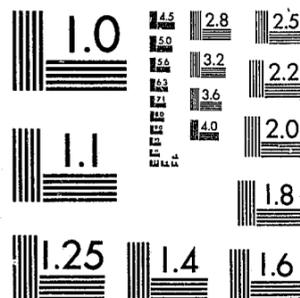




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Surveying Citizens for Police Performance Assessments
by

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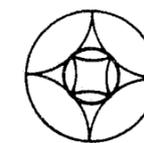
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WORKSHOP
POLITICAL THEORY
AND
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SURVEYING CITIZENS FOR POLICE PERFORMANCE ASSESSMENTS¹

ACQUISITIONS

The use of survey techniques to study crime and the police has become ubiquitous in the past 15 years. Surveys have been used extensively to measure the occurrence and distribution of crime. They have also been used to measure citizens' fear of crime and their reactions to fear, including investments in self-protection and collective security arrangements. Surveys have been used to obtain independent audits of police behaviors in response to reports of victimization, requests for assistance, or in other contacts between police officers and citizens. Further, surveys have been used to obtain a wide range of measures of citizens' perceptions and evaluations of police activities and performance. Over the past 10 years my colleagues and I have participated in this use of surveys, arranging for interviews with individuals in some 20,000 households. We have used the data from these interviews to assess and compare police performance across more than 60 police jurisdictions and in 5 metropolitan areas. This paper reports some of our methods and findings. It also addresses some recent critiques of the use of citizen surveys, concluding that we need to learn a good deal more before wholeheartedly embracing (or rejecting) their use as performance assessment tools.

Comparison is the cornerstone of any measurement process. In order to assess the performance of police, for example, one needs a standard for comparison, a measuring stick, however complex and multidimensional that stick may be. My colleagues and I have not been comfortable with the standards and recommendations promulgated by the various commissions dealing with police in recent years (e.g., President's Commission on Law

Enforcement and Administration of Justice, 1967; National Advisory Commission on Criminal Justice Standards and Goals, 1973; American Bar Association, 1973). Most of these standards focus on input variables, such as the number of full-time officers, rather than on measures of police activities or outputs. These standards and recommendations lack empirical content and are inattentive to the need for adaptation to varying local circumstances. In preference to using a single set of standards to assess police performance, we have chosen to employ a comparative assessment framework.² In this scheme, the performance of different police agencies is assessed in comparison to the performance of other agencies serving similar areas. The need for similar comparison areas requires careful attention to research design and analysis, but does allow comparative assessment to proceed on a basis that is fair to the agencies involved. By including multiple types of similar comparison areas, it is possible to assess police performance comparatively across very different agencies and contexts.

Within this comparative assessment framework, general population surveys have formed an integral research tool. With research designs and statistical controls to provide equivalent bases, comparisons have been made of citizen reports of experiences, observations, perceptions, and evaluations across areas served by different police agencies. A particular interest is how the structure of police organization -- the size of police agencies and their internal organization, and the number and types of police agencies operating in different areas -- affects the activities of the agencies and the behaviors of officers, and how these, in turn, affect the performance of police, particularly at the

street level. Comparative measures from surveys are used to order police agencies in terms of performance. The results of those orderings have been quite contrary to what might have been expected given many commission reports and recommendations (Ostrom, 1975). These findings may have had some impact in slowing organizational change based on commission pronouncements (Skoler, 1978: 173-175).

Most similar systems research designs

In our early research into comparative policy agency performance, we used a classic "most similar systems" research design (Przeworski and Teune, 1970). In this design research sites are selected so as to hold constant all important explanatory variables with the exception of the single variable whose effect is being analyzed. In order to study the effect of agency size on performance, sets of very similar neighborhoods that received police services from different sized police agencies were chosen. In the Indianapolis area the performance of three police agencies of about 20 officers each was compared to the performance of the 1,100 officer Indianapolis Police Department. In that study, we "held all else constant" by doing research in a set of very comparable middle-class, white residential neighborhoods. In a Chicago study our comparison was between the performance of two very small (fewer than 10 officers) departments and that of the 12,000-plus officer Chicago Police Department. In Chicago the similar systems were poor, black neighborhoods.

In both the Indianapolis and Chicago studies, police performance variables could be compared directly by virtue of the similarity of the study neighborhoods. The only major difference among the white, middle-

class neighborhoods in Indianapolis was in whether they received service from a large municipal police department or a relatively small one. In Chicago this was also true, but for poor, black neighborhoods.

The 1970 Indianapolis Study

Our first experience with the use of citizen surveys as tools in comparative performance assessment came in 1970. We wished to assess what differences in performance might be found when police agencies of different size supplied services to otherwise comparable neighborhoods. The Indianapolis-Marion County area in Indiana offered an attractive research site for several reasons.

Interviews were conducted in the jurisdictions of three small independent communities immediately adjacent to Indianapolis, and in three neighborhoods just across their borders that fell within the jurisdiction of Indianapolis. The independent communities and the Indianapolis neighborhoods were all approximately equidistant from the higher-crime center of the city. The neighborhoods and the independent communities were all carefully matched on housing types and tenure, employment patterns, and racial and age composition of the residents. A most similar systems research design was used to minimize variations in all variables except those of immediate interests, that is, the immediate effects of differences in police organization (large, professional, specialized versus small, locally-controlled, highly patrol-oriented organizations) as they might be revealed by differences in the experiences, observations, perceptions, and evaluations proffered by citizens in the neighborhoods.

The areas chosen for study were the incorporated communities of Beech Grove, Speedway, and Lawrence, and portions of the Indianapolis Police Services District which lay immediately adjacent to these communities. A high proportion of the homes in the areas were owner-occupied. Residents were almost exclusively white and tended to be employed in white-collar occupations. Residents of the suburban communities tended to have lived there longer and to be older, though neither difference was large. All six study areas could be characterized as low crime areas (Ostrom, et al., 1973, provides a complete description of the study areas and the study itself).

The police departments serving the independent communities were relatively small. Beech Grove had 19 full-time sworn officers. Lawrence had 21, and Speedway had 25. These departments were somewhat larger than those frequently criticized for being too small (see, for example, National Advisory Commission on Criminal Justice Standards and Goals, 1973), but were much smaller than the Indianapolis Department. The Indianapolis Police Department, with a strength of nearly 1,100 full-time sworn officers, was a modern professional force, recognized for its extensive training and innovation.

The 1970 Chicago Study

Within the same year as the Indianapolis Study, a very similar research project was conducted in the Chicago metropolitan area. In this project, the study neighborhoods were inhabited by poor, black residents rather than white, middle class as in Indianapolis. Two small towns, Phoenix and East Chicago Heights, were chosen to represent black

neighborhoods served by small local police forces. The Phoenix Police Department employed 4 full-time officers and 15 part-time officers, while the East Chicago Heights Police employed 6 full-time and 5 part-time officers. These police departments were, thus, below the 10 full-time officers minimum frequently argued to be essential for effective policing. They were certainly much smaller than the Chicago Police Department, with a full-time sworn officer complement in excess of 12,500 men.

Three neighborhoods within the City of Chicago were chosen for comparison purposes. These were North and South Englewood and Morgan Park. The neighborhoods were quite similar in demographic and socioeconomic conditions to the independent communities, but it was not possible to find contiguous neighborhoods as in Indianapolis. The only major socioeconomic difference between the independent communities and the Chicago neighborhoods was the presence of a considerable amount of low density public housing in one of the independent communities. Thus, Chicago respondents were quite a bit more likely to own or to be buying their own home than were respondents from the independent communities.

Respondents in the Indianapolis and the Chicago studies were asked similar sets of questions relating to their experiences with crime and the police, their observations and perceptions of police activities in their neighborhoods, and their overall evaluations of the police services they received in those neighborhoods. A full report of the sampling procedures used, the questions employed, and the item-by-item responses for these studies is available from the author.³ For brevity in presentation, however, Tables 1 and 2 summarize the comparative performance findings of the Indianapolis and Chicago research.

Table 1. Rank^a order of study neighborhoods
on police performance variables -- 1970 Indianapolis Study

	Independent Communities Served by Small Departments			Indianapolis Neighborhoods Served by Large Department		
	Beech Grove	Lawrence	Speedway	Near Beech Grove	Near Lawrence	Near Speedway
Citizen experiences						
Victimization	4.0	3.0	1.0	2.0	6.0	5.0
Willingness to report	1.0	3.0	4.0	5.0	6.0	2.0
Level of follow-up	4.0	2.0	1.0	6.0	5.0	3.0
Assistance	3.0	2.0	1.0	4.0	5.0	6.0
Response speed	3.0	2.0	1.0	5.0	4.0	6.0
Cumulative experiences	3.0	2.0	1.0	4.5	6.0	4.5
Citizen perceptions and evaluations						
Promptness	3.0	2.0	1.0	5.0	6.0	4.0
Neighborhood crime trend	2.0	1.0	4.0	6.0	3.0	5.0
Police bribe-taking	6.0	4.0	1.0	3.0	2.0	5.0
General evaluation	3.0	1.0	2.0	4.0	6.0	5.0
Cumulative perceptions and evaluation	3.0	1.5	1.5	5.0	4.0	6.0

^aMost favorable rank is 1

Table 2. Rank^a order of study neighborhoods
on police performance variables -- 1970 Chicago Study

	Independent Communities Served by Small Departments		Chicago Neighborhoods Served by Large Department		
	Phoenix	East	North	South	Morgan
		Chicago Heights	Englewood	Englewood	Park
Citizen experiences					
Victimization	1.5	4.0	5.0	1.5	3.0
Willingness to report	2.0	2.0	4.0	5.0	2.0
Level of follow-up	3.0	1.0	5.0	3.0	3.0
Satisfaction	4.0	5.0	3.0	2.0	1.0
Assistance	3.5	5.0	1.5	1.5	3.5
Response speed	1.5	1.5	3.5	3.5	5.0
Satisfaction	4.0	2.0	1.0	4.0	4.0
Cumulative experiences	2.5	2.5	5.0	2.5	2.5
Citizen perceptions and evaluations					
Promptness	1.0	5.0	3.0	3.0	3.0
Neighborhood crime trend	3.0	1.0	3.0	5.0	3.0
Police bribe-taking	1.0	2.0	3.5	5.0	3.5
Police mistreatment	1.0	2.0	3.5	5.0	3.5
Police equality	1.0	2.0	4.0	4.0	4.0
General evaluation	2.5	5.0	2.5	2.5	2.5
Cumulative perceptions and evaluation	1.0	2.0	4.0	4.0	4.0

^aMost favorable rank is 1.

To summarize the comparative performance results in the Indianapolis Study, each neighborhood was rank-ordered according to the percentage of more favorable responses to each of the experience, perception, and evaluation questions. Table 1 presents the results of that ranking. For example, respondents from Speedway were least likely to say that they or a family member had been victimized in the previous 2 years. Respondents from Beech Grove were most likely to report a high level of follow-up to their reported victimization, while those from the Indianapolis neighborhood located adjacent to Beech Grove were least likely to report high follow-up. Cumulating the experience rankings, citizens in the three independent, smaller communities were found to have more favorable experiences with crime and their local police than were citizens from the Indianapolis neighborhoods.

A similar set of rankings resulted for the perception and evaluation questions. Citizens in Speedway were more likely to say that their local police responded "very rapidly" when called. Citizens in Lawrence were least likely to view crime in their neighborhood as "increasing." The cumulative perception and the evaluation ranking, like that for experiences, indicates a generally higher level of police performance in the independent communities than in the very similar neighborhoods served by the Indianapolis Police.

The rank ordering of the five Chicago study neighborhoods is shown in Table 2. The differences between neighborhoods on several indicators were not as clear in Chicago as they were in Indianapolis. Where neighborhoods fell quite close to the same point on an individual item, they were given the same rank so as to avoid overstating small differences.

On an overall basis, two of the Chicago neighborhoods ranked about the same on experience as the two small jurisdictions. The third Chicago neighborhood feel somewhat below, with more respondents reporting unfavorable experiences of one kind or another. The two small communities ranked above all three Chicago neighborhoods on most of the evaluations. In total there is not a great deal of difference between the experiences, perceptions, and evaluations reported by residents of the small communities and those reported by respondents in the Chicago neighborhoods. There is a very slight lean toward the small communities across the set of indicators, but it is perhaps fairest to say that performance was approximately equal in the two very different kinds of jurisdictions.

The findings of these two research efforts were quite remarkable to many at the time. In the late 60's and early 70's there was a strong push for the consolidation of small police agencies in metropolitan areas. Critics were certain that departments with fewer than 10 officers could not supply adequate police service and some questioned the efficacy of departments as large as 50 officers or even, in at least one case, departments with fewer than 200-300 sworn officers. Our comparative data indicated, however, that small- and medium-sized departments could and were doing as well and often better than very large, modern police departments in supplying police services to comparable residential neighborhoods. In these two studies and in our subsequent efforts, we found citizens receiving police service from small- and medium-sized agencies generally less likely to report they or their families had been victimized. They were more likely to have reported their

victimizations to local police. They were assisted more frequently by police. They perceived faster response times in their own experiences and more generally. They reported lower perceptions of crime increase and higher perceptions of police honesty, courtesy, and fairness. And they consistently rated their local police "outstanding" and "good" in numbers that exceeded such reports by citizens served by large police departments. The studies in this series have been linked by common threads in their theoretical interests, focusing on organization to activities to performance linkages; in their research designs, employing variations in the most similar systems design for selection of research sites; and in their data collection procedures, relying on interviews with citizens residing in study neighborhoods for at least a major portion of the data collected.

With the Indianapolis and Chicago studies some comparative police performance differences were found and some explanations for those differences began to develop. Performance advantages for small- and medium-sized police agencies appeared to result from doing things differently than the very large departments. In part because of a difference in the demands they received, smaller departments put a much heavier emphasis on the supply of on-street patrol services, while large departments devoted a high proportion of their resources to specialized investigation and support services. This generally resulted in a much higher presence on the street in communities served by the smaller police agencies (see Ostrom, Parks, and Whitaker, 1978, for congruent nationwide figures). As policing is a highly labor intensive, face-to-face form of service delivery, we speculated that this added on-street presence was one of

the major explanations for the higher performance of the smaller agencies. In subsequent research the generality of the findings were increased by including many more types of study neighborhoods and many different forms of police organization. This expanded research required a change from the most similar systems design to accommodate multiple sets of systems in our research.

Multistrata similar systems research designs

In later studies we have used more complex research designs, characterized as multistrata, similar systems designs (Ostrom, Parks, and Smith, 1973; Parks, 1980). In these studies sets of comparable neighborhoods were picked, but several such sets were chosen rather than a single one. The sets of neighborhoods were chosen to ensure variation in neighborhood wealth and racial composition. By choosing multiple sets of similar neighborhoods, a close match to the distribution of types of neighborhoods served by police across the United States was obtained. This gave the studies greater face validity, but required more complex analysis schemes to compensate for the potential confounding effects of multiple neighborhood types.

The 1972 St. Louis Study⁴

In 1972 we conducted our first research project employing a multistrata, similar systems research design. The research sites were located in the St. Louis, Missouri, metropolitan area. The St. Louis research focused on police service delivery in 44 residential neighborhoods. Police services in these neighborhoods were supplied by one or more of

29 separate police agencies. The agencies ranged in size from 2,200 full-time sworn officers down to one department employing only part-time officers. The neighborhoods were predominantly residential. This focus enabled the elimination of many service condition variables as potential alternative explanations for findings. The types of demands placed upon police, for example, are likely to be quite different in residential areas than they are in central business districts or heavily industrial areas. While not all police jurisdictions contain the latter types of areas, virtually every police agency includes within its jurisdiction large proportions of neighborhoods similar to those selected in St. Louis. This restriction to comparable areas lends face validity to findings as well as reducing the number of extraneous influences that would otherwise require statistical control in analyses. It also limits the generality of any findings with respect to implications for policing nonresidential areas. This was recognized at the time of the research and accepted as a reasonable cost to obtain service condition comparability.

The sample frame utilized for the 1972 St. Louis Study was an extension of the "most similar systems" research design. Three distinct strata of neighborhoods were created based on indicators of neighborhood wealth. The neighborhoods were lower middle to middle income residential areas.⁵ The categories of neighborhood wealth were defined by the median value of owner-occupied housing and median contract rents. The lowest category included neighborhoods where the median housing value was less than \$10,000 in 1970. The middle category included median housing values of \$10,000 to \$19,999, while the high category included values of \$15,000 to \$24,999. The overlap on housing values between the middle and high categories was divided according to median contract rents, with neighborhoods where rents were less than \$120 per month assigned to the middle stratum.

Seven categories of size and organization were used. These included three categories for increasing sizes of independent communities -- 500 to 4,999; 5,000 to 15,999; and 16,000 to 28,900 in 1970 population. A fourth category included census tracts in larger communities in St. Louis County. A fifth category was established for urban places in the unincorporated portions of the County, while the sixth category consisted of planning neighborhoods established within the City of St. Louis. The last category included those communities in St. Louis County that received police services under contract from the County Police or from an adjoining municipality.

A combination of in-person, mail, and telephone interviews was used to obtain interviews with citizens residing in the selected neighborhoods. The citizen interviews obtained data on characteristics of respondents and their households. Data were also obtained on the activities of respondents and household members and their experiences with crime and the police. The respondents' perceptions of local police officers and police activities, and their evaluations of the overall quality of police services in their neighborhoods were collected as well. More than 4,000 interviews were completed in total. The distribution of interviews and study neighborhoods in the St. Louis design matrix is shown in Table 3.

Analysis considerations with multiple strata research designs

The most similar systems research design runs into serious difficulties whenever the "systems" of interest vary on more than a single dimension. The logic of that design requires that all such differences be controlled through the selection of research sites, such that the only difference

Table 3. Distribution of citizen interviews and study neighborhoods in St. Louis

Neighborhood Wealth Stratum ^a	Independent Communities with Populations of:			Census Tracts in Cities of 29,000-66,000	Unincorporated Places in St. Louis County	Planning Neighborhoods in St. Louis	Communities with Contract Police
	500-4,999	5,000-15,999	16,000-28,900				
1	N ^b = 283 S ^c = 3	N = 608 S = 6	N = 194 S = 2	N = 390 S = 4	N = 78 S = 1	None in this cell	N = 81 S = 1
2	N = 184 S = 2	N = 289 S = 3	N = 429 S = 4	N = 360 S = 4	N = 81 S = 1	N = 607 S = 7	N = 332 S = 4
3	None in this cell	N = 115 S = 2	None in this cell	None in this cell	None in this cell	None in this cell	None in this cell

^aWealth strata are defined by median housing values and median contract rent. Stratum 1 is the highest wealth stratum.

^bNumber of citizen interviews completed

^cNumber of study neighborhoods in this cell

SOURCE: Modified from Table 4.3 in Parks, 1979

among systems lies along the dimension of principal research interest (Przeworski and Teune, 1970). Where this is the case, differences among systems in the dependent variables of interest can be safely attributed to differences in the single dimension.

When systems differ on more than a single dimension, differences in the dependent variables of interest might be the result of variations along any of the differing dimensions. In the St. Louis Study, for example, immediate possibilities for explaining differences in performance across neighborhoods were differences in police organization as before, but also differences in neighborhood wealth and/or in neighborhood racial composition. Neighborhoods were consciously selected so as to ensure a range of variation in both neighborhood wealth and racial composition. Therefore, the analysis must account for these differences and compensate for them before any statements about comparative performance of differently organized police agencies can be made.

The particular set of techniques used to make the necessary compensations are a variant of conventional regression analysis. A set of indicators of neighborhood conditions serve as control variables, similar to covariates in an analysis of variance framework. These control variables adjust the analysis for the varying contextual effects of the different neighborhood types. Because the study neighborhoods also varied in the composition of the respondent set from neighborhood to neighborhood, an additional set of control variables are computed for each respondent to adjust for differences in respondents' age, educational background, racial character, length of residence in their neighborhood, and housing tenure.

The adjustments for individual and neighborhood characteristics help to remove these variables as alternative explanations for differences in the performance indicators from neighborhood to neighborhood. To investigate these latter differences, a set of dummy effect variables are constructed to use in regression analyses (see Kerlinger and Pedhazur, 1973, for full details of dummy effect coding). One such dummy variable is created for each combination of police organizational arrangements and research design strata. For example, effect variables are constructed for upper middle-income neighborhoods in each of the seven jurisdiction size and police organization categories. Similar effect variables are constructed for each other stratum in the design matrix, e.g., middle-income neighborhoods or low-income neighborhoods.

An effect coefficient is computed for each effect variable. The regression equations for computing these effect coefficients look like the following:

$$Y = b_0 + \sum_i b_i N_i + \sum_j b_j X_j + \sum_c b_c C_c, \text{ where}$$

Y = the performance variable of interest;

N_i = the set of neighborhood characteristics used for adjustment purposes;

X_j = the set of individual respondent characteristics used for adjustment purposes; and

C_c = the set of effect variables used to estimate the differences in performance variable Y for each cell in the design matrix.

The coefficients b_c , then, represent the predicted effects of being in cell C of the design matrix on the average performance of the police on indicator Y . This approach using linear combinations of neighborhood and

individual adjustment variables together with linear estimates of effect coefficients is the simplest method of compensation for neighborhood and respondent differences in multistrata designs.

The computed effect coefficients for each cell represent the effects on respondents' experiences, perceptions, and evaluations of living in a neighborhood located in that particular cell. These effects are net of the effects of neighborhood characteristics and the characteristics of individual respondents to the extent that linear adjustment techniques allow. Thus, it is possible to compare these adjusted effects across neighborhoods served by differently organized police departments and to draw inferences about comparative performance from these comparisons.

The coefficients computed for the effect variables are interpreted as differences from the overall mean value in the sample, where those differences result from the location in the design matrix. Suppose, for example, that the mean proportion of respondents indicating that they or a household member had been victimized in the previous year is .14. Suppose further that the effect coefficient for medium-income neighborhoods served by large city police departments is .06. This would mean that after adjustment for the neighborhood context and the characteristics of the individual respondents in the sample neighborhoods, the mean proportion victimized in medium-income neighborhoods served by large city departments is $.14 + .06$, or .20. In other words, if the neighborhood conditions were the same across all neighborhoods and if the characteristics of survey respondents were the same across all neighborhoods, those respondents in middle-income neighborhoods served by large city department would be 43 percent more likely to have been victimized in the previous year than the average respondent in the sample.

This method of adjustment is very conservative. Estimated differences in police performance that remain after the use of neighborhood and individual level controls are likely to be smaller than the actual performance differences that exist. This results from the correlations of neighborhood and individual characteristics with police organization variables. This conservatism seems warranted to avoid overstating differences in police performance, but the reader should bear it in mind when reviewing the findings in subsequent sections.

Comparative experiences in St. Louis

St. Louis respondents were asked about their experiences with crime, both personally and for members of their households. They were asked about experiences where the police had assisted them and where they had been stopped by the police. Where respondents indicated they had one or more of these experiences, interviewers probed for some of the details of their encounter.

Table 4 presents data to examine the victimization experiences of the respondents. Across the whole sample, 14 percent of the respondents said that they or a household member had been the victim of some kind of crime in their own neighborhood during the previous year. Overall, victimization tended to be less frequent in the smaller communities, although the differences were not large. The neighborhoods where respondents were most likely to tell interviewers that they or a household member had been victimized were those served by the large, central city departments and some neighborhoods served by medium-sized departments.

The effect of the effect variables adjustment procedure can be illustrated by comparing the victimization rates after adjustment to the

Table 4. Comparative victimization experiences with adjustments for individual and neighborhood characteristics -- 1972 St. Louis Study

Proportion of respondents whose person or household was victimized in their own neighborhood within the previous year^a

Neighborhood Wealth Stratum	Independent Communities with Populations of:			Census Tracts in Cities of 29,000-66,000	Unincorporated Places in St. Louis County	Planning Neighborhoods in St. Louis	Communities with Contract Police
	500-4,999	5,000-15,999	16,000-28,900				
1	.11	.10	.15	.16	.09	X	.16
2	.13	.12	.14	<u>.19^b</u>	.17	<u>.20^b</u>	(.07 ^b)
3	X	.18	X	X	X	X	X
$(R^2 = .037 \quad N = 4,031 \quad \bar{X} = .14 \quad s.d. = .35)$							

Proportion of victimizations reported to the local police^a

1	.77	.79	.75	.76	.91	X	.68
2	(.54 ^b)	.71	(.60 ^b)	.69	.77	.78	.73
3	X	.75	X	X	X	X	X
$(R^2 = .037 \quad N = 916 \quad \bar{X} = .73 \quad s.d. = .44)$							

^aCell entries are predicted mean values after adjustment for individual and neighborhood characteristics.

^bThe predicted mean value for this cell is significantly different ($p < .05$) from the mean value for the entire sample. High values are underscored and low values are in parentheses.

SOURCE: Data collected in the 1972 St. Louis Study

raw frequencies for several neighborhood and police organization combinations. The cell in row 3 of the matrix, for example, with an adjusted proportion victimized of .18, had a raw victimization rate of .25. That is, one quarter of the respondents in those neighborhoods said that they or a household member had been the victim of crime in the previous year. But, neighborhoods in that cell had much lower percentages of persons under 18 living with both parents and of families with higher incomes. Both the latter neighborhood factors are negatively related to victimization in the sample as a whole. One of the neighborhoods in this cell is the most racially heterogeneous of the sample. Racial heterogeneity is positively associated with victimization in the sample as a whole. After adjusting for these neighborhood factors and for differences of respondent characteristics from those of the sample as a whole, the predicted mean victimization rate for this cell is lowered substantially. This means that if conditions in these neighborhoods were the same as the average for the sample and if the respondents from these neighborhoods had the same characteristics as average respondents, the predicted victimization rate in these neighborhoods would be lower by slightly more than one-fourth (i.e., from .25 to .18).

Similar, though less dramatic reductions from raw rates of victimization were found in several cells in row 2 of the design matrix. These included the St. Louis City Planning Neighborhoods, the Census Tracts in larger suburban communities, and the contract communities. In most of the other cells in the matrix, including particularly those in the highest wealth stratum, the adjustment procedure results in predicted victimization proportions that are higher than the raw scores. These other cells tended

to have more families with higher incomes and two parent families than the sample average and to be more racially homogeneous. Without these advantages, their victimization experiences are predicted to be less favorable.

The proportion of victimizations where the police were notified ranged from just over one-half in one cluster of neighborhoods to more than 90 percent in another. No pattern emerged with respect to organizational factors on this confidence indicator. The proportion of victimizations reported to the police that received a high level of police follow-up -- indicated by police recovering property, arresting or at least questioning a suspect, or checking thoroughly about the victim's premises -- ranged from one in five incidents to nearly two-thirds. The proportion of respondents indicating that they were satisfied with what the police had done in response to their victimization ranged from about one half to nearly 90 percent. Little, if any, patterning by jurisdiction size or service delivery organization was found for either high follow-up or victim satisfaction. Summing up the victimization experiences, big city respondents were slightly more likely to have been victimized in the previous year than were respondents served by other organizational forms, but their experiences subsequent to the victimization tended to be similar to those of respondents served under other organizational arrangements.

Respondents in St. Louis were also asked whether they or a household member had been assisted by the police, and, if so, about the details of their experience. In the total sample, 13 percent of the respondents indicated that they or a household member had received assistance from their local police in the previous year. The largest adjusted proportions of respondents receiving assistance were found in neighborhoods served

by the St. Louis Metropolitan Police and in those neighborhoods in the lower two wealth strata living in jurisdictions of 5 to 16,000 persons. The cell effects on frequency of police assistance were not generally significant, however; and there did not appear to be any strong patterning by type of organization.

Respondents in the large city neighborhoods tended to report receiving lower levels of police follow-up in assistances and to be less satisfied with the police response than those in other areas. High follow-up in this context meant that the police transported someone to the hospital or doctor, conducted an extended inspection of the problem at hand, or were said by the respondent to have "taken care of the problem." Lower follow-up was coded when police simply questioned the complainant, took a report, or were reported to have done "nothing."

For both victimization and assistance experiences, respondents who had called the local police were asked how long it had taken the police to arrive. The longest police response times were reported in the large city neighborhoods. The mean response time there was nearly 8½ minutes. The shortest times, averaging 5 minutes and 20 seconds, were found in neighborhoods served by relatively small police forces. However, response times in other cells served by small departments were quite a bit higher than this. Other than the longer times reported in the large city neighborhoods, no particular pattern in response times can be discerned.

St. Louis respondents were asked whether they had been stopped by a police officer during the previous year, and, if so, how they were treated. Respondents from the large city jurisdiction were considerably more likely to have been stopped by their own police than were respondents

from other areas. Those respondents who had been stopped by their own police in the large city and in some of the smaller jurisdictions were somewhat more likely to report that they had been treated rudely or roughly.

Comparative perceptions and evaluations in St. Louis

Survey respondents' perceptions of the speed of police response when called to their neighborhood; their perceptions of the trend of crime in their neighborhood; their assessments of police officer honesty, courtesy, and fairness of treatment in the neighborhood; and their overall assessment of police performance in their neighborhood were all obtained in St. Louis.

Respondents from medium-sized jurisdictions were slightly more likely to perceive rapid police response in their neighborhoods than were those from the smaller jurisdictions (see Table 5). Those from both medium and small jurisdictions gave more favorable responses on this indicator than did respondents from the large city and county jurisdictions. The mean perception pattern is basically similar to the pattern of mean response times in actual incidents where the police were called.

Respondents from the large city neighborhoods were most likely on the average to feel that crime was increasing in their neighborhood. Those least likely to perceive increasing crime were residents of the smallest jurisdictions, including small jurisdictions that received police services under contract arrangements. Respondents from some of the medium-sized jurisdictions were also more likely to perceive crime increasing in their neighborhoods, though no clear pattern appeared here.

Table 5. Comparative perceptions with adjustments for individual and neighborhood characteristics -- 1972 St. Louis Study

Perceived speed of police response when called in respondent's neighborhood^a
 (Very rapid = 5; Quickly enough = 4; Slowly = 3; Very slowly = 2; Not at all = 1)

Neighborhood Wealth Stratum	Independent Communities with Populations of:			Census Tracts in Cities of 29,000-66,000	Unincorporated Places in St. Louis County	Planning Neighborhoods in St. Louis	Communities with Contract Police
	500-4,999	5,000-15,999	16,000-28,900				
1	4.49 ^b	4.63 ^b	4.50 ^b	4.61 ^b	4.39	X	(3.81 ^b)
2	4.38	4.44	4.73 ^b	4.66 ^b	4.22	(3.94 ^b)	4.55
3	X	3.82	X	X	X	X	X
(R ² = .158 N = 3,591 \bar{X} = 4.37 s.d. = .75)							

Perceived trend of crime in respondent's neighborhood
 (Increasing = 3; Staying same = 2; Decreasing = 1; No crime = 0)

1	(1.87 ^b)	2.02	2.20 ^b	2.03	2.12	X	2.12
2	(1.75 ^b)	2.16 ^b	1.97	2.05	2.15	2.26 ^b	(1.65 ^b)
3	X	2.11	X	X	X	X	X
(R ² = .074 N = 3,673 \bar{X} = 2.03 s.d. = .83)							

^aCell entries are predicted mean values after adjustment for individual and neighborhood characteristics.

^bThe predicted mean value for this cell is significantly different (p<.05) from the mean value for the entire sample. High values are underscored and low values are in parentheses.

SOURCE: Data collected in the 1972 St. Louis Study

The most favorable perceptions of local police officers were found in the very small jurisdictions. Respondents there were most likely to believe that their local police officers were honest and courteous, and that they treated everyone equally. The least favorable perceptions of police officers were held by respondents from the large city neighborhoods and those in the lowest wealth stratum.

Respondents from the medium-sized jurisdictions tended to be most favorable in terms of overall ratings of police performance in their neighborhoods. The least favorable ratings of overall police performance, as with perceptions of police officers, were found in the large city neighborhoods and in the lowest wealth stratum.

Summarizing the perception measures, respondents from the large city neighborhoods consistently gave lower scores to their police than did respondents from other areas. Those from the lowest wealth stratum among the medium-sized communities were also more critical of their police. Results were somewhat mixed as between the smallest communities and somewhat larger, medium-sized communities. The medium-sized tended to score higher on measures of perceived speed of response and overall ratings of performance, while the smaller scored higher on perceptions of police officer honesty, courtesy, and fairness, and showed lower perceptions of crime increase.

Thus, in St. Louis patterns found in our earlier, similar systems research were repeated. With an expanded range of neighborhood types and forms of police agency organization small- and medium-sized police organizations continued to be found as good or better than large-scale organizations. In the St. Louis Study there were some advantages in terms of experiences

with crime and the police for residents of small- and medium-sized communities. They tended to be victimized less and to receive quicker responses and higher levels of follow-up in some experiences. They also tended to report being better satisfied by police actions when they had contact. The advantage in terms of citizen perceptions was larger. The neighborhoods served by the largest department were consistently among the lowest in terms of perceived speed of police response; perceived officer characteristics of honesty, courtesy, and fairness; and overall ratings of police performance. They were among the highest, on the other hand, on citizen perceptions of increasing crime in their neighborhood. Across the whole spectrum of measures derived from the citizen survey in St. Louis, there were no indicators showing residents of large city neighborhoods to be advantaged with respect to police performance.

The patterns of resource utilization in the St. Louis departments were also similar to those found earlier. The smaller departments put much higher proportions of their personnel into on-street patrol assignments. The smallest departments had virtually 100 percent of their officers with patrol assignments, while those in the medium-sized ranges averaged about 70 percent in patrol. The large city and county departments had only slightly more than one half of their officers assigned to patrol. Somewhat surprisingly, these differences in officer utilization did not dramatically harm the large city force's patrol presence. Because of the very large numbers of officers in that force, some 3.5 officers for every 1,000 city residents, the city police were able to maintain a high patrol presence in spite of the lower proportion of officers assigned to patrol duties.

The 1977 Police Services Study⁶

During the summer of 1977 we studied police service delivery in 60 residential neighborhoods located in three metropolitan areas -- Rochester, New York; St. Louis, Missouri; and Tampa-St. Petersburg, Florida. By including several metropolitan areas in the Police Services Study, a broader spectrum of police agency organization was included than had been possible in our previous work.

The neighborhood populations in 1977 ranged from predominantly poor, minority residents to upper middle-income, white residents. The neighborhoods received police services from 24 separate police agencies, ranging in size from 13 full-time sworn officers to more than 2,000 officers.

The field research undertaken in 1977 was the second phase of the Police Services Study. In the first phase extensive descriptive data was collected on the organization of police service delivery in 80 small- to medium-sized metropolitan areas across the country (see Ostrom, Parks, and Whitaker, 1978). Findings from that first phase were used in preparing the design for field research in the second phase.

The first phase of the Police Services Study showed that most Americans received police services from relatively large police agencies. While small agencies are most prevalent in any listing of police departments, less than 10 percent of the population of the 80 metropolitan area sample received police services from an agency with 10 sworn officers or fewer. Because of this finding, fieldwork in the second phase was focused on neighborhoods served by agencies that employed more than 10 sworn officers.

The choice of metropolitan areas for second phase research was restricted to the larger ones among the 80 from the first phase. Thirty-four of the metropolitan areas had 1970 populations in excess of 250,000 persons. By choosing from among this set of larger areas, the face validity of our research sites as truly metropolitan was enhanced.

Concern for the cost and logistic difficulties of fieldwork required research sites in no more than three metropolitan areas. The sites were chosen from among the 34 larger areas (and St. Louis, an area added because of prior research and the availability of research sites in the large, central city police department). The three areas chosen -- Rochester, New York; St. Louis, Missouri; and Tampa-St. Petersburg, Florida -- provided a distribution of police agency sizes to select from that led to a close match with the distribution in the larger metropolitan areas as a whole. In order to bring the distribution in the final design closer to that in the nation as a whole, more study neighborhoods were selected in the larger jurisdictions than in the small. With this selection a combination of study neighborhoods and jurisdictions that was roughly comparable to the mix of service delivery arrangements through which most Americans receive police services was obtained.

The research design for the Police Services Study included a broader range of neighborhood types than in earlier work. Specifically, a larger number of poor neighborhoods, both white and minority were included. The literature on police-citizen interactions indicated these areas as the most troublesome for police. While earlier research had looked at some areas of this nature (e.g., the Chicago Study and parts of the St. Louis Study), the Police Services Study extended that focus by including a larger number of poor neighborhoods and types of police organizations serving them.

Operational definitions of "neighborhood" for the Police Services Study included police beats, Census block groups, enumeration districts, and several combinations of these geographic entities. In addition to the citizen survey, the Police Services Study included data collection by trained observers riding with patrol officers in the study neighborhoods. For this purpose, a match of neighborhood and beat was desirable. In some instances this was not possible because of shifting beat boundaries (some departments changed their patrol structure depending upon the shift of the day) or the unavailability of beats which offered desired racial and income characteristics. In these instances, neighborhoods were defined to include portions of several beats, often linked to Census boundaries.

Data collection in the Police Services Study

The citizen survey data in the Police Services Study were collected exclusively by telephone interviews. The citizen interviews in the Police Services Study obtained data on respondent and household characteristics, experiences, perceptions, and attitudes. We also asked extensive questions about the extent of citizen involvement in supplying their own safety through various self-protective and collective security means. A total of some 12,000 interviews were completed in the study. The distribution of those interviews and the study neighborhoods is shown in Table 6.

Table 6 shows six strata of income and racial combinations. The neighborhood grouping is based primarily on income, with a breakdown by race within one income range. The income ranges are: (1) poverty neighborhoods where the median family income for respondents ranged from \$4,000 to \$6,000; (2) lower income neighborhoods where the median family income

Table 6. Distribution of citizen interviews and study neighborhoods -- 1977 Police Services Study

Number of citizen interviews and number of study neighborhoods by neighborhood type and police organization

	Neighborhoods That Receive Police Services From:			
	Agencies with 10 to 50 Officers	Agencies with 51 to 160 Officers	Large County Agencies	Large City Agencies
Poverty neighborhoods	N ^a = 532 S ^b = 3	N = 197 S = 1	None in this cell	N = 1,003 S = 5
Lower income, black neighborhoods	None in this cell	None in this cell	N = 120 S = 1	N = 1,029 S = 5
Lower income, mixed neighborhoods	N = 645 S = 3	N = 210 S = 1	None in this cell	N = 765 S = 4
Lower income, white neighborhoods	N = 579 S = 3	N = 578 S = 3	N = 589 S = 3	N = 1,630 S = 8
Middle-income neighborhoods	N = 647 S = 3	N = 1,013 S = 5	N = 599 S = 3	N = 399 S = 2
Upper middle-income neighborhoods	N = 182 S = 1	N = 855 S = 4	N = 447 S = 2	None in this cell

^aNumber of citizen interviews

^bNumber of study neighborhoods

SOURCE: Data collected in the 1977 Police Services Study

ranged from just over \$6,000 to \$14,000; (3) middle-income neighborhoods where the median income ranged from just over \$14,000 to \$18,000; and (4) upper middle-income neighborhoods where the median family income of our respondents ranged from just above \$18,000 to a high of nearly \$23,000. The racial composition of the poverty neighborhoods was predominantly minority. In only one poverty neighborhood did the percentage of the population that was white reach 30 percent. The lower income neighborhoods were divided by the percent of white respondents into three categories: (1) black neighborhoods, where the percent of white respondents was 25 or less; (2) mixed neighborhoods, where that percent ranged from 26 to 80; and (3) white neighborhoods, where minority respondents were less than 20 percent of the sample. All but two of the middle-income neighborhoods were white on these grounds, as were all of the upper middle-income neighborhoods.

In the data analyses presented below, neighborhood income level and racial composition are used as adjustments to compensate for differences in neighborhood contexts. A series of individual and household level adjustments are also employed. These are the respondent's age, sex, race, and education; and household income, length of residence, and housing tenure. As with the analyses of the St. Louis data, adjusting for these neighborhood and individual characteristics allows a conservative comparison of the performance effects of varying police organization across neighborhoods of quite different kinds.

Comparative experiences in the Police Services Study

Respondents in the Police Services Study were asked whether they or a household member had experienced any of a list of items that might constitute a victimization at any time during the previous 12 months. The items included:

- Something taken by force;
- Someone beaten up, attacked, or hit;
- House or car broken into;
- Property removed from house or car without permission;
- Purse, wallet, watch, or other personal item stolen;
- Car stolen;
- House vandalized; and
- Any other crimes.

Where a respondent answered that one or more of these items had occurred to the respondent or a household member in the previous 12 months, interviewers probed to ascertain details. Based on the information obtained, interviewers determined whether a victimization had actually occurred and its nature. Where a victimization had occurred, respondents were asked the location of the incident; whether it was reported to police and, if not, why not; how long it took for police to respond when called; whether the response was faster or slower than expected; and whether they were satisfied with what the police did with respect to the victimization.

Respondents were also queried about instances where they or a household member had been assisted by the police in the previous year and whether they personally had been stopped by the local police or had contacted the local police for information. Where any of the incidents

were reported, respondents were asked for the nature of the assistance, stop, or information call, and whether they were satisfied with police actions.

Table 7 presents data on victimization. After adjustment for neighborhood and individual characteristics, lower income black and mixed neighborhoods served by large city departments do exhibit somewhat higher than expected victimization rates when compared to the sample average or to other neighborhoods of the same type with different policing arrangements. This pattern is consistent with that found in our previous studies. Neighborhoods where the adjusted rate of victimization was lower than the sample average were found in the jurisdictions of municipal departments in the two lower size ranges. Another finding consistent with earlier research was that there was very little significant difference in the rate of reporting of victimizations across neighborhoods served by differently organized police agencies. Middle-income neighborhoods offered the only occasion of large differences. There respondents from neighborhoods served by the smaller police agencies were some 20 percent more likely to report victimizations to local police than were middle-income respondents served by large city departments. Such a difference in propensities to report crimes might well show up in comparisons of reported crime rates across this range of neighborhoods.

Respondents who had called the police to report a victimization were asked how long it took the police to arrive after being called. The highest mean response times were reported for neighborhoods served by large county police agencies. These agencies typically assigned lower proportions of personnel to patrol duties and tended to have rather low

Table 7. Comparative victimization experiences with adjustments for individual and neighborhood characteristics -- 1977 Police Services Study

Proportion of respondents whose person or household was victimized in their own neighborhood in the previous year^a

	Neighborhoods That Receive Police Services From:			
	Agencies with 10 to 50 Officers	Agencies with 51 to 160 Officers	Large County Agencies	Large City Agencies
Poverty neighborhoods	.31	(.19 ^b)	X	.32
Lower income, black neighborhoods	X	X	.28	.40 ^b
Lower income, mixed neighborhoods	.36 ^b	.35	X	.40 ^b
Lower income, white neighborhoods	(.24 ^b)	.27	.25	.27
Middle-income neighborhoods	(.18 ^b)	.28	.34 ^b	.31
Upper middle-income neighborhoods	.26	(.22 ^b)	.26	X
(R ² = .07 N = 12,019 \bar{X} = .29 s.d. = .45)				

^aCell entries are predicted mean values after adjustment for individual and neighborhood characteristics.

^bThe predicted mean value for these cells is significantly different ($p < .05$) from the mean value for the entire sample. High values are underscored and low values are in parentheses.

SOURCE: Data collected in the 1977 Police Services Study

patrol presence on the streets. More rapid response times tended to be reported in the jurisdictions of the municipal police agencies in the two smaller size ranges.

Respondents served by all types of police agencies were fairly even in their satisfaction with the job done by police in response to their victimization. The only trend is for respondents from lower income neighborhoods to be somewhat more pleased with the police response than those from upper income neighborhoods among large- and medium-sized municipal agencies. This trend is not particularly strong, however.

Respondents were asked whether they or a household member had received assistance from local police during the previous year. Positive responses with respect to such assistance were much more frequent from respondents in racially mixed or predominantly white neighborhoods than they were from respondents in predominantly minority neighborhoods. There was also a tendency for respondents from neighborhoods served by the smaller size ranges of municipal departments to have received assistance more than respondents from neighborhoods served by large county or city departments. There were virtually no significant differences across neighborhood types or forms of police organization in satisfaction with the services received.

The Police Services Study was the first of our comparative studies of police performance where we did not find large city police stopping their citizens more than police in other types of police agencies. The only type of neighborhood where large city police were more likely to have stopped residents than were police from smaller municipal and county agencies were middle-income neighborhoods. Even

here the differences were small. In other types of neighborhoods it was usually county police or police from the large suburban departments that were more likely to stop residents. Respondents who had been stopped by police from large city agencies were somewhat less satisfied with the treatment they received. Only in the middle-income neighborhoods did respondents stopped by large city police indicate higher satisfaction than respondents stopped by other police.

In general, the experiences reported by respondents in the Police Services Study followed patterns similar to those found earlier. Victimization was somewhat more likely in large city neighborhoods than it was in neighborhoods served under other organizational arrangements. Citizens living in neighborhoods served by smaller municipal police forces were more likely to receive a rapid response when they called the police than were big city residents, or particularly, county residents. Rates of reporting victimizations to the police were about the same across different types of neighborhoods and forms of police organization, as were rates of satisfaction with police actions taken in response to reported victimizations. Citizens living in neighborhoods served by the smaller municipal forces were more likely to have been assisted by their local police. Citizens in neighborhoods served by county police and by medium-sized municipal forces were more likely to have been stopped by their police in the previous year. Those stopped by police were least satisfied with police behavior if the stop was made by police from large city forces.

Comparative perceptions and evaluations in the Police Services Study

The differences in respondents' perceptions and evaluations of their police and crime conditions tended to be greater across neighborhood

types and forms of police organization than were experience differences. Table 8 shows, for example, that there is a fairly consistent trend for respondents from neighborhoods served by municipal agencies ranging up to 160 officers in size to report perceptions of faster police response speed in their neighborhoods. The pattern here is generally consistent with but stronger than the pattern of mean response times. Respondents served by large city and county departments were less likely to perceive that the speed of response in their neighborhoods was very rapid.

Big city respondents were those most likely to perceive crime as increasing in their neighborhoods. Differences among neighborhoods and organizational forms are not great on this indicator, however. Differences in respondents' perceptions of police officer honesty, courtesy, and equality of treatment tended to favor lower income neighborhoods. Once again, however, the differences were not too large. Citizens' ratings of the overall quality of the police service were usually higher when the citizens received service from municipal police agencies in the 51 to 160 officer size range. Citizens served by the smaller range of municipal departments usually gave nearly as high ratings, while the ratings from citizens served by county or large city departments were somewhat lower. All of these patterns are reasonably comparable with those found in our three previous performance comparisons.

Detailed explanations have yet to be developed for the patterns of findings in the Police Services Study. The trends found in earlier work with respect to the emphasis placed on patrol also appear in this study. That is, municipal departments of increasing size tend to allocate smaller proportions of their personnel and other resources to the supply of on-

Table 8. Comparative perceptions and evaluations with adjustments for individual and neighborhood characteristics -- 1977 Police Services Study

Perceived speed of police response
when called in respondent's neighborhood^a
(Very rapidly = 5; Quickly enough = 4;
Slowly = 3; Very slowly = 2; Not at all = 1)

	Neighborhoods That Receive Police Services From:			
	Agencies with 10 to 50 Officers	Agencies with 51 to 160 Officers	Large County Agencies	Large City Agencies
Poverty neighborhoods	(3.8 ^b)	4.2	X	(4.0 ^b)
Lower income, black neighborhoods	X	X	(3.7 ^b)	(3.9 ^b)
Lower income, mixed neighborhoods	4.3	<u>4.4^b</u>	X	(4.0 ^b)
Lower income, white neighborhoods	<u>4.3^b</u>	4.2	4.2	4.1
Middle-income, neighborhoods	<u>4.4^b</u>	<u>4.4^b</u>	4.1	4.2
Upper middle-income neighborhoods	<u>4.4^b</u>	<u>4.5^b</u>	(4.0 ^b)	X
(R ² = .12 N = 10,574 \bar{X} = 4.2 s.d. = .8)				

^aCell entries are predicted mean values after adjustment for individual and neighborhood characteristics.

^bThe predicted mean value for these cells is significantly different ($p < .05$) from the mean value for the entire sample. High values are underscored and low values are in parentheses.

SOURCE: Data collected in the 1977 Police Services Study

street patrol. There also appears to be a tendency for the same pattern of reduced emphasis placed upon on-street patrol assignments as the areas served increase in wealth. Large county departments exhibit the same pattern of relatively low emphasis on patrol duty, in part because of their allocations of large complements of personnel to jail duties.

It would be comforting to point out that the patterns of production strategies found in the Police Services Study do match closely to the patterns of performance findings. One might, thus, conclude that the early explanations, focusing on patrol as the key element in residential policing, were supported across nearly 10 years of research and nearly 20,000 citizen interviews. But, the patterns are more complex than such an explanation alone can entail. While none of the findings across the several studies are contrary to this production strategy explanation, further analyses are currently underway to elaborate it and to include additional elements. There appear to be patterns of internal and external authority structures in policing that often parallel the production strategy choices and may well explain those choices.

Comparative performance assessments -- a summary

This concludes a review of a body of working using citizen surveys for assessing comparative police performance. The review was intended to illuminate the methodology and some of the findings of this research. One of the key features of the findings across all of these studies has been a consistent, if not always strong, patterning of performance indicators with the organizational form of the police agencies supplying services. Contrary to what most contemporary critics of

American policing have argued, performance advantages were not found for residential neighborhoods that received police services from large departments. If these findings can be said to be representative of policing in residential areas more generally, then any wholesale consolidations of smaller agencies leading, for example, to a nation with 300 police agencies all larger than 200 sworn officers in size (di Grazia, 1976), might be detrimental to police performance in residential areas.

Critiques of citizen surveys in performance assessment

Data from citizen surveys can be used to estimate values that are used to construct performance indicators. These performance indicators can be compared from one jurisdiction to another and across different forms of police organizational arrangements. Where differences in the survey-based performance indicators are found, and where adequate adjustments for other differences which might be explanations for the performance differences are made, it seems reasonable to claim that the performance differences reflect true interjurisdictional or interorganizational variations in police performance. But, is this reasonable?

Questions have been raised in recent literature that suggest the need for caution when using survey responses to construct performance indicators for comparison purposes. In the most direct attack, Stipak (1979) referred to comparisons of satisfaction from one area to another as a "potential misuse as a performance indicator (46)." Stipak presented data showing that citizens' reported satisfactions with police services and with parks and recreation services in the Los Angeles area

were only weakly related to "objective" measures of those services, primarily a set of input measures. Adding to these findings the hypothesis that ". . . citizens pay little attention to services and fail to perceive differences in service quality . . . , (1979: 48), he argued that comparative performance assessments based on reported satisfactions or evaluations of service are generally ". . . invalid and potentially misleading (1979: 46)."

Angrist (1976) presented a number of questions that merit investigation before "subjective social indicators," such as citizen perceptions or evaluations of service delivery, are used for public policy purposes. We need to know, for example, whether citizens are sufficiently knowledgeable about services to judge performance. We also need to know whether direct experiences with service delivery affect citizens' perceptions. And, we need to know how best to measure citizens' perceptions (1976: 9). Angrist argued that most proponents of survey usage have not paid sufficient attention to finding answers to these questions.

There is an uncanny wishful thinking in the established practice of framing survey questions and hoping that respondents know about the topic and are equipped to answer. Despite our rigorous attempts to insure that the question is clearly worded, suits the respondent's universe of discourse and has universally known and understood referents, we may be wrong (1976: 10).

Confronting and overcoming the questions raised about the validity of surveys for performance assessment purposes requires more than wishful thinking, however. We must be able to put forward evidence that citizens'

accounts of experiences are reasonably accurate, that they can and do perceive service activities and service levels and can report their perceptions with reasonable accuracy, and that they can aggregate their experiences and perceptions so as to give meaningful summary evaluations. The evidence on these points is not as well developed as one would expect given the ubiquity of surveys, however. What evidence there is suggests that there are varying levels of validity to be obtained.

Kelling, Wycoff, and Pate (1980) also challenge the use of survey data for comparison purposes. They argue, like Stipak, that citizens are generally unaware of police practices. They also point out, quite rightfully, that a sample of residential households cannot include a large number of persons whose attitudes may be equally important as the attitudes of residents. These nonresidents include those who work in an area and those who simply pass through. Further, they note that residents may well be satisfied when police take actions that are viewed very unfavorably by nonresidents, e.g., harassing unwanted visitors or unfairly discriminating against outsiders in traffic enforcement. They point to the difficulty of interpreting satisfaction measures in the latter instances.

These critiques and questionings need some reply. While one can pose counter arguments to many of them, the weight of empirical evidence does not fall clearly on either side.

"What do citizens know, anyway?"

Whether citizens can perceive police service delivery with any degree of accuracy is the first key question in any discussion of the use of surveys for performance assessments. Are experiences with crime and with police personnel sufficiently salient for citizens to remember them? Do citizens perceive other aspects of police activities where they are not in immediate contact with the police? Critics of the use of surveys would be likely to answer in the negative to these questions.

Experiences and recall

There has been some research with respect to a part of the first question. Validation studies of citizens' ability to recall victimizations accurately have been conducted using two different models. The Law Enforcement Assistance Administration (LEAA) has conducted "reverse record checks," where persons known from police records to have reported a crime to police are given a standard victimization interview to see if they provide the same information to the interviewer (U.S. Department of Justice, 1972; Sparks, Genn, and Dodd, 1977: 44-52). Similar research has been conducted in England (Sparks, Genn, and Dodd, 1977). The second model is a "forward records check," where victimizations that are reported to a survey interviewer as having been reported to police are followed up in police records to see if the information there is the same (Schneider, et al., 1978).

The reverse records checks indicate that a high proportion of victimization survey respondents can recall crimes that they reported to police. In the LEAA San Jose Study, 74 percent of the crimes sampled from police records were recalled in the victimization interviews (U.S.

Department of Justice, 1972). In the English Study, 92 percent were recalled (Sparks, Genn, and Dodd, 1977). The authors of the latter study offer some methodological and cultural explanations for their higher rates of success. The forward records check achieved a much lower match rate, finding only 53 percent of reported victimizations in police records, even where precise location data were supplied by the victim (Schneider, et al., 1978). This lower rate could result from exaggeration by survey respondents, underrecording of crimes by police, less than diligent pursuit of crime records by the police who performed the file searches, or overly severe criteria for finding a match.

One cannot conclude from the reverse records check findings that a relatively high percentage of all crimes are revealed in victimization surveys. What these checks indicate is that a relatively high percent of those crimes about which individuals were sufficiently concerned to contact the police remained sufficiently salient to those individuals that they were able to recall them for an interviewer. It seems likely that there are other crimes which occur to people that they do not report to police or to survey interviewers. If so, survey estimates provide a lower bound for the extent of criminal activity to which people are exposed, albeit a bound that is closer to the true figure than police statistics.

The reverse records check studies were aimed at validating survey data and attempting to estimate nonsampling biases. The result of the early San Jose Study were sufficiently encouraging for the LEAA and the Census Bureau to proceed with their very large victimization studies (National Research Council, 1976). That is, the estimates of victimization supplied by these surveys were judged sufficiently accurate to warrant the expenditure of considerable sums in their collection.

Beyond the question of whether citizens can accurately recall and report whether they have been victimized, these validation studies, like similar studies in other fields (e.g., Parry and Crossley, 1950; Anderson, 1979), give mixed results. A particular focus of much of the reverse records check work was to examine "telescoping," the extent and direction of misreporting of the date of occurrence of a criminal incident. Between 50 and 70 percent of the respondents seemed able to report occurrence dates accurately. Another focus was on classification of the type of crime which had occurred. The LEAA San Jose research indicated a match of 80 to nearly 100 percent, depending upon crime type (1972: 10). Similar match percentages were obtained in Schneider's Portland Study (1978: 30).

Schneider reported other comparisons between police records and survey reports. She found greatest accuracy for crime details, age, sex, and number of suspects, for victim reports of self-protective activities, and for reports of witness presence. She found less accuracy for offense seriousness and dollar loss, suspect race, whether suspects were known to victims, and for police response time and activities at the scene (1978: 4). Her measure of validity or accuracy was the match of survey reports to police reports taken at the time of victimization. One of her main conclusions is consistent with a conclusion of virtually all validation studies, i.e., "the reliability or validity of survey data depend upon the type of information being considered" (1978: 4, emphasis in original)."

Schneider's report includes one of the very few direct comparisons of citizen reports of police activities to police reports of those same activities. With respect to police response time, she found that 48 percent of the survey respondents gave response time estimates within

15 minutes of the police recorded time. Fully 51 percent reported longer times, some much longer (1978: 63). It may be, though it cannot be determined from these data, that many of the Portland police reports measured time from dispatch to arrival, rather than from small receipt to arrival, or did not include time required to locate citizens after arrival. If so, a number of the citizen overestimates (in comparison with police records) may be more accurate than granted in Schneider's report. The data on police activities at the scene of a victimization show fewer activities reported by citizens than by police (1978: 64). This probably results from the open-ended nature of the question used by Schneider (and in much of the research reported in this paper). As she notes, probing for specific actions would likely have identified more (1978: 65).

In the Police Services Study, data were collected which may help illuminate some of these questions. Observations of a large number of police-citizen encounters were made while accompanying police officers on some 900 duty shifts. For a subset of those encounters, "debriefing" interviews were conducted with citizens who participated in the encounters (Allen, 1978). These data, as yet unanalyzed, should allow some determination of the match of observer's and participant's perceptions of many actions in the encounters. This determination will provide much needed evidence with respect to citizens' capacity to perceive accurately and report at least those direct experiences with service delivery which they have recently had. A report of the results of the observer and participant comparisons should be available within the next year (Parks, forthcoming).

The evidence presently available on citizens' capacity to recall experiences, including the perceived activities of police personnel during

those experiences, is mixed. It seems that citizens can recall most of the experiences that are recorded in police files. They are somewhat less able to recall all of the details of those experiences, yet they do fairly well here also. Whether their reports of experiences that are not recorded in police files are accurate is not known. As with the police recorded experiences, accuracy and validity most likely vary with the type of information being requested. There is obviously great room for further research in the area of citizens' capacity to recall and report experiences accurately.

Citizens' perceptions of police services -- negative views

Schneider's research raised questions about citizens' ability to report police activities accurately in those instances where they had had direct experience (1978). Those questions are generally unanswered at present. Others have raised serious questions about citizens' ability to perceive police activities more generally, including those activities that do not occur within the context of a specific encounter with crime or the police.

Stipak (1979) argues that police services have low salience for citizens unless they are very good or very poor. He cites his own finding that citizens' satisfaction with police services in Los Angeles County is not well predicted by several "objective service indicators." These objective indicators include rates of crime, clearances, and property recovery as well as police expenditures and personnel standardized for population served. Stipak also cites the Kansas City Preventive Patrol Experiment finding that experimental variations in the level of police patrol in particular areas had little effect on

satisfaction with police or fear of crime or on perceptions of the time spent patrolling in the areas (1979: 47). Kelling, Wycoff, and Pate also cite the Kansas City Experiment as suggesting "that citizens surveyed on a random household basis cannot even distinguish changes in the quantity of police services, let alone their quality (1980: 52)."

Stipak's (1979) argument with respect to the relatively low salience of police services has some surface plausibility, particularly for areas where police-citizen contacts are infrequent. His data, however, supply little support to argue whether this is true or not. The objective indicators are all measured jurisdictionwide for the areas where citizens were interviewed. Further, two of them are measures of service inputs, not outputs; and the remaining three are difficult to interpret as performance indicators. Measuring these variables at the jurisdiction level ignores any variation from place to place within jurisdictions, a variation that may be quite large in the bigger geographic areas. This, in turn, reduces possible relationships between the indicators and satisfaction. More important is the fact that inputs and measures of crime-related phenomena do not have strong, logical connections to police performance and, therefore, cannot be expected to be strongly related to citizen satisfaction with police performance. Given these difficulties, it would be remarkable had Stipak found any strong relationships between his objective indicators and citizen satisfaction.

The Kansas City Preventive Patrol Experiment data with respect to citizen attitudes and perceptions may not be as clear evidence that citizens cannot perceive police services as critics argue, either. Larson (1975) offers a powerful competing explanation for the "no change" findings.

That is, the activities of police officers responding to calls in the reactive areas (where regular patrols were removed) were such as to make them more visible. This, combined with the presence of additional police units, not from the patrol force, in those areas made it quite likely that citizens would see little or no change.

Even the question of whether citizens did perceive a change in Kansas City is not clearly answered in the negative in the report of the Experiment. Interestingly, the authors of that report used data from citizens' ratings of police visibility to provide support for their argument that experimental conditions were maintained (Kelling, et al., 1974: 37-41). In response to the questions, "How often do you see police officers in your neighborhood?," citizens in the reactive beats, where police patrol was intended to be reduced reported seeing police less frequently during the experiment than before the experiment. Citizens in the proactive beats, where patrol presence was intended to be increased reported seeing police more frequently during the experiment than before. These findings held for both a household survey and a business survey in the experimental areas. Rather than using these findings as supporting the proposition that citizens can perceive a change in police practice, however, Stipak (1979) and Kelling, Wycoff, and Pate (1980) choose to use responses from a different, more general question to argue that citizens cannot perceive a change. In response to the question, "How much time do you think police in your neighborhood now spend patrolling in cars?," citizens in the proactive as well as the reactive and control beats indicated less time during the experiment than before (Kelling, et al., 1974: 331-337). The report's authors state that "this is a broader question, and can be influenced by input

from family members, neighbors, etc. (1974: 331)." It is unclear that it is a better measure of citizens' abilities to perceive service changes, however. A person's perceptions or ability to perceive might be better tested by reports of what he or she has seen rather than by reports of what he or she thinks is occurring but may not have seen. In any event, the conflicting evidence from Kansas City cannot be taken as conclusive on the question of whether citizens can perceive police service delivery in their neighborhoods.

Citizens' perceptions of police services -- positive views

In a recent analysis of data from the 1972 St. Louis Study, I reported some findings that may illuminate the question of citizens' ability to perceive police services (Parks, 1979). The particular question analyzed was citizens' perceptions of the speed of police response when called in their neighborhoods. These perceptions were hypothesized to be influenced by citizens' own experiences and the experiences of their neighbors, by police deployment strategies in the study neighborhoods and the levels of demand from the neighborhoods, and potentially by individual characteristics of the citizens interviewed.

I found that the perceptions of those citizens who had had a recent experience with the local police (within the previous year) were most strongly influenced by response time in that experience. However, the aggregated experiences of their neighbors were nearly as important influences on those perceptions, indicating that citizens may be able to place their own experiences in a broader context. For those citizens without recent experience, aggregate neighborhood experiences were the strongest influences (Parks, 1979: 191). An explanation of citizens'

perceptions built on their own and neighbors' experiences, together with lesser influences from police deployment, service demands, and individual characteristics accounted for better than 40 percent of the variance in perceptions among those who had had a recent experience and about 16 percent of the variance in perceptions for those without recent experience (ibid, 189). This explanation made explicit the links between agency inputs and activities and citizens' perceptions of a particular service. Where these links can be made explicit, showing a logical and necessary connection, it is more reasonable to expect findings that citizens do perceive the services they receive.

Citizens' perceptions of other public services -- additional positive evidence

Several of us who have used citizen survey data for performance assessments have been concerned with validating this mode of data collection and analysis for some time. In 1974 we collected extensive data on street lighting and road repair services using several different modes of data collection. These modes included citizen surveys, direct observation, physical measurement, and retrieval from agency records. This methodological research was designed to investigate the relationships among indicators developed from these very different modes of measurement.

Analyses based on data from direct observations, physical measurements, and citizen surveys showed a relatively high level of correlation among them. Citizens' perceptions of specific features of road conditions (e.g., surface types, potholes, cracks, curbs) were very accurate. Their perceptions of street roughness were well matched to roughness scores derived from physical measurements of street surfaces (Carroll, 1975). Their

perceptions of lighting brightness were most accurate for areas immediately adjacent to their homes and less accurate, though still positively correlated for summary perceptions of overall block brightness (Greene, 1975). Citizens' overall satisfaction ratings for road conditions and street lighting correlated well with their more specific perceptions and, thus, with objective measures of road and lighting conditions. The fact that measures of public services derived from such very different data collection modes were highly interrelated and, particularly, that citizens were able to perceive specific aspects of service delivery quite accurately, gave us increased confidence in the use of perception measures in other service areas where such direct physical measurements were less available (Ostrom, 1976).

Citizens' experiences and perceptions -- a knowledge gap

The available evidence with respect to citizens' capacities to recall their experiences with crime and the police accurately and to perceive the police services they receive does not allow many firm conclusions. This is troubling because my colleagues and I, as well as many other scholars, have collected data from citizens via surveys that attempted to measure their experiences and perceptions. These data have been used to make substantive comparisons of police performance and to make recommendations based on these comparisons. There is reason to believe that the recommendations may have affected public policy decisions (e.g., Skoler, 1978). While our own efforts and those of others do provide positive evidence for the validity of measurements based on citizens' reported experiences and perceptions, additional research into that validity is clearly warranted.

At the same time, we reject the views of some critics who argue citizens cannot tell us much about service delivery. Our experiences in interview situations have continually led us to believe that respondents were concerned with respect to their local police services and aware of many aspects of those services. Citizens' awareness did seem higher in areas where information on local policing was less costly (e.g., smaller communities where more police were known) or where information on policing was more important (e.g., communities with higher crime- and service-related demands for police services). These are admittedly subjective impressions, but are consistent with what has been called an "investment theory" of citizen information (Popkin, et al., 1976). People obtain information either where it is relatively costless to obtain or where it is relatively valuable to have.

Clearly, a strong research program is warranted in this area of experiences, perceptions, and recall capacity. The National Institute of Justice's Methodology Development Program has taken steps in developing this research (e.g., Bielby and Berk, 1978). Further efforts should be supported by those of us who are advocates of survey use and by our strong critics. The mounting evidence with respect to the inadequacy of any single source of performance measurements in policing (see Whitaker, et al., 1981) suggests that citizen-based data, if validated, could be an important component of more complex, multisourced performance measurement and comparison systems.

Citizen surveys in multimode performance assessments

Police services are quite complex and frequently ill-defined. Like many other public services, they are highly multidimensional, with many types of inputs, many transformation activities, many outputs, and many outcomes. Given this complexity, it is quite important to use multiple indicators when assessing police performance. No single measure can be relied upon to aggregate across different dimensions.

Just as multiple indicators are required for police performance assessments, so too are multiple modes of measurement. Some aspects of policing may be more accessible to one form of data collection than another, but usually it should be possible to obtain measures from two or more sources for any aspect. This offers important benefits on two scores. First, combining and comparing measures from internal records with measures based on data collected from extradepartmental sources should contribute to the reliability and validity of agency data. There is a common bias in self-reporting systems toward recording information which is favorable to the reporter or his/her agency and failing to record that which is less favorable (for a police example, see Seidman and Couzens, 1974). Data from an independent source can be used to verify the accuracy of internal records and, thus, help to counteract this natural tendency (e.g., Governmental Research Institute, 1973).

A second benefit of multiple mode performance assessment is the added confidence in relationships that results when they are supported by measures from different modes. Any form of measurement has errors and potential biases associated with it. When multiple measurement forms are

employed, it is likely that they will be crosscutting, having different patterns of error and bias.

. . . the operational implication of the inevitable theoretical complexity of every measure . . . calls for multiple operationism, that is, for multiple measures which are hypothesized to share in the theoretically relevant components but have different patterns of irrelevant components. . . . If a proposition can survive the onslaught of a series of imperfect measures, with all their irrelevant error, confidence should be placed in it (Webb, et al., 1966: 3).

In the studies where my colleagues and I have used citizen surveys as a component in assessing police performance, we have also used other modes of data collection (Parks, 1976; 1981). These other modes have included the use of police agency records and records of other criminal justice agencies such as the prosecutor's office. We have also interviewed police officers to determine their qualifications and attitudes, and we have observed their behaviors on patrol and in encounters with citizens. Further, we have listened to and coded data from exchanges between citizens and police telephone operators. Data from these several sources and modes of data collection have then been combined for purposes of analyzing and assessing police performance.

When citizen survey data are used in a multiple measures, multiple modes assessment of police performance, their utility may be greatly strengthened by the interpretations available from data collected in different modes. Likewise, the citizen survey measures can increase the usefulness of measures from those other modes. I agree with Webb and

Hatry that surveys ought not be the only component of any performance assessment.

Merely tabulating and publishing the responses (to surveys) is not sufficient to make fully productive use of survey information. . . . Pertinent information obtained from other regular sources of government information such as government records should be considered along with survey information. Only through such analyses can survey information be placed in proper perspective with other types of information to provide accurate and comprehensive guidance to government officials for their decision and policy making (Webb and Hatry, 1973: 4).

On the other hand, surveys ought not to be neglected as a data source in performance assessments. They do provide data which are otherwise unobtainable and, with careful analyses, can be employed to identify real performance differences.

Footnotes

¹ Stephen Mastrofski, John McIver, Elinor Ostrom, Vincent Ostrom, Marlene Simon, and Wesley Skogan provided very useful comments on the monograph from which this paper is taken. Their advice is much appreciated.

² In this paper the pronouns "we" and "our" are used occasionally. The research reported was conducted as a group enterprise with many colleagues at the Workshop in Political Theory and Policy Analysis, Indiana University, and the Center for Urban and Regional Studies, University of North Carolina, Chapel Hill. The use of plural pronouns refers to these joint endeavors.

³ These are contained in a monograph bearing the same title as this paper which has been prepared for the National Institute of Justice. That monograph should be publicly available within the year. I would be happy to supply an advance copy to interested readers for the cost of reproduction and mailing.

⁴ The 1972 St. Louis research was made possible by a grant from the National Institute of Mental Health, Center for the Study of Metropolitan Problems (5R01-MH-19911). The support of the Center is most gratefully acknowledged.

⁵ In the St. Louis Study a "neighborhood" was defined as either: (1) an independently incorporated community in St. Louis County with a 1970 population less than or equal to 28,900 people; (2) a census tract within an independently incorporated community in St. Louis County where the community population exceeded 28,900 in 1970; (3) an urban place within the unincorporated portion of St. Louis County; or (4) a Planning Neighborhood within the city of St. Louis itself. The St. Louis Planning Commission divides the city geographically into 70 Planning Areas or Neighborhoods. The division is designed to take account of natural boundaries, such as highways or industrial concentrations; natural foci, such as parks and community centers; and existing neighborhood organizations (see St. Louis Planning Commission, 1971).

A minimum population of 500 persons was required in each of these cases. This set of definitions of "neighborhood" is admittedly ad hoc. Very little agreement on formal definitions of the term can be found. The set chosen seemed reasonable and was useful for design purposes.

⁶ The Police Services Study was made possible by a grant from the National Science Foundation (NSF GI-43949). The support of the Foundation is most gratefully acknowledged.

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