

PATTERNS OF COMMUNITY POLICING IN THE UNITED STATES

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This study explores the dimensionality of the community policing movement using four national data sets collected between 1993 and 1997. Researchers and reformers have established numerous definitions of community policing. Many of these definitions propose conflicting hypotheses about its underlying dimensionality. In the absence of a coherent body of theory to guide a more confirmatory approach, the authors use recently developed exploratory factor analysis techniques to estimate the dimensionality of community policing in four large and diverse samples of agencies from around the United States. The authors' findings show that the number of dimensions underlying the community policing movement varies significantly according to the source of the data. The authors discuss the findings in the context of organization theory, providing an agenda for future theory testing. In addition, based on some of the problems encountered in this study, the authors offer a number of concrete suggestions for improving macro-level research on community policing.

Community policing has become a household phrase. Police agencies around the nation report that they are turning toward community policing as a mechanism for solving local problems, reducing crime and fear of crime, and forging better relations with citizens (Maguire, 1998; Maguire, Kuhns, Uchida, & Cox, 1997; Trojanowicz, 1994; Wycoff, 1994; Zhao, 1996; Zhao, Lovrich, & Thurman, 1999; Zhao & Thurman, 1997; Zhao, Thurman, & Lovrich, 1995). Even agencies generally claiming not to practice com-

This project was supported by Cooperative Agreement No. 97-CK-WX-K002, issued by the Office of Community Oriented Policing Services, U.S. Department of Justice. Points of view in this article are those of the authors and do not necessarily represent the official positions or policies of the U.S. Department of Justice. We are grateful to Kimberly Hassell and Johnette Peyton for their research assistance.



POLICE QUARTERLY Vol. 3 No. 1, March 2000 4-45
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munity policing tend to engage in some of its specific activities (Maguire & Katz, 1997). Despite its overwhelming appeal to citizens, police executives, politicians, and the media, community policing still comes under fire for being conceptually ambiguous. Bayley (1994) argues that “there is tremendous disagreement in professional circles about the meaning of community policing” (p. 104). Crank and Langworthy (1996) summarize such critiques with the claim that it “is a hodge-podge of unintegrated programs, absent central purpose or theme” (p. 213). Since the earliest days of the community policing movement, analysts have expressed concern about the problems of defining community policing (Crank, 1994; Mastrofski, 1993; Seagrave, 1996).

A number of scholars, practitioners, and reformers have attempted to define community policing by dividing it into more specific components or dimensions. Bayley’s (1994) four-dimensional model, for example, consists of *community engagement*, *organizational adaptation*, *mobilization*, and *problem solving* (CAMPS). Meanwhile, Corder (1997) and Maguire and Katz (1997) have each proposed four-dimensional models that do not overlap with each other or Bayley’s CAMPS model. Overall, the research and reform literature contains numerous community policing models, with the number of dimensions generally ranging from one to four (Corder, 1997; Corder & Scarborough, 1997; Maguire & Katz, 1997; Maguire et al., 1997; Maguire, Uchida, Kuhns, & Cox, 1999; Rohe, Adams, Arcury, Memory, & Klopovic, 1996; Roth & Johnson, 1997; Zhao, 1996).¹ In general, these separate models show little overlap with one another. Although some have described this conceptual ambiguity as the strength of community policing, such conditions make it nearly impossible to evaluate community policing (Moore, 1994; Roth & Johnson, 1997, p. 2).

If it is difficult for those at the helm of the community policing movement to agree on a universally accepted definition, then it is probably even more difficult for local decision makers to understand what it means. A number of possible mechanisms to be discussed might generate differences in the way community policing is viewed by reformers and the way it is enacted in local jurisdictions around the nation. Given these forces, it is likely that patterns of community policing in the United States are different from some of the ideal visions painted by academics and reformers.

This study explores the dimensionality of the community policing movement in the United States using four national survey data sets.² The goal is to determine whether police agencies’ self-reported community policing activities exhibit a measurement structure that is similar to the ideal visions

of community policing existing in the many au courant definitions. Once we have identified a core set of dimensions, we can then determine which community policing activities load most highly on these dimensions. Therefore, the results of this study will be useful for understanding how local communities understand and represent community policing. In addition, this study will provide a foundation for developing more precise operational definitions and empirical measures of community policing in the future.

THE DIMENSIONALITY OF COMMUNITY POLICING

So many analysts have commented on the difficulties of defining community policing that it is now a cliché among the cognoscenti (Oliver & Bartgis, 1998; Seagrave, 1996). The “conceptual fuzziness” of community policing has not really changed over the past decade (Mastrofski, 1993, p. 65). In 1988, David Bayley noted that “community policing on the ground often seems less a program than a set of aspirations wrapped in a slogan” (p. 225). A decade later, Bayley (1998) made a similar point:

Altogether then, American police should be congratulated for trying new things, but exactly what their strategic inventiveness consists of is hard to say. COP and POP have been wonderful philosophic sticks for encouraging the police to reexamine customary strategies, but they are awkward descriptive terms for what has been taking place. (p. 4)

Although the problems of defining community policing are enormous, many scholars and reformers have wrestled with its ambiguity and attempted to create operational definitions.

One way that scholars and reformers have attempted to define community policing is by dividing it into a series of subcategories or dimensions. Table 1 reviews some of these efforts. Bayley (1994, p. 105) argues that the four elements of community policing that appear frequently in agencies demonstrating a genuine commitment to change are consultation, adaptation, mobilization, and problem solving. Cordner (1997) also argues that a four-dimensional model is appropriate, but his four are different: philosophical, strategic, tactical, and organizational. Maguire and Katz (1997) also establish a four-dimensional model, but their dimensions too are different: patrol officer activities, management activities, citizen activities, and organizational activities. Although all of these authors have proposed four-dimensional models, none is right or wrong: All are simply attempting to give some shape to a movement that is amorphous. The dimensions listed

TABLE 1. Theory and Research on the Dimensions of Community Policing

<i>Study Citation</i>	<i>Dimensions</i>	<i>Description</i>
Bayley (1994)	4	Defined community policing using four dimensions: consultation, adaptation, mobilization, and problem solving.
Bratton (1996)	3	Defined community policing as "the three p's": partnership, problem-solving, and prevention.
Cordner (1997); Cordner and Scarborough (1997)	4	Operationalized community policing using four dimensions: philosophical, strategic, tactical, and organizational.
Maguire and Katz (1997)	4	Formed four additive community policing indices measuring patrol officer activities, management activities, citizen activities, and organizational activities. Computed Cronbach's alpha but did not test dimensionality.
Maguire, Kuhns, Uchida, and Cox (1997)	1	Formed an additive community policing index containing 31 items. Computed Cronbach's alpha but did not test dimensionality.
Maguire, Uchida, Kuhns, and Cox (1999)	2	Tested a three-dimensional model of community policing: adaptation, problem-solving, and community interaction and engagement. Confirmatory factor analysis revealed a two-factor structure consisting of internal and external activity dimensions.
Maguire, Zhao, and Lovrich (1999)	1 and 2	Used exploratory factor analysis on panel data collected in 1993 and 1996. The 1993 solution was one-dimensional and the 1996 solution was two-dimensional.
Rohe, Adams, Arcury, Memory, and Klopovic (1996)	3	Defined community policing using three dimensions that separate it from traditional policing: shared responsibility, prevention, and increased officer discretion.
Roth and Johnson (1997)	4	Operationalized community policing, as it is articulated by the Office of Community Oriented Policing Services, using four dimensions: problem-solving, community partnership building, preventive interventions, and organizational change. Measured each dimension using additive indices and computed Cronbach's alpha for each. Did not test dimensionality.
Skolnick and Bayley (1988)	4	Described the four recurring elements of community policing found internationally: community-based crime prevention, reorientation of patrol activities, increased police accountability, and decentralization of command.
Zhao (1996)	2	Formed two additive community policing indices measuring internally and externally focused change. Computed Cronbach's alpha, but did not test dimensionality.

in Table 1 range from one to four, although Seagrave (1996) cites Canadian publications listing a greater number of dimensions.

A limitation of these models is their generality. They are like mail slots at a post office. They tell us to whom the mail (reform) is directed, but they don't tell us what is in the mail. The substance of community policing reform remains undefined.

Quantitative research on the dimensions of community policing is rare. Some analysts have deductively generated additive indices of community policing activities and computed alpha coefficients to assess their reliability (Maguire & Katz, 1997; Maguire et al., 1997; Roth & Johnson, 1997; Zhao, 1996). However, Cronbach's alpha is a test of internal consistency, not unidimensionality (Hinkin, 1995; Miller, 1995); therefore, these studies cannot provide evidence about the number of dimensions. Maguire, Uchida, et al. (1999) tested a three-dimensional model of community policing, but found that a two-dimensional model (formed by collapsing two of the dimensions) had a better fit. Their study relied on a confirmatory factor analysis of additive indices, however, and was not an item-level analysis. More recently, Maguire, Zhao, and Lovrich (1999) used exploratory factor analysis techniques on two waves of community policing survey data collected by Washington State University. They found that community policing in their sample of agencies evolved from a one-dimensional to a two-dimensional model from 1993 to 1996. They interpreted the newly emerging factor as an "advanced" community policing dimension. Thus, the only two studies that have examined the dimensionality of the community policing movement in the United States have each identified two dimensions, though each two-dimensional solution is different.

This study will not attempt to test any particular theory about the dimensionality of community policing, but we do find it appropriate to cast the research within a theoretical framework. In the following section, we highlight two perspectives that are useful for understanding the forces that shape patterns of community policing in the United States. Later, we discuss whether the findings in this study are consistent with each perspective.

TWO PERSPECTIVES ON THE DIFFUSION OF COMMUNITY POLICING: ISOMORPHISM AND REFRACTION

This section introduces two perspectives for understanding patterns of community policing in the United States: isomorphism and refraction. Isomorphism is a term used to describe similarity in structure or form.

Institutional isomorphism, for instance, refers to the process by which organizations within a particular field (e.g., municipal police agencies) come to resemble one another over time due to external pressures concerning organizational legitimacy (DiMaggio & Powell, 1983). Isomorphism in the diffusion of community policing would mean that there is little variation in implementation among departments. If this is true, then community policing is a unidimensional movement. Refraction is the term used to describe how light rays and energy waves are deflected from their straight paths when they pass from one medium to another (such as through a prism). We use the principle of refraction metaphorically to illustrate how community policing might make its way into local police agencies. It is likely that the community policing movement does not pass unadulterated from the pages of the reform literature to the streets and neighborhoods of the United States. In between, much as a prism “bends” the light rays passing through it, are a number of filtering mechanisms that alter the reform by dilution, distortion, or dispersion. To the extent that this message is ambiguous initially, the end result of this refractive process might be ambiguity and fragmentation in the reform movement. We draw on a number of concepts in organization theory to illustrate some of the ways that this refractive process might occur. We use the notions of isomorphism and refraction as heuristic devices that make it easier to think about the forces at play in the diffusion of community policing throughout the United States. We are not testing an explicit theory of diffusion. We use these concepts as a means of structuring our thoughts and observations on the diffusion of community policing.

ISOMORPHISM

Isomorphism is most frequently discussed by institutional theorists in the study of organizations.³ DiMaggio and Powell (1983) highlighted three ways that organizations within a particular organizational field (such as police organizations) come to resemble each other over time, a process they call institutional isomorphism.⁴ The three types of isomorphism are mimetic, coercive, and normative. Mimetic isomorphism occurs when one organization mimics, copies, or imitates another. Theorists have argued that organizations are most likely to imitate one another when the relationships between means and ends are not clearly understood (DiMaggio & Powell, 1983; Strang & Meyer, 1994). Because means-ends relationships in policing are particularly problematic (Maguire, 1998; Mastrofski & Ritti, 1995), police organizations may be especially prone to imitation or “copycatism”

(Mastrofski, 1998). Recent evidence suggests that police agencies frequently receive their ideas about innovation from one or more key agencies, essentially copying those that they find successful (Weiss, 1997). Therefore, there is implicit evidence to support the occurrence of isomorphism in policing.

Coercive isomorphism occurs when organizations adopt a particular feature due to pressure from the environment, either from the state or other organizations. Perhaps the greatest source of coercive isomorphism in the area of community policing is the U.S. Justice Department, which is distributing nearly \$9 billion from the 1994 Crime Act to local police agencies around the country. One catch for receiving these funds is that local police agencies must stipulate that they are using the funds to implement or expand community policing. Other coercive mechanisms probably exist at various levels of government around the nation.⁵

Normative isomorphism is based on professionalization (Donaldson, 1995). One source of normative isomorphism in policing is the Police Executive Research Forum, which holds an annual conference on Problem-Oriented Policing and distributes publications on community policing and related topics. Standards created by professional bodies form the basis of normative isomorphism. In all three forms of isomorphism, institutional theory predicts that organizations in the same organizational field will homogenize over time, coming to resemble one another more and more. Of particular concern to the present study is the notion that isomorphic processes in the diffusion of community policing would mean that the movement is unidimensional.

It has not yet been established by systematic evidence what criteria police agencies use in deciding whom and what to copy, but Weiss (1997) infers what those criteria might be in a study that examines relationships between certain organizational characteristics and the adoption of innovations (most of which are associated with community policing). Weiss's survey of police managers in 182 municipal agencies serving populations of over 100,000 shows that emulating peers, mediating risk (of civil liability), and being more cosmopolitan (communicating with professionals outside one's own organization) are all associated with higher levels of police department innovation. These predictors correspond roughly to the concepts of mimetic, coercive, and normative isomorphism, respectively. The researcher did not explore the extent to which adoptions of particular innovations were influenced by reviews of the evidence of the technical efficacy of the innovation (i.e., its prospects for producing a technically desired

result). However, one observer of American police has noted how infrequently police and police agencies undertake practices based on rigorous evidence (Sherman, 1998). If this is so, a strong preliminary argument can be made that American police are attracted or driven to innovations based on hopes for success without strong technical evidence or because they seek other things from those innovations: to look like other police agencies, to look like other innovative agencies, or to avoid being punished for not doing what is widely accepted as the right practice.

REFRACTION

The United States has more autonomous police agencies than any other nation in the world (Bayley, 1992). These agencies serve thousands of governments at multiple levels, operating in different states with different legal mandates, frequently overlapping jurisdictions, and only loose connections to one another. Therefore, patterns of innovation diffusion in American police agencies are complex. The variety of forces that play a role in constraining, facilitating, altering, or otherwise shaping the diffusion process is enormous. Here we draw on a number of concepts from public administration and organization theory to understand refractive processes in the diffusion of community policing throughout the United States.

First, organizational actors frequently must make rapid decisions about innovation in the face of limited information and with “bounded rationality” (March & Simon, 1958). The conceptual fragmentation of the community policing movement makes it even more difficult to make rational and well-informed policy decisions. In policing, the notion of bounded (or constrained) rationality should not necessarily be taken as an indictment of decision makers as individuals. Several scholars have argued that police executives face a number of constraints that may limit their ability to make rational, well-thought-out decisions (Maguire, 1998; Mastrofski, 1997). For instance, Mastrofski and Ritti (1995) have argued that much of police work (as with many public service industries) is based on poorly elaborated technologies in which little is known about the relationship between means and ends. Under such circumstances, the rationality of many decisions will appear to be bounded. The net effect of this pattern, with thousands of police executives throughout the United States making very different and often conflicting decisions, will be a refractive community policing movement.

The second point overlaps with the first, with some subtle conceptual differences. When a local community first becomes interested in community

policing—whether the interest comes from police executives, community members, or politicians—a variety of interpretive processes take place. Various individuals must attempt to make sense of the community policing movement in the context of local circumstances (Weick, 1995). In addition, organizations and other social groups also engage in collective interpretive processes (Weick, 1995; Weick & Roberts, 1993). The sequences by which the members of an individual police organization collectively process the available information that they have about community policing, and reach some kind of resolution about what it means, are rarely documented. Such information would be very valuable for understanding these sense-making processes, and would be a valuable addition to our knowledge about how local police agencies enact community policing and other forms of innovation. As Norton Long (1996) once observed, “The beginning of wisdom in administrative analysis consists in a realistic assessment of the capacity of the organization to think” (p. 149). This notion of collective interpretive processes and their resulting decisions is an uncharted area in police research. The implications of sense-making processes for the diffusion of community policing are similar to those for decision making. The tens (perhaps hundreds) of thousands of individual and collective interpretive processes about what community policing means are bound to produce vast differences in the way that the movement is understood around the nation (e.g., Zbaracki, 1998).

Third, local actors must frequently make such decisions in the midst of turbulent social and political environments, clinging to a host of personal and organizational agendas and competing in a variety of micropolitical contests (Child, 1972; Pfeffer, 1978). Long (1958) once likened the local community, with its array of mutually competitive and cooperative entities, to an “ecology of games.” As these various power games are played out in communities all over the United States, they may have a refractive effect on the implementation and understanding of community policing.

The nature of the games, the players, and the rules can vary considerably across time and space. It would require considerable naivete to suppose that the community policing reform wave has swept or will sweep away all vestiges of the preexisting games and redefine a new set of games. Indeed, the quiet revolution, paradigm shift, sea change, and new blue line metaphors used to characterize community policing presume a far more immediate and profound set of effects on police agencies around the nation than experience with any prior reform would indicate (Fogelson, 1977; Walker, 1977).

Rather, we expect a more modest set of reform effects, in terms of both breadth and depth. Whatever the effects of this reform, the structure of American policing virtually assures that they will be insinuated selectively and incrementally. Local players will react to it in varying ways. How they do so will depend on the nature of their local games and the role they play in them. Indeed, the most attractive feature of community policing as a reform concept is its protean quality. It can be bent and shaped to all manner of purpose. Community policing in one city might be defined as zero tolerance of drug dealing and other quality of life disruptions in public places. In another city, community policing is increasing the department's responsiveness to alienated segments of the community. And in yet another it is a more effective and efficient way to identify and solve problems. These interpretations of the reform's meaning are only at the rhetorical level of policy making. They may be enacted quite differently at other levels, such as how the department is structured, how its resources are allocated, and how employees actually conduct their work.

The fourth refractive process is perhaps the easiest to understand. Rational theorists (also known as contingency theorists) might argue, quite simply, that variations in the implementation of community policing around the nation can be explained by the unique local circumstances of each community. There is a large body of literature on the relationship between local contingencies and police policy/behavior (e.g., Pursley, 1976; Wilson, 1968). A rational theory of police policy making would suggest that local agencies implement those portions of community policing that they need to implement based on the circumstances and contingencies of their particular communities. The rational perspective, once dominant in organization studies, has taken a backseat to other explanations for organizational phenomena. Nonetheless, the rational approach has a certain intuitive appeal, and is undergoing a recent resurgence in organization theory (Donaldson, 1995) and police studies (Maguire, 1998; Mastrofski & Ritti, 1995).

The fifth and final refractive process is a blend of the contingency (rational) and institutional perspectives. Community policing has enormous symbolic appeal for local governments. It is likely that some local decision makers might want to enlist in the community policing movement for its message rather than its substance (Crank & Langworthy, 1992; Mastrofski & Ritti, 1995; Meyer, 1979). Institutional theorists, for example, might argue that police agencies implement tangential and symbolic elements of community policing at the fringes of the organization, without actually produc-

ing changes in the technical core (where the primary work is accomplished) (Mastrofski & Ritti, 1995). Contrast this “loose coupling” imagery with the rational perspective that we just presented. If some agencies are implementing community policing for its symbolic appeal, and others are implementing it for its substance, then this would produce yet another source of refraction in community policing.⁶

We have highlighted five forces that shape the way community policing has diffused throughout the United States: (a) bounded or constrained rationality in local decision making, (b) interpretive differences in individual and collective sense-making processes, (c) political turbulence, (d) a rational or contingency theory perspective, and (e) a combined rational-institutional theory perspective. Together, these forces combine with others, working as a set of local filters through which community policing must pass before it is enacted. The process of diffusion probably does not allow the original message (as articulated in the reform literature) to arrive unaltered. For this reason (and perhaps many others), it is possible that community policing might exist in many different shapes and forms throughout the United States.

COMBINING THE PERSPECTIVES

In summary, refraction is the result of localized adaptation to unique contingencies or circumstances, whether they are political, financial, or technical, and rational or irrational. Adapting a reform movement to localized circumstances results in fragmented implementation nationwide. Thus, refraction would produce a multidimensional model of community policing. Isomorphism is the result of a one-size-fits-all approach to community policing. To the extent that the implementation of community policing can be characterized as isomorphic, the movement is unidimensional. One pair of theorists has argued, however, that the two perspectives are not mutually exclusive. In their study of the diffusion of civil service reforms in U.S. municipalities, Tolbert and Zucker (1983) argue that the effect of the environment on diffusion has a temporal dimension. Early adoption of innovation is largely spurred by technical concerns, but once the innovation gains more widespread legitimacy and begins to spread, the diffusion process is based more on institutionalized concerns. Scott (1992) argues, “As a set of structures or practices becomes more widely institutionalized, organizations will adopt these forms regardless of their specific characteristics or

needs. For this reason, organizational-specific features typically become less predictive of the adoption of a new practice or innovation as time passes” (p. 214).

These arguments suggest that the early stages of a reform movement like community policing might be characterized as refractive, with local agencies adopting its various aspects or portions as dictated by local contingencies. Later, as the movement becomes more institutionalized, the diffusion process might be characterized as isomorphic, with agencies jumping on the bandwagon based on institutional concerns for legitimacy rather than other, more technical concerns. The implication is that as community policing becomes institutionalized in the United States, it may shift from a multi-dimensional to a unidimensional movement. The one study that has examined the dimensionality of community policing over time, however, found the opposite—that community policing grew from a one-dimensional to a two-dimensional movement over a 3-year period (Maguire, Zhao, et al. 1999). Nevertheless, the temporal aspects of the dimensionality of community policing are important concerns that deserve further study as data become available.

This current study will not be able to definitively test the isomorphic or refractive processes we have briefly postulated here, but it will allow us to examine some consequences of how the tension between the two is resolved. Specifically, we will explore how police agencies present their involvement in community policing. Because of the nature of the data available to us, we are careful to distinguish the presentation of community policing, as portrayed in self-reported data collected in surveys of police agencies, from the actual structures and conduct of policing. Exploring the latter will require different data, which we discuss in the conclusion.

SOURCES OF COMMUNITY POLICING REFORM

Before moving to the implications of our theoretical framework for the dimensionality of community policing, we need to comment on the sources of community policing reform that structure our inquiry. A well-documented analysis of the origins and development of community policing has not yet been written. Perhaps it will be easier to write such a history once the reform has matured or even played out, providing a post hoc perspective informed by knowledge of what became of it. At this point, we are not in a position to say conclusively whether community policing began as a

grassroots, bubble-up reform emerging independently and in various forms among communities around the nation, or one that issued from a relatively small cadre of forward-thinking elites, drawn from academia, policy think-tanks, progressive professional associations, and police leaders. Our inclination is to attribute the emergence of the idea of community policing to the Hamiltonian model of a cadre of national progressives, but their ideas in most cases were forged by their experiences in and observations of varieties of policing around the country. So there is cause to credit a Jeffersonian model of diversity and experimentation supporting this reform as well. Furthermore, the reform has prospered, or at least taken root, not because the ideas of community policing are new or revolutionary, but because the environment is now conducive to the support and nourishment of ideas that earlier fell on barren ground. Indeed, many of the precursors of community policing, such as team policing, did not survive, although certain of their elements may be found in what people today call community policing (e.g., geographic accountability for police work). Community policing is, in short, a group of ideas whose time has come.⁷

Whatever the mechanisms of its genesis—Hamiltonian or Jeffersonian—it is clear to us that the most visible, although not necessarily the strongest, forces attempting to promote and shape the trajectory of this reform are the isomorphic ones.⁸ The national professional and policy elites have easiest access to the means to promote and define the reform: grants to reward, publications to disseminate, professional prestige to bestow, and theories and studies with which to justify. Theirs is principally the power of persuasion coupled in some cases with the power to coerce, reward, or certify performance. On the other hand, those involved in the many ecologies of local games have the power to implement and are largely, although not entirely, buffered from the consequences that the national reform institutions and actors may propagate. An analysis of the Safe Streets Act of 1968 and the Law Enforcement Assistance Administration shows how readily the forces for change can be repelled, blunted, or diverted in the American federal system (Feeley & Sarat, 1980). We therefore begin with the assumption that these national elites operate much as missionaries, initiating ways to convert the heathen and sustain those already converted. At this point they are attempting to imprint a vision of what good policing is, and the local agencies and communities serve as the targets of their reformation. We make this point to note that reform movements need not work this way. Impetus for change can bubble up from the locales, as did the civil rights and farm labor movements in the 1950s.

TABLE 2. Summary of Four Data Sets Used in This Study

<i>Description</i>	<i>Sample Description</i>	<i>Years</i>	<i>Agencies</i>	<i>Variables</i>
1993 Police Foundation Survey	Data set is based on responses to a survey that was distributed to a stratified random sample of 2,314 United States police and sheriffs' agencies.	1993	1,606	74
COPS FAST Community Policing Worksheets	Data set consists of all law enforcement agencies that applied to the COPS FAST program. This program targeted agencies serving populations less than 50,000.	1994	5,826	31
COPS Community Policing Information Worksheets	Data set consists of all law enforcement agencies that applied for a COPS grant after COPS FAST was completed in 1994.	1994-1997	2,326	49
COPS Initial Grantee Reports	Data set consists of all law enforcement agencies that received grants from COPS and submitted mandatory Initial Progress Reports.	1994-1997	6,566	22

Note: COPS FAST = Community Oriented Policing Services Funding Accelerated for Small Towns.

DATA SOURCES

This study examines the dimensionality of the community policing movement in the United States using four national data sets. These four data sets are summarized in Table 2. All are based on paper survey instruments mailed to police agencies. For the present study, we focus on the questions in each survey instrument that address the agencies' participation in specific community policing activities. All of the community policing questions in these four surveys (with one exception, to be discussed later) contain essentially the same three response options: the agency does not participate in the activity, the agency is planning to participate in the activity, and the agency currently participates in the activity. Therefore, with one exception, the coding is consistent across all questions in all four surveys. The number of questions asked in each survey varies from 22 to 74. Although there is variation in the types of questions asked, there also a great deal of overlap. This overlap will allow us to draw conceptual linkages from the separate studies.

THE POLICE FOUNDATION SURVEY

The first data set is based on a national survey of community policing conducted by the Police Foundation. In March 1993, the Police Foundation

surveyed a stratified random sample of 2,314 U.S. police and sheriffs' agencies about their community policing practices (Annan, 1994, p. 5; Wycoff, 1994).⁹ Over 1,600 departments (71%) submitted useable responses to the survey.¹⁰ The Police Foundation survey contains 63 items that match the coding found in the other three surveys. Eleven additional items that address specific patrol officer activities are coded differently. Later, we explore whether these differently coded items can be included in the analysis.¹¹ The remaining data sets used in this study were all obtained from the Office of Community Oriented Policing Services (COPS).

THE COPS FAST WORKSHEETS

The second data set was constructed from a survey attached to police department applications to a police hiring program sponsored by COPS. The program, called COPS FAST (Funding Accelerated for Small Towns), was established in 1994 and focused exclusively on agencies serving populations of 50,000 or fewer people. The application asked police agencies to check off from a list of 31 community policing activities those that they had already implemented, or separately, those that they planned to implement in the near future. In addition, agencies were asked to provide a written description of their community policing arrangements. All applications were reviewed by grant staff for completeness, internal consistency, and willingness to participate in community policing activities.¹² Of the nearly 6,000 applications received, 5,826 contained data of sufficient quality for inclusion in this study. These agencies served populations ranging from 106 to 49,949 people, with a mean of 11,205 and a median of 6,395. This is the only data set in the study that contains such a purposively limited cross-section of American police agencies.

THE COPS COMMUNITY POLICING INFORMATION WORKSHEETS

After the COPS FAST program was completed, the COPS office switched to a more comprehensive reporting format than was used in the FAST program. The Community Policing Information Worksheets database contains data from 2,326 agencies on 49 separate community policing variables. The information in this data set was collected throughout the 3-year period from 1994 to 1997.

THE COPS INITIAL REPORTS WORKSHEETS

The fourth data set is based on a collection of mandatory Initial Progress Reports that recipients of COPS grants are required to complete as a condition of their grants. This data set contains information on 22 separate community policing variables from 6,566 agencies. The information was collected throughout the 3-year period from 1994 to 1997.

DATA QUALITY ISSUES

These four data sets vary tremendously in level of data quality, degree of sampling rigor, and scope of community policing activities covered. The Police Foundation data set is the best one of the four. It was based on a stratified random sample of American police agencies and conducted based on traditional social science standards. In addition, it explores the greatest scope of community policing activities, with up to 74 separate items used in this analysis. On the other hand, it is based on the smallest sample and was collected in 1993, and is therefore the oldest data set in the group.

The COPS office data sets contain a number of biases: In particular, they were completed by agencies that were either applying for community policing grants from COPS or had already received such grants. Thus, there were clear motivations for agencies to exaggerate their involvement in community policing (beyond the usual desire to portray one's organization in the best possible light to outsiders). Our professional interaction with COPS grantees has provided anecdotal evidence to suggest that this kind of bias is present in responses to the COPS data collection initiatives. Furthermore, all three of the COPS data sets are based on convenience samples and contain a number of technical problems that limit their utility. They were not collected by social scientists, and were not designed for social scientific analysis. Their purpose is to encourage local agencies to think about their community policing efforts and to communicate their progress to federal authorities. On the other hand, they contain some of the largest sample sizes that we have seen in police research and they are the most recent data available on community policing in the United States, with some information as current as October 1997.

In addition, all of these data sets suffer from the problem of dosage. Because none of these studies is designed to measure the degree to which agencies have implemented specific activities, it is difficult to draw such inferences from them. Simply put, an agency that claims to participate in

block meetings with citizens could have sent one officer to one such meeting, or sent hundreds of officers on dozens of occasions. The dosage problem is a severe shortcoming of all prior agency-level research on community policing.

Given the problems with these data sets, why have we chosen to use them? The samples are not random, but they are large and diverse. Some of the data sets contain responses for about half of the general purpose local police agencies in the country (Maguire et al., 1997). As we will show later, even in the face of empirical evidence confirming some of these problems, we are still able to uncover valuable lessons from these data. Keeping the varying levels of quality in these data sets in mind, we now describe the methods used to assess their dimensionality.

METHODS

Exploratory factor analysis (EFA) has been roundly criticized as an atheoretical "data mining" technique that is often used haphazardly by researchers (Gorsuch, 1983, pp. 369-372). However, EFA is valuable under certain conditions: (a) when there are multiple measures that might be reduced into fewer measures for the sake of parsimony, and (b) when there is either too little or too much theory to guide the initial steps of this measurement process. As mentioned earlier, researchers, theorists, and reformers have suggested a dizzying array of schemes for reducing the community policing movement into fewer dimensions, and there is little reason to suspect that any one is more plausible than another. In addition, the four data sets we explore here each contain between 22 and 74 community policing variables. Setting up a confirmatory measurement model with so many items and so little theory would be very difficult. We therefore believe the use of EFA can help to build theoretical understanding about how community policing is enacted, or perhaps understood, by American police agencies.

All of the data sets used in this article were compiled by having police agencies complete paper survey instruments with either dichotomous or ordinal categorical response options. Although researchers today routinely apply the conventional linear factor analysis model to categorical data, numerous studies have shown that this practice can produce misspecified (and potentially misleading) models (Mislevy, 1986; Muthén, 1978; Waller, 1995). Although the best way to deal with this issue is still being debated in the statistical literature, a number of solutions have emerged over the past

two decades. In particular, researchers seem to agree that the use of Pearson correlations on dichotomous variables (also known as phi coefficients) and ordinal categorical variables is flawed, and that the analysis should be based on matrices of tetrachoric (in the case of dichotomous data) or polychoric (in the case of ordinal data) correlations instead (Mislevy, 1986; Muthén, 1978; Waller, 1995). The underlying assumption of this strategy is that the categorical items are proxies for underlying continuous latent response variables, but that due to observational constraints are expressed in terms of two or more ordered categories.¹³ Both tetrachoric and polychoric correlations can be regarded as the correlations between the underlying continuous latent response variables.

In this study, we conduct a series of exploratory factor analyses using the procedures developed by Waller (1995) for the MicroFACT factor analysis program. This program was specifically designed for the exploratory factor analysis of dichotomous and ordered polytomous items. MicroFACT performs iterated principal factor analysis on tetrachoric and polychoric correlation matrices (IPFATC). The tetrachoric correlations are computed using the methods outlined in Divgi (1979), and the polychoric correlations are computed based on the methods described by Olsson (1979). The resulting matrices are smoothed to reduce the number of improper solutions, or Heywood cases (in which a communality converges on a value greater than one) (Loehlin, 1992; Waller, 1995). Unlike other factor analytic methods used in the analysis of dichotomous and polytomous data, IPFATC does not exert unreasonable limitations on the number of items, factors, or cases (Mislevy, 1986; Waller, 1995).

ANALYSIS

There is a large body of research on how to determine the number of factors to retain. One popular method is the Kaiser-Guttman rule, in which the researcher retains those factors with eigenvalues greater than one (Loehlin, 1992). This rule frequently results in the retention of too many factors (overextraction), especially in data sets with a large number of items (Zwick & Velicer, 1986). Retaining and rotating a large number of factors selected based on the Kaiser-Guttman rule has been shown to introduce “a substantial degree of instability into the factor structure which emerges” (Walkey, 1983). Despite these problems, the Kaiser-Guttman criterion is used frequently by researchers, probably because it has been programmed into a

number of popular software packages. Nevertheless, we find the evidence against the use of the Kaiser-Guttman rule to be convincing.

Visual inspection of scree plots is another popular strategy in which the analyst begins by eliminating the factors at the base of the scree plot that tend to form a line with little or no slope. Those factors that appear above a sharp elbow in the plot are regarded as nontrivial and are retained (Loehlin, 1992). Research has shown that in most instances, visual inspection of the scree plot is a reasonable method for deciding the number of factors to retain (Zwick & Velicer, 1986). There are better, more systematic approaches for separating the trivial from the nontrivial factors in a scree plot, but these tend to be computationally intensive and have not yet been integrated into most factor analysis programs (Glorfeld, 1995; Loehlin, 1992; Zwick & Velicer, 1986).¹⁴

In this study, we rely primarily on visual inspection of the scree plot to determine the number of nontrivial factors. In addition, we use two other backup methods to confirm our decision about how many factors to extract. As we will show, in most cases these backups are not necessary because the dimensionality is so clearly evident in the scree plots. First, Harman (1976, p. 141) suggests that the analyst should stop extracting factors when the sum of the eigenvalues equals the sum of the estimated communalities. The second method that we use is to extract no factors in which all loadings are trivial. This is a subjective judgment (as are all the others), but Comrey (1973) suggests that when a factor contains no loadings greater than $|\cdot30|$, “there is ordinarily little reason to extract more factors” (p. 101). All three of these techniques will be useful for determining the correct number of factors to extract from each data set. In any circumstance in which the evidence is ambiguous, we will err on the side of overextraction. Although neither underextraction nor overextraction are ideal, research has shown that it is better to select too many factors than too few (Comrey, 1973).

We began by running a principal factor analysis on each of the four data sets in their original three-category metric.¹⁵ Solutions in which more than one factor was extracted were subjected to orthogonal (varimax) rotation. Because we have a number of concerns about the middle (“we are planning to do this activity”) category, we also reran the analyses after collapsing the planning category with the “we do not currently perform this activity” category. In each instance, the dimensionality and the item loadings were nearly identical. Because we are more comfortable interpreting actual self-reported activity than planned activity, we base the remainder of our discussion on the analysis of dichotomous items.¹⁶

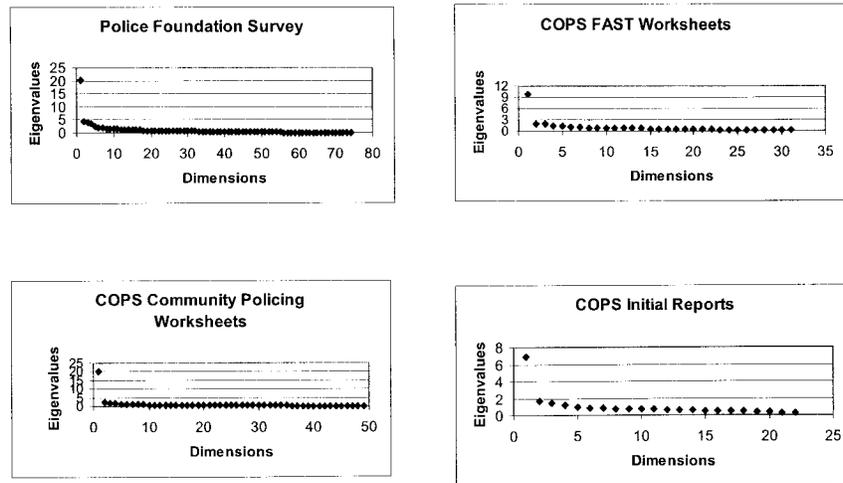


FIGURE 1: Screen Plots for Four Data Sets

Note: COPS = Community Oriented Policing Services; FAST = Funding Accelerated for Small Towns.

Figure 1 contains scree plots for all four data sets. The three COPS data sets are clearly one-dimensional, each containing one major factor and a rapidly diminishing trail of trivial factors. Both alternative methods for determining the number of factors to extract confirm this interpretation. We will come back to the interpretation of the individual factor loadings shortly.

Determining the dimensionality of the Police Foundation data set is a bit more complicated. First, although it is difficult to observe on the small scree plot in Figure 1, the number of nontrivial factors is somewhat ambiguous. As with the other three data sets, we see clear evidence of a single large factor on which the majority of the items load heavily. However, judging only from the scree plot (which is based on an analysis of all 74 dichotomized items), one could justify selecting anywhere from two to five total factors. To help with this decision, we employ the two backup procedures described earlier. First, Harman's (1976) method of comparing eigenvalues to the sum of communalities suggests in this case that we should extract just two factors. Next, at least six factors contain loadings that exceed $|.30|$, though some of these may be trivial. In such ambiguous circumstances, the ability to substantively interpret the meaning of the factors is the most important

criterion. Interestingly, the meaning of the factor structure becomes much clearer with each additional factor extracted. A five-factor solution appears to be the most appropriate, generating a wonderfully clear and simplistic structure. Tables 3 to 6 present basic descriptive statistics and factor loadings for all four data sets.

Because the three COPS data sets have one-factor solutions, it is not difficult to explore patterns in the factor loadings. The Police Foundation data set, on the other hand, has a five-factor solution. Because the factor loadings span five factors and 74 items (a total of 370 separate loadings), it is difficult to visually explore patterns from the loading matrix presented in Table 3. For that reason, we created one additional table to ease the interpretation of the factor structure in the Police Foundation data. Table 7 presents the five-factor solution with all nonsignificant items (loadings less than $|.40|$) deleted, and the items reordered so that those loading on the same factor are contiguous. The five-factor solution begins with a generalized community policing factor containing a diverse array of community policing programs and activities, followed by a patrol officer activities factor, a citizen activities factor, a mid-level manager factor, and finally, an organizational structure factor. The results are especially interesting because although many of the items that load highly within each dimension are contiguous to one another on the survey instrument, others that are conceptually similar were distributed throughout the instrument. This is especially apparent with the organizational structure factor. Many of the structural variables, such as officer assignments and various forms of decentralization, are scattered across different sections of the survey, yet they load highly on the same appropriate dimension. Thus, although there is some cause for wondering whether the factor structure merely reflects the way the questionnaire was constructed, there is additional evidence to suggest that this is not a universal problem.

Overall, each data set appears to contain more error than is routinely reported in published factor analysis solutions. The five-factor solution in the Police Foundation data explains 48% of the total variance. In the remaining three data sets, the one-factor solutions explain 31% of the variance in the COPS FAST data, 40% of the variance in the Community Policing Information Worksheets data, and 30% of the variance in the Initial Progress Reports data. Overall, these levels of explained variance are low enough to suggest that the matrices contain high levels of error or noise that the factor solutions are unable to explain. It is unknown whether this noise is

TABLE 3. 1993 Police Foundation Community Policing Data

<i>Type of Community Policing Activity</i>	<i>Agencies Participating (%)</i>	<i>Factor Loadings</i>				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
1. Classification and prioritization of calls to increase officer time for other activities	52.1	.53	-.10	.08	.20	.09
2. Alternative response methods for calls (e.g., telephone reports, mail-in reports, scheduled appointments for some calls)	44.2	.58	.00	.09	.18	.17
3. Citizen surveys to determine community needs and priorities	34.4	.52	.26	.18	.08	.14
4. Citizen surveys to evaluate police service	34.2	.47	.24	.14	.11	.03
5. Victim assistance program	60.3	.42	.06	.05	.11	.10
6. Permanent, neighborhood-based offices or stations	30.9	.36	.26	.04	.10	.60
7. Mobile, neighborhood-based offices or stations	10.0	.28	.20	.01	.01	.48
8. Drug-free zones around schools, parks, or churches	59.6	.26	.12	.04	.04	.17
9. Police/youth programs (e.g., PAL program, school liaison program, mentoring program)	65.6	.54	.11	.06	.06	.20
10. Drug education program in schools	90.7	.58	.08	-.11	.01	.08
11. Drug tip hotline or Crime Stoppers program	72.2	.48	.08	-.04	.05	.23
12. Fixed assignment of patrol officers to specific beats or areas	57.0	.38	.14	.00	.12	.49
13. Designation of some officers as community or neighborhood officers, each responsible for working in areas identified as having special problems or needs	36.8	.38	.33	.11	.03	.43
14. Foot patrol as a specific assignment	35.5	.24	.20	.09	-.03	.40
15. Foot patrol as a periodic expectation for officers assigned to cars	44.8	.25	.21	.03	.12	.22
16. Regularly scheduled meetings with community groups	60.1	.58	.24	.15	.06	.43
17. Specific training for problem identification and resolution	32.4	.47	.21	.19	.18	.24
18. Training for citizens in problem identification or resolution	19.0	.46	.16	.18	.10	.25
19. Regular radio or television programs or spots to inform community about crime, criminals, and police activities	33.0	.42	.13	.11	.06	.14
20. Landlord/manager training programs for order maintenance and drug reduction	15.4	.53	.19	.16	.15	.12
21. Building code enforcement as a means of helping remove an area's crime potential (e.g., drug dealing or prostitution)	42.2	.56	.23	.02	.12	.21
22. Use of other regulatory codes to combat drugs and crime	52.5	.59	.20	.01	.18	.18
23. Geographically based crime analysis made available to officers at the beat level	47.6	.55	.12	.04	.23	.08
24. Interagency involvement in problem identification and resolution	59.1	.58	.15	.12	.25	.05
25. Integration with community corrections programs	22.8	.33	.09	.16	.20	.07
26. Integration with Alternative Dispute Resolution (ADL)	14.2	.31	.13	.05	.14	.08
27. Command or decision-making responsibility tied to neighborhoods or geographically defined areas of the jurisdiction	31.7	.35	.25	.08	.31	.55

(continued)

TABLE 3 Continued

<i>Type of Community Policing Activity</i>	<i>Agencies Participating (%)</i>	<i>Factor Loadings</i>				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
28. Beat or patrol boundaries that coincide with neighborhood boundaries	44.8	.38	.15	.02	.17	.39
29. Physical decentralization of field services	20.2	.25	.21	.13	.21	.70
30. Physical decentralization of investigations	12.6	.12	.22	.20	.16	.58
31. Means of accessing other city or county databases to analyze community or neighborhood conditions (e.g., school data, health data, parole/probation records, tax records, licensing data)	36.5	.39	.09	.12	.20	.12
32. Fixed shifts (changing no more often than annually)	43.9	.14	-.06	-.01	-.03	.30
33. Centralized crime analysis unit/function	48.6	.59	.10	-.01	.17	.12
34. Decentralized crime analysis unit/function	7.7	.12	.15	.12	.19	.44
35. Specialized problem-solving unit	19.7	.44	.24	.08	.14	.15
36. Specialized community relations unit	46.6	.57	.10	.07	-.04	.27
37. Specialized crime prevention unit	62.7	.71	.10	.04	-.03	.14
38. Multidisciplinary teams to deal with special problems such as child abuse	46.0	.44	.08	.14	.17	.03
39. Interagency drug task force	81.1	.52	.09	-.02	.16	.05
40. Interagency code enforcement	26.0	.38	.18	.11	.09	.12
41. Patrol officers make door-to-door contacts in neighborhoods	67.6	.20	.65	.05	.05	.18
42. Patrol officers develop familiarity with community leaders in area of assignment	81.1	.18	.76	.07	.11	.21
43. Patrol officers work with citizens to identify and resolve area problems	86.4	.25	.78	.12	.16	.21
44. Patrol officers assist in organizing community	69.7	.18	.79	.05	.04	.27
45. Patrol officers teach residents how to address community problems	72	.23	.77	.08	.06	.19
46. Patrol officers work regularly with detectives on cases in area of assignment	81.7	.24	.48	.08	.19	-.06
47. Patrol officers conduct crime analysis for area of assignment	52.6	.12	.67	.12	.11	.05
48. Patrol officers meet regularly with community groups	77.4	.26	.73	.17	.01	.23
49. Patrol officers enforce civil and code violations in area	60.9	.00	.48	.01	.11	.07
50. Patrol officers work with other city agencies to solve neighborhood problems	77.6	.26	.72	.12	.11	.02
51. Patrol officers conduct surveys in area of assignment	49.7	.14	.77	.12	.02	.10
52. Mid-level managers redesign organization to support problem-solving efforts	36.7	.21	.15	.05	.57	.12
53. Mid-level managers maintain regular contact with community leaders	58.0	.30	.24	.14	.56	.13
54. Mid-level managers establish interagency relationships	69.1	.36	.14	.14	.61	-.11

TABLE 3 Continued

<i>Type of Community Policing Activity</i>	<i>Agencies Participating (%)</i>	<i>Factor Loadings</i>				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
55. Mid-level managers make final decisions about which problems are to be addressed in geographic area of responsibility	54.5	.17	.00	.08	.78	.12
56. Mid-level managers make final decisions about how to handle most community problems	48.9	.10	.06	.06	.77	.16
57. Mid-level managers make final decisions about application of agency resources to solve problem in geographic area of responsibility	43.1	.13	.07	.13	.78	.12
58. Mid-level managers elicit input from officers/deputies about solutions to community problems	75.5	.36	.09	.09	.75	.07
59. Mid-level managers manage crime analysis for geographic area of responsibility	40.0	.13	.14	.06	.59	.06
60. Citizens participate in Neighborhood Watch Program	83.2	.58	.15	.04	.01	.26
61. Citizens serve as volunteers within the police agency	53.1	.47	.12	.21	.08	.06
62. Citizens attend citizen police academy	15.4	.34	.07	.14	.07	.20
63. Citizens serve in citizen patrols coordinated by your agency	17.7	.34	.08	.21	.11	.23
64. Citizens serve on citizen advisory councils at neighborhood level to provide input/feedback on department policies and practices	31.1	.40	.21	.43	.07	.40
65. Citizens serve on citizen advisory councils at city-wide level	31.1	.38	.14	.46	.05	.23
66. Citizens participate in court watch program	12.4	.14	.07	.30	.14	.21
67. Citizens serve on advisory group for chief or other agency managers	26.9	.32	.06	.56	.09	.26
68. Citizens prepare agreements specifying work to be done on problems by citizens and police	13.4	.24	.15	.58	.11	.36
69. Citizens work with police to identify and resolve community or neighborhood problems	61.6	.53	.20	.32	.19	.28
70. Citizens help develop policing policies	13.7	.18	.13	.75	.16	.22
71. Citizens help evaluate officer performance	10.8	.02	.08	.72	.12	.05
72. Citizens help review complaints against police	11.8	-.07	.06	.80	.02	.25
73. Citizens participate in selection process for new officers	16.4	.06	.11	.71	.05	-.28
74. Citizens participate in promotional process	16.5	.12	.10	.72	.08	-.27

due to randomness (weak relationships between the variables), measurement error (due to dosage problems, aggregation bias, or other potential sources), or some combination of the two. Because there is such a small amount of systematic or reliable variance in these data sets, it is likely that any research attempting to explain interagency variations in community policing using them will be doomed to very small levels of explained variance.

TABLE 4. COPS FAST Community Policing Data

<i>Type of Community Policing Activity</i>	<i>Agencies Participating (%)</i>	<i>Factor Loading</i>
1. Youth programs (e.g., in-school, after school, weekend police/youth programs)	49	.45
2. Antidrug programs	68	.53
3. Regular meetings with community groups to discuss crime	40	.64
4. Antiviolence programs	16	.62
5. Identifying crime problems with members of the community and other government agencies (e.g., prosecutor and courts, social services, probation office)	63	.56
6. Preventing crime by focusing on conditions that lead to crime (e.g., abandoned buildings and cars, referrals to other civil agencies)	50	.51
7. Writing a strategic plan for community policing	12	.54
8. Locating office or stations within neighborhoods	20	.47
9. Community policing training for officers	31	.36
10. Community policing training for citizens	12	.60
11. Develop partnerships with other government agencies (e.g., probation office, sanitation) to combat crime	80	.60
12. Develop partnerships with civic groups to combat crime	58	.50
13. Develop partnerships with neighborhood associations to combat crime	49	.70
14. Develop partnerships with tenants' associations to combat crime	23	.62
15. Develop partnerships with police employee organizations to combat crime	31	.57
16. Developing partnerships with business groups to combat crime	52	.50
17. Develop partnerships with religious groups to combat crime	40	.69
18. Working in schools or other public agencies to teach crime prevention	60	.63
19. Citizens participate in Neighborhood Watch	53	.66
20. Citizens volunteer within law enforcement agency	36	.49
21. Citizen advisory groups to your law enforcement agency	17	.46
22. Citizen patrols within your community	13	.50
23. Citizens participate in antidrug or antiviolence programs	46	.37
24. Patrol officers perform foot, bike, and/or mounted patrol	41	.57
25. Patrol officers make door-to-door contacts with citizens and businesses	43	.41
26. Meeting with community leaders and groups to explain crime prevention techniques	52	.44
27. Patrol officers use business cards, cellular phones, or beepers to maintain contact with and be contacted by citizens (regarding public safety concerns)	42	.69
28. Develop partnerships with schools to combat crime	78	.44
29. Identifying crime problems by looking at crime trends (e.g., keeping records of crimes and the types of requests for help)	67	.59
30. Use computer systems to collect and analyze problem-solving information	49	.45
31. Working with other public agencies to solve disorder problems (e.g., trash collection, public works agencies to solve lighting problems)	55	.49

Note: COPS FAST = Community Oriented Policing Services Funding Accelerated for Small Towns.

TABLE 5. Community Policing Information Worksheets

<i>Type of Community Policing Activity</i>	<i>Agencies Participating (%)</i>	<i>Factor Loading</i>
1. Youth programs (e.g., in-school, after school, weekend police/youth programs)	54.8	.55
2. Antidrug programs	66.0	.59
3. Regular meetings with community groups to discuss crime	50.8	.73
4. Antiviolence programs	27.8	.59
5. Identifying crime problems with members of the community and other government agencies (e.g., prosecutor and courts, social services, probation office)	65.2	.65
6. Identifying crime problems by looking at crime trends (e.g., keeping records of crimes and the types of requests for help)	66.5	.55
7. Identifying top problems by analyzing repeat calls for service	57.4	.49
8. Preventing crime by focusing on conditions that lead to crime (e.g., abandoned buildings and cars, referrals to other civil agencies)	57.1	.61
9. Building on information systems to enhance crime analysis capabilities	31.0	.57
10. Regularly surveying community members to assist in identifying and prioritizing crime problems	41.1	.61
11. Locating office or stations within neighborhoods	31.9	.54
12. Providing community policing training to citizens	25.2	.69
13. Meeting with community members to learn more about the nature of specific problems	61.4	.76
14. Involving community members in selecting responses to problems and determining measures of success	34.7	.68
15. Have written strategic plan for community policing	20.4	.69
16. Department currently designates special unit (or a special officer) for community policing activities	42.1	.64
17. Department promotes an agency-wide approach to community policing	55.1	.65
18. Personnel are given responsibility for geographic areas	51.0	.64
19. Call management systems are in place to free officer time for community policing (i.e., telephone reporting, alternative responses, etc.)	28.8	.61
20. Personnel evaluations reward participation in collaborative problem-solving efforts	27.0	.59
21. Decision-making authority has been decentralized	45.8	.60
22. Management positions have been eliminated	19.4	.40
23. Community policing concepts have been integrated into agency's mission statement	36.3	.64
24. Community policing concepts have been integrated into departmental policies and procedures	36.8	.69
25. Detectives have been integrated into community policing efforts	31.9	.62
26. Department staff routinely collaborate with other municipal agencies to address problems	73.5	.66
27. Consulted with other government agencies (e.g. probation office, sanitation) to address crime and disorder	80.3	.61
28. Consulted with civic groups to address crime and disorder	60.6	.72
29. Consulted with neighborhood associations to address crime and disorder	53.9	.74

(continued)

TABLE 5 Continued

<i>Type of Community Policing Activity</i>	<i>Agencies Participating (%)</i>	<i>Factor Loading</i>
30. Consulted with tenants' associations to address crime and disorder	30.8	.67
31. Consulted with organizations of your employees, including collective bargaining groups, to address crime and disorder	35.0	.59
32. Consulted with business groups to address crime and disorder	58.6	.74
33. Consulted with religious groups to address crime and disorder	47.4	.66
34. Consulted with schools to address crime and disorder	75.3	.73
35. Neighborhood Watch	53.8	.60
36. Citizen volunteer programs	35.5	.65
37. Citizen advisory groups to your law enforcement agency	25.7	.63
38. Citizen patrols within your community	19.5	.53
39. Citizens participate in antidrug or antiviolenace programs	51.7	.58
40. Patrol officers participate in foot patrol, bicycle patrol, or mounted patrol	53.7	.57
41. Patrol officers make door-to-door contact with citizens and businesses	54.5	.57
42. Patrol officers meet with community leaders and groups to learn more about crime problems and jointly develop crime prevention plans	53.1	.73
43. Patrol officers use business cards, cellular phones, or beepers to maintain contact with, and be contacted by, citizens regarding public safety concerns	54.1	.59
44. Patrol officers work in schools or other public agencies to teach crime prevention	65.6	.65
45. Patrol officers work with citizens to identify and address community crime problems	59.8	.74
46. Patrol officers use computer systems to collect and analyze information, particularly repeat calls for service	45.2	.54
47. Patrol officers coordinate specific problem-solving projects to address problems on their beats	35.5	.72
48. Patrol officers work with other public agencies to solve disorder problems (e.g., trash collection, public works agencies to solve lighting problems, etc.)	62.4	.63
49. Patrol officers map crime problems	29.3	.52

DISCUSSION

The interpretation of these factor solutions probably depends on one's perspective. A pessimist might argue that when agency representatives complete a national community policing survey, their responses represent more about the image they wish to portray to the external world than about their agencies' actual activities (Maguire, 1997; Wycoff, 1994). If this is true, then the factors represent what respondents want us to think about their agencies—they are presentational strategies (Manning, 1978), structural signals (M. W. Meyer, 1979), presentations of self (Goffman, 1959), or

TABLE 6. Community Policing Activity Information Derived From Initial Reports

<i>Type of Community Policing Activity</i>	<i>Agencies Participating (%)</i>	<i>Factor Loading</i>
1. Problem-oriented policing targeted at specific recurring problems (systematic analysis of problem, implementation of strategy, and systematic assessment of results)	43.9	.61
2. Directed patrol (time set aside for focusing on a specific problem, area, or offense)	76.4	.54
3. Alternative responses for calls (e.g., telephone reports, mail-in reports, scheduled appointments)	38.8	.36
4. Citizen surveys to determine community needs and priorities	31.4	.57
5. Victim assistance program	55.8	.41
6. Permanent or mobile neighborhood-based offices	19.9	.58
7. Drug-free zones around schools, parks, or religious institutions	63.8	.36
8. Police/youth programs	55.4	.54
9. Drug education programs in schools	81.6	.51
10. Drug tip hotline or Crime Stoppers program	52.2	.47
11. Fixed assignment of officers to beats	39.3	.54
12. Foot/bike patrol as a full-time assignment	19.3	.55
13. Foot/bike patrol as periodic expectation for officers assigned to cars	50.1	.43
14. Training for citizens in problem solving	16.1	.67
15. Landlord/manager training programs or order maintenance and drug reduction	10.5	.58
16. Regulatory code enforcement to combat crime and disorder	52.8	.48
17. Geographically based crime analysis made available to beat officers	41.5	.50
18. Use of alternative dispute resolution in community conflicts	37.7	.51
19. Neighborhood Watch or other community crime prevention program	63.3	.61
20. Citizen police academy	10.0	.62
21. Neighborhood citizen advisory councils	17.9	.63
22. Jurisdiction-wide citizen advisory councils	11.7	.54

myths/symbols (Crank & Langworthy, 1992; J. W. Meyer & Rowan, 1977) propagated by police agencies. Given this bent, a pessimist might conclude that the factors generated in this study reflect (a) the respondents' understanding of what community policing entails (regardless of its level of implementation in their agencies), and/or (b) the respondents' attempts to present the organization in the best possible light to external actors. An optimist, on the other hand, might view these factors as the essence of community policing. If the survey items do indeed measure individual community policing activities, then the overlap in their variance, which is represented in the factors, must constitute community policing. Any discussion of these findings needs to be firmly rooted in the understanding that the factors might represent how police agencies (a) have enacted community policing throughout the United States, (b) understand what constitutes community policing, or (c) wish to present themselves.

TABLE 7. Modified Five-Factor Solution

<i>Community Policing Activity</i>	<i>Factor Loadings</i>					<i>h²</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	
1. Classification and prioritization of calls to increase officer time for other activities	.53	-.10	.08	.20	.09	.35
2. Alternative response methods for calls (e.g., telephone reports, mail-in reports, scheduled appointments for some calls)	.58	.00	.09	.18	.17	.40
3. Citizen surveys to determine community needs and priorities	.52	.26	.18	.08	.14	.40
4. Citizen surveys to evaluate police service	.47	.24	.14	.11	.03	.31
5. Organizational practices include victim assistance program	.42	.06	.05	.11	.10	.21
6. Police/youth programs (e.g., PAL program, school liaison program, mentoring program)	.54	.11	.06	.06	.20	.35
7. Drug education program in schools	.58	.08	-.11	.01	.08	.37
8. Drug tip hotline or Crime Stoppers program	.48	.08	-.04	.05	.23	.29
9. Specific training for problem identification and resolution	.47	.21	.19	.18	.24	.39
10. Training for citizens in problem identification or resolution	.46	.16	.18	.10	.25	.34
11. Regular radio or television programs or spots to inform community about crime, criminals, and police activities	.42	.13	.11	.06	.14	.23
12. Landlord/manager training programs for order maintenance and drug reduction	.53	.19	.16	.15	.12	.38
13. Building code enforcement as a means of helping remove crime potential (e.g., drug dealing or prostitution) from an area	.56	.23	.02	.12	.21	.42
14. Use of other regulatory codes to combat drugs and crime	.59	.20	.01	.18	.18	.45
15. Geographically based crime analysis made available to officers at the beat level	.55	.12	.04	.23	.08	.38
16. Centralized crime analysis unit/function	.59	.10	-.01	.17	.12	.40
17. Specialized problem-solving unit	.44	.24	.08	.14	.15	.30
18. Specialized community relations unit	.57	.10	.07	-.04	.27	.42
19. Specialized crime prevention unit	.71	.10	.04	-.03	.14	.54
20. Multidisciplinary teams to deal with special problems such as child abuse	.44	.08	.14	.17	.03	.25
21. Organizational arrangements include interagency drug task force	.52	.09	-.02	.16	.05	.31
22. Citizens work with police to identify and resolve community or neighborhood problems	.53	.20	.32	.19	.28	.53
23. Citizens serve as volunteers within the police agency	.47	.12	.21	.08	.06	.28
24. Citizens participate in Neighborhood Watch Program	.58	.15	.04	.01	.26	.43
25. Interagency involvement in problem identification and resolution	.58	.15	.12	.25	.05	.43
26. Regularly scheduled meetings with community groups	.58	.24	.15	.06	.43	.59

TABLE 7 Continued

<i>Community Policing Activity</i>	<i>Factor Loadings</i>					<i>h</i> ²
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	
27. Citizens serve on citizen advisory councils at neighborhood level to provide input/feedback on department policies and practices	.40	.21	.43	.07	.40	.55
28. Patrol officers/deputies make door-to-door contacts in neighborhoods	.20	.65	.05	.05	.18	.50
29. Patrol officers/deputies develop familiarity with community leaders in area of assignment	.18	.76	.07	.11	.21	.66
30. Patrol officers/deputies work with citizens to identify and resolve area problems	.25	.78	.12	.16	.21	.75
31. Patrol officers/deputies assist in organizing community	.18	.79	.05	.04	.27	.73
32. Patrol officers/deputies teach residents how to address community problems	.23	.77	.08	.06	.19	.70
33. Patrol officers/deputies work regularly with detectives on cases in area of assignment	.24	.48	.08	.19	-.06	.33
34. Patrol officers/deputies conduct crime analysis for area of assignment	.12	.67	.12	.11	.05	.49
35. Patrol officers/deputies meet regularly with community groups	.26	.73	.17	.01	.23	.69
36. Patrol officers/deputies enforce civil and code violations in area	.00	.48	.01	.11	.07	.25
37. Patrol officers/deputies work with other city agencies to solve neighborhood problems	.26	.72	.12	.11	.02	.62
38. Patrol officers/deputies conduct surveys in area of assignment	.14	.77	.12	.02	.10	.63
39. Citizens serve on citizen advisory councils at citywide level	.38	.14	.46	.05	.23	.43
40. Citizens serve on advisory group for chief or other agency managers	.32	.06	.56	.09	.26	.50
41. Citizens prepare agreements specifying work to be done on problems by citizens and police	.24	.15	.58	.11	.36	.55
42. Citizens help develop policing policies	.18	.13	.75	.16	.22	.69
43. Citizens help evaluate officer performance	.02	.08	.72	.12	.05	.55
44. Citizens participate in promotional process	.12	.10	.72	.08	-.27	.63
45. Citizens help review complaints against police	-.07	.06	.80	.02	.25	.72
46. Citizens participate in selection process for new officers	.06	.11	.71	.05	-.28	.60
47. Mid-level managers redesign organization to support problem-solving efforts	.21	.15	.05	.57	.12	.41
48. Mid-level managers maintain regular contact with community leaders	.30	.24	.14	.56	.13	.50
49. Mid-level managers establish interagency relationships	.36	.14	.14	.61	-.11	.55
50. Mid-level managers make final decisions about which problems are to be addressed in geographic area of responsibility	.17	.00	.08	.78	.12	.66

(continued)

TABLE 7 Continued

<i>Community Policing Activity</i>	<i>Factor Loadings</i>					<i>h²</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	
51. Mid-level managers make final decisions about how to handle most community problems	.10	.06	.06	.77	.16	.64
52. Mid-level managers make final decisions about application of agency resources to solve problem in geographic area of responsibility	.13	.07	.13	.78	.12	.66
53. Mid-level managers elicit input from officers/deputies about solutions to community problems	.36	.09	.09	.75	.07	.71
54. Mid-level managers manage crime analysis for geographic area of responsibility	.13	.14	.06	.59	.06	.39
55. Foot patrol as a specific assignment	.24	.20	.09	-.03	.40	.26
56. Command or decision-making responsibility tied to neighborhoods or geographically defined areas of the jurisdiction	.35	.25	.08	.31	.55	.59
57. Physical decentralization of field services	.25	.21	.13	.21	.70	.66
58. Physical decentralization of investigations	.12	.22	.20	.16	.58	.46
59. Permanent, neighborhood-based offices or stations	.36	.26	.04	.10	.60	.56
60. Mobile, neighborhood-based offices or stations	.28	.20	.01	.01	.48	.35
61. Fixed assignment of patrol officers to specific beats or areas	.38	.14	.00	.12	.49	.42
62. Designation of some officers as community or neighborhood officers, each of whom is responsible for working in areas identified as having special problems or needs	.38	.33	.11	.03	.43	.45
63. Decentralized crime analysis unit/function	.12	.15	.12	.19	.44	.28

With this caveat in mind, this section explores these factor solutions further, drawing linkages to other recent research on the dimensionality of community policing in the United States. This study examined the dimensionality of community policing activities using four national data sets. One data set produced a five-factor solution and three produced one-factor solutions. Due to these obviously conflicting results, it is difficult to determine whether community policing in the United States can be best described as an isomorphic (unidimensional) or refractive (multidimensional) movement. Comparing these findings to other recent research complicates the picture even further. For instance, using two national surveys conducted in 1993 and 1996, Maguire, Zhao, et al. (1999) found that community policing evolved from a one-dimensional to a two-dimensional model over a 3-year period. In the present study, the earliest data set produced a five-factor solution and the later data sets all produced one-factor solutions. Thus, current

evidence on the dimensional evolution of community policing is now particularly muddy. Furthermore, an earlier study that relied on confirmatory structural equation methods found a two-factor solution, using the same Police Foundation data that resulted in a five-factor solution in the present study (Maguire, Uchida, et al., 1999). These patterns of findings suggest that any conclusions drawn from this line of research are heavily dependent on at least three factors: the questionnaire, the sample, and the method (confirmatory vs. exploratory). Despite these limitations, it is possible to extract a number of tentative findings from this research. However, as we will show, the substantive findings are tightly interwoven with methodological issues.

First, exploratory factor analysis of six national studies (four from the present study and two from Maguire, Zhao, et al., 1999) has now consistently demonstrated the presence of one dominant factor that explains the vast majority of the variance in matrices of community policing activity data. In other words, although these data sets vary in the presence and nature of residual factors, all feature one large factor that can likely be interpreted as a general community policing dimension. Any other factors that have been found thus far explain only a small proportion of the explainable variance.¹⁷ This consistent finding constitutes partial evidence of isomorphism in the diffusion of community policing.

Second, response patterns in at least one of these studies suggest the presence of a questionnaire design effect. The 1993 Police Foundation survey instrument was divided into a series of distinct sections from which the items factor analyzed in this study were drawn. The sections were each labeled according to their content with a large boldfaced print. At least three of the five factors generated from these items closely resemble sections of the questionnaire: citizen activities, patrol officer activities, and mid-level manager activities. The remaining two factors—general community policing and organizational structure—contain items from various sections of the instrument. These patterns suggest that respondents (either consciously or unconsciously), in general, tended to respond consistently within sections of the survey. Methodologists refer to this as the response set problem. This problem occurs when respondents view a group of questions as homogeneous, and respond similarly to each question within the response set. Future police agency surveys can avoid this form of measurement error by constructing instruments without such clear divisions.

Third, evidence on the nature and presence of residual factors (those existing in addition to the dominant factors discussed earlier) is mixed. Only two of these six data sets have found evidence of more than one factor:

the 1993 Police Foundation (PF) survey examined in this study, and the 1996 Washington State University (WSU) data described by Maguire, Zhao, et al. (1999). The five-factor solution in the PF data and the two-factor solution in the WSU data are clearly not compatible. The WSU factor solution is based on only 22 individual survey questions, and it appears to represent an array of progressive community policing activities perhaps undertaken by only a minority of agencies. The PF factor solution is based on 74 individual survey questions, and is therefore more conducive to a multifactor solution. However, interpretation and assessment of the PF factor solution is difficult due to the possibility of a questionnaire effect.

Fourth, the interpretation of residual factors is particularly muddled because exploratory and confirmatory analysis of the same data set produced conflicting findings. Maguire, Uchida, et al. (1999) used confirmatory factor analysis on the PF data set and found evidence of a two-factor solution consisting of internally and externally focused activities. Confirmatory factor analysis solutions, however, are particularly volatile in the face of weak theory, and it is possible for incorrect models to appear to fit the data well. Exploratory factor analysis of the PF data in the present study produced a five-factor solution. Thus, dimensional analysis of the same data set using two different methods produced two different findings. Only through careful, incremental research can we expect the findings of exploratory and confirmatory approaches to coalesce.

Fifth, the evidence on the nature and presence of residual factors is also likely affected by the sponsors of each study. All three of the studies sponsored by COPS produced one-factor solutions, but this was true for only one of the three remaining studies by groups without grant-giving power (the 1993 PF study and the 1993 and 1996 WSU studies). In addition, fewer items dropped out of the factor solutions in the COPS studies than in the other three studies. Two items dropped from the COPS FAST solution, no items dropped from the COPS Community Policing Information Worksheets solution, and two items dropped from the COPS Initial Reports solution. On the other hand, the number of items dropped from the remaining databases were as follows: PF, 11; 1993 WSU study, 6; and 1996 WSU study, 5 (Maguire, Zhao, et al., 1999). Police agencies appear reluctant to embrace or reject portions of the community policing reform package as presented to them by COPS. Rather, the loading patterns suggest that in general they adopt an all-or-nothing approach when completing COPS surveys. This problem is similar to the response-set problem described earlier,

except that in this case agencies view the entire instrument as a response-set due to its sponsorship.

Earlier, we suggested that there were probably significant problems with the COPS databases. We believe that the patterns we have just illustrated provide some empirical justification for concern with these data. These data flaws are telling, however, because they have some theoretical meaning. In particular, they resonate with our earlier discussion of institutional isomorphism and a Hamiltonian perspective on the diffusion of community policing. How police agencies portray their community policing activities may depend on the institutional authority of those asking the questions. If this tentative conclusion has merit, then it suggests one form of support for Crank and Langworthy's (1996) contentions about the institutional nature of community policing and centrist authority. Thus, although the data flaws make it difficult in many instances to extract substantive findings from the analysis, the flaws may be theoretically informative in themselves. They also suggest that a good study of the dimensionality of community policing needs to be conducted by a neutral agency (such as a university or nonpartisan research establishment) that will minimize isomorphic concerns for police survey respondents.

Finally, evidence of temporal patterns of diffusion is also mixed. The panel data collected by WSU evolved from a one-factor to a two-factor solution from 1993 to 1996: a movement from isomorphism to refraction. Yet the data examined in this study demonstrated evidence of movement from refraction to isomorphism, with the 1993 data generating a five-factor solution, and all later data generating one-factor solutions. However, the ability to draw inferences about temporal shifts in diffusion from the four data sets examined in this study is severely limited due to the questionnaire and sponsor effects just discussed. Despite this apparent confusion, the WSU data are clearly superior for drawing inferences about temporal patterns of diffusion, because they were based on the same instrument and the same sample.

CONCLUSION

Overall, the findings in this study provide a helpful road map for future research on the diffusion of community policing. The absence of any dominant theories or definitions about what constitutes community policing make it difficult to use the deductive or confirmatory methods preferred by social scientists. At this point, such methods are likely to cloud the picture rather than clarify it. The use of inductive or exploratory methods seems

particularly warranted in research on the diffusion of community policing, as long as the goal of the research is to build theory. As theory in this area progresses, it is likely that confirmatory and exploratory methods will begin to produce similar findings.

Evidence from this and other recent studies demonstrates the need for careful new research on interagency variation in community policing. The methodological limitations of existing data sets, in which the instruments were formed for purposes other than to answer the questions addressed here, make it imperative to gather data that are not beset with those problems. As one first step, it is highly desirable to obtain a representative sample of all local police agencies, rather than just those seeking federal funding. Data from federal agencies are useful for some purposes: They typically have enormous sample sizes and their sources of bias can often be identified. On the other hand, they are not useful for capturing the full range of variation in community policing (or other organizational properties) throughout the nation.

More important, we need to gain greater confidence in the accuracy of respondents' characterizations of what their agencies are actually doing. Because of the tremendous favorable publicity and pressure across the nation to pursue community policing, police agencies have a built-in motivation to present themselves in the most positive light with regard to what they are doing to implement this reform. There are a variety of methods for addressing this problem. One is to conduct on-site assessments of community policing implementation, which would allow researchers to obtain more extensive evidence of the nature and extent to which various activities and structures are actually in operation. However, such data collection methods are very expensive and must therefore use much smaller sample sizes than the less expensive mail and telephone surveys, which rely on the responding agency to provide the information.

How can surveys from a distance be improved to increase our ability to produce interpretable results about patterns of community policing? One method is to promise confidentiality to respondents so that there is no direct and obvious incentive for misrepresenting (by overstatement) the extent to which community policing has been implemented. This may help minimize sponsorship effects. Evidence of questionnaire effects suggests the need to do new studies in which survey instruments contain either mixed item sets (a purposely disorganized set of items) or less pronounced labels that do not induce certain response patterns. Another improvement will be to provide a more fine-grained set of response options to agencies so that they can

indicate the extent to which they have implemented a given activity or structure. It makes a great deal of difference whether 1% or 10% of the patrol force is engaged in foot patrol on a full-time basis, for example. Providing such a range of response options gives the respondent a chance to be as accurate as possible and get the appropriate amount of credit for implementing each aspect of community policing. Aside from improving the accuracy of the responses, getting more detail on the extent of implementation will enable researchers to measure the dosage of implementation. That is, they will be able to distinguish organizations that have committed a lot of time and effort to a given activity from those that have committed less. They will be able to distinguish organizations that have served a large number of clients with a given service from those that have served fewer. And they will be able to distinguish organizations that have conducted a given activity for many years from those that have just begun.

Another important area for improvement of survey research on community policing implementation is to explore the possibility that there may be variation within police agencies as well as between them in their implementation of community policing. It is reasonable to expect that, intentionally or otherwise, the implementation of community policing will not necessarily be uniform within police departments, especially larger ones serving diverse communities. Indeed, one of the tenets of at least some community policing advocates is that programs, activities, and methods should vary to suit the needs and preferences of different constituencies of a department. For example, many departments report granting greater discretion for precinct commanders to allocate resources, set up programs, and alter tactics and procedures in ways most likely to meet the needs of their separate jurisdictions. Thus, what community policing looks like in one district may not be the same as others, even within the same jurisdiction. Indeed, among the nation's larger departments, their geographic subunits typically serve larger resident populations than found in the entire jurisdiction of smaller agencies. Conceivably, community policing might also vary temporally within the same community (different times of the day, days of the week, or seasonally), and it might vary according to clientele or problem (e.g., victim group or type of offense). Surveys that allow researchers to look for this potential variability will provide a more accurate characterization of the nature and extent of community policing implementation in the United States.

Finally, as demonstrated by the WSU surveys (Maguire, Zhao, et al., 1999), the only way to truly understand temporal patterns of diffusion is to

conduct longitudinal studies on stable samples and use stable instruments. All of these improvements are necessary to understand the theoretical contours of isomorphism and refraction in the diffusion of innovation in American police agencies. With them, we can draw firmer conclusions about patterns of community policing in the United States.

NOTES

1. Although this study focuses exclusively on community policing in the United States, Seagrave (1996) highlights a number of Canadian publications listing 3, 6, 8, and 16 dimensions.

2. Dimensionality is the degree to which individual variables cluster together, presumably because they are measuring the same broader concept. For instance, if we think of each question on an aptitude exam as an individual variable, the responses might cluster into broader dimensions that measure verbal, quantitative, and analytical ability.

3. For discussions of institutional isomorphism in policing, see Crank and Langworthy (1992) and Maguire, Zhao, and Lovrich (1999).

4. Institutional forces are not the only ones that might affect levels of isomorphism within an organizational field. For instance, DiMaggio and Powell (1983) discuss the notion of competitive isomorphism, in which the market dictates organizational form within the private sector.

5. Coercive isomorphism is one area in which institutional theory overlaps with resource-dependency theory (Donaldson, 1995; Pfeffer & Salancik, 1978). Both theories share the notion that organizations are heavily affected, or even controlled, by their environments. However, whereas institutional theory is based on the role of the environment in granting legitimacy to the organization, resource dependency theory focuses on the environment as a source of resources. The overlap, of course, is that sources of legitimacy and resources are often one and the same. In addition, the decision to grant resources to an organization is often based on an appraisal of the organization's legitimacy. Only one scholar, to our knowledge, has combined these two approaches (Tolbert, 1985).

6. One recent empirical study combined the institutional and contingency perspectives with some success (Gupta, Dirsmith, & Fogarty, 1994).

7. Analysts do not necessarily agree on what the times require. Compare, for example, Kelling and Moore (1988) with Ericson and Haggerty (1997).

8. Crank and Langworthy (1996) stake a firm opinion on this issue: "Though community-based policing is intended to look local . . . it is centrist in origins, sponsorship, and intellectual leadership" (p. 223).

9. Readers desiring a thorough description of the methods are advised to consult a report by Annan (1994). Those interested in a written summary of the findings should consult a report by Wycoff (1994).

10. This survey was recently updated by Macro International and the Police Executive Research Forum, but the data are still being analyzed and have not yet been released.

11. The 11 questions address a variety of community policing activities that patrol officers might engage in. Respondents are given four response options regarding the number of

patrol officers in the agency that participate in each activity: none, some, special unit officers, and most. This format clearly does not fit with the three-category format used for all of the other questions. Later, we explore the conditions under which this block of items can be included in the analysis, or whether the effects of these variables (if any) are artifacts of differences in the wording of the questions.

12. Otherwise, no attempt was made to validate the responses contained in any of the Community Oriented Policing Services (COPS) community policing data sets used in this study. Grantees were later required to participate in traditional grant monitoring activities to ensure that federal funds were not misused. Thus, their community policing activities were monitored after the grant was awarded. However, these later monitoring efforts were not used to validate the initial community policing checklists used in this study.

13. Tetrachoric correlations are based on the assumption that for a dichotomous variable y , there is a corresponding continuous latent response variable y^* , and a threshold parameter τ that determines the y outcomes. If $y^* > \tau$, then $y = 1$; and if $y^* \leq \tau$, $y = 0$ (Mislevy, 1986; Muthén, 1978, 1989). The polychoric correlation for ordered polytomous data is based on similar logic, having one additional threshold parameter.

14. These methods essentially use statistical (rather than visual) methods to determine at what point the break in the slope of the eigenvalues is substantial enough to distinguish between trivial and nontrivial factors.

15. For this analysis, we dropped the 11 questions in the Police Foundation survey that were coded differently. The four response categories in these questions were not comparable to the three categories used in all the other questions and data sets.

16. For this analysis, we recoded the 11 differently coded items into dichotomies representing the presence or absence of the activity within the agency. The recoded questions were then comparable to all other questions and data sets, and therefore could be included in the data set.

17. The first factor extracted in any factor or components analysis is always the largest. In this case, however, the eigenvalue of the first factor is enormous compared to the remaining factors (the scree).

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