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THE ROLE OF STATISTICS IN EVALUATING COMMUNITY EFFORTS ON CRIME PREVENTION

Myron Heidingsfield¹

The term crime prevention as used in this paper suggests not only that research which deals specifically with preventive procedure, but to any other that attempts to lay a foundation for future crime prevention programs, as in the studies of Shaw and Thrasher.

For the purpose of this paper, the author will attempt to show by a limited survey of research undertaken in the field of crime prevention, the use made of statistical methodology and its potentialities. It is realized that among all the techniques that are available to statisticians, some are not usually incorporated in the commonplace survey found in the literature.

Frank Loveland, in his "The General Value of Statistics in Administration of a Correctional System," states that there is a definite "value of statistics in furnishing data upon which to base a program of crime prevention . . . however, it is evident from the problems faced in the field of penology and prison administration, that research and statistical services have a definite and not unimportant place in general organization."²

The so-called sociological or cultural approach to research in crime prevention, not much evident in criminologic literature, implies a statistical analysis

that is differentiated from the so-called individualistic or case analysis. According to Shaw "this approach attempts to relate behavior to the social and cultural settings in which it arises . . . Groups reflect community life, and the community in turn reflects larger culture and social processes. Behavior of a delinquent may be in part a reflection of a conflict which drives him to a gang in which delinquency is a traditional group pattern."³

Dorothy S. Thomas concurs with Shaw, on the importance of statistics in the field of sociology and states: "There has been an incomplete recognition of the function of statistical analysis as the tool for the sociologist. Although never given the certainty that results from a perfectly good experiment, it is a method which provides a basis for evaluating probable relations objectively. The limitations of the method are due to the restrictions imposed by its underlying assumptions."⁴

She says, however, that ". . . statistics can never completely exclude other methods of analysis used in sociology. It should always be regarded as a methodological scheme for the objective evaluation of relationships in data that have been previously mulled over. The case study for instance, must always

¹ Board of Parole, 80 Center St., N. Y. City.

² "The General Value of Statistics in Administration of a Correctional System", *Proceedings American Prison Association*, 1932, p. 271.

³ C. Shaw, *Delinquency Areas*, 1929, U. of Chicago Press, p. 9.

⁴ D. S. Thomas, *Statistics in Social Research*, *American Journal of Sociology*, Vol. 35, No. 1, July, 1929, p. 1.

keep several steps ahead of statistical analysis, for statistical analysis must necessarily be concerned with selected factors, and the basis of this selection must come through intimate knowledge of the total situation."⁵

It should be pointed out that those data that are non-objective, are not made more reliable through the use of statistical analysis. "Therein lies the chief danger of the statistical approach to sociology, for many of the data of the most unreliable sort are readily transmutable to a numerical form in which the statistical method can be used. The end result gives an impression of great precision and certitude which were never inherent in the data."⁶

In the general field of crime prevention as previously defined, many of the methods directly related to statistical analysis are used. Statistical classification of crime has been a basis for analysis in terms of prevention. Police records are compiled by recording the offender as a unit to be classified. Crime Indexes are based on some such type of data, however, it should be remembered the value of a crime rate for index purposes decreases as the distance from the crime itself in terms of judicial procedure increases. Statistical methods are constantly being used in measuring relationships between economical crises and crime rates.

Continuing our study of the statistician's role in crime prevention, it is noted that much use is made of educational measurements for testing intelligence, social aptitude, personality adjustment, etc. These tests which are

analyzed in terms of statistical methodology, have become an essential technique in crime prevention programs which deal with juvenile delinquency.

According to Thomas, in her article on "Statistics and Social Research," only two first-rate statistical studies were ever made in this field. They were respectively Goring's study of the English Convict, and Slawson's study of the Delinquent Boy.

She points out that statistical analyses were made with regard to physical, mental and environmental factors with relation to crime. Here again, it is seen that an attempt is made to objectify the measurement of phenomena which may make for personal maladjustments.

Shaw, in his studies on juvenile delinquency in Chicago, makes use of statistical methodology in several of its forms. He constructs spot maps, sets up frequency distribution classified according to age, sex, economic studies, and proceeds to apply Pearson-Product moment correlation between rates in each of his ecological zones and rates of school truants. Correlations are also computed for recidivism with rates of individual delinquency.

In setting up his Lower West Side Prevention Program, Thrasher says: "One of the essential details was fact finding, providing a scientific basis for community leisure time program through the furnishing of agencies with useful facts." Implied in this statement is the necessity for statistical methods to be used in the evaluation of the data collected. The lack of the application of statistical techniques is decried by

⁵ D. S. Thomas, *op. cit.* p. 12.

⁶ *Ibid.*, p. 12.

the Gluecks in their "Preventing Crime." They say: "no system has been established which accurately measures the results of crime prevention programs. It will never be possible to prove what specific crimes have been prevented, but it is true that for the Crime Prevention Bureau, the number of juveniles taken to court for serious offenses showed a marked decline."⁷

In view of the possibilities which may result from the application of statistical techniques to crime prevention, "the Police Statistician is trying to standardize the collection of comparable and reliable juvenile crime statistics in order that it can be determined in the future with a fair degree of accuracy whether the crime prevention work is preventing an increase in the amount of juvenile crime."⁸

Although there is no single index which will give a comprehensive picture of police effectiveness, a satisfactory record system will yield a number of items of information useful in administration control. The most significant information regarding crimes against the public morals, disturbance of the peace and similar offenses, is the number of persons charged by the police. It is in this field of police work that a sound philosophy of administration is still lacking as a basis for measurement. Additional difficulty is that the police must discover as well as investigate such offenses. ". . . a number of techniques are available for measuring police purposes. Perhaps the most important are the time studies and statistical analyses which form the

basis for scientific determination of police beats. . . . A basis for comparative statistics between cities has been created in the uniform crime reports of the Department of Justice. Before such statistics can be of greatest usefulness to police administrators, two steps are necessary:

1. Further improvement in accuracy and comparability.
2. A statistical study of the causes of crime which will permit at least approximate allowances to be made with the extra administration, social, racial, institutional and economic factors which affect a crime of a municipality."⁹

In reviewing the role of statistics, in evaluating the community efforts on crime prevention, the writer has found a decided lack in the use of the statistical tool as an aid in analysis. This has been particularly true where the prime objectives have been the discovery of fundamental relationships which were essential to an adequate solution of the problem. In many places, the use of the statistical methodology has increased the importance and significance of the work.

Significant progress may be expected in social research if the method of stratified random sample is adopted. This procedure would allow the use of analysis of variance and its associated tests of significance for differences between social and economic variables which may pertain to social disorganization. The technique of "designing an experiment," that is taking full cognizance of all variables in a particular

⁷ S. and E. Glueck, *Preventing Crime*, McGraw Hill Book Co., N. Y., 1936, p. 51.

⁸ S. and E. Glueck, *op. cit.*, p. 235.

⁹ E. C. Ridley, and H. A. Simon, "Measuring Police Activities," *Public Management*, Vol. 19, May, 1937, p. 138.

problem, as followed by many of the agricultural and biological statisticians would also add to the value of social research—particularly when an ecological approach is followed.

Chapin in his design for social experiments suggests: "(1) If there is a real relationship between two social variables and this is a substantial relationship, then even crude controls of other variable factors will demonstrate the existence of this relationship. (2) Demonstration of the real relationship between two observed variables may be established within the limits of one experiment quite as decisively by many small differences that are in the same direction and are in agreement, as by the conventional criterion of statistically significant differences. (3) When the number of cases observed is large, it repays the effort to apply control of variable factors by the method of identity through individual matching, since this procedure will demonstrate with finality (within the limitations of the given experiment) the degree of real relationship by satisfying the criterion of a statistically significant difference."¹⁰

Correlation techniques which measure objectively relationships between two or more variables, such as Tetrachoric R, Bi-Serial R, and the Mean-Square Coefficient of Contingency, may be employed to distinct advantage when the data are classified on a qualitative basis. For those situations in which many variables are present, such methods as multi-dimensional co-

ordinates, matrix and factorial analysis, are excellent aids in analysis.

If all the possible techniques open to persons engaged in research were utilized, there is no doubt in the mind of the author that many of the results of social research would be far more significant than they have been—and possibly—we would be nearer to the solution of the many problems associated with crime prevention.

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¹⁰ F. S. Chapin, "Design for Social Experiments," *American Sociological Review*, Vol. 3, No. 6, December, 1938, p. 794.

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"Not to labor is vagrancy—a misdemeanor. To deny the right to labor is a crime—a collective conspiracy of organized Society. We have failed to find an adequate solution of the labor problem of released convicts by overlooking Society's full responsibility. We will not solve the crime problem by dealing merely with those who have been arrested and convicted so long as no provision is made for the after-care of those who have paid their penalty."—F. Emory Lyon.

The end of probation is that of saving the individual child or adult as a social asset and not that of destroying him and making him an outcast all the days of his life. Social outcasts are dangerous, they are debased not only in their own minds but in the minds of the public. When a state or nation persists in filling its institutions with outcasts, and refuses to use and apply the devices and principles that modern science and criminology provide to reinstate them as early as possible, as decent and acceptable members of society, there is no probability that the volume of crime and delinquency will at any time in the future be reduced.—Hon. Charles W. Hoffman.