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GETTING 'EM OUT OF CIRCULATION: DOES INCARCERATION OF JUVENILE OFFENDERS REDUCE CRIME?

STEVENS H. CLARKE*

INTRODUCTION

The debate concerning penal sanctions has been waged primarily between two groups: the "treaters" and the "punishers."¹ The "treaters" argue that prisons are cruel, expensive and nonrehabilitative. The "treaters" contend that even if alternative treatments of offenders provide no greater rehabilitative measures than prisons, at least they are less cruel and less costly. While the "punishers" concede that prisons are usually not rehabilitative, this group emphasizes the fact that incarceration prevents at least those crimes which the offender may have committed but for his imprisonment. The "punishers" believe that this interruption of offenders' criminal careers will significantly reduce total crime.²

The purpose of this article is to explore the question of whether, and to what extent, incarceration prevents criminal acts which may have occurred but for the imprisonment of the offender. More specifically, this article will focus on the removal or incapacitation aspects of imprisonment and its effect on the prevention of crime. The removal effect of incarceration should not be confused with either the deterrent effect or the rehabilitative effect. The deterrent effect refers to the crime-preventive effect on the general public of the threat of punishment which is communicated by the official policy on the use of incarceration as a penal sanction. The rehabilitative effect refers to the effect on post-prison criminality of the prison experience, including therapeutic treatment while in prison.

It should be noted that while deterrent and rehabilitative effects of imprisonment can be positive, negative or zero, the removal effect

can only be positive or zero. Prison experience can raise or lower the offender's chance of recidivism upon release or leave this chance unchanged. The threat of punishment communicated by incarceration policies may reduce the chances of criminal acts by others, fail to affect these chances at all or possibly even increase these chances. Since imprisonment restrains inmates from committing crimes during the period of incarceration, the removal effect may be either positive or zero depending on whether the inmate would have committed a criminal offense but for his imprisonment.³

It is almost impossible to examine the removal effect of incarceration separate from the rehabilitative and deterrent effects. In considering the rehabilitative effect, the possibility of a positive rehabilitative effect can be discounted since there is little evidence of reduced recidivism resulting from prison experience. Questions may arise concerning the negative rehabilitative effect, however, since there is a common belief that the destructive effects of prison life make recidivism the routine course for most imprisoned offenders. Nevertheless, for the purposes of this study, the possibility of a negative rehabilitation effect is not important since the chief subject of the inquiry is what the maximum possible increase in crime might be if the present practice of incarcerating juveniles were ended. If a negative rehabilitative effect is assumed, estimates of the increase in crime resulting from a non-incarceration policy would be lower, not higher.

The relationship between the removal and deterrent effects is more problematic than that between the removal and rehabilitative effects. It may reasonably be assumed that the threat of incarceration does to some extent deter juveniles as well as adults from committing

³ This definition ignores the crimes which inmates may commit while in prison against other inmates or correctional personnel.

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¹ Morris, *Impediments to Penal Reform*, 33 U. CHI. L. REV. 631 (1966).

² This reasoning assumes of course, that most offenses are committed by relatively few offenders.

crimes.⁴ Removing the threat altogether may appreciably increase crime not only by removing a deterrent that has been restraining some potential offenders, but also by suggesting a more permissive moral standard and thereby encouraging crime. The latter might be termed "de-deterrence." By ignoring the deterrent effect and considering just the removal effect of incarceration, the maximum possible increase in crime attributable to ending the practice of incarceration of juveniles might be significantly underestimated. Nevertheless, there is some justification for dealing with the removal effect of incarceration exclusive of the deterrent effect. To establish that the removal effect exists, one need only assume a certain probability of offending during an offender's period of imprisonment. Then, by definition, the removal effect becomes real and measurable. Establishing the deterrent effect not only requires assuming that the offender has a certain probability of offending, but also that the threat of incarceration is communicated in various ways and that behavior is influenced by the communication. This makes the deterrent more speculative by several orders of magnitude than the removal effect. In sum, it appears almost impossible to estimate the strength of the deterrent effect. Therefore, all estimates made of possible changes in crime in this study are exclusive of any possible contribution from deterrence or "de-deterrence."

THE EFFECT OF REMOVING THE MALE JUVENILE OFFENDER FROM SOCIETY

The focus in this paper will be on the crime-suppressing effect that can be attributed to current juvenile incarceration practice, that is, the actual number of juvenile offenders incarcerated and the actual time currently being spent in secure custody by adjudicated juvenile offenders. The primary source of information is the data collected by Wolfgang, Sellin, Figlio, and other University of Pennsylvania researchers in their study of a birth cohort of 9,945 boys in Philadelphia.⁵ All figures are taken from printouts from the birth

cohort data tapes provided by Dr. Robert Figlio.

In considering what is herein termed the removal effect of incarceration, data on juvenile rather than adult offenders are used because data comparable to those of the Philadelphia cohort study presently do not exist for adult offenders. Although no result generalizable to the adult offender population can be obtained by it, study of the removal effect with regard to juveniles seems worthwhile. Apparently, juveniles commit an appreciable amount of serious crime. From the Uniform Crime Report data for 1972, it can be inferred that 45 per cent of arrests for Part I offenses were of persons under eighteen. The contribution of youngsters under eighteen to the total Part I offenses is probably less than 45 per cent because their chances of being arrested for a given offense are probably higher than those of older offenders. If one assumes an arrest-to-offense ratio for juveniles equal to 1.6 times the overall arrest-to-offense ratio for all ages, the proportion of Part I offenses attributable to juveniles can be estimated at 28 per cent.⁶

Although treated separately in our system of justice, juveniles commit as serious crimes as adults, and their commitment to correctional institutions is similar in at least one respect to imprisonment of adults. It is based partly on the perceived need to protect society from the crimes the adjudicated offender might commit if not imprisoned. The crime-suppressing effect of institutionalizing juveniles may not be an official goal of juvenile correction, but it certainly is a consideration among juvenile court judges and others involved in the juvenile justice system.

The cohort studied by Wolfgang, Sellin and Figlio consists of all boys (total 9,945) born in 1945 who resided in the city of Philadelphia at least from their tenth until their eighteenth birthday. These boys were followed from age six to age eighteen in the official records of Philadelphia schools, police and courts. This permitted the isolation of the effects of age, a factor which is probably more important in delinquency and criminality than any other variable except sex. One limitation of the data is that they reflect official, not actual delin-

⁴ *But see* M. GOLD, *DELINQUENT BEHAVIOR IN AN AMERICAN CITY* 102 (1970).

⁵ M. WOLFGANG, R. FIGLIO & T. SELLIN, *DELINQUENCY IN A BIRTH COHORT* (1972).

⁶ FEDERAL BUREAU OF INVESTIGATION, *CRIME IN THE UNITED STATES—1972* 2, 102, 126, 129 (1972).

quency. This should not be a problem in the present analysis if it can be assumed that the ratio of actual juvenile offenses committed to offenses recorded by the police is relatively stable. Since there is evidence⁷ that white and nonwhite boys differ with regard to the probability that an actual offense will be officially recorded by the police, figures for whites and nonwhites will be presented separately and may provide independent confirmation of a statement about the cohort or indicate its limits of variation.

"Incarcerated offender," as defined herein, will refer to a boy in the cohort who has been committed one or more times to a correctional institution before reaching eighteen years of age. The Philadelphia study deals with two types of offenses: "index offenses" (those involving actual personal injury, theft, damage to property, or forcible sexual intercourse) and "nonindex offenses" (all other acts or conditions legally defined and officially recorded as juvenile offenses). To reduce the ambiguity of the term "juvenile offense," which includes a great variety of socially disapproved behavior, only index offenses will be considered here. All references to "offenses" should be read "index offenses," and all figures for seriousness points pertain to seriousness points for index offenses. In the Philadelphia study, seriousness points were computed based on the extent of personal injury and property loss or damage using a scoring system developed in an earlier work of Sellin and Wolfgang.⁸

INCARCERATED BOYS AS A GROUP: WHAT THE PHILADELPHIA FIGURES SHOW

Of the 9,945 boys in the cohort, only 3,475 have any recorded contact with the Philadelphia police. Of these, 1,802 have a record of an index offense (the rest being officially nonindex offenders only); 946 of the index offenders are nonwhite and 856 are white. A total of 381 boys have been incarcerated at least once before age eighteen: 300 are nonwhite and eighty-one are white. Assuming that almost all

the incarcerated boys are index offenders, they constitute about 21 per cent of the 1,802 index offenders in the cohort. They account for 41 per cent of all index seriousness points attributed to the cohort, and for 39 per cent of all index offenses. The 300 nonwhite incarcerated boys constitute 32 per cent of the 946 nonwhite index offenders, they have committed 51 per cent of all index offenses attributed to nonwhites, and have amassed 52 per cent of the total of index seriousness points attributed to nonwhites in the cohort. The eighty-one white incarcerated boys are 9 per cent of all white index offenders. They have committed 18 per cent of all white index offenses and have accumulated 19 per cent of all index offense seriousness points attributed to whites in the cohort. As expected, the incarcerated boys have been responsible for a disproportionately large number of index offenses and seriousness points. This is true independently of other obvious differences between white and nonwhite boys in the cohort.

Comparing incarcerated boys with other index offenders, it was found that although the average number of serious points per index offense is about the same for incarcerated boys (270 points per index offense for nonwhites and 256 for whites) as for all index offenders as a group (265 points per index offense for nonwhites and 243 for whites),⁹ the number of index offenses per boy is much higher for the incarcerated group (4.12 for nonwhites, 3.14 for whites) than for index offenders in general (2.55 for nonwhites, 1.64 for whites). Recidivism, in the sense of a repeat commitment, was quite high among the incarcerated boys. Nonwhites averaged 1.79 commitments and whites averaged 1.42 commitments.

ASSUMPTIONS AND ESTIMATING PROCEDURES

It has been seen that the incarcerated boys constitute a group quite different in offensivity from the rest of the cohort and even from the rest of the index offenders. Although the incarcerated boys undoubtedly differ among themselves, the assumption will be made here that at any given year of age, they are a homogeneous group with respect to offenses commit-

⁷ T. HIRSCHI, *CAUSES OF DELINQUENCY* 75-81 (1969).

⁸ T. SELLIN & M. WOLFGANG, *THE MEASUREMENT OF DELINQUENCY* 401-12 (1964). In the cohort study, the Wolfgang-Sellin score was apparently multiplied by 100 in all instances.

⁹ WOLFGANG, FIGLIO & SELLIN, *supra* note 5 at 111.

ted. Taking the incarcerated boys as a group, it is clear that not all were in juvenile correctional institutions at the same time. It will be assumed that, in any given year of age, the incarcerated boys who were actually confined in correctional institutions at that age would have committed the same average number of index offenses of the same average seriousness as the incarcerated boys who were not institutionalized during that year of age. The term of commitment to a correctional institution is assumed to be an average of nine months for all age groups.¹⁰ Obviously, any estimate of the reduction of juvenile offenses due to confinement in correctional institutions is a linear function of the mean length of confinement, and the conclusions reached here are quite sensitive to changes in that mean.

The Philadelphia cohort is assumed to be representative of boys generally in the United States at the present time, and the law enforcement and juvenile court practices applied to them are assumed to be generally typical of those in the United States. It will also be assumed that statements about proportional relationships with regard to officially recorded juvenile offenses hold true with regard to actual juvenile offenses.

The figures in the tables that follow require some explanation. In each table, column 1 indicates the number of boys incarcerated at each age from six through seventeen. Column 2 provides the "full-year equivalents at large" for each age year. This figure is equal to the total number of incarcerated boys (300 for nonwhites, 81 for whites), minus the number actually incarcerated at that age, multiplied by 0.75 years, the assumed mean length of confinement. Column 3 shows the number of seriousness points accumulated for each age year by the incarcerated boys who remained at large that year. Dividing column 3 by column 2 gives column 4, the points per boy (full-year equivalent) at large. Column 5 indicates the estimate of index offense seriousness points "prevented" by the incarcerations at each year of age. Points prevented is equal to number incarcerated at each age multiplied by 0.75

multiplied by points per boy at large at that age (column 4). Column 6 contains, for each age year, the points prevented per incarceration, derived by dividing points prevented (column 5) by number of incarcerations (column 1). Columns 7, 8, 9, and 10 deal with index offenses rather than seriousness points, but are otherwise the same as columns 3, 4, 5, and 6.

DISCUSSION OF THE DATA

At first, it is noted that the age distribution of points and offenses per boy at large is similar for both nonwhites and whites. It peaks at age sixteen for nonwhites and at fifteen for whites and then drops off sharply.¹¹ The distribution of incarcerations follows a similar age distribution. The more offenses that are committed, the more likely a boy is to be apprehended and incarcerated. Approaching the peak age, the number of points and offenses prevented per incarceration climbs very rapidly, then drops off past the peak. The total points and offenses prevented (columns 5 and 9) is negligible until age twelve, then rises very rapidly and drops off sharply past the peak age.

It is assumed that the marginal cost of a nine-month incarceration is about \$1100. This figure includes four dollars per day for food, medicine, laundry and other variable costs, but does not include correctional personnel costs and costs of law enforcement and juvenile courts. Considering just the removal effect of juvenile incarceration, the "return" in terms of offenses prevented by an incarceration averages between 0.56 and 0.65 index offenses (these being the figures for whites and nonwhites, respectively), and reaches a maximum of between 0.88 and 0.99—nearly one index offense prevented at a cost conservatively estimated at \$1100. Thus, incarceration seems an expensive

¹¹ This finding is generally consistent with the cohort study, WOLFGANG, FIGLIO, & SELLIN, *supra* note 5, at 112, and two studies using self-report rather than official data. M. GOLD, DELINQUENT BEHAVIOR IN AN AMERICAN CITY 66-72 (1970) (sample from Flint, Michigan); Williams & Gold, *From Delinquent Behavior to Official Delinquency*, 20 SOCIAL PROBLEMS 215-17 (1972) (national sample).

The Williams and Gold study considered ages thirteen through sixteen years only. The Gold study speculated that the drop after age sixteen may be the result of the tendency of police not to keep records of youngsters for offenses committed when they are close to the juvenile age limit.

¹⁰ The figure of nine months is an estimate provided by Robert H. Sobolevitch, Director of the Division of Youth Services, Pennsylvania Department of Welfare.

TABLE 1.
Nonwhite Incarcerated¹ Boys (Total 300)

Age of Boys	1. Number Of Incarcerations At Indicated Age	2. Full-Year Equivalents At Large ²	3. Points Accumulated For Index Offenses	4. Points Per Boy At Large	5. "Est. Pts. Prevented" By Incarc. ³	6. Points Prevented Per Incarc. ⁴	7. Index Offenses Committed	8. Offenses Per Boy At Large	9. Est. Offenses Prevented ⁵ By Incarc. ³	10. Offenses Prevented Per Incarc. ³
6	0	300.0	278	0.9	0.0	.....	1	0.003	0.000	.....
7	0	300.0	436	1.5	0.0	.....	3	0.010	0.000	.....
8	0	300.0	2290	7.6	0.0	.....	13	0.043	0.000	.....
9	3	297.8	7077	23.8	53.6	17.9	41	0.138	0.311	0.104
10	7	294.8	10653	36.1	189.5	27.1	51	0.173	0.908	0.130
11	15	288.8	15138	52.4	589.5	39.3	83	0.287	3.299	0.215
12	23	282.8	25556	90.4	1559.4	67.8	129	0.456	7.866	0.342
13	40	270.0	31620	117.1	3513.0	87.8	154	0.570	17.100	0.428
14	87	234.8	41911	178.5	11647.1	133.9	164	0.698	45.545	0.524
15	103	222.8	53145	238.5	18424.1	178.9	188	0.844	65.199	0.633
16	148	189.0	90827	480.6	53346.6	360.5	249	1.317	146.187	0.988
17	112	216.0	54344	251.6	21134.4	188.7	156	0.722	60.648	0.542
TOTAL	538	3196.8	333,275	104.3 ⁶	110,457.2	205.3 ⁶	1232	0.385 ⁷	346.993	0.645 ¹⁰

NOTES:

1. Mean incarceration time is 9 months (0.75 years).
2. Full-year equivalents = (total boys in table) - (number incarc.) (0.75) for each age.
3. Points prevented = (number incarc.) (0.75) (points per boy) for each age.
4. Col. 5 divided by Col. 1.
5. Equals Col. 3 total divided by Col. 2 total.
6. Equals Col. 5 total divided by Col. 1 total.
7. Equals Col. 7 total divided by Col. 2 total.
8. Estimated index offenses prevented = (number incarc.) (0.75) (offenses per boy) for each age.
9. Col. 9 divided by Col. 1.
10. Col. 9 total divided by Col. 1 total.

TABLE 2.
White Incarcerated Boys (Total 81)

Age of Boys	1. Number of Incarcerations At Indicated Age	2. Full-Year Equivalents At Large ²	3. Points Accumulated For Index Offenses	4. Points Per Boy At Large	5. Est. Points "Prevented" By Incarc. ³	6. Points Prevented Per Incarc. ⁴	7. Index Offenses Committed	8. Offenses Per Boy At Large	9. Est. Off. "Prevented" By Incarc. ⁵	10. Offenses Prevented Per Incarceration ⁶
6	0	81.00	0	0.0	0.0	.....	0	0.000	0.000	.....
7	0	81.00	0	0.0	0.0	.....	0	0.000	0.000	.....
8	0	81.00	252	3.1	0.0	.....	2	0.025	0.000	.....
9	1	80.25	1034	12.9	9.7	9.7	5	0.062	0.047	0.047
10	1	80.25	1384	17.2	12.9	12.9	6	0.075	0.056	0.056
11	1	80.25	2030	25.3	19.0	19.0	10	0.125	0.094	0.094
12	13	71.25	8909	125.0	1218.8	93.8	34	0.477	4.651	0.358
13	9	74.25	7107	95.7	646.0	71.8	23	0.310	2.093	0.233
14	13	71.25	7087	99.5	970.1	74.6	29	0.407	3.968	0.305
15	35	54.75	14855	271.3	7121.6	203.5	64	1.169	30.686	0.877
16	28	60.00	14719	245.3	5151.3	184.0	53	0.883	18.543	0.662
17	14	70.50	7551	107.1	1124.6	80.3	28	0.397	4.169	0.298
TOTAL	115	885.75	64928	73.3 ⁸	16,274.0	141.5 ⁶	254	0.287 ⁷	64.307	0.559 ¹⁰

NOTES:

1. Mean incarceration time is 9 months.
2. Full-year equivalents = (total boys in table) — (number incarcerated) (0.75) for each age.
3. Points prevented = (number incarcerated) (0.75) (points per boy) for each age.
4. Col. 5 divided by Col. 1.
5. Equals Col. 3 total divided by Col. 2 total.
6. Equals Col. 5 total divided by Col. 1 total.
7. Equals Col. 7 total divided by Col. 2 total.
8. Equals (number incarcerated) (0.75) (offenses per boy) for each age.
9. Col. 9 divided by Col. 1.
10. Col. 9 total divided by Col. 1 total.

way of preventing crime, although it may be less expensive than other preventive policies.¹²

Assuming the Philadelphia boys are typical incarcerated male juveniles, the total seriousness points and total index offenses prevented by their incarceration (columns 5 and 9) can be interpreted either as the maximum increase in crime that would result from a policy of not committing juveniles to correctional institutions or as the maximum reduction in crime that would result from a policy of doubling the present age-specific incarceration rates for juveniles. The number of points and offenses prevented is quite appreciable in terms of all juvenile offenses, but not in terms of reported crime as a whole. For nonwhites in the cohort, the offenses prevented by incarceration represented a potential number of index seriousness points equal to 17 per cent of the cohort total, and a potential number of index offenses equal to 14 per cent of the cohort total. For white boys, the points prevented and the offenses prevented each constituted a potential 5 per cent of the respective cohort totals. Assuming that the truth lies somewhere in between the figures for whites and nonwhites, it can be estimated that index offenses actually committed by as well as officially attributed to, boys under eighteen would increase by 5 to 15 per cent if a non-incarceration policy were adopted.

In order to estimate the proportion of all index offenses attributable to those under eighteen, it is first necessary to deal with the question of offenses committed by girls. The Philadelphia data are of little value here, since they concern boys only. The contribution of girls to the total juvenile offenses probably constitutes less than 18 per cent, based on 1972 Uniform Crime Report data indicating that of all those arrested for Part I offenses (regardless of age), 18 per cent are female. It may be true that girls who are committed to training schools are less likely than boys to have been committed for index offenses and more likely to have been committed for nonindex offenses such as running away from home, incorrigibility and truancy. If so, it may also be true that incarceration

of juvenile girls prevents (in the removal effect sense) fewer index offenses than incarceration of boys, since the incarcerated girls have less serious careers of offending. Nevertheless, since the contribution of girls to index offenses is rather small, it will be assumed here that incarceration of girls under eighteen has the same removal effect as that of boys, which as shown earlier can be estimated at 5 to 15 per cent of the total index offenses committed by juveniles.

Since the Federal Bureau of Investigation does not report on "index offenses" as defined herein, the category of Part I offenses will be assumed to be roughly equivalent to that of index offenses. Part I offenses include all assault offenses except simple assault, and all robbery, burglary and larceny. (The chief difference between the Wolfgang-Sellin index offenses and the Federal Bureau of Investigation Part I offenses seems to be that the latter include attempted offenses and other instances of legally defined offenses where no actual injury or loss of property occurred.)

Using Part I offenses as the equivalent of index offenses, and using the Uniform Crime Report data discussed earlier, it can be estimated that approximately 28 per cent of all actual index offenses are committed by persons under eighteen. If the index offenses prevented by the removal effect of juvenile incarceration amount to 5 to 15 per cent of those that actually occurred, it can be estimated (ignoring deterrent effect considerations) that the index offense increase that could be expected from instituting a policy of not incarcerating any juveniles would be approximately 5 to 15 percent of 28 per cent. This would be 1 to 4 per cent of all index crimes now committed. The expected increase in index offense seriousness points (in harm done by index offenses) would probably be about the same since the figures for points generally follow the figures for offenses. This expected increase in crime would be easily obscured by the effects of other variables on crime statistics.

The question remains concerning the effect of removing the threat of training school on youngsters' willingness to commit crimes. If there were an increase in juvenile crime due to weakening of this deterrent effect, it may be assumed that this increase would be gradual and

¹² A recent study estimates \$35,000 as the cost of deterring one felony by increasing police patrols in New York City Subways. J. M. Chaiken, *The Impact of Police Activity on Crime: Robberies on the New York City Subway System*, RAND Institute (1974).

delayed, and not felt to its fullest extent until several years after the adoption of a nonincarceration policy. If this were the case, there are ways in which juvenile offending could be monitored to determine whether there were an unacceptable increase. If there were an unacceptable increase, it would be possible to return to the prior policy on incarceration of juvenile offenders.

The results of this analysis also have implications for a law enforcement strategy based on

the removal effect as far as juvenile offenders are concerned. Even if it were possible to double the numbers of juvenile offenders incarcerated,¹³ the above figures suggest that the resulting decrease in nationwide index offenses would be only 1 to 4 per cent. Considering the problems involved, the benefit is not worth the cost.

¹³ The improvement might be achieved by improving investigation and apprehension efforts, by better prosecution of juvenile cases, and by enacting stricter juvenile legislation.