

# A Thirty-Year Follow-up of Treatment Effects

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**ABSTRACT:** *Over 500 men, half of whom had been randomly assigned to a treatment program that lasted approximately 5 years, were traced 30 years after termination of the project. Although subjective evaluations of the program by those who received its benefits would suggest that the intervention had been helpful, comparisons between the treatment and control groups indicate that the program had negative side effects as measured by criminal behavior, death, disease, occupational status, and job satisfaction. Several possible processes are suggested in explanation of these findings.*

In 1935, Richard Clark Cabot instigated one of the most imaginative and exciting programs ever designed in hopes of preventing delinquency. A social philosopher as well as physician, Dr. Cabot established a program that both avoided stigmatizing participants and permitted follow-up evaluation.

Several hundred boys from densely populated, factory-dominated areas of eastern Massachusetts were included in the project, known as the Cambridge-Somerville Youth Study. Schools, welfare agencies, churches, and the police recommended both "difficult" and "average" youngsters to the program. These boys and their families were given physical examinations and were interviewed by social workers who then rated each boy in such a way as to allow a selection committee to designate delinquency-prediction scores. In addition to giving delinquency-prediction scores, the selection committee studied each boy's records in order to identify pairs who were similar in age, delinquency-prone histories, family background, and home environments. By the toss of a coin, one member of each pair was assigned to the group that would receive treatment.<sup>1</sup>

The treatment program began in 1939, when the boys were between 5 and 13 years old. Their median age was 10½. Except for those dropped from the program because of a counselor shortage in 1941, treatment continued for an average of 5 years. Counselors assigned to each family visited, on the average, twice a month. They encouraged families to call on the program for assistance. Family problems became the focus of attention for ap-

proximately one third of the treatment group. Over half of the boys were tutored in academic subjects; over 100 received medical or psychiatric attention; one fourth were sent to summer camps; and most were brought into contact with the Boy Scouts, the YMCA, and other community programs. The control group, meanwhile, participated only through providing information about themselves. Both groups, it should be remembered, contained boys referred as "average" and boys considered "difficult."

The present study compares the 253 men who had been in the treatment program after 1942 with the 253 "matched mates" assigned to the control group.

## *Method*

Official records and personal contacts were used to obtain information about the long-term effects of the Cambridge-Somerville Youth Study.<sup>2</sup> In 1975 and 1976, the 506 former members of the program were traced through court records, mental hospital

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<sup>1</sup> An exception to assignment by chance was made if brothers were in the program; all brothers were assigned to that group which was the assignment of the first brother matched. See Powers and Witmer (1951) for details of the matching procedure.

<sup>2</sup> A sample of 200 men had been retraced in 1948 (Powers & Witmer, 1951), and official records had been traced in 1956 (McCord & McCord, 1959a, 1959b).

records, records from alcoholic treatment centers, and vital statistics in Massachusetts. Telephone calls, city directories, motor-vehicle registrations, marriage and death records, and lucky hunches were used to find the men themselves.

Four hundred eighty men (95%) were located; among these, 48 (9%) had died and 340 (79%) were living in Massachusetts.<sup>3</sup> Questionnaires were mailed to 208 men from the treatment group and 202 men from the control group. The questionnaire elicited information about marriage, children, occupations, drinking, health, and attitudes. Former members of the treatment group were asked how (if at all) the treatment program had been helpful to them.

Responses to the questionnaire were received from 113 men in the treatment group (54%) and 122 men in the control group (60%). These responses overrepresent men living outside of Massachusetts,  $\chi^2(1) = 10.97$ ,  $p < .001$ .<sup>4</sup> Official records, on the other hand, provide more complete information about those men living in Massachusetts.

### Comparison of Criminal Behavior

The treatment and control groups were compared on a variety of measures for criminal behavior. With the exception of Crime Prevention Bureau records for unofficial crimes committed by juveniles, court convictions serve as the standard by which criminal behavior was assessed. Although official court records may be biased, there is no reason to believe that these biases would affect a comparison between the matched groups of control and treatment subjects.

Almost equal numbers in the treatment and control groups had committed crimes as juveniles—whether measured by official or by unofficial records (see Table 1).

It seemed possible that the program might have benefited those referred as "difficult" while damaging those referred as "average." The evidence,

TABLE 2

### Juvenile Delinquency and Adult Criminal Records

Record	Treatment group	Control group
Official juvenile record		
No adult record	14	15
Only minor adult record	33	27
Serious crimes as adults	25	25
No official juvenile record		
No adult record	71	70
Only minor adult record	86	99
Serious crimes as adults	24	17
Total	253	253

however, failed to support this hypothesis. Among those referred as "difficult," 34% from the treatment group and 30% from the control group had official juvenile records; an additional 20% from the treatment group and 21% from the control group had unofficial records. Nor were there differences between the groups for those who had been referred as "average."<sup>5</sup>

As adults, equal numbers (168) had been convicted for some crime. Among men who had been in the treatment group, 119 committed only relatively minor crimes (against ordinances or order), but 49 had committed serious crimes against property (including burglary, larceny, and auto theft) or against persons (including assault, rape, and attempted homicide). Among men from the control group, 126 had committed only relatively minor crimes; 42 had committed serious property crimes or crimes against persons. Twenty-nine men from the treatment group and 25 men from the control group committed serious crimes after the age of 25.

Reasoning that the Youth Study project may have been differentially effective for those who did and did not have records as delinquents, it seemed advisable to compare adult criminal records while holding this background information constant.

TABLE 1

### Juvenile Records

Record	Treatment group	Control group
No record for delinquency	136	140
Only unofficial crimes	45	46
Official crimes	72	67
Total	253	253

<sup>3</sup> Two hundred forty-one men from the treatment group and 239 men from the control group were found; 173 from the treatment group and 167 from the control group were living in Massachusetts.

<sup>4</sup> Among those sent the questionnaire, the response rate for men living in Massachusetts was 53%; for men living outside Massachusetts, the response rate was 74%. A similar bias appeared for both groups.

<sup>5</sup> For the treatment group, 18% had official records and an additional 13% had unofficial records. For the control-group "average" referrals, the figures were 19% and 13%, respectively.

Again, there was no evidence that the treatment program had deflected people from committing crimes (see Table 2).

The treatment and control groups were compared to see whether there were differences (a) in the number of serious crimes committed, (b) in age when a first crime was committed, (c) in age when committing a first serious crime, and (d) in age after which no serious crime was committed. None of these measures showed reliable differences.

Benefits from the treatment program did not appear when delinquency-prediction scores were controlled or when seriousness of juvenile record and juvenile incarceration were controlled. Unexpectedly, however, a higher proportion of criminals from the treatment group than of criminals from the control group committed more than one crime,  $\chi^2(1) = 5.36, p < .05$ . Among the 182 men with criminal records from the treatment group, 78% committed at least two crimes; among the 183 men with criminal records from the control group, 67% committed at least two crimes.

### *Comparison of Health*

Signs of alcoholism, mental illness, stress-related diseases, and early death were used to evaluate possible impact of the treatment program on health.

A search through records from alcoholic treatment centers and mental hospitals in Massachusetts showed that almost equal numbers of men from the treatment and the control groups had been treated for alcoholism (7% and 8%, respectively).

The questionnaire asked respondents to note their drinking habits and to respond to four questions about drinking embedded in questions about smoking. The four questions, known as the CAGE test (Ewing & Rouse, Note 1), asked whether the respondent had ever taken a morning eye-opener, felt the need to cut down on drinking, felt annoyed by criticism of his drinking, or felt guilty about drinking.<sup>6</sup> The treatment group mentioned that they were alcoholic or responded *yes* more frequently, as do alcoholics, to at least three of the CAGE questions: 17% compared with 7%,  $\chi^2(1) = 4.98, p < .05$ .

Twenty-one members of each group had received treatment in mental hospitals for disorders other than alcoholism.<sup>7</sup> A majority of those from the treatment group (71%) received diagnoses as manic-depressive or schizophrenic, whereas a majority of those from the control group (67%) received less serious diagnoses such as "personality

disorder" or "psychoneurotic,"  $\chi^2(1) = 4.68, p < .05$ .

Twenty-four men from each group are known to have died. Although the groups were not distinguishable by causes of death, among those who died, men from the treatment group tended to die at younger ages,  $t(94) = 2.19, p < .05$ .<sup>8</sup>

The questionnaire requested information about nine stress-related diseases: arthritis, gout, emphysema, depression, ulcers, asthma, allergies, high blood pressure, and heart trouble. Men from the treatment group were more likely to report having had at least one of these diseases,  $\chi^2(1) = 4.39, p < .05$ .<sup>9</sup> In particular, symptoms of stress in the circulatory system were more prevalent among men from the treatment group: 21%, as compared with 11% in the control group, reported having had high blood pressure or heart trouble,  $\chi^2(1) = 4.95, p < .05$ .

### *Comparison of Family, Work, and Leisure Time*

A majority of the men who responded to the questionnaire were married: 61% of the treatment group and 68% of the control group. An additional 15% of the treatment group and 10% of the control group noted that they were remarried. Fourteen percent of the treatment-group and 9% of the control-group respondents had never married. The remaining 10% of the treatment group and 13% of the control group were separated, divorced, or widowed. Among those ever married, 93% of each group had children. The median number of children for both sets of respondents was three.

About equal proportions of the treatment- and the control-group respondents were unskilled workers (29% and 27%, respectively). At the upper end of the socioeconomic scale, however, the con-

<sup>6</sup> This test was validated by comparing the responses of 58 acknowledged alcoholics in an alcoholism rehabilitation center with those of 68 nonalcoholic patients in a general hospital: 95% of the former and none of the latter answered *yes* to more than two of the four questions (Ewing & Rouse, Note 1). Additional information related to alcoholism is being gathered through interviews.

<sup>7</sup> An additional five men from the treatment group and three men from the control group had been institutionalized as retarded.

<sup>8</sup> The average age at death for the treatment group was 32 years ( $SD = 9.4$ ) and for the control group, 38 years ( $SD = 7.5$ ).

<sup>9</sup> Thirty-six percent of those in the treatment group and 24% of those in the control group reported having had at least one of these diseases.

trol group had an advantage: 43% from the control group, compared with 29% from the treatment group, were white-collar workers or professionals,  $\chi^2(2) = 4.58, p < .05$ . For those whose occupations could be classified according to National Opinion Research Center (NORC) ranks, comparison indicated that the control-group men were working in positions having higher prestige,  $z = 2.07, p < .05$  (Mann-Whitney *U* test).

The questionnaire inquired whether the men found their work, in general, to be satisfying. Almost all of the men who held white-collar or professional positions (97%) reported that their work was satisfying. Among blue-collar workers, those in the treatment group were less likely to report that their work was generally satisfying (80%, compared with 95% among the control group),  $\chi^2(1) = 6.60, p < .02$ .

The men described how they used their spare time. These descriptions were grouped to compare the proportions who reported reading, traveling, doing things with their families, liking sports (as spectators or participants), working around the house, watching television, enjoying music or theater or photography, doing service work, enjoying crafts or tinkering, and participating in organized group activities. The treatment and control groups did not differ in their reported uses of leisure time.

### *Comparison of Beliefs and Attitudes*

The men were asked to evaluate their satisfaction with how their lives were turning out, their chances for living the kinds of lives they'd like to have, and whether they were able to plan ahead.<sup>10</sup> Men from the treatment and the control groups did not differ in their responses to these questions.

A short form of the F scale (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950) developed by Sanford and Older (Note 2) was included in the questionnaire. Men were asked whether they agreed or disagreed with the following statements: "Human nature being what it is, there must always be war and conflict. The most important thing a child should learn is obedience to his parents. A few strong leaders could make this country better than all the laws and talk. Most people who don't get ahead just don't have enough willpower. Women should stay out of politics. An insult to your honor should not be forgotten. In general, people can be trusted."

Despite diversity in opinions, neither answers to particular questions nor to the total scale suggested that treatment and control groups differed in

authoritarianism. Both groups selected an average of 2.9 authoritarian answers; the standard deviation for each group was 1.7.

Each man was asked to describe his political orientation. About one fifth considered themselves liberals, two fifths considered themselves conservatives, and two fifths considered themselves as middle-of-the-road. No one considered himself a radical. Treatment and control groups did not differ reliably.

The men also identified the best periods of their lives, and, again, there was little difference between control and treatment groups.

### *Subjective Evaluation of the Program*

Former members of the treatment group were asked, "In what ways (if any) was the Cambridge-Somerville project helpful to you?"

Only 11 men failed to comment about this item. Thirteen noted that they could not remember the project. An additional 13 stated that the project had not been helpful—though several of these men amplified their judgments by mentioning that they had fond memories of their counselors or their activities in the project.

Two thirds of the men stated that the program had been helpful to them. Some wrote that, by providing interesting activities, the project kept them off the streets and out of trouble. Many believed that the project improved their lives through providing guidance or teaching them how to get along with others. The questionnaires were sprinkled with such comments as "helped me to have faith and trust in other people"; "I was put on the right road"; "helped prepare me for manhood"; "to overcome my prejudices"; "provided an initial grasp of our complex society outside of the ghetto"; and "better insight on life in general."

A few men believed that the project was responsible for their becoming law-abiding citizens. Such men wrote that, had it not been for their particular counselors, "I probably would be in jail"; "My life would have gone the other way"; or "I think I would have ended up in a life of crime."

More than a score requested information about their counselors and expressed the intention of communicating with them.

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<sup>10</sup> This set of questions was developed at the University of Michigan Survey Research Center as a measure of self-competence. It has an index of reproducibility as a Guttman Scale of .94 (see Douvan & Walker, 1956).

## Summary and Discussion

This study of long-term effects of the Cambridge-Somerville Youth Study was based on the tracing of over 500 men, half of whom were randomly assigned to a treatment program. Those receiving treatment had (in varying degrees) been tutored, provided with medical assistance, and given friendly counsel for an extended period of time.

Thirty years after termination of the program, many of the men remembered their counselors—sometimes recalling particular acts of kindness and sometimes noting the general support they felt in having someone available with whom to discuss their problems. There seems to be little doubt that many of the men developed emotional ties to their counselors.

Were the Youth Study program to be assessed by the subjective judgment of its value as perceived by those who received its services, it would rate high marks. To the enormous credit of those who dedicated years of work to the project, it is possible to use objective criteria to evaluate the long-term impact of this program, which seems to have been successful in achieving the short-term goals of establishing rapport between social workers and teenage clients.

Despite the large number of comparisons between treatment and control groups, none of the objective measures confirmed hopes that treatment had improved the lives of those in the treatment group. Fifteen comparisons regarding criminal behavior were made; one was significant with alpha less than .05. Fifteen comparisons for health indicated four—from three different record sources—favoring the control group. Thirteen comparisons of family, work, and leisure time yielded two that favored the control group. Fourteen comparisons of beliefs and attitudes failed to indicate reliable differences between the groups.

The objective evidence presents a disturbing picture. The program seems not only to have failed to prevent its clients from committing crimes—thus corroborating studies of other projects (see, e.g., Craig & Furst, 1965; Empey, 1972; Hackler, 1966; Miller, 1962; Robin, 1969)—but also to have produced negative side effects. As compared with the control group,

1. Men who had been in the treatment program were more likely to commit (at least) a second crime.

2. Men who had been in the treatment program were more likely to evidence signs of alcoholism.

3. Men from the treatment group more commonly manifested signs of serious mental illness.

4. Among men who had died, those from the treatment group died younger.

5. Men from the treatment group were more likely to report having had at least one stress-related disease; in particular, they were more likely to have experienced high blood pressure or heart trouble.

6. Men from the treatment group tended to have occupations with lower prestige.

7. Men from the treatment group tended more often to report their work as not satisfying.

It should be noted that the side effects that seem to have resulted from treatment were subtle. There is no reason to believe that treatment increased the probability of committing a first crime, although treatment may have increased the likelihood that those who committed a first crime would commit additional crimes. Although treatment may have increased the likelihood of alcoholism, the treatment group was not more likely to have appeared in clinics or hospitals. There was no difference between the groups in the number of men who had died before the age of 50, although men from the treatment group had been younger at the age of death. Almost equal proportions of the two groups of men had remained at the lowest rungs of the occupational structure, although men from the treatment group were less likely to be satisfied with their jobs and fewer men from the treatment group had become white-collar workers.

The probability of obtaining 7 reliably different comparisons among 57, with an alpha of .05, is less than 2%. The probability that, by chance, 7 of 57 comparisons would favor the control group is less than 1 in 10,000.<sup>11</sup>

At this juncture, it seems appropriate to suggest several possible interpretations of the subtle effects of treatment. Interaction with adults whose values are different from those of the family milieu may produce later internal conflicts that manifest themselves in disease and/or dissatisfaction.<sup>12</sup> Agency intervention may create dependency upon outside

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<sup>11</sup> This estimate is conservative: The count of 57 comparisons includes comparisons that are not independent (e.g., adult criminal record and crimes after the age of 25), but only 7 independent significant relationships have been counted. If comparisons for any stress-related disease, for NORC ranking of occupation, and for job satisfaction without controlling work status are counted, 10 out of 60 comparisons were significant.

<sup>12</sup> Such conflicts seem to have been aroused by intervention in the lives of hard-core unemployables (Padfield & Williams, 1973).

assistance. When this assistance is no longer available, the individual may experience symptoms of dependency and resentment. The treatment program may have generated such high expectations that subsequent experiences tended to produce symptoms of deprivation. Or finally, through receiving the services of a "welfare project," those in the treatment program may have justified the help they received by perceiving themselves as requiring help.

There were many variations to treatment. Some of these may have been beneficial. Overall, however, the message seems clear: Intervention programs risk damaging the individuals they are designed to assist. These findings may be taken by some as grounds for cessation of social-action programs. I believe that would be a mistake. In my opinion, new programs ought to be developed. We should, however, address the problems of potential damage through the use of pilot projects with mandatory evaluations.

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