing with a problem you face.  
After you have solved a problem, you spend some time trying to figure out what went wrong.  
When faced with a problem you usually look at what sort of outside things in your environment may be adding to the problem.  
You have an organized way to compare choices and make decisions.

8. Empathy for others

As a rule you have little difficulty putting yourself in other people's shoes, even when you disagree with them,  
You have seen things happen to other people that make you almost sad enough to cry.  
No matter what you may think of them personally, police have such tough jobs that they should be paid well for their work.

9. Awareness and sympathy toward victims of crime

People who drink large amount of alcohol are threats to the safety of others  
Most individuals who get attacked or robbed on the street should have known better than to be in a place where that could happen.  
By failing to take reasonable precautions, many people whose houses are burglarized have themselves to blame.  
If you are a close friend or relative of someone who is beaten up or wounded in a robbery, that make you a victim too.

10. Self control

When you are angry with someone, you often take it out on anybody who happens to be around  
You are usually calm and not easily upset  
You can inform people that you are irritated or angry without losing your temper  
When you get angry, you often stay angry for hours

11. Acceptance of rationalizations for crime

People are fools to work for a living if they can get by some easier way, even by breaking the law  
Suckers deserve to be taken advantage of  
Most successful people use some illegal means to become successful  
It's okay for you to take and keep things that people are careless enough to leave around  
It's okay to cheat when you feel other are being unfair to you  
Taking things from supermarkets and department stores does not hurt anyone  
No matter where people come from, they can still get ahead through honest work

12. Tolerant attitudes toward drug use

People should have the right to choose for themselves whether or not to use marijuana.  
Person should be allowed to use crack or cocaine if they want to, so long as they don't interfere with other people.  
Many drug laws were designed mainly to keep deprived groups at a disadvantage.  
You would go out on your way to discourage a friend from using hard drugs.

13. Sense of powerlessness/fatalism

At least half the things that get people into trouble with the law are beyond their control.  
Most people will never become successful unless they get at least one lucky break.  
What you do today usually can change what might happen to you tomorrow.  
You are often blamed for things that are not your fault.  
One of the best ways to handle most problems is just not to think about them.  
After making a decision, the outcome you expected usually matches the actual outcome.

14. Normlessness/accepting illegitimate means

Sometimes you need to lie in order to get a job

At work its sometimes necessary to break the rules in order to get ahead

15. Susceptibility of peer influences toward deviance

If you want your fellow workers to like you, you may have to cover up for them

You have to be willing to break some rules if you want to be popular with your friends

It's okay to lie if it keeps your friends out of trouble

16. General susceptibility to external influence

Before you do something, you try to consider how your friends will react to it.

It is often hard for you to go on with work if nobody encourages you.

What others think of you does not bother you a lot.

You rarely need friends' advice to choose movies, books, or music.

In order to get along and be liked, you tend to be what other people expect you to be.

17. Exposure to criminal friends

How many of your friends on parole:

Suggested you do something that was against the law?

Purposely damages or destroyed property that did not belong to them?

Hit or threatened to hit someone without any reason?

Use marijuana or hashish?

Stole something worth more than \$5

Broke into a car or building to steal something?

Some hard drugs such as cocaine, heroin, or LSD?

Pressured or forced someone to have sexual relations against their will

18. Access to criminal resources

If you wanted to plan a crime, you know someone who would help you plan it

If you wanted to buy stolen goods at a low price, you would know where to go or who to see

If you wanted to get some money for stolen goods, you would know where to go or who to see

You would rather associate with people who obey the law than with people who don't

Prosocial sentiments scale:

How wrong is it for someone your age to:

cheat on their income tax?

purposely damage or destroy property?

use marijuana or hashish?

drink alcohol to the point of being drunk?

use hard drugs, such as cocaine, heroine, or LSD?

break into a car or building to steal something?

steal something worth more than \$5?

Police almost always have a good reason when they stop somebody.

Police rarely try to help people.

If the cops don't like you, they will get you for anything.

On the whole, cops are honest.

You have a lot of respect for the police in the community you live in.

On the whole, judges are honest and kindhearted.

Almost anything can be fixed in the courts if you have enough money.

Court decisions are almost always just.

A person who does not have enough money to hire a lawyer can still get a fair trial in this state.

You regard your parole officer as a source of help when you have a problem.

Your parole officer does not understand your situation very well.

Appendix A. Continued.

Scale Name & Items

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Your parole officer cares about you like a son.  
Your parole officer tries hard to help you stay out of trouble.  
Advice that you get from your parole officer usually is not worth much.  
You feel good about yourself when you live up to the expectations your parole officer has for you.  
People who drink large amount of alcohol are threats to the safety of others  
Most individuals who get attacked or robbed on the street should have known better than to be in a place where that could happen.  
By failing to take reasonable precautions, many people whose houses are burglarized have themselves to blame.  
If you are a close friend or relative of someone who is beaten up or wounded in a robbery, that make you a victim too.  
People are fools to work for a living if they can get by some easier way, even if it means breaking the law.  
Suckers deserve to be taken advantage of.  
Most successful people used some illegal means to become successful.  
It's okay for you to take a keep things that people are careless enough to leave laying around.  
It's okay to cheat when you feel others are being unfair to you.  
Taking things from supermarkets and department stores doesn't hurt anyone.  
No matter where people come from, they can still get ahead through honest work  
People should have the right to choose for themselves whether or not to use marijuana.  
Person should be allowed to use crack or cocaine if they want to, so long as they don't interfere with other people.  
Many drug laws were designed mainly to keep deprived groups at a disadvantage.  
You would go out or your way to discourage a friend from using hard drugs.  
You can make it at work without having to cheat or lie.  
Sometimes you need to lie in order to get a job.  
At work it's sometimes necessary to break the rules in order to get ahead  
If you want your fellow workers to like you, you may have to cover up for them.  
You have to be willing to break some rules if you want to be popular with your friends.  
It's okay to lie if it keeps your friends out of trouble.  
How many of your friends (during the last four months you were on parole)  
Suggested you do something that was against the law?  
Purposely damaged or destroyed property that did not belong to them?  
Hit or threatened to hit someone without any reason?  
Used marijuana or hashish?  
Stole something worth more than \$5?  
Broke into a car or building to steal something?  
Sold hard drugs such as cocaine, heroin, or LSD?  
Pressured or forced someone to have sexual relations against their will?

Cognitive Skills Scale:

How much of the time would your friends think that you  
Are a good person?  
Are messed up?  
Are likely to succeed?  
Get into trouble?  
Have a lot of personal problems?  
What do you think your chances of success are:  
To be a success in your work or career?  
To provide a good home for your family?  
To have children and a relationship with them?  
To earn an annual salary of at least \$20,000 this year?  
You have the ability to solve most problems, even when at first no solution is obvious.  
You don't like to work on a problem unless you can expect to come out with a clear cut solution.  
Thinking of similar past problems does not help much when you are trying to solve a new problem.  
Sometimes you get to charged up emotionally that you can't think of many ways of dealing with a problem you face.  
After you have solved a problem, you spend some time trying to figure out what went wrong.

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Appendix A. Continued.

Scale Name & Items

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When faced with a problem you usually look at what sort of outside things in your environment may be adding to the problem.

You have an organized way to compare choices and make decisions.

As a rule you have little difficulty putting yourself in other people's shoes, even when you disagree with them,

You have seen things happen to other people that make you almost sad enough to cry.

No matter what you may think of them personally, police have such tough jobs that they should be paid well for their work.

When you are angry with someone, you often take it out on anybody who happens to be around.

You are usually calm and not easily upset.

You can inform people that you are irritated or angry without losing your temper.

When you get angry, you often stay angry for hours.

When you are angry with someone, you often take it out on anybody who happens to be around.

You are usually calm and not easily upset.

You can inform people that you are irritated or angry without losing your temper.

When you get angry, you often stay angry for hours.

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## **Appendix B: Results of post-test analyses**

One way analysis of variance (ANOVA) is used to compare experimental and comparison group scores on eight test scales and two summary scales. A second step of these analyses enters risk as a covariate, testing whether risk interacts with group membership on these scales. As noted above, groups are reconfigured to determine the effects of program completion on test results. In doing so, we employ multiple regression (OLS), controlling for variables listed above (e.g., SES, employment, education, and age, and prior incarceration). Test scores are regressed on dummy variables for each group (completers, dropouts, and comparisons) and control variables, thus affording an opportunity to compute group means (controlling for other factors) and to assess the statistical significance of group effects on test scores. A second step to this analysis tests for interactions between treatment groups and risk, to determine whether test results for group completers, dropouts, or comparison group members differs according to risk. Statistical controls are not entered into this last analysis, because the control variables evidence high collinearity with the risk measure. In this latter case, however, the risk measure, itself acts as a control for possible group differences.

### **Post-test Results**

Analysis of variance test of the differences in results for the experimental and comparison group found no significant differences (see Table 1). As indicated above, however, a number of the experimental subjects who took the test had not, in fact, finished the program. When we compare program completers, program dropouts, and comparison group members, while statistically controlling for potential group differences.

These results are shown in Table 2. Parolees who completed the Cognitive Skills program scored no better than comparison group subjects and only slightly better than the program dropouts. In fact, group averages were significantly different for only four of the 10 tests performed. These differences, however, were attributable to lower scores achieved by the dropout group in comparison to both the completer and the comparison groups. Most notably, those who completed the program did not perform significantly better than the comparison group.

Upon controlling for risk, however, a small risk effect is detected. As shown in Table 3, medium to high risk offenders, often achieved the most favorable scores. Results favored those who completed the group in three of the eleven tests. High risk program completers scored more favorably than other program participants on the following scales: a) attitudes toward the police,

susceptibility to peer influences toward crime, and criminal sentiments. The remaining significant tests were attributable to the fact that program dropouts performed considerably worse than members of the other group.

**Table 1. Post-test means for experimental and control groups**

| Scale  | <u>Experimental</u> |     | <u>Comparison</u> |     | <u>sig.</u> |
|--|---------------------|-----|-------------------|-----|-------------|
|  | $\bar{x}$           | N   | $\bar{x}$         | N   |             |
| 1 Belief that criminal behavior/drug use is wrong.<br>(higher scores) <sup>1</sup> | 4.45                | 175 | 4.47              | 148 |             |
| 2 Favorable attitudes toward police.<br>(higher scores)                            | 3.22                | 175 | 3.19              | 148 |             |
| 4 Belief that your parole officer is supportive.<br>(higher scores)                | 3.61                | 175 | 3.66              | 148 |             |
| 5 Belief that others regard you positively.<br>(higher scores)                     | 3.80                | 175 | 3.81              | 148 |             |
| 6 Perceived prospects for achieving life goals.<br>(higher scores)                 | 4.65                | 174 | 4.70              | 147 |             |
| 11 Acceptance of rationalizations for crime.<br>(lower scores)                     | 2.03                | 175 | 1.93              | 148 |             |
| 15 Susceptibility of peer influences toward crime.<br>(lower scores)               | 1.98                | 175 | 1.90              | 148 |             |
| 17 Exposure to criminal friends<br>(lower scores)                                  | 1.68                | 175 | 1.56              | 148 |             |
| Prosocial Sentiment Scale<br>(higher scores)                                       | 3.76                | 175 | 3.83              | 148 |             |
| Cognitive Skills<br>(higher scores)  | 3.85                | 175 | 3.87              | 148 |             |

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<sup>1</sup>Desired direction for change.

**Table 2. Post-test means for comparisons, program completers and program dropouts**

| Scale  |                  | $\bar{x}$ | N   | %    | sig.  |
|--|------------------|-----------|-----|------|-------|
| 1 Belief that criminal behavior/<br>drug use is wrong<br>(higher scores <sup>1</sup> ) | Class Completers | 4.49      | 128 | 39.6 |       |
|  | Class Dropouts   | 4.44      | 47  | 14.6 |       |
|  | Comparison Group | 4.49      | 148 | 45.8 |       |
| 2 Favorable attitudes toward<br>police<br>(higher scores)                              | Class Completers | 2.37      | 128 | 39.6 |       |
|  | Class Dropouts   | 2.27      | 47  | 14.6 |       |
|  | Comparison Group | 2.33      | 148 | 45.8 |       |
| 4 Belief that your parole officer<br>is supportive<br>(higher scores)                  | Class Completers | 3.39      | 128 | 39.6 | p<.05 |
|  | Class Dropouts   | 3.13      | 47  | 14.6 |       |
|  | Comparison Group | 3.38      | 148 | 45.8 |       |
| 5 Belief that others regard<br>you positively<br>(higher scores)                       | Class Completers | 3.64      | 128 | 46.6 |       |
|  | Class Dropouts   | 3.46      | 47  | 14.6 |       |
|  | Comparison Group | 3.62      | 148 | 45.8 |       |
| 6 Perceived prospects for<br>achieving life goals<br>(higher scores)                   | Class Completers | 4.48      | 128 | 46.6 |       |
|  | Class Dropouts   | 4.52      | 47  | 14.6 |       |
|  | Comparison Group | 4.55      | 148 | 45.8 |       |
| 11 Acceptance of<br>rationalizations for crime<br>(lower scores)                       | Class Completers | 2.46      | 128 | 46.6 | p<.05 |
|  | Class Dropouts   | 2.58      | 47  | 14.6 |       |
|  | Comparison Group | 2.38      | 148 | 45.8 |       |
| 15 Susceptibility of peer<br>influences toward crime<br>(lower scores)                 | Class Completers | 1.87      | 128 | 46.6 |       |
|  | Class Dropouts   | 1.97      | 47  | 14.6 |       |
|  | Comparison Group | 1.81      | 148 | 45.8 |       |
| 17 Exposure to criminal friends<br>(lower scores)                                      | Class Completers | 2.04      | 128 | 46.4 |       |
|  | Control Group    | 2.23      | 47  | 14.6 |       |
|  | Comparison Group | 1.97      | 148 | 45.8 |       |
| Prosocial Sentiment Scale<br>(higher scores)   | Class Completers | 3.39      | 128 | 46.4 | p<.05 |
|  | Class Dropouts   | 3.28      | 47  | 14.6 |       |
|  | Comparison Group | 3.44      | 148 | 45.8 |       |
| Cognitive Skills<br>(higher scores)  | Class Completers | 3.70      | 128 | 46.4 |       |
|  | Class Dropouts   | 3.67      | 47  | 14.6 |       |
|  | Comparison Group | 3.73      | 148 | 45.8 |       |

**Table 3. Two way ANOVA of posttest scores by group membership and risk level.**

| Scale  |                  | Completers |    | - | Drop outs |    | Controls |    | sig. <sup>1</sup> |
|--|------------------|------------|----|---|-----------|----|----------|----|-------------------|
|  |                  | Mean       | N  |   | Mean      | N  | Mean     | N  |                   |
| 1 Belief that criminal behavior/<br>drug use is wrong<br>(increase) <sup>2</sup> | Medium/high Risk | 4.53       | 35 |   | 4.47      | 14 | 4.41     | 52 |                   |
|  | Low Risk         | 4.42       | 93 |   | 4.43      | 33 | 4.49     | 96 |                   |
| 2 Favorable attitudes toward<br>police<br>(increase)                             | Medium/high Risk | 3.45       | 35 |   | 3.11      | 14 | 3.22     | 52 | r x comp*         |
|  | Low Risk         | 3.18       | 93 |   | 3.13      | 33 | 3.17     | 96 |                   |
| 4 Belief that your parole officer<br>is supportive<br>(increase)                 | Medium/high Risk | 3.80       | 35 |   | 3.30      | 14 | 3.65     | 52 | dropouts*         |
|  | Low Risk         | 3.64       | 93 |   | 3.44      | 33 | 3.66     | 96 |                   |
| 5 Belief that others regard<br>you positively<br>(increase)                      | Medium/high Risk | 3.95       | 35 |   | 3.47      | 14 | 3.72     | 52 |                   |
|  | Low Risk         | 3.82       | 93 |   | 3.73      | 33 | 3.86     | 96 |                   |
| 6 Perceived prospects for<br>achieving life goals<br>(increase)                  | Medium/high Risk | 4.65       | 35 |   | 4.59      | 14 | 4.66     | 51 |                   |
|  | Low Risk         | 4.63       | 92 |   | 4.70      | 33 | 4.72     | 96 |                   |
| 11 Acceptance of<br>rationalizations for crime<br>(decrease)                     | Medium/high Risk | 1.96       | 35 |   | 2.28      | 14 | 1.92     | 52 |                   |
|  | Low Risk         | 2.00       | 93 |   | 2.06      | 33 | 1.94     | 96 |                   |
| 15 Susceptibility of peer<br>influences toward crime<br>(decrease)               | Medium/high Risk | 1.79       | 35 |   | 2.14      | 14 | 1.96     | 52 | completers *      |
|  | Low Risk         | 2.03       | 93 |   | 1.97      | 33 | 1.87     | 96 | r x comp *        |

Table 3. Continued.

| Scale   |                  | Completers |    | Drop outs |    | Controls |    | sig <sup>1</sup>           |
|---|------------------|------------|----|-----------|----|----------|----|----------------------------|
|   |                  | Mean       | N  | Mean      | N  | Mean     | N  |                            |
| 17 Exposure to criminal friends<br>(decrease) | Medium/high Risk | 1.50       | 35 | 1.82      | 14 | 1.57     | 52 | dropouts *                 |
|   | Low Risk         | 1.67       | 93 | 1.80      | 33 | 1.56     | 96 |                            |
| Prosocial Sentiment Scale<br>(increase)       | Medium/high Risk | 3.91       | 35 | 3.73      | 14 | 3.80     | 52 | completers *<br>r x comp * |
|   | Low Risk         | 3.75       | 93 | 3.58      | 33 | 3.85     | 96 |                            |
| Cognitive Skills Scale<br>(increase)          | Medium/high Risk | 3.93       | 35 | 3.66      | 14 | 3.81     | 52 | r x drop *                 |
|   | Low Risk         | 3.83       | 93 | 3.88      | 33 | 3.91     | 96 |                            |

<sup>1</sup> Significance of group effects and interaction effects.

<sup>2</sup> Desired direction of change.

**Appendix C. Logistic regression: probability of readmission to prison by experimental condition and time period.<sup>a</sup>**

|                          | Parameter Estimate | Standardized Estimate | Odds Ratio |
|--------------------------|--------------------|-----------------------|------------|
| Experimental condition   |                    |                       |            |
| Experimental Group       | -.1225             | .0000                 | .8847      |
| Time Period <sup>b</sup> |                    |                       |            |
| 3 Month                  | .1925              | .0000                 | 1.2122     |
| 6 Month                  | .8168 <sup>#</sup> | .0631                 | 2.2632     |
| 9 Month                  | .2018              | .0000                 | 1.2236     |
| 12 Month                 | .7068 <sup>#</sup> | .0480                 | 2.0275     |
| 15 Month                 | .7260 <sup>#</sup> | .0489                 | 2.0668     |
| 18 Month                 | .3468              | .0000                 | 1.4146     |
| 21 Month                 | .1902              | .0000                 | 1.2095     |
| 24 Month                 | -.1731             | .0000                 | .8411      |
| 27 Month                 | -.7696             | .0000                 | .4632      |
| 30 Month                 | -1.3144            | -.0268                | .2686      |
| Intercept                | -3.0500*           |                       |            |
| Model Chi Square         | 37.661*            |                       |            |

\* P < .05

<sup>a</sup> The failure curve associated with this logistic regression is presented in Figure 1.

<sup>b</sup> “During program” time period is the omitted variable.

<sup>#</sup> The variable is significantly different than the omitted variable, p < .05

**Appendix D. Non-cumulative rates of returns to prison: experimental and control groups by risk level and time period.**

| Time Period    | Group Membership               |              |                        |              |                       |              |
|----------------|--------------------------------|--------------|------------------------|--------------|-----------------------|--------------|
|                | All Study Members <sup>a</sup> |              | High Risk <sup>b</sup> |              | Low Risk <sup>b</sup> |              |
|                | Control                        | Experimental | Control                | Experimental | Control               | Experimental |
| During Program | 0.045                          | 0.040        | 0.054                  | 0.049        | 0.040                 | 0.036        |
| 3 Month        | 0.054                          | 0.048        | 0.065                  | 0.059        | 0.048                 | 0.044        |
| 6 Month        | 0.097                          | 0.087        | 0.116                  | 0.105        | 0.087                 | 0.079        |
| 9 Month        | 0.055                          | 0.049        | 0.066                  | 0.060        | 0.049                 | 0.044        |
| 12 Month       | 0.088                          | 0.078        | 0.104                  | 0.095        | 0.078                 | 0.071        |
| 15 Month       | 0.089                          | 0.080        | 0.107                  | 0.097        | 0.080                 | 0.073        |
| 18 Month       | 0.063                          | 0.056        | 0.076                  | 0.069        | 0.056                 | 0.051        |
| 21 Month       | 0.054                          | 0.048        | 0.065                  | 0.059        | 0.049                 | 0.044        |
| 24 Month       | 0.038                          | 0.034        | 0.047                  | 0.042        | 0.035                 | 0.031        |
| 27 Month       | 0.021                          | 0.019        | 0.026                  | 0.024        | 0.019                 | 0.018        |
| 30 Month       | 0.013                          | 0.011        | 0.015                  | 0.014        | 0.011                 | 0.010        |

<sup>a</sup> The failure curves associated with these rates are presented in Figure 1.

<sup>b</sup> The failure curves associated with these rates are presented in Figure 3.

**Appendix E. Logistic regression: probability of felony arrest or revocation by experimental condition and time period.<sup>a</sup>**

|                          | Parameter Estimate   | Standardized Estimate | Odds Ratio |
|--------------------------|----------------------|-----------------------|------------|
| Experimental condition   |                      |                       |            |
| Experimental Group       | -.1644               | .0000                 | .8484      |
| Time Period <sup>b</sup> |                      |                       |            |
| 3 Month                  | 1.2313 <sup>#</sup>  | .1615                 | 3.4256     |
| 6 Month                  | .6988 <sup>#</sup>   | .0732                 | 2.0113     |
| 9 Month                  | .2409                | .0000                 | 1.2724     |
| Intercept                | -2.5508 <sup>*</sup> |                       |            |
| Model Chi Square         | 40.061 <sup>*</sup>  |                       |            |

<sup>\*</sup> P < .05

<sup>a</sup> The failure curve associated with this logistic regression is presented in Figure 2.

<sup>b</sup> “During program” time period is the omitted variable.

<sup>#</sup> The variable is significantly different than the omitted variable, p < .05

**Appendix F. Non-cumulative rates of felony arrest or revocation: experimental and control groups by risk level and time period.**

| Time Period    | Group Membership               |              |                        |              |                       |              |
|----------------|--------------------------------|--------------|------------------------|--------------|-----------------------|--------------|
|                | All Study Members <sup>a</sup> |              | High Risk <sup>b</sup> |              | Low Risk <sup>b</sup> |              |
|                | Control                        | Experimental | Control                | Experimental | Control               | Experimental |
| During Program | 0.072                          | 0.062        | 0.088                  | 0.077        | 0.060                 | 0.056        |
| 3 Month        | 0.211                          | 0.185        | 0.250                  | 0.224        | 0.190                 | 0.169        |
| 6 Month        | 0.136                          | 0.117        | 0.164                  | 0.145        | 0.124                 | 0.106        |
| 9 Month        | 0.090                          | 0.078        | 0.111                  | 0.097        | 0.082                 | 0.070        |

<sup>a</sup> The failure curve associated with these rates are presented in Figure 2.

<sup>b</sup> The failure curve associated with these rates are presented in Figure 4.

**Appendix G. Logistic regression: probability of readmission to prison by experimental condition, time period and level of risk. <sup>a</sup>**

|                          | Parameter Estimate   | Standardized Estimate | Odds Ratio |
|--------------------------|----------------------|-----------------------|------------|
| Experimental condition   |                      |                       |            |
| Experimental Group       | -.1032               | .0000                 | .9019      |
| Time Period <sup>b</sup> |                      |                       |            |
| 3 Month                  | .1923                | .0000                 | 1.2121     |
| 6 Month                  | .8211 <sup>#</sup>   | .0635                 | 2.2731     |
| 9 Month                  | .2034                | .0000                 | 1.2255     |
| 12 Month                 | .7074 <sup>#</sup>   | .0480                 | 2.0287     |
| 15 Month                 | .7329 <sup>#</sup>   | .0496                 | 2.0812     |
| 18 Month                 | .3535                | .0000                 | 1.4241     |
| 21 Month                 | .1978                | .0000                 | 1.2188     |
| 24 Month                 | -.1563               | .0000                 | .8553      |
| 27 Month                 | -.7517               | .0000                 | .4716      |
| 30 Month                 | -1.2963              | -.0257                | .2735      |
| Medium/high Risk         | .3152 <sup>*</sup>   | .0393                 | 1.3705     |
| Intercept                | -3.1715 <sup>*</sup> |                       |            |
| Model Chi Square         | 41.993 <sup>*</sup>  |                       |            |

\* P < .05

<sup>a</sup> The failure curve associated with this logistic regression is presented in Figure 3.

<sup>b</sup> “During program” time period is the omitted variable.

<sup>#</sup> The variable is significantly different than the omitted variable, p < .05

**Appendix H. Logistic regression: probability of felony arrest or revocation by experimental condition, time period and level of risk. <sup>a</sup>**

|                          | Parameter Estimate   | Standardized Estimate | Odds Ratio |
|--------------------------|----------------------|-----------------------|------------|
| Experimental condition   |                      |                       |            |
| Experimental Group       | -.1439               | .0000                 | .8660      |
| Time Period <sup>a</sup> |                      |                       |            |
| 3 Month                  | 1.2353 <sup>#</sup>  | .1618                 | 3.4396     |
| 6 Month                  | .7032 <sup>#</sup>   | .0737                 | 2.0202     |
| 9 Month                  | .2492                | .0000                 | 1.2830     |
| Medium/high Risk         | .3522 <sup>#</sup>   | .0472                 | 1.4222     |
| Intercept                | -2.6870 <sup>*</sup> |                       |            |
| Model Chi Square         | 44.419 <sup>*</sup>  |                       |            |

<sup>\*</sup> P < .05

<sup>a</sup> The failure curve associated with this logistic regression is presented in Figure 4.

<sup>b</sup> “During program” time period is the omitted variable.

<sup>#</sup> The variable is significantly different than the omitted variable, p < .05

**Appendix I. Logistic regression: probability of readmission to prison by study group and time period. <sup>a</sup>**

|                                | Parameter Estimate  | Standardized Estimate | Odds Ratio |
|--------------------------------|---------------------|-----------------------|------------|
| Study Group                    |                     |                       |            |
| Class Completers               | -.6515*             | -.0750                | .5213      |
| Dropouts                       | .6737*              | .0874                 | 1.9614     |
| Time Period <sup>b</sup>       |                     |                       |            |
| 3 Month                        | .2319               | .0000                 | 1.2606     |
| 6 Month                        | .9271 <sup>#</sup>  | .0726                 | 2.5271     |
| 9 Month                        | .3497               | .0000                 | 1.4186     |
| 12 Month                       | .8881 <sup>#</sup>  | .0645                 | 2.4304     |
| 15 Month                       | .9406 <sup>#</sup>  | .0681                 | 2.5616     |
| 18 Month                       | .5835               | .0246                 | 1.7923     |
| 21 Month                       | .4590               | .0000                 | 1.5825     |
| 24 Month                       | .1139               | .0000                 | 1.1207     |
| 27 Month                       | -.4585              | .0000                 | .6322      |
| 30 Month                       | -.9690              | .0000                 | .3794      |
| Number of prior incarcerations | .2671*              | .0990                 | 1.3062     |
| White                          | -.3448*             | -.0345                | .7084      |
| Education                      | -.1466              | -.0099                | .8636      |
| SES                            | -.0315              | .0000                 | .9690      |
| Employment status <sup>c</sup> |                     |                       |            |
| Employed full-time             | 1.0858 <sup>#</sup> | .1144                 | 2.9618     |
| Employed part-time             | .7665 <sup>#</sup>  | .0557                 | 2.1523     |
| Unemployed < 6 months          | .5246 <sup>#</sup>  | .0354                 | 1.6898     |
| Age <sup>d</sup>               |                     |                       |            |
| 23-27                          | -.7384 <sup>#</sup> | -.0784                | .4779      |
| 28-32                          | -.6587 <sup>#</sup> | -.0543                | .5175      |
| 33-37                          | -.6381 <sup>#</sup> | -.0527                | .5283      |
| 38 and older                   | -.9311 <sup>#</sup> | -.0726                | .3941      |
| Intercept                      | -3.174*             |                       |            |
| Model Chi Square               | 125.513*            |                       |            |

\* P < .05

<sup>a</sup> The failure curve associated with this logistic regression is presented in Figure 5.

<sup>b</sup> “During program” time period is the omitted variable.

<sup>c</sup> “Unemployed longer than 6 months” is the omitted variable.

<sup>d</sup> “Age 18-22” is the omitted variable.

<sup>#</sup> The variable is significantly different than the omitted variable, p < .05

**Appendix J. Non-Cumulative Rates of Returns to Prison: Completer, Dropout and Control Groups by Risk Level and Time Period.**

| Time Period    | Group Membership               |           |         |                        |           |         |                       |           |         |
|----------------|--------------------------------|-----------|---------|------------------------|-----------|---------|-----------------------|-----------|---------|
|                | All Study Members <sup>a</sup> |           |         | High Risk <sup>b</sup> |           |         | Low Risk <sup>c</sup> |           |         |
|                | Control                        | Completer | Dropout | Control                | Completer | Dropout | Control               | Completer | Dropout |
| During Program | 0.038                          | 0.020     | 0.066   | 0.052                  | 0.027     | 0.089   | 0.038                 | 0.020     | 0.066   |
| 3 Month        | 0.046                          | 0.024     | 0.080   | 0.063                  | 0.033     | 0.108   | 0.046                 | 0.024     | 0.080   |
| 6 Month        | 0.086                          | 0.046     | 0.145   | 0.115                  | 0.063     | 0.189   | 0.086                 | 0.046     | 0.145   |
| 9 Month        | 0.049                          | 0.026     | 0.085   | 0.066                  | 0.035     | 0.113   | 0.049                 | 0.026     | 0.085   |
| 12 Month       | 0.079                          | 0.042     | 0.134   | 0.106                  | 0.058     | 0.176   | 0.079                 | 0.042     | 0.134   |
| 15 Month       | 0.081                          | 0.044     | 0.137   | 0.109                  | 0.059     | 0.180   | 0.081                 | 0.044     | 0.137   |
| 18 Month       | 0.057                          | 0.030     | 0.098   | 0.077                  | 0.041     | 0.130   | 0.057                 | 0.030     | 0.098   |
| 21 Month       | 0.049                          | 0.026     | 0.085   | 0.067                  | 0.036     | 0.114   | 0.049                 | 0.026     | 0.085   |
| 24 Month       | 0.036                          | 0.011     | 0.063   | 0.049                  | 0.026     | 0.085   | 0.036                 | 0.019     | 0.063   |
| 27 Month       | 0.021                          | 0.008     | 0.036   | 0.028                  | 0.015     | 0.050   | 0.021                 | 0.011     | 0.036   |
| 30 Month       | 0.012                          | 0.006     | 0.021   | 0.016                  | 0.009     | 0.029   | 0.012                 | 0.006     | 0.021   |

<sup>a</sup> The failure curves associated with these rates are presented in Figure 5.

<sup>b</sup> The failure curve associated with these rates are presented in Figure 7.

<sup>c</sup> The failure curve associated with these rates are presented in Figure 6.

**Appendix K. Logistic regression: probability of readmission to prison by study group, time period and level of risk.<sup>a</sup>**

|                          | Parameter Estimate | Standardized Estimate | Odds Ratio |
|--------------------------|--------------------|-----------------------|------------|
| Study Group              |                    |                       |            |
| Class Completers         | -.6655*            | -.0798                | .5140      |
| Dropouts                 | .5852*             | .0782                 | 1.7954     |
| Time Period <sup>b</sup> |                    |                       |            |
| 3 Month                  | .2108              | .0000                 | 1.2346     |
| 6 Month                  | .8712 <sup>#</sup> | .0681                 | 2.3898     |
| 9 Month                  | .2669              | .0000                 | 1.3059     |
| 12 Month                 | .7810 <sup>#</sup> | .0551                 | 2.1836     |
| 15 Month                 | .8085 <sup>#</sup> | .0566                 | 2.2445     |
| 18 Month                 | .4279              | .0000                 | 1.5340     |
| 21 Month                 | .2750              | .0000                 | 1.3165     |
| 24 Month                 | -.0481             | .0000                 | .9530      |
| 27 Month                 | -.6275             | .0000                 | .5339      |
| 30 Month                 | -1.1783            | -.0180                | .3078      |
| Medium/high Risk         | .3210*             | .0402                 | 1.3786     |
| Intercept                | -3.2319*           |                       |            |
| Model Chi Square         | 76.734*            |                       |            |

\* P < .05

<sup>a</sup> The failure curve associated with this logistic regression is presented in two figures. The curves for low risk parolees is presented in Figure 6. The curves for high risk parolees is presented in Figure 7.

<sup>b</sup> “During program” time period is the omitted variable.

<sup>#</sup> The variable is significantly different than the omitted variable, p < .05

**Appendix L. Logistic regression: probability of felony arrest or revocation by study group and time period. <sup>a</sup>**

|                                      | Parameter Estimate   | Standardized Estimate | Odds Ratio |
|--------------------------------------|----------------------|-----------------------|------------|
| <b>Study Groups</b>                  |                      |                       |            |
| Class Completers                     | -.8278 <sup>*</sup>  | -.1006                | .4370      |
| Dropouts                             | .7515 <sup>*</sup>   | .1015                 | 2.1202     |
| <b>Time Period<sup>b</sup></b>       |                      |                       |            |
| 3 Month                              | 1.3819 <sup>#</sup>  | .1755                 | 3.9824     |
| 6 Month                              | .9135 <sup>#</sup>   | .0982                 | 2.4931     |
| 9 Month                              | .4935                | .0270                 | 1.6380     |
| Number of prior incarcerations       | .3409 <sup>*</sup>   | .1278                 | 1.4062     |
| White                                | -.3307               | -.0254                | .7185      |
| Education                            | -.0135               | .0000                 | .9866      |
| SES                                  | -.0137               | .0000                 | .9864      |
| <b>Employment status<sup>c</sup></b> |                      |                       |            |
| Employed full-time                   | 1.4569 <sup>#</sup>  | .1437                 | 4.2928     |
| Employed part-time                   | .8946 <sup>#</sup>   | .0614                 | 2.4465     |
| Unemployed < 6 months                | 1.2804 <sup>#</sup>  | .1148                 | 3.5981     |
| <b>Age<sup>d</sup></b>               |                      |                       |            |
| 23-27                                | -.2316               | .0000                 | .7933      |
| 28-32                                | -.5369               | -.328                 | .5845      |
| 33-37                                | -.5599               | -.347                 | .5713      |
| 38 and older                         | -.8291 <sup>#</sup>  | -.0603                | .4365      |
| Intercept                            | -3.6390 <sup>*</sup> |                       |            |
| Model Chi Square                     | 124.089 <sup>*</sup> |                       |            |

\* P < .05

<sup>a</sup> The failure curve associated with this logistic regression is presented in Figure 8.

<sup>b</sup> “During program” time period is the omitted variable.

<sup>c</sup> “Unemployed longer than 6 months” is the omitted variable.

<sup>d</sup> “Age 18-22” is the omitted variable.

<sup>#</sup> The variable is significantly different than the omitted variable, p < .05

**Appendix M. Logistic regression: probability of felony arrest or revocation by study group, time period and level of risk.<sup>a</sup>**

|                          | Parameter Estimate  | Standardized Estimate | Odds Ratio |
|--------------------------|---------------------|-----------------------|------------|
| Experimental condition   |                     |                       |            |
| Class Completers         | -.8156*             | -.1033                | .4424      |
| Dropouts                 | .6332*              | .0887                 | 1.8836     |
| Time Period <sup>b</sup> |                     |                       |            |
| 3 Month                  | 1.3007 <sup>#</sup> | .1685                 | 3.6719     |
| 6 Month                  | .7952 <sup>#</sup>  | .0850                 | 2.2148     |
| 9 Month                  | .3437               | .0000                 | 1.4101     |
| Medium/high Risk         | .3588*              | .0475                 | 1.4317     |
| Intercept                | -2.7532*            |                       |            |
| Model Chi Square         | 80.263*             |                       |            |

\* P < .05

<sup>a</sup> The failure curves associated with this logistic regression are presented in Figures 9 and 10.

<sup>b</sup> “During program” time period is the omitted variable.

<sup>#</sup> The variable is significantly different than the omitted variable, p < .05

**Appendix N. Non-cumulative rates of felony arrest or revocation: completer, dropout and control groups by risk level and time period.**

| Time Period    | Group Membership               |           |         |                        |           |         |         |
|----------------|--------------------------------|-----------|---------|------------------------|-----------|---------|---------|
|                | All Study Members <sup>a</sup> |           |         | High Risk <sup>b</sup> |           |         |         |
|                | Control                        | Completer | Dropout | Control                | Completer | Dropout | Control |
| During Program | 0.056                          | 0.025     | 0.111   | 0.084                  | 0.039     | 0.147   | 0.060   |
| 3 Month        | 0.191                          | 0.093     | 0.333   | 0.251                  | 0.129     | 0.387   | 0.190   |
| 6 Month        | 0.129                          | 0.061     | 0.238   | 0.168                  | 0.082     | 0.276   | 0.124   |
| 9 Month        | 0.088                          | 0.041     | 0.170   | 0.114                  | 0.054     | 0.195   | 0.082   |

<sup>a</sup> The failure curves associated with these rates are presented in Figure 8.

<sup>b</sup> The failure curves associated with these rates are presented in Figure 10.

<sup>c</sup> The failure curves associated with these rates are presented in Figure 9.

## Notes.

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<sup>1</sup> Phase I research costs are funded by the Georgia Board of Pardons and Paroles; Phase II is funded through the Office of Justice Programs for the National Institute of Justice (Grant #98-CE-VX-0013) and by the Georgia Board of Pardons and Paroles.

<sup>2</sup> The National Institute of Corrections has taken an active role in promoting cognitive interventions through a number of teleconferences and two regularly scheduled workshops, Limited Risk Management and Effective Interventions with High Risk Offenders. In addition, workshops on cognitive programming options for adult and juvenile offenders have become standard fare at regional and nation meetings of such professional organizations as the American Correctional Association, the American Probation and Parole Association, and the International Community Corrections Association. Attendance at these workshops is high, and interest in cognitive programming among administrators and practitioners is strong.

<sup>3</sup> Elizabeth Fabiano developed the R&R Program with Robert Ross in 1985.

<sup>4</sup> Phase I research costs are funded by a subgrant from the Edward E. Byrne Law Enforcement Block Grant Program to the GBPP; Phase II is funded through the Office of Justice Programs for the National Institute of Justice (Grant #98-CE-VX-0013) and by the GBPP.

<sup>5</sup> The experimental group has four less participants than the comparison group for two reasons. Two parolees were revoked prior to the date that the Cognitive Skills course begin in their districts and thus were omitted from analysis. In both cases the parolees had been assigned to the experimental group. The remaining two-case-discrepancy is due to some parole districts submitting to the parole board central office lists of paroles (to be randomly assigned) that contained odd numbers. As a result, the number of parolees assigned to the experimental and control groups is not equal; two more parolees were assigned to the control group than to the experimental group.

<sup>6</sup> Each of the 16 district in the study operated at least one Cognitive Skills course. Five parole districts (Savannah, Jonesboro, Brunswick, North Fulton, and Lafayette) conducted two groups of classes, and Statesboro ran three groups.

<sup>7</sup> A complete set of all five session evaluation forms were not available for two of the 23 groups receiving the Cognitive Skills treatment. One group provided forms from two sessions, and another group provided four session evaluation forms.

<sup>8</sup> Information is not available on the program participation of control group members during the time when the experimental group participated in the Cognitive Skills Program.

<sup>9</sup> Data pertaining to residential stability were incomplete and, therefore, are not included in our outcome analyses.

<sup>10</sup> Four cases are coded as successes until the nine month time period but missing after that point.

<sup>11</sup> They are excluded because they attended few classes and we were unable to determine whether they were successes or failures. In all likelihood, they were successes, but we chose not to make that assumption.

<sup>12</sup> Other, in this case, may include non-compliance with additional disposition criteria or failure to comply with treatment standards.

<sup>13</sup> In creating our risk scores, it was necessary to modify three of the seven variables contained in the Salient Factor Risk Score. First, prior convictions and prior incarcerations pertain, in our research, to the adult record, whereas the SFS calls for inclusion of juvenile offenses. Second, we were not able to obtain a measure of whether offenders had recent commitment free periods of three years prior to the present offenses. Finally, the SFS calls for heroin/opiate dependence, and such a variable is not routinely collect by most correctional agencies. In our study, that variable is indicated when the offender is noted (on OTIS records) to evidence alcohol or drug addiction. While there are modifications to the SFS, our risk score nevertheless taps a number of factors known to be static predictors of

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reoffending (Van Voorhis and Brown 1996). In fact, among offenders with Georgia risk scores, the correlation between our “SFS score” and the Georgia score was high ( $\gamma = .84$ ).

<sup>14</sup> No established index of social class was used for this purpose. Interviewers were guided by criteria for each of the categories. These are as follows: a) welfare (receiving some form of public assistance at the time of incarceration, regardless of other income), b) occasionally employed (occasionally employed), c) minimum standard (annual income meets the government’s Minimum Standard of Living for a family of 4, d) middle class (making more than the Minimum Standard of Living and having some resources, such as property, savings or investments).

<sup>15</sup> Values were chosen randomly in proportion to non-missing values for the missing cases on employment and education due to the small percentages of missing data. Because a somewhat larger proportion of cases were missing on SES, a variable was created to indicate whether data were missing. Using logistic regression, this variable was regressed on the other demographic variables. It was found that whether data were missing on SES was related to parolees’ level of risk and employment. Therefore, we used the predicted values derived from the logistic regression equation to impute values for the missing SES data. This procedure assumes that the relationship of SES and other model variables holds for those missing SES cases.

<sup>16</sup> This model regresses drop out status on number of incarcerations, race, education, employment, risk, ses, and age (experimental offenders).

<sup>17</sup> Tests of group differences across posttest scores only, produced more significant group differences (see Appendix B).

<sup>18</sup> They did, however, determine that the groups were not substantially different in terms of background characteristics.

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