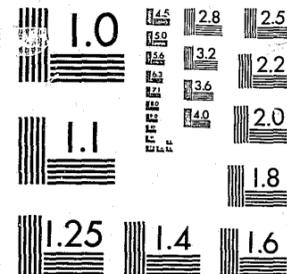


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9/22/83

The Importance of Experimental Research
in Deterrence Studies

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This research was partially funded by the Law Enforcement Assistance Administration. The views contained within are those of the authors' and do not necessarily represent those of the funding agency. 79-NI-AX-0050

Presented at the American Society of Criminology Meeting, November, 1980
San Francisco, California.

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A panel of academicians convened to study the scientific status of deterrence in the realm of criminal justice concluded "we cannot yet assert that the evidence warrants an affirmative conclusion" that penalties deter (Blumstein et al, 1978: 7). Layman might well scoff at such social science equivocation. A freeway driver readily appreciates the deterrent effect of a police car. The historian would also be puzzled by this criminological conclusion about deterrence. He might wonder to what, if not to the ability of penalties to alter behavior, the social scientist would attribute such outcomes as the conversion of Jews in Spain following the governmental edict in 1492 prohibiting the practice of Judaism.

The study of deterrence need not strive to prove whether or not there is such a general thing as a "deterrent effect." As Johannes Andenaes (1971: 537-538) has pointed out:

General propositions accepting or rejecting deterrence ought to belong to the past. The question is not whether punishment has a deterrent effect, but rather under what conditions and to what extent the deterrence purpose is effected. . . Common sense tells us that the threat of punishment does not play the same role in offenses as different as murder, rape, tax evasion, shoplifting, and illegal parking.

In line with Andenaes' suggestion, current research on deterrence is apt to concentrate on particular forms of illegal behavior.

History and Definitions

The basis of the deterrence doctrine is that crime rates are negatively related to properties of punishment, particularly to the perceived certainty of legal punishment, and, to a lesser extent, to the severity of the punishment. This relationship has been suggested with respect to a variety

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of offenses, from criminal homicide to parking violations (Tittle and Logan, 1973; Zimring and Hawkins, 1973).

The principles of deterrence were first delineated in some detail by Cesare Bonesana, Marchese de Beccaria (1738-94) and Jeremy Bentham (1748-1832). These two intellectual leaders of the Classical School theorized that individuals could be controlled by their fear of punishment. Beccaria believed that "[p]ain and pleasure are the only springs of action in beings endowed with sensibility (1963: 31)." Man was viewed as guided by reason, endowed with "free will," and responsible for his acts. The Classical School held that man could be controlled by making the pain from punishment exceed the pleasure obtained from the criminal act. The rational man would then choose "the desirability of non-criminal conduct. (Vold, 1958: 25)."

Bentham and Beccaria viewed the punishments of the time as illogical. The penalty for murder was death and the penalty for theft was death. Under such a system of sanctions, they argued, there was no incentive for the thief not to kill his victim. Beccaria urged that there should be "a scale of crimes. . . of which the first degree should consist of those which immediately tend to the dissolution of society: and the last of the smallest possible injustice done to a private member of society (1963: 25)."

Members of the Classical School believed that the purpose of punishment should be crime prevention. Punishment is desirable only if it deters others from criminal behavior. To accomplish this goal, Beccaria maintained that the public should be made aware of all laws; that trials should be swift; and that certainty and swiftness of punishment will have greater deterrent effect

than severity. Beccaria argued that penalties must be certain. Moderate penalties that are consistently applied will have more effect than more severe penalties that are only occasionally utilized (1963: 64).

Analysis of Aggregate Data

The most popular contemporary research method for studying deterrence in the United States has been to use states, counties, or cities as units of analysis. An attempt is made to establish a link between crime rates and measurements of certainty of punishment for different crimes. If deterrence principles are valid for a given criminal behavior, the expectation is that there will be a negative relationship between certainty of punishment and crime rates. The more likely it is for an offender to be punished for his crime, the lower the crime rate should be. Jack Gibbs (1968), for example, applied this technique to murder rates as reported in the FBI's Uniform Crime Report for each state, and concluded that certainty of punishment effected the murder rate. Similar studies, with few exceptions, (Forst, 1976; Greenberg et al, 1979; Pontell, 1978), have consistently found that the data supports the deterrence philosophy (see Gray and Martin, 1969; Tittle, 1969; Logan, 1972; Antunes and Hunt, 1973; Chiricos and Waldo, 1970; Ehrlich, 1973; Logan, 1975; Geerken and Gove, 1975). Recent studies have employed sophisticated analytical techniques and models combined with increased variables (Greenbert et al, 1979).

Such studies have been criticized for not accurately measuring the two important variables - - (1) certainty of punishment and (2) incidence of crime. Certainty of punishment is generally measured by:

"(1) the risk of police apprehension which is measured by the clearance rate or by the ratio of arrests to reported offenses;

(2) the risk of conviction, which is the ratio of convictions to reported crimes; (3) the risk of imprisonment, which is the ratio of prison commitments to reported crimes; and (4) the severity of prison punishment, which is usually measured by mean or median time served (Blumstein et al., 1978: 22)."

These data fail to account for (1) behavior defined as criminal by one observer but not by another, (2) failure to detect criminal acts, (3) failure to report detected crimes, (4) failure to record crimes, (5) failure of all arrests to lead to convictions, and (6) individuals who are convicted for a lesser offense than the one for which they were arrested (Kamisar, 1972; Wheeler, 1967; Wolfgang, 1963; Nagin, 1978; and Pepinsky, 1980). The analysis of such data also has often been biased in favor of the view that sanctions affect crime rates. Only recently has attention been paid to the probability that crime may affect sanctions (Pontell, 1978, Pepinsky, 1978; Greenberg et al, 1979). Increased crime, for example, may produce overcrowded jails which may lead to reduced sentences.

The validity of the cited studies of deterrence is further clouded by the compounding effect of incapacitation since the imprisoning of criminals may reduce the crime rate without deterring. Jack, for example, is committing all the robberies in a small town. His arrest eliminates all such behavior. Jack was not deterred by the threat of imprisonment and no additional individual is deterred because of Jack's incapacitation, yet the robbery rate drops. Finally such studies may underestimate or bias "certainty of punishment" since some persons, for example, juveniles, may show up in offense data but not adult arrest, conviction, or incarceration figures.

The use of official aggregate data, particularly the FBI's Uniform Crime Report, reinforces the class bias in the study of crime. It is noteworthy that the "index crimes" were established by a committee of the International Chiefs of Police in 1927 (President's Commission on Law Enforcement and Administration of Justice, 1967: 94) -- twelve years before Edwin Sutherland first raised the issue of white-collar crime in his presidential address to the American Sociological Society.

Experimental Research

Blumstein and his colleagues argue that "[f]rom a scientific perspective, controlled experimentation is the ideal approach to test for any effects, including those of deterrence (20)." An example of such work is Buikhuisen's (1974) study in the Netherlands of efforts to deter the use of worn tires on cars. For two weeks the police and press in the town of Groningen publicized a police effort to control the behavior under study. The town of Leeuwarden was used as a control. Cars with worn tires were enumerated in both towns prior to the publicity campaign. After the two week effort, previously inspected cars were again located and reinspected. The result was a 54 percent replacement rate of tires in Groningen compared with a 27 percent rate in Leeuwarden (see also Schwartz and Orleans, 1964; Decker, 1972; Chaiken, Lawless, and Stevenson, 1974; Chambliss, 1966; and Tittle and Rowe, 1973 for additional experimental studies).

Replication of such inquiries can provide strong evidence in favor or against deterrence of a given behavior that could be used for purposes of public policy. Such considerations led us to focus on experimental research when we sought to understand the effects of deterrence upon automobile repair fraud.

White-Collar Crime and Deterrence

The study of automobile repair fraud is a rich source of information for the more general topic of white-collar crime: a crime committed by an individual (or a corporation) in the course of his occupation (Sutherland, 1949). Insights regarding the illegal practices of repair dealers might be applicable to other white-collar crimes. Certain factors common to many white-collar occupations, may be criminogenic -- that is, there is a greater likelihood of illegal behaviors when these forces are in place than when they are not.

Beccaria's belief that there should be "a scale of crimes -- of which the first degree should consist of those which immediately tend to the dissolution of society" talks directly to the matter of white-collar crime (Magnuson and Carper, 1968: 62; Mintz and Cohen, 1971: 265-266; President's Commission on Law Enforcement and Administration of Justice, 1967: 158). Gilbert Geis (1973: 189), for example, argues for increased prosecution of white-collar crimes on the ground that "they threaten the integrity of society."

The literature suggests that white-collar criminals may be more sensitive to deterrence efforts. "[I]t seems likely," Frank Zimring and Gordon Hawkins (1973: 127) write, "that those who attain high status will possess many of the characteristics that may be associated with maximum threat influence, such as a sense of the significance of the future and a strong loyalty to a social system that has been responsible for much of their success." Similarly, Michael Geerken and Walter Gove hypothesize that "the effectiveness of [a] deterrence system will increase as the individual's investment in and rewards from the social system

increase (509)." It has been suggested that high status may be susceptible to even minimal deterrence efforts. Marshall Clinard's research (1952) of violations by businessmen of wartime regulations led him to conclude that "because of their reputation, a short [jail] sentence may be as effective with businessmen as a long sentence with lower class criminals (91)."

White-collar crimes are rational behavior rather than impassioned or impulsive outbreaks, and therefore also are likely to be particularly susceptible to deterrence efforts (Chambliss, 1967: 709). The record of the antitrust violations in the heavy electrical equipment industry shows businessmen rationally planning their crimes (Geis, 1967). Robert Lane's research revealed that businessmen and government officials "believe that businessmen run afoul of the law for economic reasons -- they want to 'make a fast buck' (1953)." Lane concluded that most profitable companies do not violate as easily and quickly as their less fortunate counterparts -- the same conclusion as Clinard's more recent research (1979). Such conclusions offer further evidence of the rational economic nature of white-collar crime.

Method

First, women were sent to randomly selected repair facilities in two matched California metropolitan areas. Women were used because there is some evidence that they are more likely to be the victims of repair fraud. It was the intention of the researchers to establish a situation where fraud might occur.

The women approached the appropriate people at the garages with the story that they were moving and their cars did not start, again, to maximize the opportunity for fraud. The assumption was that a person about to leave town made a particularly vulnerable target for exploitation. The potential victims further explained that their car battery was in the trunk of the borrowed cars they were driving. They requested the shops to test the batteries.

The above measure (the "battery test") minimized a major problem -- the separation of standard operating procedure and incompetence from fraud. Previous studies of repair facilities had not attempted to delineate between the behaviors. For example, one measure that had been used on previous studies was to disconnect the vacuum advance hose. This defect causes poor acceleration and, if one has a very sensitive ear, a hissing noise. A driver took a car with these complaints to a number of places for pilot-testing in the California study. A standard facility response was "sounds like a vacuum leak, but I'll have to put it on the scope." The cost of connecting the car's engine to the scope (a piece of diagnostic equipment) was, on the average, \$20. It is industry practice to use the scope whenever possible. This practice exists despite (1) the fact that the vacuum advance hose is easily visible once the hood is open and (2) the results of a survey the researchers conducted of California Community College auto shop teachers in which 90 percent of those who responded said they would check the vacuum advance first given the complaints. It was felt that such industry practice was not deterrable behavior.

The "battery test" provides a better measure of dishonesty. The sampled shops all had some means to measure the quality of the batteries. A shop's recommendation to replace the battery combined with the written

report of the "victim" helped minimize the possibility that the researchers were measuring incompetence, that is, they were better able to recognize "fraud." Within days following the "battery test," surveyers approached the shops. Managers and owners were asked questions regarding the structure of their business, the size of the business or if the owner is present -- items that the literature suggests might be related to compliance. They were also requested to agree or disagree with attitudinal statements also suggested by the literature. These included perceived certainty and severity of punishment. The intent was to establish a set of independent variables to predict the dependent variable -- "honesty." Approximately 80 percent of the shops responded to the survey.

The experimental area was then subjected to an intervention. First, Public Service Announcements informing the public of the existence of a state agency to which they could report questionable repair dealers were broadcast on radio and television. Second, the county's district attorney filed a civil suit against a national firm for alleged illegalities in their auto repair outlets. Finally, the Bureau of Automotive Repair (the California state licensing agency for automobile repair shops) sent the dealers in the area a letter reminding them of the duties under law, the reasons for the law, and the consequences of violation. Nothing unusual was done in the control area.

Finally, the researchers post "battery-tested" all shops that had been pre-tested. In addition, they "battery-tested and surveyed a post-test only group in each area.

Preliminary Results of the California Study

The pre-test "honesty" rate (the percentage of shops that did not recommend a new battery) for the experimental group was 92.5 percent (n equals 67). For the control group, the rate was 94.1 percent (n equals 68). At the post-test, these groups had "honesty" rates of 85.9 percent (n equals 64) and 85 percent (n equals 60) respectively. The "honesty" rate for the post-test only group in the experimental area was 91 percent (n equals 90). The rate for the post-test only group in the control area was 80.7 percent (n equals 88).

Table 1 shows the "honesty" rates.

	PRE	TABLE 1 PRE-POST-TESTED	POST-TEST-ONLY
experimental	92.5% (67)	85.9% (64)	91% (90)
control	94.1% (68)	85% (60)	80.7% (88)

The only chi square that was significant ($p < .05$) was the difference between the pre-test group's honesty rate in the control area (94.1%) and the post-test only group's honesty rate in the control area (80.7%). The chi square was .02770.

Postscript

One week after the post-test, a black woman was sent to "battery-test" twenty of the previously tested dealers. The twenty were randomly selected from those shops in the experimental area that had been pre- and post-tested. Two of the twenty outlets stated they would be unable to test the battery. Eight shops reported the battery to be good. Ten dealers, however, suggested that a new battery was needed immediately or in the very near future.

Analysis

The above project attempted to test deterrence principles with regard to the California auto repair industry. The initial analysis suggests a deterrent effect may have been accomplished, that is, the experimental group's post-test "honesty" rate is not significantly different from the area's pre-test score (92.5% to 91%). The similar groups for the control area show a significant difference in their "honesty" rates (94.1% to 80.7%). The suggestion is that the intervention held "honesty" constant in the experimental area while it plummeted elsewhere as evidenced by the drop in honesty in the control area. Alternative explanations for the results are being researched. It may be, for example, that a worsening economy was related to the drop in "honesty" in the control city. If true, it is necessary to show that the two areas did not suffer equally, that is, that the recession was not felt similarly in the experimental and control areas.

The results concerning race differences are highly suggestive of greater victimization of minorities.

The researchers also found that the "crooked" repair dealers were unlikely to view the Bureau of Automobile Repair as being lenient -- a finding consistent with Beccaria's view that severity is not as important as certainty.

Many of their findings, however, have only proved tantalizing. A high correlation, though one not statistically significant at the .05 level of confidence, was measured between any change (either up or down) in the size of the business (number of employees) and crooked behavior.

It may be that an unstable economy is more likely to lead to white-collar crime than one that has little fluctuation. Such relationships have been found in regard to other behaviors. Such a hypothesis, however, needs further testing.

Discussion

The test presented in this paper evidences the fact that natural experiments can be utilized in deterrence studies. Other efforts, such as Buikhuisen's (1974), underscore the availability of this method. Furthermore, natural experimentation appears to cut across class lines. Automobile repair dealers range from the owner-operated one person shop to large dealerships and mass merchandisers, such as Sears and Montgomery Ward.

One cannot argue that automobile repair fraud is a trivial offense not worthy of study. Fraud committed by auto repair dealers steals both life and money from the public. Americans spend over \$40 billion each year to maintain their individualized transports: \$2 billion allegedly is wasted on fraudulent repairs. In fact, it is estimated that \$12 to \$20 billion of the American repair bill is for unnecessary, not done, or fraudulent repairs (Jones et al, 1979). Such expenditures surely subtract from the total dollars spent on necessary repairs - - both of a mechanical and a safety nature. The high cost of automobile repair fraud combined with its white-collar crime status suggests that it is the very type behavior that Beccaria would have wanted to control.

Research on deterrence should eliminate the use of aggregate data, such as official crime rates. Studies employing this data may build an interesting methodology but do little to provide social policy answers.

Peter Berger (1963: 13) writes that some social scientists: have become so preoccupied with methodological questions that they have ceased to be interested in society at all. As a result, they have found out nothing of significance about any aspect of social life, since in science as in love a concentration on technique is quite likely to lead to impotence.

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