Police Crackdowns and Slowdowns: 
A Naturalistic Evaluation of Changes 
in Police Traffic Enforcement

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A retrospective quasi-experimental reversal design examined the effects of increases and decreases in traffic enforcement on the frequency and severity of traffic accidents in a metropolitan area. Over a two-month period, police substantially increased the number of citations written for moving violations on local interstate highways. Subsequently, the police decreased all self-initiated activities, including traffic citation writing, as a tactic to enforce wage demands in a contract dispute. Examination of traffic accident data collected throughout these periods found no changes in the frequency of accidents reported, nor any change in the distribution of accident types involving property damage, personal injury, or fatalities. These findings question the utility of traffic enforcement crackdowns as a public safety measure, and demonstrate that temporary lapses in such enforcement have no documented detrimental effects.

In evaluating programs of long standing within an organization, it may be impossible for the researcher to design an experimentally rigorous evaluation without disrupting routine program operations. Moreover, many such established programs were developed without an explicit causal model; relations between program inputs and outcomes may be frequently verbalized yet remain empirically unvalidated. A preliminary evaluation strategy both practicable for the researcher and useful to program administrators is to conduct a retrospective analysis (Campbell & Stanley, 1966) of functional relationships between the routine program inputs and any available indices which can be directly tied to verbalized program goals. In other words, a first step towards a rigorous program evaluation might be a naturalistic study of variations in program inputs and subsequent changes in outcomes.

Retrospective analyses have the obvious limitation that the researcher has no control over the timing and level of changes in the program inputs, nor over any other aspect of design affecting internal validity. Nevertheless, a suitable quasi-experimental design (Campbell & Stanley, 1966) may exist in the recent history of the program. The present study reports one such retrospective quasi-experimental evaluation of a police traffic enforcement program.

The police are an important social agency which has an extremely high level of public visibility. As the first link in the criminal justice system, the police are charged with crime prevention, public safety, and emergency services. Since 1965 there have been numerous federal and state commissions established to study police administration and policies. Yet, despite its importance and public concern over its activities, there has been relatively little research into the effectiveness of routine police operations.

A number of recent studies have examined the effectiveness of police patrol tactics in controlling crime. The best known and largest scale of these studies is the Kansas City preventive patrol experiment (Kelling, Pate, Dieckman, & Brown, 1975). In this study, the visibility of police patrol was manipulated by increasing the number of patrol cars assigned to five zones, while decreasing the number of cars in five additional zones. A third set of five zones maintained previous levels of patrol. At the end of one year, there were no significant differences in the frequencies of serious crimes among the three groups of zones. Apart from several interpretative criticisms of the Kansas City experiment, the massive scale of the project coupled with its elaborate instrumentation and consequent sophisticated statistical analyses have probably deterred many police departments from undertaking similar research.

A research strategy which does not involve such strong experimental control or high cost is necessary to evaluate routinely police procedures as these procedures are typically executed. A simple evaluation technique of considerable analytic power which does not have an obstructive experimental requirements is the time-series design including reversal or multiple-base- line features (Campbell & Stanley, 1966; Risley & Wolf, 1972). Illustrating how this design can be used to evaluate police procedures, Schnelle, Kirchner, McNees, and Lawler (1975) examined the effects of increased police patrolling in residential areas on the frequency of residential burglaries. This study employed a multiple time-series design in which three geographically separate zones were simultaneously “saturated” by increased patrol manpower. Comparisons were made of the frequencies of residential burglaries in the target zones, in the same zones during non-saturation shifts, and in randomly selected non-target zones. There was no indication that saturation patrolling had any effects on the rate of
home burglaries. However, the frequency of burglary arrests was substantially increased in the target zones compared to the non-saturation shifts and zones.

A second set of studies by Schnelle, Kirchner, Eck, Macrae, McNees, Casey, and Useiton (1978) and by Schnelle, Kirchner, Domash, Larson, Carr, and McNees (in press) employed the reversal design in evaluating the effects of helicopter patrol on serious crimes. It was found that the helicopter patrol did reduce daylight residential burglaries, but only when the helicopter was confined to a small (five square mile), high population density area. In larger suburban areas, the helicopter had no discernible effects (Schnelle et al., in press). Unlike the saturation patrol experiment, the helicopter experiment did not produce an increase in arrests in the target areas.

Evaluations of traffic safety efforts have been primarily concerned with assessing the effects of increased judicial penalties for traffic violations. These evaluations, typically employing simple pre-post time-series designs, have not demonstrated that traffic safety indices are significantly affected by increased penalties. Campbell and Ross (1968) retrospectively examined the effects of a Connecticut law to suspend for 30 days the licenses of convicted speeders. Unfortunately, concurrent changes in enforcement practices made it impossible to determine whether the law change or other factors were responsible for the observed reduction in traffic accidents.

Robert, Rich, and Ross (1973) evaluated the effects of a mandatory seven-day jail sentence imposed for driving while intoxicated in Chicago. Again, there was no evidence that the legislation was effective in reducing traffic fatalities. Ross (1975) also analyzed the effectiveness of severe traffic violation penalties in Finland, but found no evidence that severe penalties lowered accident or fatality rates. Edwards and Brackett (1978) reported a pre-post time-series evaluation of a novel highway speed management strategy. Marked highway patrol vehicles were randomly stationed along a 17-mile stretch of highway. Over successive weeks the number of vehicles and the predictability of their presence was reduced. Unmarked speed monitoring vehicles reported that the average speeds of vehicles were reduced by this deployment strategy.

The validity of these results is questionable due to a lack of baseline speed measures and any control procedures such as a reversal or comparison with untreated highway sections. Moreover, the study failed to address the issue of whether the obtained reductions in speed were followed by any reductions in the frequency of traffic accidents.

In none of the previous research has there been an effort to examine the effect of changes in the levels of police traffic enforcement on the frequency of traffic accidents. A retrospective quasi-experiment on this issue was made possible by a unique series of events in Nashville, Tennessee. In April, 1978, the police department began a special project to enforce the 55 mph speed limit on local interstate highways. The project was intended to reduce speeding and thereby to reduce the frequency of accidents. Three interstates converge on and surround Nashville within the metropolitan county. The 69 miles of interstate roadway is the major commuter route in the area. In June, police officers began a work "slowdown" to support their demands for salary increases. The phenomenon of police slowing down self-initiated activities has become a popular tactic of police unions to enforce job demands which is frequently accompanied by intense publicity. The police slowdown in Nashville was evidenced primarily by the effective curtailment of traffic enforcement operations and misdemeanor arrests for about one month. The succession of increased traffic enforcement and work slowdown phases provided an opportunity for a relatively powerful evaluation of the impact of police traffic citations on traffic safety.

**METHOD**

**Design**

The sequence of baseline, enforcement, slowdown, and baseline periods constitutes a reversal with multiple interventions (ABCA) (Risley & Wolf, 1972). As an experimental design, the reversal has proven itself to be a powerful evaluation tool and has gained widespread use in behavior analysis. The retrospective quasi-experimental nature of the present study has less analytical power than a true experimental design, but the weakness derives from the retrospective nature of the data and the consequent lack of control over the levels and timing of the interventions—not from the reversal design itself.

**Measures**

All measures of enforcement and traffic accidents were gathered through the Nashville Police Department computer center. The independent variable was the number of traffic citations for moving violations issued per day. Non-moving violations (e.g., improper equipment, noisy muffler) and parking citations were excluded. This measure was assessed at three levels: 1) baseline—before (February–March) and after (July–August) the interventions—represents the normal frequency of traffic citations; 2) speed limit enforcement period (April 2–May 2) during which radar squads were engaged in strict speed limit enforcement on local interstate highways; and 3) police work-slowdown (June 1–June 26) during which police reduced all self-initiated activities. Totals of citations issued were retrieved for each day of the period from February 2 to August 9, 1978. The data were collapsed over five-day blocks for ease of analysis.

The dependent variable was the number of traffic accidents per day. In Tennessee, all motor vehicle accidents involving personal injury or property damage over $200 must be reported to the police. Traffic officers are dispatched from headquarters to the scene of reported accidents to
conduct their investigations. Because of the legal requirement and the fact that officers were dispatched to accidents, reporting of traffic accidents probably was not affected by the work slowdown. The accident measure was divided into three levels according to the seriousness of the accident; property damage, personal injury, and fatalities. As with the independent variable, the daily totals of each type of accident were retrieved from computer files. The data were summed over five-day blocks.

Although the special enforcement project was conducted on interstate highways only, citation and accident measures were collected from the whole city because police presence and traffic enforcement activities were dispersed citywide. There is no reason to assume that if police visibility acquires some control over driving behavior on the interstates, similar visibility of police throughout the city should not similarly control. Also, if one assumes that only those drivers cited for moving violations will change their behavior, those changes should be general, not confined to the interstates. Finally, any consistent changes in accident rates on a large, heavily travelled section of road, such as the interstates, should be observable in the combined citywide data.

RESULTS

The upper panel of Figure 1 (Panel a) displays the total number of traffic citations issued per five-day period from February 2 to August 8. The vertical lines indicate the beginnings and ends of the various interventions and baselines. Panels b, c, and d show respectively total property damage accidents, total personal injury accidents, and total fatality accidents per five-day period.

In Panel a, it can be seen that the frequency of citations was relatively stable during the first baseline period (mean: 1667.3; range: 1236—2202). During the speed limit enforcement period, citations increased abruptly and remained an average of 52% above baseline (mean: 2536.7; range: 2214—2907). The work slowdown markedly decelerated the issuance of citations to a level only 36% of the original baseline (mean: 652.2; range: 178—1624). The final baseline period showed a return in the frequency of traffic citations to a level near the first baseline (mean: 1433.6; range: 1186—1949). Between the speed limit enforcement and slowdown phases, there was a five-day period during which normal traffic enforcement operations prevailed: the radar squads were not operating. This period appears as the unshaded portion of Panel a.

It can be readily seen in Panels b and c that despite a general upward drift in accidents across all phases, the frequencies of property damage (289 per five-day block) and personal injury accidents (66.4 per block) were not affected by the interventions. From Panel d it appears that fatal accidents during the enforcement (1.37 per block) and slowdown (1.40) phases may have increased over the initial baseline (0.5). However, comparison with fatalities in the second baseline period (1.11) indicates that the apparent effect probably was not due to the interventions—the sec-
Fig. 1. Citations issued and traffic accidents per five-day block. The top panel shows the total number of traffic citations issued per five-day period from February 2 through August 9, 1978. The shaded portions show the average number of citations per five-day period throughout each condition—baseline, speed limit enforcement, work slowdown, and second baseline. Between the enforcement and slowdown conditions, there was a five-day period of baseline conditions. The lower three panels show five-day totals of traffic accidents involving, in descending order, property damage, personal injury, and fatalities.
and baseline continued to show a greater frequency of fatal accidents. In general, the data revealed no tendency for the contrasting interventions to produce opposite effects on traffic accidents of any type. This was the case even when a more restrictive analysis of accident data limited only to interstates was conducted.

**DISCUSSION**

The present retrospective analysis of police traffic enforcement shows that wide variations in the overall levels of enforcement have no immediate measurable impact on the frequency or severity of traffic accidents, even when these interventions are highly publicized.

The speed limit enforcement data are consistent with published evaluations of police patrol effectiveness which found few if any crime prevention effects of increased police manpower assigned to a given area (Kelling et al., 1975; Schnelle et al., 1975). The Kansas City experiment included a group of zones in which police did not patrol but responded only to calls for service. No increase in crime was reported as a result of this temporary absence of police presence. This finding appears confirmed in the present study: the temporary lull in proactive traffic enforcement did not lead to more frequent automobile accidents.

In regard to the slowdown period, it should be pointed out that the slowdown did not involve changes in police presence or mobility since police officers were still patrolling in their cars. Because police visibility was relatively unchanged, it is reasonable to assume that most drivers experienced no change in the actual driving conditions encountered. The police slowdown was highly publicized on a continuing basis. Immediately prior to and during the slowdown, a total of 77 articles concerning police union demands, possible strike action, and city government contingency plans appeared in local newspapers. Radio and television stations also regularly mentioned the slowdown during news broadcasts. Thus, most motorists were at least exposed to publicity about the slowdown by police.

The retrospective quasi-experimental nature of the study requires that conclusions be made cautiously. Retrospective studies entirely rule out manipulations by the researcher. Strictly speaking, the study has no design component: the term quasi-experiment is thus only a description of the sequence of changes in the independent variable. Neither the timing of the interventions nor the levels of deployment and activity by police were subject to control, as they would be in a true experiment or quasi-experiment. The limitation imposed by this fact is that it remains unknown whether perhaps longer or more intense interventions would demonstrate a functional relationship between traffic enforcement and accident frequency. The strongest conclusion allowed in the present case is that no consistent changes in the frequency of traffic accidents were found to follow the observed changes in the frequency of traffic citations.

The dependent measure, traffic accidents, also imposes limitations on the present analysis. Although it can be assumed that the definitions of the various types of accidents did not change throughout the period of the study, and that accident reporting tendencies were not reactively affected by the interventions, it must be noted that the dependent measures were only selected for the present study: they were not explicitly constructed or subjected to tests of reliability and validity as in a controlled study. Further, the nature of behavioral measures more directly related to driving behavior, such as speed monitors and instruments to assess the level of drivers' awareness of and reaction to police enforcement, would provide a potentially more sensitive assessment of the effects of the interventions.

Despite the limitations noted above, this quasi-experimental analysis has several positive features and can serve as an exemplar of a useful type of program evaluation. First, the study was unobtrusive and cost nothing to conduct. Second, the analysis concerned the routine operation of a traditional police program. Third, the dependent measures comprised routinely collected police data directly relevant to program goals. Fourth, because of this naturalistic approach, the evaluation is readily comprehensible to and accepted by police administrators. As such, similar retrospective evaluations having strong defensible designs, as in the present case, can provide a powerful point of departure for the design of program modifications and more obtrusive experimentally rigorous evaluations.

In summary, this paper provides an example of how the performance of a large organization can be evaluated by taking advantage of changes that naturally occur in the organization. The preliminary data generated by this unobtrusive evaluation, while not definitive, are useful in calling into question the traffic enforcement policies of police departments. Furthermore, the effect of police slowdowns as a job demand strategy does not seem to endanger the safety of motorists, at least over the time periods evaluated herein. The primary loss that results from such slowdowns would seem to be the reduced police presence that a city would collect when fewer traffic citations are issued. More exacting experimental research should be stimulated by this retrospective evaluation so that more precise statements about the value of police traffic enforcement can be made.


