

Effects of Correctional Boot Camps on Offending

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ABSTRACT: A systematic review incorporating meta-analytic techniques of correctional boot camps studies was conducted. An intensive search identified 771 documents of which 144 were deemed potentially relevant, located, and evaluated for eligibility. In 37 documents, 29 studies were judged eligible for inclusion in the systematic review. The 29 studies resulted in 44 samples providing the primary unit of analysis. Quasi-experimental and experimental studies evaluated a residential program with a militaristic environment and compared the recidivism of participants to a comparison group receiving another correctional sanction. In 9 studies, boot camp participants had lower recidivism than did comparison groups; in 8, comparison groups had lower recidivism; and in the remaining studies, no significant differences were found. A meta-analysis found no overall significant differences in recidivism between boot camp participants and comparison samples. Further analyses indicated the results cannot be explained by differences in study methodology, offender characteristics, or boot camp program components.

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CORRECTIONAL boot camps, also called shock or intensive incarceration, are short-term incarceration programs modeled after basic training in the military (MacKenzie and Parent 1992; MacKenzie and Hebert 1996). Participants are required to follow a rigorous daily schedule of activities including drill and ceremony and physical training. They rise early each morning and are kept busy most of the day. Correctional officers are given military titles, and participants are required to use these titles when addressing staff. Staff and inmates are required to wear uniforms. Punishment for misbehavior is immediate and swift and usually involves some type of physical activity like push-ups. Frequently, groups of inmates enter the boot camps as squads or platoons. There is often an elaborate intake ceremony where inmates are immediately required to follow the rules, respond to staff in an appropriate way, stand at attention, and have their heads shaved. Many programs have graduation ceremonies for those who successfully complete the program. Frequently, family members and others from the outside public attend the graduation ceremonies.

While there are some basic similarities among the correctional boot camps, the programs differ greatly in other aspects (MacKenzie and Hebert 1996). For example, the camps differ in the amount of focus given to the physical training and hard labor aspects of the program versus therapeutic programming such as academic education, drug treatment, or cognitive skills. Some camps emphasize the therapeutic

programming, while others focus on discipline and rigorous physical training. Programs also differ in whether they are designed to be alternatives to probation or to prison. In some jurisdictions judges sentence participants to the camps; in others, participants are identified by department of corrections personnel from those serving terms of incarceration. Another difference among programs is whether the residential phase is followed by an aftercare or reentry program designed to assist the participants with adjustment to the community.

Correctional boot camps were first opened in adult correctional systems in the United States in 1983, in Georgia and Oklahoma. Since that time they have rapidly grown, first within adult correctional systems and later in juvenile corrections. Today, correctional boot camps exist in federal, state, and local juvenile and adult jurisdictions in the United States. Juvenile boot camps developed later than the adult camps. However, during the 1990s camps for juveniles rapidly developed, and by 2000, 70 juvenile camps had been opened in the United States (see the Koch Crime Institute Web site at www.kci.org). The camps for adjudicated juveniles differ somewhat from the adult camps. In juvenile camps, less emphasis is placed on hard labor, and as required by law, the camps offer academic education. Juvenile camps are also apt to provide more therapeutic components. However, in many other aspects the juvenile camps are similar to adult camps with rigorous intake procedures, shaved heads, drill and ceremony,

physical training, immediate physical punishment for misbehavior (for example, push-ups), and graduation ceremonies.

Despite their continuing popularity, correctional boot camps remain controversial. Primarily, the debate involves questions about the impact of the camps on the adjustment and behavior of participants while they are in residence and after they are released. According to advocates, the atmosphere of the camps is conducive to positive growth and change (Clark and Aziz 1996; MacKenzie and Hebert 1996). In contrast, critics argue that many of the components of the camps are in direct opposition to the type of relationships and supportive conditions that are needed for quality therapeutic programming (Andrews et al. 1990; Gendreau, Little, and Goggin 1996; Morash and Rucker 1990; Sechrest 1989).

Research examining the effectiveness of the correctional boot camps has focused on various potential impacts of the camps. Some have examined whether the camps change participants' attitudes, attachments to the community, or impulsivity (MacKenzie et al. 2001; MacKenzie and Shaw 1990; MacKenzie and Souryal 1995). Others have examined the impact of the camps on the need for prison bed space (MacKenzie and Piquero 1994; MacKenzie and Parent 1991). However, the research receiving the most interest appears to be that examining the impact of the camps on recidivism (MacKenzie 1997).

According to a survey of state correctional officials, the major goals of the camps are to deter future crime,

protect the public, rehabilitate the offenders, reduce costs, and lower recidivism (Gowdy 1996). Thus, except for reducing the costs of corrections, all of the major goals are associated in some way with reducing the criminal activities of participants. Sufficient time has now elapsed since the beginning of these camps so that a body of research examining the impact of the camps on the recidivism of participants has been produced. This systematic review is designed to examine this research in order to draw conclusions regarding what is currently known about the effectiveness of correctional boot camps in reducing recidivism.

METHOD

Search strategy and eligibility criteria

The scope of this review was experimental and quasi-experimental evaluations that examined boot camp and boot camp-like programs for juvenile and adult offenders. To be eligible to be included in the review a study had to (1) examine a residential program that incorporated a militaristic environment (the programs were called by various names such as boot camp, shock incarceration, and intensive incarceration); (2) include a comparison group that received either community supervision (for example, probation) or incarceration in an alternative facility such as jail, prison, or juvenile residential facility; (3) include participants who were convicted or adjudicated; and (4) report a

postprogram measure of criminal behavior, such as arrest or conviction (the measure may be based on official records or self-report and may be reported on a dichotomous or continuous scale). The comparison group in a quasi-experimental design had to be selected to be reasonably similar to the experimental group; thus any study that compared the experimental group to a general national or state sample was eliminated from the study. Furthermore the study eligibility criteria eliminated quasi-experimental designs that only compared program dropouts to program completers.

The strategies used to identify all studies, published or otherwise, that met these criteria included a keyword search of computerized databases and contact with authors working in this area. The following databases were searched: Criminal Justice Periodical Index, Dissertation Abstracts Online, Government Publications Office Monthly Catalog, Government Publications Reference File, National Criminal Justice Reference Service, PsychINFO, Sociological Abstracts, Social SciSearch, and U.S. Political Science Documents. The keywords used were "boot camp(s)," "intensive incarceration," and "shock incarceration." Several of the searched databases indexed unpublished works. This identified 771 unique documents. Review of the titles and abstracts suggested that 152 might meet the above criteria or were relevant review articles that might contain additional references. Of these 152, 144 were obtained and evaluated for eligibility, resulting in 29 eligible studies reported in 37

documents (see references). The majority of these studies were state or federal technical reports ($n = 22$). Only 9 of these studies were published in peer-reviewed journals. One study was conducted in Canada, and another study was conducted in England. The remaining studies evaluated boot camp programs in the United States.

Data collection and analysis

The coding protocol developed for the synthesis allowed for the coding of multiple samples from a single study (distinct evaluations reported in a single report, different cohorts or data reported for males and females separately). This resulted in 44 distinct samples, and these samples represent the primary unit of analysis for this systematic review. The coding protocol also allowed for the coding of multiple indicators of criminal involvement, such as arrest, conviction, and technical violation, measured at multiple time points following release from the program. A copy of the coding protocol can be obtained from the authors. All studies were double coded, and any discrepancies in the coding between the two coders were resolved.

The protocol captured aspects of the research design, including methodological quality, characteristics of the boot camp program, comparison group condition, study participants, outcome measures, and direction and magnitude of the observed effects. The primary effect of interest was recidivism or a return to criminal activity on the part of the offender after leaving the program. Recid-

ivism data were reported dichotomously across all studies and were based on official records, generally reflected as arrest, reconviction, or reinstitutionalization. As such, the natural index of effectiveness is the odds ratio (see Fleiss, 1994) and was the index of effect (see below). The mean odds ratio and homogeneity of effects across studies was computed using the inverse variance weight method. A random-effects model was assumed, and the random-effects variance component was estimated using the methods outlined by Dersimonian and Laird (1986) and Raudenbush (1994). The computations were performed using macros written by the second author that are available for use with SAS, SPSS, and Stata (Lipsey and Wilson 2001).

A total of 155 recidivism effect sizes were extracted from the studies. Recidivism effects that reflected technical violations only were excluded from the analyses reported below, reducing the set of effect sizes to 142. The recidivism effects were examined in two ways. First, multiple recidivism effects from a single study and sample were averaged prior to analysis, producing a set of 44 recidivism effect sizes for the analysis. The second set of analyses used arrest as the measure of recidivism if it was available; if not, reconvictions were used as the measure, and if neither of these was available, reinstitutionalizations were used. The results from the two methods of measuring recidivism were compared and did not yield any substantive differences in the results. Therefore, results based on the second method of measuring

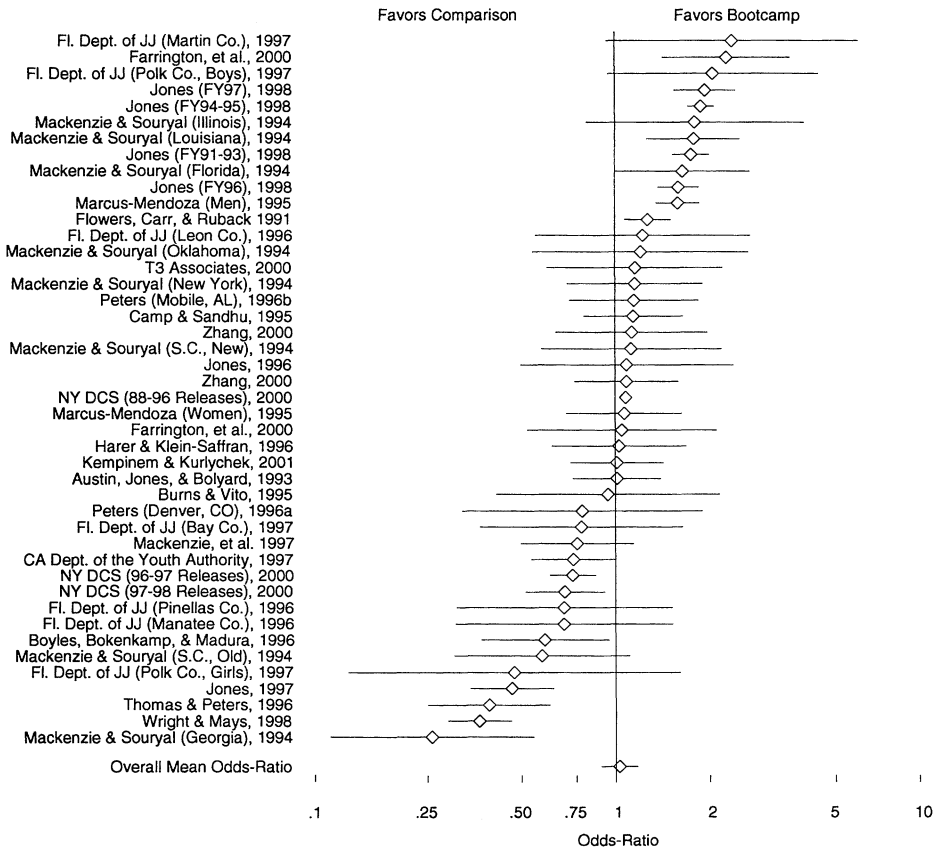
recidivism are reported in the following analyses.

RESULTS

The distribution of recidivism effects across the 44 boot camp versus comparison group samples is shown in Figure 1. Each row of this forest plot represents a distinct sample, identified by the label in the left column. The recidivism odds ratio (effect size) is represented by the small diamonds, and the line spans the 95 percent confidence interval around the odds ratio. The samples are sorted with the largest positive effect at the top and the smallest negative effect (odds ratios between 1 and 0) on the bottom. At the very bottom of the plot is the overall random-effects mean odds ratio.

The effects across these studies ranged from large reductions to large increases in the risk of recidivating for the boot camp participants relative to the comparison groups. The overall mean odds ratio was 1.02 (95 percent confidence interval of 0.90 to 1.17), indicating an almost equal odds of recidivating between the boot camp and comparison groups, on average. Thus there appears to be no relationship between program participation (boot camp or comparison) and recidivism. The equivalent recidivism rates for the average boot camp and comparison group, given this overall odds ratio, would be 49.4 percent for the boot camp and 50 percent for the comparison condition. This is a small difference by most any standard. Thus, overall, the evidence suggests that boot camps do not reduce the risk of recidivism relative to

FIGURE 1
 A FOREST PLOT SHOWING THE RECIDIVISM ODDS RATIOS AND
 95 PERCENT CONFIDENCE INTERVAL FOR EACH STUDY AND
 SAMPLE AND THE OVERALL MEAN ODDS RATIO



other existing criminal justice system forms of punishment and rehabilitation. From the forest plot, it is also evident that 9 studies observed a statistically significant positive benefit of boot camps, whereas 8 studies observed a statistically significant positive benefit of the comparison condition. The remaining 27 studies found no significant differences

between the boot camp samples and the comparisons.

The distribution of odds ratios was highly heterogeneous, $Q = 464.6$, $df = 43$, $p < .0001$, suggesting the presence of moderators of the effects, either methodological or substantive, such as the nature of the boot camp program and comparison conditions and the types of offenders served.

TABLE 1
**CROSS-TABULATION OF QUALITATIVE METHODOLOGICAL
 QUALITY SCORE AND OTHER METHOD DESCRIPTORS (N = 44)**

Method Variable	Qualitative Methodological Quality Score		
	4 (n = 19)	3 (n = 17)	2 (n = 8)
Randomly assigned participants to conditions			
Yes	4 (21)	1 (6)	0 (0)
No	15 (79)	16 (94)	8(100)
Used group-level matching**			
Yes	14 (74)	5 (29)	1 (13)
No	5 (26)	12 (71)	7 (87)
Prospective research design**			
Yes	17 (89)	9 (53)	6 (75)
No	2 (11)	8 (47)	2 (25)
Used statistical controls in analyses**			
Yes	13 (68)	3 (18)	1 (13)
No	6 (32)	14 (82)	7 (87)
Boot camp dropouts in analysis**			
Yes	9 (47)	9 (53)	0 (0)
No	10 (53)	8 (47)	8(100)
Overall attrition apparent			
Yes	3 (16)	2 (12)	1 (12)
No	16 (84)	15 (88)	7 (88)
Differential attrition apparent			
Yes	3 (16)	3 (18)	2 (25)
No	16 (84)	14 (82)	6 (75)

NOTE: Percentages are in parentheses.

** $p < .05$, based on a chi-square test.

Possible moderating effects are explored below.

Methodological characteristics of the studies

Any conclusion regarding the effectiveness (or ineffectiveness, as the data suggest) of boot camps relative to more traditional correctional approaches in reducing the risk of recidivism is valid only if the methodological quality of this collection of studies is sufficiently high. Table 1 displays the frequency of studies with various methodological characteristics by our qualitative methodological rating scale. This scale was

developed by Sherman and colleagues (1997) and has five levels of methodological rigor. The lowest level of methodological quality was excluded from this synthesis and reflects studies without a comparison group. The highest level of methodological rigor (level 5) represents randomized designs that are not compromised through attrition or other common problems in carrying out a randomized evaluation study.

As can be seen in Table 1, none of the five randomized evaluations included in this synthesis were granted a method quality score of 5. This was generally because the stud-

ies had high attrition or excluded program dropouts from the recidivism analysis, creating a potential threat from selection bias. Thus there were no evaluations of the effectiveness of boot camps that were free from methodological blemishes. That said, however, many of the studies (19 of 44, or 43 percent) were judged to be methodologically solid (method score of 4). These studies were generally the higher-quality quasi-experimental designs that either carefully selected the comparison group so as to maximize similarity with the boot camp group (for example, selecting boot camp eligible offenders and matching the groups on demographic characteristics) or used statistical controls in the analysis of recidivism effects. Only 8 of the 44 evaluations (18 percent) were judged to be of poor methodological quality.

To assess the robustness of the general finding of no effect, a separate mean odds ratio was computed for each category of the different methodological variables (see Table 2). The mean effect size was slightly lower for the studies judged to be of overall higher methodological quality, although the trend was statistically nonsignificant. Studies that used a prospective research design had observed larger positive effects (although not significantly different from a null odds ratio of 1) than did retrospective designs. That is, while the mean odds ratio of prospective and retrospective designs are significantly different from each other, neither design produces an odds ratio that suggests that the experimental and control samples are significantly

different from each other (for example, confidence interval includes 1). In contrast to studies that did not use statistical controls in the analysis of recidivism outcomes, studies that used controls observed smaller effects that were negative in direction. Once again, neither category differed significantly from the null hypothesis. All other methodological variables were unrelated to the observed odds ratios.

Offender characteristics across studies

There was generally little information regarding the characteristics of the offenders in the studies. For 11 of the 44 samples, the authors did not indicate the gender, although it is reasonable to assume that in these cases the samples were all male. Only 3 of the 44 samples were all female, and the mean odds ratio for these samples was 1.06 and statistically nonsignificant. This mean odds ratio is roughly the same as that for the overall sample. Four samples were mixed gender, although they were predominantly male (equal to or greater than 80 percent). Thus there are insufficient data to adequately explore whether boot camps are differentially effective for males and females, as some theorists have hypothesized (Morash and Rucker 1990).

All samples were successfully classified as either juvenile or adult. The adult samples were typically young adults and in some cases included at least a small percentage of juveniles who were adjudicated as adults. As shown in Table 3, the mean odds ratio for the studies evaluating

TABLE 2
 MEAN ODDS RATIO AND 95 PERCENT CONFIDENCE
 INTERVAL BY METHOD VARIABLES ($N = 44$)

Method Variable	Mean Odds Ratio	95 Percent Confidence Interval		k^a
		Lower	Upper	
Qualitative methodological quality score				
Random assignment, not degraded				0
High-quality quasi-experiment	0.92	0.73	1.15	19
Standard quasi-experiment	1.07	0.85	1.34	17
Poor-quality quasi-experiment	1.15	0.84	1.59	8
Randomly assigned participants to conditions				
Yes	0.75	0.48	1.17	5
No	1.06	0.91	1.24	39
Used group-level matching				
Yes	1.11	0.88	1.40	20
No	0.97	0.80	1.17	24
Prospective research design**				
Yes	1.13	0.95	1.34	32
No	0.83	0.65	1.06	12
Used statistical controls in analyses**				
Yes	0.85	0.68	1.07	17
No	1.14	0.96	1.37	27
Boot camp dropouts in analysis				
Yes	1.03	0.82	1.28	18
No	1.02	0.83	1.24	26
No overall attrition apparent				
Yes	1.06	0.91	1.24	39
No	0.72	0.46	1.14	5
No differential attrition apparent				
Yes	1.03	0.87	1.21	36
No	0.96	0.67	1.41	8

a. k = number of samples included in analysis.

** $p < .05$.

the effectiveness of juvenile boot camps was lower than that of the studies evaluating adult (often young adult) boot camps, although this difference was not statistically significant. This difference may reflect a difference in the typical comparison group for juveniles relative to adults. Traditional juvenile detention facilities are qualitatively different from adult prison or adult probation, the common comparison groups for the studies of adult boot camps.

Juvenile detention facilities are more likely, although not guaranteed, to have a greater emphasis on rehabilitation than their adult counterparts. Unfortunately, the availability of rehabilitative treatment within the comparison facilities was not reported by the primary studies.

The racial/ethnic makeup of the offender populations and the offender risk level were often unreported, with no information available for 9 of the 44 samples (20 percent).

TABLE 3
 MEAN ODDS RATIO AND 95 PERCENT CONFIDENCE
 INTERVAL BY OFFENDER CHARACTERISTICS (N = 44)

Offender Characteristic	Mean Odds Ratio	95 Percent Confidence Interval		k ^a
		Lower	Upper	
Age group of offender				
Juvenile	0.88	0.68	1.14	16
Adult	1.09	0.92	1.30	28
Offender type				
Juveniles				
Nonviolent/nonperson crimes	0.92	0.61	1.38	4
Mixed (violent and nonviolent) crimes	0.85	0.65	1.11	12
Adults				
Nonviolent/nonperson crimes	1.17	0.92	1.50	13
Mixed (violent and nonviolent) crimes	1.01	0.79	1.31	15

a. k = number of samples included in analysis.

For an additional 8 samples, only the percentage of African Americans was reported. Thus roughly half of the samples had complete racial/ethnic makeup information. In general, African Americans were the predominant racial group, representing roughly 52 percent of the samples reporting this information. Caucasians represented 23 percent of the 24 samples, and Hispanics represented roughly 9 percent of the 21 samples reporting these data. The data did not lend themselves to an analysis of the relationship between racial/ethnic makeup of the samples and the observed odds ratios.

Programmatic differences across studies

Boot camps vary in the emphasis placed on rehabilitative treatment relative to physical exercise and military drill and ceremony. It has been speculated that the greater the emphasis on treatments, such as

drug abuse counseling, vocational education, and aftercare transition assistance, the greater the likelihood that boot camps will have positive benefits relative to alternative correctional approaches, such as prison and probation. To assess this issue, we coded whether the evaluation report described the boot camp program as providing various rehabilitative programs listed in Table 4. Mean odd ratios were computed separately for juvenile and adult programs.

The only program characteristic that showed a strong relationship to the effectiveness of the boot camp programs was the presence of an aftercare treatment component for the adult programs. The 11 odds ratios for boot camps with an aftercare component versus comparison group contrasts had a mean of 1.46 with a 95 percent confidence interval that did not include 1, indicating a statistically significant positive effect. This evidence suggests that

TABLE 4
 MEAN ODDS RATIO AND 95 PERCENT CONFIDENCE INTERVAL BY
 PROGRAM CHARACTERISTICS (JUVENILES $n = 16$, ADULTS $n = 28$)

Program Characteristic	Mean Odds Ratio	95 Percent Confidence Interval		k^a
		Lower	Upper	
Aftercare treatment component				
Juveniles				
Yes	0.88	0.70	1.12	14
No	0.79	0.44	1.43	2
Adults***				
Yes	1.46***	1.14	1.87	11
No	0.89	0.72	1.10	17
Academic education				
Juveniles				
Yes	0.88	0.68	1.14	16
No				0
Adults				
Yes	1.13	0.93	1.38	24
No	0.86	0.51	1.43	4
Vocational education				
Juveniles				
Yes	0.98	0.62	1.55	3
No	0.84	0.66	1.08	13
Adults*				
Yes	0.82	0.56	1.20	6
No	1.17*	0.97	1.43	22
Drug treatment				
Juveniles				
Yes	0.90	0.70	1.15	12
No	0.78	0.49	1.24	4
Adults				
Yes	1.08	0.88	1.33	22
No	1.12	0.73	1.72	6
Counseling (group and individual)				
Juveniles				
Yes	0.91	0.70	1.17	10
No	0.79	0.52	1.18	6
Adults				
Yes	1.17	0.95	1.44	21
No	0.85	0.58	1.26	7
Manual labor				
Juveniles				
Yes	1.03	0.73	1.44	7
No*	0.79	0.61	1.02	9
Adults				
Yes	1.07	0.88	1.31	24
No	1.22	0.73	2.04	4

a. k = number of samples included in analysis.

* $p \leq .10$. *** $p \leq .01$.

aftercare may be important in reducing the risk of recidivism, at least for adult samples.

A counterintuitive finding is the negative relationship between vocational education and odds ratio for the adult samples. Study samples with vocational education had a lower mean odds ratio than did those without. The number of boot camp programs with vocational education was small, however, raising the possibility that this relationship is confounded with other study differences.

Multivariate analysis of effect size and study characteristics

The simple univariate analyses of the relationships between odds ratios and study characteristics do not take into account the possible confounding of study features. To assess this possibility, a mixed-effects regression model (see Lipsey and Wilson 2001; Raudenbush 1994) was estimated, regressing the logged odds ratios onto study features. The basic model included the major methodological features, accounting for significant variability in odds ratios across studies, $R^2 = .28$, $Q = 16.19$, $df = 7$, $p = .02$. Significant variability remained, however, after accounting for methodological differences. Building on this basic methods model, separate regression analyses were run for each major program characteristic shown in Table 4. Because of the possibility of an interaction between program characteristics and offender age, these models were run separately for juveniles and adults. The finding of a positive benefit from aftercare for the adult offenders remained statistically significant

after adjusting for methods features. The counterintuitive finding regarding vocational education was not robust to method difference; that is, it was statistically nonsignificant once conditioned on method features. This reinforces our hunch that this finding was the result of a confounding of study features and not due to any negative effects of vocational education. No new significant study characteristics emerged in the multivariate analyses.

DISCUSSION
AND CONCLUSION

In our overall meta-analysis of recidivism, we found no differences between the boot camp and comparison samples. Our analysis predicts that if the comparison sample's recidivism is estimated to be 50 percent, the boot camp sample's recidivism would be estimated to be 49.4 percent, or only 0.6 percent lower. When the individual studies were examined, no significant differences were found between the boot camp samples and the comparisons in the majority of the studies. In only 17 samples out of the total of 44, a significant difference between the experimental and control samples was found; approximately half favored the boot camp while the remaining favored the comparisons. Thus, by whatever criteria are used, there is no evidence that the boot camps reduce recidivism.

The results of this systematic review and meta-analysis will be disappointing for many people. Advocates of the programs expect them to successfully reduce the future

criminal activities of adults and juveniles. Critics argue that the programs are poorly conceived as therapeutic interventions, they will not reduce recidivism, and they may actually have the opposite effect by increasing criminal activities. Our results do not support either side of this argument because we found no differences in recidivism between the 44 boot camp samples and the comparisons. Correctional boot camps are neither as good as the advocates assert nor as bad as the critics hypothesize.

An examination of the forest plot of the individual studies (see Figure 1) and our analysis of the data demonstrated large differences in the studies in terms of the effect of boot camps. Some studies found boot camp participants did better than the comparisons, and others found comparison samples did better. For this reason, we explored whether the differences among studies could be attributed to the methods or design of the studies or to characteristics of the programs or individual participants. In our examination of the methodological variables, we did not find any evidence that differences in the results of studies could be explained by the study methodology.

Our examination of the offender characteristics was disappointing because very few studies reported sufficient information to enable us to code and analyze the possible impact of these characteristics on study outcomes. Few studies even reported on the gender of the samples. The only variables we could examine were (1) whether the studies focused on adult offenders or adjudicated juveniles,

and (2) whether the participants were limited to those convicted or adjudicated for nonviolent/nonperson crimes or mixed violent and nonviolent crimes. Again we found no evidence that differences in these characteristics explained the differences in the results.

We were able to code and analyze the possible impact of six program characteristics, including whether the boot camps had aftercare, academic education, vocational education, drug treatment, counseling, or manual labor components. It is important to note that this information was limited to general information about the characteristics of the programs. We assume the quality and intensity of the programs differed greatly. From our knowledge of the boot camps we know that some programs consider Narcotics Anonymous or Alcoholics Anonymous meetings drug treatment, whereas others provide a more intensive drug treatment experience using a Therapeutic Community-type model. We did not have enough information to code such differences. Almost no information was given about what happened to the comparison samples. The potential impact of these differences on recidivism cannot be overlooked.

When we examined the impact of program characteristics, the only differences we found were for adult studies and, after controlling for methodological differences, the only difference was for boot camps that included an aftercare component. In other words, whereas the odds ratios differed for boot camps with and without aftercare, in neither case did the boot camp samples differ

significantly from the comparisons. While the recidivism of releasees from boot camps with aftercare differed from the recidivism of releasees from boot camps without aftercare, there were no significant differences in recidivism between boot camp releasees and comparisons for either type of boot camp (for example, with or without aftercare). Thus we were unable to identify any characteristic of the methods, offenders, or programs that would explain differences in results of the studies.

Why don't boot camps reduce recidivism when compared to other correctional alternatives? In our opinion, one possible reason boot camps are not any more or less effective than other alternatives is because they may offer no more therapy or treatment than the alternatives. That is, boot camps by themselves have little to offer as far as moving offenders away from criminal activities. Sufficient research currently exists to demonstrate that appropriate correctional treatment with particular characteristics can be effective in changing offenders (Andrews and Bonta 1998; Gendreau and Ross 1987; Lipsey 1992). Some boot camps incorporate this type of treatment and therapy into the regime of the camps, while others do not. Similarly, some comparison facilities or programs provide such treatment. Almost all studies compared offenders or juveniles in boot camps to others in correctional programs within the same jurisdictions. We hypothesize that there are similarities within jurisdictions such that boot camps with therapy and treatment will be located in

jurisdictions that also provide such treatment to those in the comparison programs within the jurisdiction. Thus, in terms of the type of treatment or therapy that has been shown to be effective, correctional programs within the same jurisdictions will be similar. The boot camps may only differ from other correctional programs in the same jurisdiction in the military aspects and not in therapy and treatment. It seems likely that the therapy and treatment are the important components in reducing recidivism. Therefore, since boot camps and other correctional programs provide similar therapy and treatment, the impact on recidivism will be similar.

The research demonstrates that there are no differences in recidivism when boot camp samples are compared to those who receive other correctional sanctions. In our opinion, this can be interpreted to show that a military atmosphere in a correctional setting is not effective in reducing recidivism. However, many questions remain. It would be particularly valuable to have more information about the characteristics of the participants, and the components of the programs, both for the boot camps and for the comparisons. From these studies, we were able to code very little of this information. We anticipate that programs with more treatment and therapy will be more successful in reducing recidivism. The question is whether this would explain some of the differences in results across studies. Future research would greatly benefit by increasing the amount of detailed

information about the programs and the participants.

**APPENDIX
SECONDARY SOURCES USED
IN THE META-ANALYSIS**

1. Burns and Vito (1995)
Burns, Jerald C. 1994. A Comparative Analysis of the Alabama Department of Corrections Boot Camp Program. Unpublished Ph.D. diss., University of Alabama, Tuscaloosa.
2. State of New York Department of Correctional Services (2000)
Courtright, Kevin E. 1991. An Overview and Evaluation of Shock Incarceration in New York State. Unpublished master's thesis, Mercyhurst College, Erie, PA.
3. Marcus-Mendoza (1995)
Holley, Philip D. and David E. Wright. 1995. Oklahoma's Regimented Inmate Discipline Program for Males: Its Impact on Recidivism. *Journal of the Oklahoma Criminal Justice Research Consortium* 2:58-70.
4. Kempinem and Kurlychek (2001)
Kempinem, Cynthia and Mark Motivans. 1998. Who Goes to Pennsylvania's Boot Camp? Paper presented at the meeting of the American Society of Criminology, Washington, DC, Nov.
5. Harer and Klein-Saffran (1996)
Klein-Saffran, Jody. 1991. Shock Incarceration, Bureau of Prisons Style. *Research Forum* 1:1-9.
6. MacKenzie and Souryal (1994)
MacKenzie, Doris L., Robert Brame, David McDowall, and Claire Souryal. 1995. Boot Camp Prisons and Recidivism in

Eight States. *Criminology* 33:327-57.

- MacKenzie, Doris Layton, James W. Shaw, and Voncile B. Gowdy. 1990. *Evaluation of Shock Incarceration in Louisiana, Executive Summary*. Washington, DC: U.S. Department of Justice, National Institute of Justice.
7. Peters (1996a), Peters (1996b), and Thomas and Peters (1996)
Peters, Michael, David Thomas, and Christopher Zamberlan. 1997. *Boot Camps for Juvenile Offenders: Program Summary*. Rockville, MD: U.S. Department of Justice, National Institute of Justice.

NOTE: Secondary sources are shown after the primary sources included in the reference list.

References

- Andrews, Donald A. and James Bonta. 1998. *The Psychology of Criminal Conduct*. Cincinnati, OH: Anderson.
- Andrews, Donald A., Ivan Zinger, Robert D. Hoge, James Bonta, Paul Gendreau, and Frances T. Cullen. 1990. Does Correctional Treatment Work? A Clinically Relevant and Psychologically Informed Meta-Analysis. *Criminology* 28:369-404.
- *Austin, James, Michael Jones, and Melissa Bolyard. 1993. *Assessing the Impact of a County Operated Boot Camp: Evaluation of the Los Angeles County Regimented Inmate Diversion Program* (NCJRS document reproduction service no. 154401). San Francisco: National Council on Crime and Delinquency.

*References marked with an asterisk indicate studies included in the meta-analysis. (See appendix for secondary sources used in the meta-analysis showing primary resource.)

- *Boyles, Cecilia E., Eric Bokenkamp, and William Madura. 1996. *Evaluation of the Colorado Juvenile Regimented Training Program*. Golden: Colorado Department of Human Services, Division of Youth Corrections.
- *Burns, Jerald C. and Gennaro F. Vito. 1995. An Impact Analysis of the Alabama Boot Camp Program. *Federal Probation* 59:63-67.
- *California Department of the Youth Authority. 1997. *LEAD: A Boot Camp and Intensive Parole Program; the Final Impact Evaluation* (Report to the California Legislature). Sacramento: Author.
- *Camp, David A. and Harjit S. Sandhu. 1995. Evaluation of Female Offender Regimented Treatment Program (FORT). *Journal of the Oklahoma Criminal Justice Research Consortium* 2:50-57.
- Clark, Cheryl L. and David W. Aziz. 1996. Shock Incarceration in New York State: Philosophy, Results, and Limitations. In *Correctional Boot Camps: A Tough Intermediate Sanction*, ed. Doris Layton MacKenzie and Eugene E. Hebert. Washington, DC: U.S. Department of Justice, National Institute of Justice.
- Dersimonian, Rebecca and Nan Laird. 1986. Meta-Analysis in Clinical Trials. *Controlled Clinical Trials* 7:177-88.
- *Farrington, David P., G. Hancock, M. Livingston, Kate Painter, and G. Towl. 2000. *Evaluation of Intensive Regimes for Young Offenders* (Home Office research findings). London: Home Office Research, Development and Statistics Directorate.
- Fleiss, Joseph L. 1994. Measures of Effect Size for Categorical Data. In *The Handbook of Research Synthesis*, ed. Harris Cooper and Larry V. Hedges. New York: Russell Sage.
- *Florida Department of Juvenile Justice. 1996a. *Leon County Sheriff's Department Boot Camp: A Follow-Up Study of the First Five Platoons*. Tallahassee: Florida Department of Juvenile Justice, Bureau of Data and Research.
- *———. 1996b. *Manatee County Sheriff's Boot Camp: A Follow-Up Study of the First Four Platoons*. Tallahassee: Florida Department of Juvenile Justice, Bureau of Data and Research.
- *———. 1996c. *Pinellas County Boot Camp: A Follow-Up Study of the First Five Platoons* (research rep. no. 33). Tallahassee: Florida Department of Juvenile Justice, Bureau of Data and Research.
- *———. 1997a. *Bay County Sheriff's Office Boot Camp: A Follow-Up Study of the First Seven Platoons* (research rep. no. 44). Bay County: Florida Department of Juvenile Justice, Bureau of Data and Research.
- *———. 1997b. *Martin County Sheriff's Office Boot Camp: A Follow-Up of the First Four Platoons* (research rep. no. 43). Martin County: Florida Department of Juvenile Justice, Bureau of Data and Research.
- *———. 1997c. *Polk County Juvenile Boot Camp: A Follow-Up Study of the First Four Platoons*. Tallahassee: Florida Department of Juvenile Justice, Bureau of Data and Research.
- *———. 1997d. *Polk County Juvenile Boot Camp—Female Program: A Follow-Up Study of the First Seven Platoons*. Polk County: Florida Department of Juvenile Justice, Bureau of Data and Research.
- *Flowers, Gerald T., Timothy S. Carr, and R. Barry Ruback. 1991. *Special Alternative Incarceration Evaluation*. Atlanta: Georgia Department of Corrections.
- Gendreau, Paul, Tracy Little, and Claire E. Goggin. 1996. A Meta-Analysis of the Predictors of Adult Offender Recidivism: What Works! *Criminology* 34:575-607.

- Gendreau, Paul and Robert R. Ross. 1987. Revivication of Rehabilitation: Evidence from the 1980s. *Justice Quarterly* 4:349-408.
- Gowdy, Voncile B. 1996. Historical Perspective. In *Correctional Boot Camps: A Tough Intermediate Sanction*, ed. Doris Layton MacKenzie and Eugene E. Hebert. Washington, DC: U.S. Department of Justice, National Institute of Justice.
- *Harer, Miles D. and Jody Klein-Saffran. 1996. An Evaluation of the Federal Bureau of Prisons Lewisburg Intensive Confinement Center. Unpublished manuscript, Federal Bureau of Prisons, Research and Evaluation, Washington, DC.
- *Jones, Mark. 1996. Do Boot Camp Graduates Make Better Probationers? *Journal of Crime and Justice* 19:1-14.
- *———. 1997. Is Less Better? Boot Camp, Regular Probation and Rearrest in North Carolina. *American Journal of Criminal Justice* 21:147-61.
- *Jones, Robert J. 1998. *Annual Report to the Governor and the General Assembly: Impact Incarceration Program*. Springfield: Illinois Department of Corrections.
- *Kempin, Cynthia A. and Megan C. Kurlychek. 2001. *Pennsylvania's Motivational Boot Camp* (2000 Report to the Legislature). Quehanna: Pennsylvania Commission on Sentencing.
- Lipsey, Mark. 1992. Juvenile Delinquency Treatment: A Meta-Analytic Inquiry into the Variability of Effects. In *Meta-Analysis for Explanation: A Casebook*, ed. Thomas Cook, Harris Cooper, David S. Cordray, Heidi Hartmann, Larry V. Hedges, Richard J. Light, Thomas A. Louis, and Frederick Mosteller. New York: Russell Sage.
- Lipsey, Mark W. and David B. Wilson. 2001. *Practical Meta-Analysis*. Thousand Oaks, CA: Sage.
- MacKenzie, Doris L. 1997. Criminal Justice and Crime Prevention. In *Preventing Crime: What Works, What Doesn't, What's Promising*, ed. Lawrence W. Sherman, Denise C. Gottfredson, Doris Layton MacKenzie, John Eck, Peter Reuter, and Shawn Bushway. Washington, DC: U.S. Department of Justice, National Institute of Justice.
- MacKenzie, Doris Layton and Eugene E. Hebert, eds. 1996. *Correctional Boot Camps: A Tough Intermediate Sanction*. Washington, DC: U.S. Department of Justice, National Institute of Justice.
- MacKenzie, Doris Layton and Dale G. Parent. 1991. Shock Incarceration and Prison Crowding in Louisiana. *Journal of Criminal Justice* 19:225-37.
- MacKenzie, Doris L. and Dale G. Parent. 1992. Boot Camp Prisons for Young Offenders. In *Smart Sentencing: The Emergence of Intermediate Sanctions*, ed. James M. Byrne, Arthur J. Lurigio, and Joan Petersilia. Newbury Park, CA: Sage.
- MacKenzie, Doris Layton and Alex Piquero. 1994. The Impact of Shock Incarceration Programs on Prison Crowding. *Crime & Delinquency* 40:222-49.
- MacKenzie, Doris Layton and James W. Shaw. 1990. Inmate Adjustment and Change During Shock Incarceration. *Justice Quarterly* 7:125-50.
- *MacKenzie, Doris L. and Claire Souryal. 1994. *Multi-Site Evaluation of Shock Incarceration: Executive Summary*. Washington, DC: U.S. Department of Justice, National Institute of Justice.
- . 1995. Inmate Attitude Change During Incarceration: A Comparison of Boot Camp with Traditional Prison. *Justice Quarterly* 12:325-54.
- *MacKenzie, Doris L., Claire Souryal, Miriam Sealock, and Mohammed Bin Kashem. 1997. *Outcome Study of the Sergeant Henry Johnson Youth Leadership Academy (YLA)*. Washington, DC: University of Maryland, U.S. De-

- partment of Justice, National Institute of Justice.
- MacKenzie, Doris L., David B. Wilson, Gaylene S. Armstrong, and Angela R. Gover. 2001. The Impact of Boot Camps and Traditional Institutions on Juvenile Residents: Perception, Adjustment, and Change. *Journal of Research in Crime and Delinquency* 38:279-313.
- *Marcus-Mendoza, Susan T. 1995. Preliminary Investigation of Oklahoma's Shock Incarceration Program. *Journal of the Oklahoma Criminal Justice Research Consortium* 2:44-49.
- Morash, Merry and Lila Rucker. 1990. A Critical Look at the Idea of Boot Camp as a Correctional Reform. *Crime & Delinquency* 36:204-22.
- *Peters, Michael. 1996a. *Evaluation of the Impact of Boot Camps for Juvenile Offenders: Denver Interim Report*. Fairfax, VA: U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention.
- *———. 1996b. *Evaluation of the Impact of Boot Camps for Juvenile Offenders: Mobile Interim Report*. Fairfax, VA: U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention.
- Raudenbush, Stephen W. 1994. Random Effects Models. In *The Handbook of Research Synthesis*, ed. Harris Cooper and Larry V. Hedges. New York: Russell Sage.
- Sechrest, Dale D. 1989. Prison "Boot Camps" Do Not Measure Up. *Federal Probation* 53:15-20.
- Sherman, Lawrence W., Denise C. Gottfredson, Doris Layton MacKenzie, John Eck, Peter Reuter, and Shawn Bushway. 1997. *Preventing Crime: What Works, What Doesn't, What's Promising*. Washington, DC: U.S. Department of Justice, National Institute of Justice.
- *State of New York Department of Correctional Services, Division of Parole. 2000. *The Twelfth Annual Shock Legislative Report (Shock Incarceration and Shock Parole Supervision)*. Albany, NY: Division of Parole.
- *Thomas, David and Michael Peters. 1996. *Evaluation of the Impact of Boot Camps for Juvenile Offenders: Cleveland Interim Report*. Fairfax, VA: U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention.
- *T3 Associates Training and Consulting. 2000. *Project Turnaround Outcome Evaluation. Final Report*. Ottawa, Canada: Author.
- *Wright, Dionne T. and G. Larry Mays. 1998. Correctional Boot Camps, Attitudes, and Recidivism: The Oklahoma Experience. *Journal of Offender Rehabilitation* 28:71-87.
- *Zhang, Sheldon X. 2000. *An Evaluation of the Los Angeles County Juvenile Drug Treatment Boot Camp (Final Report)*. Washington, DC: U.S. Department of Justice, National Institute of Justice.