

The Frank E. Seidman Distinguished Award In Political Economy

Presentation of Acceptance Paper by
1997 Recipient
ELINOR OSTROM

and Discussion by
Kenneth Arrow
Thomas Schelling
Amartya Sen
Michael Nelson, Moderator

Award Presentation by Kenneth Arrow

Friday, September 26, 1997
RHODES COLLEGE
Memphis, Tennessee

In 1998, the Seidman Award will note its twenty-fifth year as an increasingly recognized and respected honor presented annually to a political economist, or a social scientist whose work represents a close inter-disciplinary connection with economics.

In its twenty-four years, the honor has been awarded to recipients from Sweden, Hungary, Belgium, England, and the United States of America. It is truly international in scope. Of the twenty-four receiving the Award, five have subsequently been named winners of the Nobel Prize in Economics.

Additionally noteworthy is that the Board of Trustees and Selection Committee of the Award, since its inception, have been composed of the most eminent economists and social scientists, all of whom have been actively involved in the Award's governance and progress.

The presentation of the acceptance paper by Elinor Ostrom, the 1997 recipient, represents an historic departure from the procedure of the previous twenty-three years. Rather than presenting her paper at the formal Award banquet, Professor Ostrom did so at another session before an audience of students, faculty, and members of the Memphis business and professional communities. Various aspects of the paper were then discussed with Professor Ostrom by Professors Kenneth Arrow, Thomas Schelling, and Amartya Sen. Their introductions are on the pages that follow. The session was moderated by Professor Michael Nelson of the Department of Political Science at Rhodes College. His expertise in the field of political science is widely recognized and punctuated by numerous writings and lectures and focusing, to a degree, on the American presidency and American politics. Many Memphians will recognize Mike as the political analyst for NBC-TV station Channel 5.

On the following pages are Professor Ostrom's written acceptance paper and a transcript of the panel discussion on the paper. Also included in this booklet is the formal presentation of the Award to Elinor Ostrom made by Kenneth Arrow on September 27, 1997.

MEL G. GRINSPAN
Distinguished Service Professor Emeritus
Director of Award
Rhodes College



ELINOR OSTROM

Recipient of the 1997
Frank E. Seidman Distinguished Award
in Political Economy

Co-Director, Workshop in Political Theory and Policy
Analysis; Co-Director, Center for the Study of
Institutions, Population, and Environmental Change;
Arthur F. Bentley Professor of Political Science,
Indiana University

PRESENTATION OF ACCEPTANCE PAPER

Introduction of Professor Ostrom by

Professor Michael Nelson, Professor, Department of Political Science, Rhodes College and Panel Moderator

What a great pleasure it is to introduce Elinor Ostrom to a Memphis audience and to Rhodes audience. Two themes run boldly through Professor Ostrom's professional life. The first is a commitment to Indiana University, where after growing up in Los Angeles and earning her B.A., M.A., and Ph.D. at UCLA, she has spent her entire academic career, and where, since 1991, she has been the Arthur F. Bentley Professor of Political Science. It was at Indiana University that, in 1973, she and another distinguished political scientist, her husband Vincent Ostrom, founded the widely renowned Workshop in Political Theory and Policy Analysis. That workshop, happily housed in an old fraternity house, has become an intellectual oasis for scholars from numerous academic disciplines and many nations, all of them concerned with applying political and economic theories to practical issues of public policy. From her base in Indiana, Professor Ostrom has traveled the world, doing research everywhere from St. Louis to Nepal and responding to pleas for her advice from everyone from the National Science Foundation to the National Sheriffs' Association. At present she is President of the American Political Science Association. As President of the APSA she graces the office previously occupied by such celebrated public intellectuals as Charles Beard, James MacGregor Burns, James Q. Wilson, and Woodrow Wilson.

The second theme that marks Professor Ostrom's career is prolific, excellent, and pathbreaking scholarship. She is the author of more than a dozen books and nearly a hundred scholarly articles. I'll mention the titles of two of those books to you because I think it would be unconscionable not to do so: *Governing the Commons* is one and *Rules, Games, and Common-Pool Resources*

(co-authored with Roy Gardner and James Walker) is the other. But as for the rest, perhaps we can agree to stipulate that were I to enumerate them all, you would be enormously impressed.

More important than the numbers of Professor Ostrom's pages in print, have been the issues that have animated her scholarship. She's concerned with people — with farmers who may not have enough water to irrigate their fields; with fishers who may or may not be able to catch enough to feed their families; with city dwellers whose streets and neighborhoods are either safe or unsafe. And she is concerned with the institutions that, to a greater or lesser degree, make it possible for government of and by the people to address those concerns. She will have much to say about her work in a moment, but for now let these words from a recent article by her and Vincent suffice. Quoting, "How people think of themselves, structure their relationships with others, and pursue the opportunities that they see as available to them may make the difference between a sustainable and meaningful way of life and one reduced to rubble. Working with others to gain mutual advantage under changing conditions of life requires substantial use of knowledge, moral sensitivity, skills and intelligence in the exercise of self-governing capabilities." Ladies and gentlemen, I give you the recipient of the 1997 Frank E. Seidman Distinguished Award in Political Economy, Elinor Ostrom.

THE COMPARATIVE STUDY OF PUBLIC ECONOMIES

by

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Thank you very much. I wish to thank the Seidman Award committee for selecting me to receive this wonderful Award. It is a great honor and I am very appreciative of their recognition. Especially in light of the distinguished colleagues who have been my predecessors.

One of Adam Smith's major contributions was the development of a theory of order that demonstrated the possibility of beneficial outcomes emerging from the independent contributions of many individuals pursuing their own interests within a set of agreed upon rules. Smith's work provided the foundation for modern micro-economics that has formalized the theory of competitive markets. Individuals organize themselves into enterprises that seek out opportunities for gain through production and exchange. Competition among buyers and sellers exchanging purely private goods in an open market within a legal framework that defines and enforces property rights and contractual agreements, generates incentives that lead toward optimal results. While each participant tries to maximize his or her own welfare, competition among producers and consumers of pure private goods leads to an increase in the benefits for all while driving individual advantage over others to a minimum. Public policies consistent with this view of order encourage the development of markets as a stimulus to increase "the wealth of nations."

Smith's theory of order stands in marked contrast to that of

Thomas Hobbes, who argued that self-organization and competition leads to warfare and necessitates a single center of power dominating all social relationships and imposing peace and order on others. For Hobbes, order came from having a single decision maker rather than relying on the decisions made by many self-organized and independent decision makers. While modern scholars frequently deny their reliance on Hobbesian intellectual roots, the modern theory of “The State” is a direct descendant of *Leviathan*. The State is defined as an organization with a monopoly over the authority to make law and the legitimate use of coercion.

A major question puzzling analysts for some time has been how far the logic of market organization can be applied to the organization of productive activities beyond strictly private goods. In 1954, Paul Samuelson, for example, demonstrated that it was not possible to rely on decentralized, spontaneous (self-organized) processes to achieve the same level of optimality as that of an open competitive market when the goods involved were public goods and thus not excludable and subtractable. In the same year, H. Scott Gordon examined the effect of open competitive processes for common-pool resources, such as fisheries, where exclusion is also difficult but the goods appropriated by one user are not available to others. Both Samuelson and Gordon—and many scholars who have built on their work—revealed suboptimalities when dealing with collective goods (the term I will use to include both public goods and common-pool resources). Problems range from minor underprovision to the “tragedy of the commons.” Markets fail to achieve optimal results when externalities are generated, and it is difficult to exclude beneficiaries who gain an advantage without their contributing to the cost of provision. A policy prescription stemming from the work of these political economists and from some theoretical traditions in public administration has been that a centralized authority is necessary to achieve greater welfare potentials for collective goods.

Contemporary policy prescriptions tend to recommend Smith’s concept of market order for all private goods and Hobbes’s con-

ception of the sovereign State for all collective goods. Since many of the goods and services desired in a modern economy are *not* pure private goods, this leads to the prescription that the State—in the singular—should provide and produce all the goods and services where markets fail. Showing that one institutional arrangement leads to sub-optimal performance is not equivalent, however, to showing that another institutional arrangement will perform better. Government monopolies also fail in providing and producing local public goods and common-pool resources efficiently and equitably. When preferences for levels and types of local public goods—such as the use of public spaces, the level of police protection, or investments in urban infrastructure—vary substantially within sub-populations, no known voting mechanism translates individual preferences into stable aggregations that reflect “the public interest” (Arrow, 1951). Problems of information loss, shirking, and budget maximization are substantial in large public bureaucracies (Tullock, 1965; Williamson, 1967; Miller, 1992). Mechanisms to reduce shirking and corruption are difficult to establish. Thus, the Market and the State both fail to increase welfare in some of the domains of modern political-economic life. Consequently, political economists need a richer set of policy formulations than just “the” Market or “the” State.

The poverty of our formulations stems, to some extent, from the separation of political economy into two disciplines that have evolved along separate paths. While substantial advantages exist from academic specialization, sweeping prescriptions based on stylized notions of the institutional arrangements studied by other disciplines are negative fallouts of overspecialization. When economists show that market arrangements fail, they are frequently willing to make simple recommendations that the State should take care of these problems without asking how incentives are generated to improve performance. The extant theory of collective action, which links the work of all political economists, has accentuated the presumed necessity of the State as an alternative to the Market, since the accepted theory predicts that self-organi-

zation to provide public goods or manage common-pool resources is highly unlikely. When political scientists and policy analysts show that overcentralized governmental units fail to perform, they sometimes recommend “privatization” as a panacea without working through the logic of how to create a set of incentives that increases performance.

My academic career has been devoted to the development of empirically grounded theories to cross the great divide between economics and political science (as well as the other social sciences) in the conduct of comparative institutional analysis. As an institutional analyst, I have been particularly interested in how *public economies* evolve to provide and produce public goods and common-pool resources and how the structure of diverse public economies affects the incentives and patterns of interactions of participants and the outcomes achieved. In collaboration with many colleagues, I have studied public economies in urban areas of the United States as well as those governing and managing diverse common-pool resources in many parts of the world. The more recent research on common-pool resources is relatively well known. The earlier research on the public economies of metropolitan areas was published in widely scattered sources and is not generally known. Since this research illustrates the method of institutional analysis that many of us at the Workshop in Political Theory and Policy Analysis have developed over the past three decades,¹ and since it is relevant to contemporary policies, I wish to share with you some of my current reflections on the public economies of urban areas drawing on this earlier research program.

What are Public Economies?

Public economies—as contrasted to market economies—are composed of *collective consumption units* of varying sizes that provide services by arranging for their production and regulating access to, patterns of use, and appropriation of collective goods.

Provision of services is thus viewed as a distinct process apart from production (V. Ostrom, Tiebout, and Warren, 1961). There is no need to organize collective consumption units in a private economy, because individuals and households already serve as the active decision makers related to demand articulation and consumption. Whenever exclusion is problematic—as with public goods and common-pool resources—creating a collective consumption unit larger than a household is essential to overcome problems of free riding and strategic preference revelation, to determine how costs will be shared among those who benefit, to arrange for production, and to regulate patterns of access, use, and appropriation. Many collective consumption units are themselves units of government that range in size from small suburban municipalities, to the government of an entire nation, to the international regimes linking multiple national governments. They may also range in scope from single-purpose special districts to general-purpose governments authorized to undertake a wide diversity of tasks. Collective consumption units also include a wide diversity of organizations that are not governments and may not even be formally constituted. Neighborhood organizations, condominiums, churches, voluntary associations, and peak associations may also function as collective consumption units related to one or more collective goods.

The *producers* in a public economy are frequently governments, but they may or may not be the same organizing unit as the collective consumption unit that organizes the provision side. Some municipalities organize their own school systems, road departments, and police departments. Others contract with other governments to produce one or more services for their community. And, the producers in a public economy are frequently private for-profit or not-for-profit firms that produce collective goods for collective consumption units paying for goods or services.

The primary reason for using a form of collective organization is to solve problems of provision. But once a collective consumption unit is established, how production is organized is an entirely

separate question. A collective consumption unit is faced with at least six different institutional arrangements for arranging for the supply of local public goods (V. Ostrom and E. Ostrom, 1978). These include: (1) establishing and operating its "own" production unit, (2) contracting with a private firm, (3) contracting with another governmental unit, (4) obtaining some services from its own production unit and other services from other governmental or private producers, (5) establishing standards of service that must be met by authorized producers and allowing each consumer to select a private vendor and to procure services from an authorized supplier, and (6) issuing vouchers to families and permitting them to purchase service from any authorized supplier. All of these arrangements are used by collective consumption units at a local, regional, national, or international level to arrange for the production of collective goods.

Local public economies are not markets. Nor are they hierarchical in structure. Individuals are not able to engage in a wide diversity of independent *quid pro quo* relationships with any vendor they choose. Decisions are made for collectivities of individuals who are then held responsible to provide tax revenue and user charges to pay for the provision of public goods and services (ACIR, 1987, 1988, 1992; Parks and Oakerson, 1989). Like markets, however, there are regular relationships among entities in a local public economy. One can think of these regular patterns of relationships as constituting an industry structure (V. and E. Ostrom, 1965). One must examine structure and performance at an interorganizational level of analysis rather than at the level of a single firm or governmental unit. Samuelson and Gordon were correct in their analysis that strictly private market arrangements fail when confronted with public goods and common-pool resources. Their analysis was incomplete, however, because only one alternative to market arrangements was considered.

The Relevance of Public Economies for Public Policy

Public economies are not as well understood by economists or political scientists as either market economies or hierarchies. Scholars working within the traditional disciplines of political science and public administration have long been perplexed, for example, by the sheer complexity of the delivery arrangements existing in American metropolitan areas. A frequent view of metropolitan institutions has been that they are chaotic and incomprehensible. Given that scholars studying metropolitan service delivery arrangements could find no order in them, the reaction has been to recommend that metropolitan institutions should be radically consolidated and streamlined. Many articles, books, monographs, and reports written by urban scholars recommend the elimination of smaller jurisdictions and the creation of a few, large, general-purpose governments to produce all local services in any given metropolitan area.²

This literature has been the basis for many consolidation referenda placed before voters who repeatedly reject the proposed reforms. In 1970, Amos Hawley and Basil G. Zimmer summarized the dominant academic view of the day:

A diagnosis of the metropolitan malady is comparatively easy and its logic is too compelling to admit disagreement. Given the diagnosis the treatment seems just as apparent: consolidate the many political units under a single, over-arching municipal government. With one stroke the many conflicting jurisdictions could be eliminated and a fragmented tax base could be combined into an adequate source of revenue for an entire community. Nothing, it would seem, could be more obvious or more rational. For that reason governmental consolidation has had numerous advocates. It has also had numerous opponents. Indeed, opposition to such a proposal has been monumental (1970: 3).

This view has been reiterated continuously through the years. In the May 1997 issue of *The New Leader*, for example, Michael Lind echoes the same theme in an article on "A Horde of

Lilliputian Governments.” Lind vigorously complains about the “multiplication of little electorates like coral polyps, which pile together in reefs that lack any ordering principle other than propinquity” (1997: 7). In the September 9, 1997, issue of my local newspaper, a noted economist at Indiana University strongly recommends the consolidation of Bloomington and another municipality with the county in which they are located.³

A Monocentric Theory

Scholars working within traditional boundaries of political science and economics, along with many journalists, have so focused on the incomprehensibility and irrationality of metropolitan systems, that they have not asked why these systems have evolved the way they have or why voters, when provided with the opportunity, have repeatedly rejected proposals to consolidate governments in metropolitan areas. Scientific progress is difficult when the phenomena of interest is perceived as incomprehensible.

Implicit in the proposals for widespread reform is a theory of monocentric order. The basic assumptions of this theory are:

1. Urban public goods and services are relatively homogeneous and similarly affect all neighborhoods within a metropolitan area.
2. Urban voters share relatively similar preferences for urban goods and services.
3. Voters effectively articulate their preferences for diverse urban goods and services through a single electoral mechanism.
4. Large scale is needed to finance high quality services.
5. Elected officials can best specify the levels of urban goods and services that should be produced to public bureaus and determine tax revenues to achieve these objectives.
6. Heads of public bureaus have effective command over street-level bureaucrats who then produce the highest level of public goods and services given the budget they receive.
7. Street-level bureaucrats deliver these goods and services to passive clients.

There are four broad types of actors in this theory: citizens, elected officials, bureau heads, and street-level bureaucrats. All four face highly constrained choices. Citizens select between a small set of candidates based on full information about the similarity of their own and candidates' preferences. Citizens are perceived to have no other relevant actions. Elected officials determine tax revenues after learning voter preferences and fully convey a set of objectives and budget allocations to bureau heads. Bureau heads determine the most efficient way to produce what is desired and command subordinates to carry out their orders. Street-level bureaucrats honestly and efficiently carry out these commands. The actors are linked in a one-way flow of relationships with no strategic behavior and complete transmission of accurate information through all linkages. Production functions are known. Thus, the predicted outcomes of a monocentric metropolitan order are that public officials will determine the optimal level of public goods and services for the metropolitan area as a whole and well-trained bureaucrats will generate this result. A further prediction is that services will be equitably delivered since no jurisdictional boundaries artificially divide the metropolitan area.

Each assumption in this theory is open to serious challenge. In regard to the first assumption, urban public goods and services vary substantially from one another in both their production and consumption characteristics. Freeways and mass transportation systems are capital intensive and have an impact on people living and working throughout a metropolitan area. The costs of excluding nonpaying users from a subway system differ from the costs of excluding nonpaying users from a highway network—given current technologies of exclusion. Primary education and police patrol, on the other hand, are not capital intensive and directly benefit smaller sets of families. The externalities from primary education extend far beyond any one metropolitan area, but the externalities from police patrol are more limited in extent.

A particular flaw in this theory is the assumption that production of human services is similar to that of physical goods.

Physical goods, like automobiles, can be produced independently of the inputs of those who eventually consume them. However, the production of all services involves some active input by the consumers being served (Parks et al., 1981; Kiser, 1984; Percy, 1984; Whitaker, 1980; E. Ostrom, 1997). If students, for example, do not participate actively in their own education, input resources devoted to education have little effect on results achieved (Davis and Ostrom, 1991). Students are essential coproducers of education. In regard to safety in a community, citizens are also important coproducers.

Citizens do not share similar preferences for urban goods and services, contrary to the second assumption. The preferences of citizens living in relatively poorer neighborhoods differ substantially from those living in wealthier neighborhoods. For illustration, think about the difference in demand for recreational services. In a neighborhood where private living space is crowded, there is a strong preference for the use of public spaces—urban streets as well as parks—to be used as gathering places and for sports. Keeping drug dealers and thugs from using these open public spaces is highly valued, but allowing access to multitudes of people is also valued. Citizens living in wealthier neighborhoods, on the other hand, have a strong preference for quiet public spaces; they use private spaces for recreation.

In a private market, preferences for the amount and quantity of a good are revealed as a result of many *quid pro quo* transactions. Producers learn about preferences through the consumers' willingness to pay for various goods offered for sale. Where exclusion is difficult, designing mechanisms that honestly reflect beneficiaries' preferences and their willingness to pay is difficult and complex, regardless of whether the providing unit is organized in the public or the private sector. Thus, the third assumption is seriously open to question. In very small groups, those affected are usually able to discuss their preferences and constraints on a face-to-face basis and to reach a rough consensus. In larger groups, decisions about provision are made through voting mechanisms and

the delegation of authority to public officials. The extensive literature on voting systems demonstrates how difficult it is to translate individual preferences into collective choices that adequately reflect individual views (Arrow, 1951; Herzberg and Ostrom, 1991; Shepsle, 1979). The problem of preference aggregation is intensified when individuals with radically differing preferences are combined into one collective consumption unit.

While large scale is needed to tap a substantial tax base, it is possible to use county or multicounty taxing units for some capital-intensive, metropolitan-wide collective goods and smaller units for services that do not have such large scales of effect. Furthermore, studies of such services as schooling do not find a relationship between expenditures and student performance (Hanushek, 1981, 1986). Even assuming that elected officials for a large and diverse jurisdiction were able to obtain good information about the preferences of citizens, conveying these to monopoly public bureaus that do not face competitive pressure to perform is extremely difficult in contrast to the fifth assumption. The heads of large public bureaus also face substantial problems supervising large and dispersed staffs who are protected from disciplinary actions by various forms of civil service legislation. The smooth operation of centralized public bureaus—assumption six—is also open to challenge.

And if assumption seven actually happens, and street-level bureaucrats simply deliver services to passive citizens who are not actively engaged in coproduction, the level and quality of these services is seriously reduced. If the only actors involved in keeping the peace and safety of an urban neighborhood are the police, they face an extremely difficult task in learning about minor problems that need to be addressed before they become major problems.

A Polycentric Theory

Instead of prejudging the performance of complex organiza-

tions in metropolitan areas, Vincent Ostrom, Charles Tiebout, and Robert Warren proposed in 1961 that the multiplicity of local jurisdictions in a metropolitan area be conceived as a “polycentric political system” (V. Ostrom, Tiebout, and Warren, 1961).

‘Polycentric’ connotes many centers of decision-making which are formally independent of each other. . . . To the extent that they take each other into account in competitive relationships, enter into various contractual and cooperative undertakings or have recourse to central mechanisms to resolve conflicts, the various political jurisdictions in a metropolitan area may function in a coherent manner with consistent and predictable patterns of interacting behavior. To the extent that this is so, they may be said to function as a system (ibid.: 831).

This brought a different perspective to the study of metropolitan governance. Instead of presuming that there were only two kinds of order—the market and the government—some political economists have come to recognize that order and comparatively high performance can be achieved in *local public* economies where large, medium, and small governmental and nongovernmental enterprises engage in both competitive and cooperative relationships.

The basic assumptions of a polycentric theory differ substantially from those of a monocentric theory. They include:

1. Urban public goods and services differ substantially in regard to their production functions and the number of people who are simultaneously affected. Public services, like education and policing, require the active coproduction of citizen-consumers to complement the inputs of those formally called producers.
2. Individuals with relatively similar, but always evolving, preferences for public goods and services tend to cluster in neighborhoods. Preferences will be more homogeneous within neighborhoods than across an entire metropolitan area.
3. Citizens who live in an urban area served by multiple juris-

dictions learn more about the performance of any one jurisdiction by seeing or hearing about how problems are handled in other jurisdictions.

4. Multiple jurisdictions with different scopes and scales of organization allow citizens more effective choice in selecting the package of services most important to them, in articulating their preferences and concerns, and, if necessary, in moving to other jurisdictions.
5. Multiple jurisdictions enable fiscal equivalence (Olson, 1969) to be accomplished so that beneficiaries are primarily responsible for costs. Redistribution is best assigned to very large units of government—at a state or national level.
6. The presence of large numbers of potential producers of urban goods and services in a metropolitan area allows elected officials more effective choice of producers for their citizens as well as a way to discipline low-performing producers by contracting with another producer.
7. Producers who are competing for continued contracts will be more likely to search out innovative technologies, to operate at close to optimal scale of production, and to encourage effective team production as well as coproduction, so as to enhance their own performance.

The same four types of actors exist in this theory but they do not face such constrained choices. Strategic behavior and problems of information transmission are assumed to exist. A modified form of competition is viewed as a method for reducing opportunistic behavior even though it is not likely that any institutional arrangement will eliminate opportunism with respect to the provision and production of collective goods. Allowing citizens to form neighborhood-level collective consumption units encourages face-to-face discussion and the opportunity to achieve common understanding and agreement on at least some problems that face each neighborhood. Creating larger collective consumption units in addition reduces the strategic behavior of the

wealthy trying to escape into tax havens where they could free ride on the tax contributions of citizens in other jurisdictions. Larger units may more adequately provide urban goods that do affect a larger number of people.

An analyst using polycentric theory does not predict that there is one optimal form of organization for all metropolitan areas. Given the difficult characteristics of urban public goods and services, it is hard to posit optimality for any institutional arrangement! One needs to study the production and consumption characteristics of particular urban public goods and services before one can make any predictions about the likely mix of institutional arrangements that will generate incentives leading to higher rather than lower performance (Stein, 1990; Sproule-Jones, 1993). Police services have been the particular urban service where I have participated in testing propositions derived from the polycentric theory.

Studying Police in Metropolitan Areas

In the 1970s, there were many proposals to greatly reduce the number of police agencies serving both urban and rural areas in the United States.⁴ Some proposals recommended moving from over 40,000 police departments that then existed to under 500 police departments across the country. Small police departments were viewed by many policy analysts as impediments to effective policing.⁵ No empirical studies had been conducted to examine the comparative performance of police departments of various sizes or metropolitan areas with diverse mixtures of departments. Steve Mastrofski, John McIver, Roger Parks, Stephen Percy, Elaine Sharp, Dennis Smith, Gordon Whitaker, and I began what became a 15-year intensive research program on urban policing with a relatively simple, most-similar systems study in the Indianapolis metropolitan area and eventually conducted a comparative study in 80 metropolitan areas throughout the U.S.

Relevant Attributes of Police Services

To conduct an institutional analysis of urban police services, we first had to understand the attributes of this service that would affect the incentives of producers and consumers. We discovered almost immediately that there is not a single service involved in policing but rather a cluster of *direct* and *intermediate* services. The production function for most of the direct services is poorly understood and the measurement problems are horrendous. Most direct police services require the coproduction of citizens and are labor-intensive. Intermediate services do not involve citizens as much and tend to be more capital-intensive.

Problems of Measurement

Conceptually, the outputs of direct police services are “states of affairs” improved to some degree by the efforts of police. The output of general area patrol is the extent to which it is safer to walk on the streets or keep valuable possessions because of the efforts of police. One can never directly measure the output of direct services as it requires reference to a counterfactual situation: the state of affairs that would have existed in the absence of police services. Measurement must rely on either statistical inference or on proxy measures. Reliable statistical inference would require that we know the set of factors that cause crime and could accurately predict the level of crime that would occur without any police services. Such knowledge is not available. Instead, police and citizens have regular access to three types of proxy measures: (1) resource inputs, (2) activity levels, and (3) crime rates.

Indicators of *resource inputs* include the budget, expenditures, and number of employees. These provide information only about the resources available to produce services and give no information on the level of output. While some social scientists have presumed that output is linearly associated with resource inputs, empirical studies have demonstrated sufficient difficulties with this assumption that we did not want to rely on expenditure data

as a proxy for output.

Indicators of *activity levels* include: number of miles driven, number of tickets issued, number of calls answered, number of arrests, and number of crimes solved. These are closer to what we mean by the output of police, but are still proxy measures and are largely under the control of the producer. A police department can increase its “output” by increasing the number of people arrested or the number of traffic tickets issued. Police can arrest more drunks on Saturday night and increase their productivity. Whether that reflects an increase in output is highly questionable. Arrests directed at a particular subgroup in society may actually be counterproductive.

Crime rates, the third type of proxy measures, are trace data that survive a long series of transformations under the control of many different actors. Some information is lost at each transformation, and systematic distortion can occur at each step. For example, police can record information so that a lesser crime is coded when they want to reduce serious crime while increasing the seriousness of the offense when they want to produce a local crime wave. Since budgetary allocations are frequently increased after a local crime wave has occurred, internal incentives exist within departments to bias data recordation so as to produce the given results.

Measurement problems are part of the reason why it is advantageous to organize both the production and the provision of direct police services in relatively small units. The police chief of a very large department is a captive of statistical reports on activities and crime rates that he receives. Some of the statistical reports seen in large departments record 90 percent of the response activities of the department in an “other” category since they do not involve one of the FBI’s major crime categories (Parks, 1979). A chief cannot even have a good “feel” for what is happening on the street as he is too far removed by status and physical barriers from the day-to-day activities. On the other hand, the police chief in a small department, who actively patrols

and observes his officers on a day-to-day basis, is better able to monitor performance. Police chiefs in small departments are *not* entirely dependent upon statistics to estimate the quality of police work. In medium-sized departments, the chain of command is quite shallow, and police chiefs still have a relatively accurate picture of what is happening on the street. Thus, police chiefs in small- to medium-sized departments can monitor internal performance based on more detailed and accurate information than police chiefs of larger departments.

On the provision side, local public officials representing a large community cannot, on a first-hand basis, know what is happening in many different locations. They are also prisoners of the statistical information they receive. Thus, they have difficulty in articulating demands related to the real performance of officers on the street. In a small community, mayors and local councils have a chance to observe the activities of their local police on a day-to-day basis and are able to specify far more exactly what they want and what they do not want in their community.

While measurement problems are severe in regard to direct services, intermediate services are easier to measure. Many private sector, for-profit firms sell equivalent types of services such as telephone answering services, laboratory services, training services, and institutionalized care. Since meaningful records of such services can be kept, a direct service producer may easily arrange for intermediate services with alternative producers of those services. And, as we found out in the field, many smaller direct-service producers do arrange to obtain training, crime laboratory analyses, and dispatching from large police departments or from private firms.

Coproduction and Capital- or Labor-Intensive Production Functions

In addition to the problem of measurement, several other attributes of police services strongly affect the incentives of par-

ticipants and thus the predicted effects of diverse institutional arrangements. These include the problem of coproduction, the capital-intensive nature of intermediate services, and the labor-intensive nature of direct services.

To be effective, police officers need the active coproduction of citizens. They provide the "public eyes" that may prevent criminal activities or alert the police to problems. Without active help by citizens giving information and being willing to serve as witnesses in court, police are less effective in solving crimes or in building a case that can be prosecuted in court. Citizens can prevent many types of criminal activities by taking precautionary efforts of many kinds.

Coproduction of direct police services by citizens is likely to be more intensive in small, collective consumption units where citizens perceive themselves to have a stake in preserving the peace and safety of their neighborhoods and view the police as providing valuable services to assist in those efforts. Officers serving in small police departments should also be more oriented to encouraging citizens to help in the coproduction of direct services. In regard to intermediate services, citizens are not normally involved as coproducers but the direct and indirect service producers may be themselves involved in coproduction activities.

Many intermediate police services are capital intensive and economies-of-scale are achieved in large production units. Crime laboratory analysis, for example, is likely to have average costs falling over an extended range of output. The initial capital expenditure involved in purchasing equipment is large. Highly trained personnel are needed to run analyses. Training can also involve substantial economies-of-scale. When training is conducted in an academy, substantial investments must be made in a building and a staff so that training a large number of recruits will be less expensive (per recruit) than training only a small number. Radio communications also involve the purchase of relatively expensive equipment and the likelihood of economies-of-scale.

In contrast, direct services are highly labor intensive. Between

85 and 90 percent of the costs of direct services relate to personnel or variable expenses, such as gasoline. Responsibility for a larger jurisdiction may increase average costs of production rather than reducing them for most direct services. In regard to the investigation of infrequent events, such as homicides, one might expect that specialized units serving a large area might process a sufficient number of cases to enhance skills at production.

Predictions about Police Performance in Metropolitan Areas

From studying the nature of producing and consuming police services, we began to develop alternative predictions based on polycentric theory. Because of the labor-intensive nature of direct police services, the essential role of citizen as coproducer, and the problem of measuring output, we predicted that small- to medium-sized, direct-service producers would be more effective and efficient than large, direct-service producers under similar service conditions.

Given that intermediate services tend to be capital intensive and are easier than direct services to measure, large production agencies should be more effective and efficient than smaller agencies in producing intermediate services. If local police departments face pressures to become more efficient, they should search out larger police departments or other producers to supply most intermediate service. To the extent that institutional arrangements facilitate contracting or other intergovernmental arrangements, one should expect to find that (1) substantially fewer intermediate-service producers exist in metropolitan areas than direct-service producers, (2) most intermediate producers are large, and (3) small direct-service producers obtain most intermediate services from larger producers.

A third set of predictions is that the performance of direct-service producers of police services will be enhanced in metropolitan areas containing a large number of other producers. Many factors lead to this prediction. One important factor is the

increased capacity of citizens and public officials to learn about, measure, and monitor performance. In a metropolitan area with many different producers, citizens obtain information about comparative performance in several ways. Simply driving through the metropolitan area provides regular information about patrol density and the extent and style of enforcement in different jurisdictions. If a citizen or a member of his or her immediate family receives a traffic ticket in two different jurisdictions, an opportunity exists to compare the fairness, courtesy, and honesty of officers working in different jurisdictions. Most citizens in a metropolitan area with many jurisdictions know residents living in different jurisdictions. Informal discussions of such personal events as being victimized, calling the police for assistance, or getting a ticket often occur among friends.

Public officials in a metropolitan area with many producers are apt to be better informed about comparative performance levels. Citizens who are unhappy with their own police, and who know that their friends and neighbors receive a better level of service, are more apt to complain to their elected officials than citizens living in a consolidated area who have no way to compare the service they receive with other jurisdictions. Further, if city managers and/or mayors in the metropolitan area meet regularly, they can exchange relevant input and output information that helps each of them in their bargaining with police chiefs. The relative monopoly over information that a single producer has is reduced in a metropolitan area with a large number of producers. Thus, police chiefs operating in metropolitan areas with many other police departments are more exposed to removal if they increase staff and other input variables beyond the level at which the more effective departments operate.

Intensive empirical research has been devoted to examining these three sets of predictions about the performance of police agencies in metropolitan areas. Substantial empirical support exists for all three. Only a brief review of the evidence available in support of these propositions can be provided here. Those

interested in examining the evidence further are referred to the work cited where information about measurement instruments, sample design, and findings is available.

Small- and Medium-Sized Police Agencies are More Effective in Producing Direct Services

The problems of measurement discussed above are not only difficult for the managers of police-production agencies and elected public officials but also for scholars wishing to measure performance. None of the published statistics on inputs, activities, or crime rates provide satisfactory measures for examining the effects of scale of organization on performance. In conducting studies of this question in the Indianapolis, Chicago, St. Louis, Nashville, Rochester, and Tampa-St. Petersburg metropolitan areas, this problem was met by collecting performance data from interviews at a random sample of households served by the small and large departments being compared. Information was obtained about victimization, willingness to call the police, speed of police response, amount of police follow-up, satisfaction levels with police contacts, and general evaluations of the quality of policing in a neighborhood.

By studying matched neighborhoods with similar service conditions, one can control for many of the other factors that can be expected to affect performance. The consistent finding from this series of studies is that small- and medium-sized police departments perform more effectively than large-sized police departments serving similar neighborhoods and frequently at lower costs (E. Ostrom and Whitaker, 1974; E. Ostrom, Parks, and Whitaker, 1973; E. Ostrom and Parks, 1973; Rogers and Lipsey, 1974). Parks (1995) is currently examining the stability of these findings over time and has already verified that the smaller police departments in the Indianapolis area continue to perform more effectively than the large, central city departments serving similar neighborhoods. Victimization rates tend to be lower, police response tends

to be faster, citizens tend to be more willing to call on police, citizens tend to more positively evaluate specific contacts with the police, and citizens tend to rate police higher across a series of other evaluative questions. Further, citizens living in small communities tend to be more informed about how to change local policies, tend to know more policemen serving their neighborhoods, and call the police more frequently to obtain general information than citizens living in large cities.

Our studies have shown that citizens being served by small departments are likely to be receiving *better* services and at lower costs than their neighbors living in the center city. Thus, instead of being an impediment to effective policing in metropolitan areas, small- to medium-sized police departments perform better than their larger counterparts in delivering direct police services to similar neighborhoods.⁶

Small Police Agencies Arrange for Intermediate Services from Large Police Agencies

Two decades ago, colleagues at the Workshop in Political Theory and Policy Analysis at Indiana University and the Center for Urban and Regional Studies at the University of North Carolina conducted a major study of police organization in 80 Standard Metropolitan Statistical Areas (SMSAs) throughout the United States (see E. Ostrom, Parks, and Whitaker, 1977, 1978). A total of 1,159 direct-service producers served residents in these 80 SMSAs. Most of these agencies produced general area patrol, traffic patrol, accident investigation, and burglary investigation services. About 70 percent produced homicide investigations while citizens served by the other 30 percent of the direct-service producers received homicide investigation services from a large producer in the area—usually an overlapping sheriff's office or a metropolitan-wide homicide unit.

In regard to intermediate services, we found 70 percent of the direct-service producers also produced their own radio communi-

cations, but only a small proportion of any of the direct-service producers produced their own entry-level training, crime laboratory analysis, or detention. Only 12 percent of these agencies produced their own detention, only 6 percent produced their own training, and only 1 percent produced their own crime laboratory analysis. In all metropolitan areas, however, intermediate services were made available to *all* direct-service producers. In most SMSAs, direct-service producers had a choice between at least two large-scale, intermediate producers.

Since crime laboratories are the most capital intensive of police intermediate services, one would expect to find the smallest number of these producers of all intermediate-service producers. This is our finding. Only 85 crime laboratories served the 80 SMSAs. Some of these crime labs served more than one SMSA. Almost half of the crime laboratories were operated by state agencies. Federal, regional, county, and private labs composed another third of the producers. Only 16 out of the 916 municipal police departments operated their own crime labs. Thus, not even the central city police departments in most SMSAs establish their own crime laboratories for forensic analysis.

If police agencies were denied access to interorganizational arrangements to assist in the provision of intermediate police services, large, fully-integrated departments would have an intrinsic advantage. Where agencies can work out interjurisdictional contracts, set up regional facilities, and exchange services with one another, small agencies are able to obtain highly professional, intermediate services at low costs without the need to become fully integrated departments.

Police Performance is Enhanced in Metropolitan Areas with Larger Numbers of Police Agencies

In order to examine the effect of interorganizational arrangements on police performance in a large number of metropolitan areas, we had to rely on more indirect measures of performance

such as: the allocation of police personnel to on-the-street assignments and the relative efficiency of agencies in producing response capacity and solving crimes.

In the 80 SMSA study mentioned above, the study team gathered information on the structure of interorganizational arrangements for service delivery in each of the metropolitan areas. In particular, we calculated the number of producers of each type of service (multiplicity) and the proportion of the population being served by the largest producer of each type of service (dominance). By arraying metropolitan areas using the measures of multiplicity and dominance, one can examine the effect of these institutional arrangements on personnel allocation patterns at the metropolitan level. Metropolitan areas with low scores in regard to multiplicity and high scores in regard to dominance come closest to approximating the "consolidated" model. Metropolitan areas with high scores in regard to multiplicity and low scores in regard to dominance come closest to approximating the "fragmented" metropolitan area scored by these same proponents.

My colleague, Roger Parks, dichotomized multiplicity and dominance scores at the median to divide the 80 SMSAs into three broad groupings: (1) fragmented—those SMSAs with below median scores in regard to dominance and above median scores in regard to multiplicity, (2) consolidated—those SMSAs with above median scores in regard to dominance and below median scores in regard to multiplicity, and (3) mixed—those SMSAs that represent mid-levels between the least and the most "consolidated structures" (Parks, 1985). Parks found a distinct difference in the availability of sworn officers to conduct patrol in the metropolitan areas depending upon the structure of interorganizational arrangements. While there are more officers per capita in the most consolidated areas, a lower percentage of these officers is assigned to patrol divisions in these SMSAs.

Second, the ratio of full-time sworn officers employed in the area to actual officers on the street at 10:00 p.m. is highest in the most consolidated areas. For example, in the most consolidated

metropolitan areas, putting 100 officers on the street at 10:00 p.m. would require, on the average, the employment of 950 officers. In the least consolidated SMSAs, putting 100 officers on the street would require the employment of 680 officers. The mixed areas fall in between the extremes. One-third more officers are required in the most consolidated SMSAs to place the same number of officers on patrol as compared to the least consolidated SMSAs. Citizens living in the most fragmented metropolitan areas receive more police presence on the street for their tax expenditures than do citizens living in the most consolidated areas.

Using a more sophisticated technique for measuring the effect of industry structure on relative output levels, Parks and Ostrom (1981) estimated production possibility frontiers in metropolitan areas that varied in regard to multiplicity. These production possibility frontiers show the maximum combinations of clearances by arrest and cars on patrol (both standardized by the number of sworn officers to control for agency size) that were obtained by departments in metropolitan areas with differing amounts of multiplicity. The frontiers show the trade-off possibilities for response capacity and clearances among the most efficient departments with the normal concave shape that one would expect. They show a significant upward shift in output possibilities as the number of patrol producers in a metropolitan area increases. The most efficient producers supply more output for given inputs in high multiplicity SMSAs than do the most efficient producers in lower multiplicity areas. Thus, as expected, the presence of many other producers in the metropolitan area enhances the efficiency of direct-service producers.

Conclusions

Scholars working in the traditional disciplines of political science and public administration have been stymied in efforts to study and understand the complex set of institutional arrange-

ments existing in most American metropolitan areas. The first major contribution of the study of public economies is that of making the phenomenon comprehensible. Patterns of complex relationships between and among small, medium, and large jurisdictions can be understood as the results of fallible and strategic citizens and public officials trying to solve problems related to both the provision and production of a wide variety of different collective goods.

A second contribution is the development of an empirically grounded theory about how institutional arrangements affect performance. Evidence from other studies about similar types of collective goods is consistent with the evidence presented here.⁷ In regard to policing, small, direct-service producers are more effective, and in many instances more efficient, than larger producers serving similar neighborhoods. Intermediate services characterized by substantial economies-of-scale are supplied by one or two large, overlapping, intermediate-service producers in a metropolitan area who make these services available to others through interjurisdictional arrangements. Thus, such services are produced at low average cost and are available even to the smallest direct-service producer. Further, the efficiency of police agencies located in metropolitan areas with many other police agencies tends to be higher than when agencies are located in metropolitan areas with only a few other agencies. The effect of institutional arrangements on performance in regard to other types of public goods, however, would differ from that of police (see V. Ostrom, Bish, and E. Ostrom, 1988).

The empirical findings in regard to police have significant policy implications in the face of a presumption made by some scholars that the presence of large numbers of small agencies in most metropolitan areas is an automatic indicator of pathology that should be cured through drastic reductions in the number of governments. The presence of order in the world is largely dependent upon the theories used to understand the world. We are not limited, however, to only the conceptions of order derived from the

work of Smith and Hobbes. A polycentric theory offers an alternative that can be used to analyze and prescribe a variety of institutional arrangements to match the extensive variety of collective goods in the world. Sometimes the problem in a metropolitan area is the need for a large-scale unit. That does not mean that one has to eliminate all the smaller units to achieve this goal. Using a monocentric theory that predicts a single, large-scale, hierarchical organization is the most effective and efficient form of government, proponents have tried (and sometimes succeeded) to change the world to make it comprehensible to them. Citizens living in urban areas whose governmental structures have been “modernized” to make them comprehensible to scholars and public officials have had to pay a high price for the inadequacy of earlier approaches to the study of public economies.

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Notes

1. See Bish, 1971; Kiser and Ostrom, 1982; Oakerson, 1992; Thomson, 1992; E. Ostrom, Gardner, and Walker, 1994: ch. 2.

2. The complaint about fragmentation also extends to the way American political institutions are organized in general (see President's Commission for a National Agenda for the Eighties, 1980).

3. "Local Government is Too Complicated," editorial in *Herald-Times*, Bloomington, Indiana, September 9, 1997.

4. ACIR, 1977; Committee for Economic Development, 1966, 1970; National League of Cities, 1966.

5. The Advisory Commission on Intergovernmental Relations argued, for example:

The existence of a very small police force, then, may create police service problems in a metropolitan area. Citizens of these localities having such 'shadow' police forces will often have to depend on the goodwill of neighboring governments for their basic patrol services. If governmental fragmentation results in a substantial number of these small police forces, the metropolitan area will face the problem of insuring that all localities receive adequate patrol services (ACIR, 1971: 151).

6. Recent research on crime and community organization is strongly supportive of the earlier research (see research summarized in Felson, 1994, and Sampson, Raudenbush, and Earls, 1997).

7. In regard to solid waste collection, see Savas (1974, 1977a, 1977b). In regard to fire services, see Ahlbrandt (1973). In regard to education, see Kirp and Cohen (1972), Sher (1977), Hanushek (1981, 1986), and Davis and Ostrom (1991). In regard to water, see Sproule-Jones (1978), Blomquist (1992), and ACIR (1991).

Bibliography

Advisory Commission on Intergovernmental Relations (ACIR), 1971, *State-Local Problems in a Federal System*, U.S. Government Printing Office, Washington, DC.

Advisory Commission on Intergovernmental Relations (ACIR), 1977, *Trends in Metropolitan Government*, U.S. Government Printing Office, Washington, DC.

Advisory Commission on Intergovernmental Relations (ACIR) (Ronald J. Oakerson), 1987, *The Organization of Local Public Economies*, U.S. Government Printing Office, Washington, DC.

Advisory Commission on Intergovernmental Relations (ACIR) (Ronald J. Oakerson, Roger B. Parks, and Henry A. Bell), 1988, *Metropolitan Organization: The St. Louis Case*, U.S. Government Printing Office, Washington, DC.

Advisory Commission on Intergovernmental Relations (ACIR) (William Blomquist), 1991, *Coordinating Water Resources in the Federal System*, U.S. Government Printing Office, Washington, DC.

Advisory Commission on Intergovernmental Relations (ACIR) (Roger B. Parks and Ronald J. Oakerson), 1992, *Metropolitan Organization: The Allegheny County Case*, U.S. Government Printing Office, Washington, DC.

Ahlbrandt, Roger S., 1973, *Municipal Fire Protection Services: Comparison of Alternative Organization Forms*, Sage Publications, Beverly Hills, CA.

Arrow, Kenneth, 1951, *Social Choice and Individual Values*, 2d ed., Wiley, NY.

Bish, Robert L., 1971, *The Public Economy of Metropolitan Areas*, Rand McNally/Markham, Chicago, IL.

Blomquist, William, 1992, *Dividing the Waters: Governing Groundwater in Southern California*, Institute for Contemporary Studies Press, San Francisco, CA.

Committee for Economic Development, 1966, *Modernizing Local Government to Secure a Balanced Federalism: A Statement on National Policy*, CED, New York.

Committee for Economic Development, 1970, *Reshaping Government in Metropolitan Regions: A Statement on National Policy*, CED, New York.

Davis, Gina and Elinor Ostrom, 1991, "A Public Economy Approach to Education: Choice and Co-Production", *International Political Science Review*, vol. 12, no. 4, October, pp. 313-335.

Felson, Marcus, 1994, *Crime and Everyday Life. Insights and Implications for Society*, Pine Forge Press, Thousand Oaks, CA.

Hanushek, E. A., 1981, "Throwing Money at Schools", *Journal of Policy Analysis and Management* vol. 1, pp. 19-41.

Hanushek, E. A., 1986, "The Economics of Schooling: Production and Efficiency in Public Schools", *Journal of Economic Literature* vol. 24, pp. 1,141-1,177.

Hawley, Amos and Basil G. Zimmer, 1970, *The Metropolitan Community: Its People and Government*, Sage Publications, Beverly Hills, CA.

Herzberg, Roberta and Vincent Ostrom, 1991, "Votes and

Vetoes,” in Franz-Xaver Kaufmann, *The Public Sector—Challenge for Coordination and Learning*, Berlin: Springer-Verlag, pp. 441-450.

Kirp, David L. and David K. Cohen, 1972, “Education and Metropolitanism”, in Lowdin Wingo, *Metropolitanization and Public Services*, Washington, D.C.: Resources for the Future, Inc., pp. 29-42.

Kiser, Larry L., 1984, “Toward an Institutional Theory of Citizen Coproduction”, *Urban Affairs Quarterly*, vol. 19, no. 4, June, pp. 485-510.

Kiser, Larry and Elinor Ostrom, 1982, “The Three Worlds of Action: A Methodological Synthesis of Institutional Approaches”, in Elinor Ostrom, *Strategies of Political Inquiry*, Beverly Hills, CA: Sage Publications, pp. 179-222.

Lind, Michael, 1997, “A Horde of Lilliputian Governments”, *The New Leader*, May.

Miller, Gary, 1992, *Managerial Dilemmas. The Political Economy of Hierarchy*, Cambridge University Press, New York.

National League of Cities, 1966, *Adjusting Municipal Boundaries: Law and Practice*, National League of Cities, Washington, DC.

Oakerson, Ronald J., 1992, “Analyzing the Commons: A Framework”, in Daniel W. Bromley, David Feeny, Margaret McKean, Pauline Peters, Jere Gilles, Ronald Oakerson, C. Ford Runge, and James Thomson, *Making the Commons Work: Theory, Practice, and Policy*, San Francisco, CA: Institute for Contemporary Studies Press, pp. 41-59.

Oakerson, Ronald J. and Roger B. Parks, 1989, "Local Government Constitutions: A Different View of Metropolitan Governance", *American Review of Public Administration*, vol. 19, no. 4, December, pp. 279-294.

Olson, Mancur, 1969, "The Principle of 'Fiscal Equivalence': The Division of Responsibilities Among Different Levels of Government", *American Economic Review*, vol. 59, no. 2, May, 479-487.

Ostrom, Elinor, 1972, "Metropolitan Reform: Propositions Derived from Two Traditions", *Social Science Quarterly*, vol. 53, December, pp. 474-493.

Ostrom, Elinor, 1997, "Crossing the Great Divide: Coproduction, Synergy, and Development", in Peter Evans, *State-Society Synergy: Government and Social Capital in Development*, Berkeley: University of California, pp. 85-118.

Ostrom, Elinor, Roy Gardner, and James Walker, 1994, *Rules, Games, and Common-Pool Resources*, University of Michigan Press, Ann Arbor.

Ostrom, Elinor and Roger B. Parks, 1973, "Suburban Police Departments: Too Many and Too Small?", in Louis H. Masotti and Jeffrey K. Hadden, *The Urbanization of the Suburbs*, Beverly Hills, CA: Sage Publications.

Ostrom, Elinor, Roger B. Parks, and Gordon P. Whitaker, 1973, "Do We Really Want to Consolidate Urban Police Forces?", *Public Administration Review*, vol. 33, pp. 423-433.

Ostrom, Elinor, Roger B. Parks, and Gordon P. Whitaker, 1977, *Policing Metropolitan America*, U.S. Government Printing Office, Washington, DC.

Ostrom, Elinor, Roger B. Parks, and Gordon P. Whitaker, 1978, *Patterns of Metropolitan Policing*, Ballinger, Cambridge, MA.

Ostrom, Elinor and Gordon P. Whitaker, 1974, "Community Control and Governmental Responsiveness: The Case of Police in Black Neighborhoods", in Willis D. Hawley and David Rogers, *Improving the Quality of Urban Management*, Beverly Hills, CA: Sage Publications, pp. 303-334.

Ostrom, Vincent, Robert Bish, and Elinor Ostrom, 1988, *Local Government in the United States*, Institute for Contemporary Studies Press, San Francisco, CA.

Ostrom, Vincent and Elinor Ostrom, 1965, "A Behavioral Approach to the Study of Intergovernmental Relations", *The Annals of the American Academy of Political and Social Science*, vol. 359, May, pp. 137-146.

Ostrom, Vincent and Elinor Ostrom, 1978, "Public Goods and Public Choices", in E. S. Savas, *Alternatives for Delivering Public Services: Toward Improved Performance*, Boulder, CO: Westview Press, pp. 7-49.

Ostrom, Vincent, Charles Tiebout, and Robert Warren, 1961, "The Organization of Government in Metropolitan Areas: A Theoretical Inquiry", *American Political Science Review*, vol. 55, pp. 831-842.

Parks, Roger B., 1979, "Assessing the Influence of Organization on Performance: A Study of Police Services in Residential Neighborhoods", Ph.D. diss., Bloomington, Indiana University, Department of Political Science.

Parks, Roger B., 1985, "Metropolitan Structure and Systemic Performance: The Case of Police Service Delivery", in Kenneth

Hanf and Theo A.J. Toonen, *Policy Implementation in Federal and Unitary Systems*, Dordrecht, the Netherlands: Martinus Nijhoff Publishers, pp. 161-191.

Parks, Roger B., 1995, "Do We Really Want to Consolidate Urban Areas", *Polycentric Circles Newsletter, Workshop in Political Theory and Policy Analysis*, Indiana University, vol. 1, no. 2, July, pp. 7-8.

Parks, Roger B., Paula Baker, Larry Kiser, Ronald J. Oakerson, Elinor Ostrom, Vincent Ostrom, Stephen L. Percy, Martha Vandivort, Gordon P. Whitaker, and Rick Wilson, 1981, "Consumers as Coproducers of Public Services: Some Economic and Institutional Considerations", *Policy Studies Journal*, vol. 9, Summer, pp. 1,001-1,011.

Parks, Roger B. and Ronald J. Oakerson, 1989, "Metropolitan Organization and Governance: A Local Public Economy Approach", *Urban Affairs Quarterly*, vol. 25, no. 1, September, pp. 18-29.

Parks, Roger B. and Elinor Ostrom, 1981, "Complex Models of Urban Service Systems", in Terry N. Clark, *Urban Policy Analysis: Directions for Future Research*, Urban Affairs Annual Reviews, vol. 21, Beverly Hills, CA: Sage Publications, pp. 171-199.

Percy, Stephen L., 1984, "Citizen Participation in the Coproduction of Urban Services", *Urban Affairs Quarterly*, vol. 19, no. 4, June, pp. 431-446.

Percy, Stephen L. and Eric J. Scott, 1985, *Demand Processing and Performance in Public Service Agencies*, University of Alabama Press, Tuscaloosa.

President's Commission for a National Agenda for the Eighties,

1980, *Report of the Panel on the Electoral and Democratic Process*, U.S. Government Printing Office, Washington, DC.

Rogers, Bruce and C. McCurdy Lipsey, 1974, "Metropolitan Reform: Citizen Evaluations of Performance in Nashville-Davidson County, Tennessee", *Publius*, vol. 4, pp. 19-34.

Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls, 1997, "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy", *Science* vol. 277, August 15, pp. 918-924.

Savas, E. S., 1974, "Municipal Monopolies Versus Competition in Delivering Urban Services", in Willis D. Hawley and David Rogers, *Improving the Quality of Urban Management*, Beverly Hills: Sage Publications, pp. 473-500.

Savas, E. S., 1977a, "An Empirical Study of Competition in Municipal Service Delivery", *Public Administration Review*, vol. 37, pp. 717-724;

Savas, E. S., 1977b, *The Organization and Efficiency of Solid Waste Collection*, Lexington Books, Lexington, MA.

Shepsle, Kenneth, 1979, "Institutional Arrangements and Equilibrium in Multidimensional Voting Models", *American Journal of Political Science*, vol. 23, no. 1, pp. 27-59.

Sher, Jonathan P., ed., 1977. *Education in Rural America. A Reassessment of Conventional Wisdom*, Westview Press, Boulder, CO.

Sproule-Jones, Mark, 1978, "Coordination and the Management of Estuarine Water Quality", *Public Choice*, vol. 33, pp. 41-53.

Sproule-Jones, Mark, 1993, *Governments at Work: Canadian Parliamentary Federalism and Its Public Policy Effects*, University of Toronto Press, Toronto.

Stein, Robert, 1990, *Urban Alternatives: Public and Private Markets in the Provision of Local Services*, University of Pittsburgh Press, Pittsburgh, PA.

Thomson, James T., 1992, *A Framework for Analyzing Institutional Incentives in Community Forestry*, Food and Agriculture Organization of the United Nations, Forestry Department, Via delle Terme di Caracalla, Rome, Italy.

Tiebout, Charles M., 1956, "A Pure Theory of Local Expenditures", *Journal of Political Economy*, vol. 64, pp. 416-424.

Tullock, Gordon, 1965, *The Politics of Bureaucracy*, Public Affairs Press, Washington, DC.

Whitaker, Gordon P., 1980, "Coproduction: Citizen Participation in Service Delivery", *Public Administration Review*, vol. 40, no. 3, May-June, pp. 240-246.

Williamson, Oliver E., 1967, "Hierarchical Control and Optimum Firm Size", *Journal of Political Economy*, vol. 75, no. 2, April, pp. 123-138.

PANEL DISCUSSION

Professor Michael Nelson

Thank you Professor Ostrom. And now, on to our panel discussion. In a moment, I will introduce the first of the three distinguished economists who will be commenting on Professor Ostrom's talk, but we may as well get one thing straight from the start. You see there's a rule which I am bound to follow that the introduction of a speaker should be briefer than the remarks of the speaker. By that rule, I can assure you that Professors Arrow, Schelling, and Sen, each of whom is a towering figure in the economics profession, will be inadequately introduced. After we've heard from our panel, Professor Ostrom will have an opportunity to respond and at that point, the floor will be open to a few of your questions. If, when that time comes, you have a question, please raise your hand, and if I am able to call upon you, go to one of the microphones, one at the front of the center aisle and one toward the back of the center aisle, to ask your question so that all may hear.

My first inadequate introduction is of Kenneth J. Arrow. Professor Arrow is a New Yorker by birth and education — B.A., City College, M.A. and Ph.D., Columbia University. But he has spent the greater part of his academic career at Stanford University with stops along the way at places like Harvard, Chicago, MIT, and Cambridge. He is perhaps best known for his impossibility theorem which asks the question: Supposing all individuals can rank all the states of the world in order of preference, is it possible to find a voting rule that will always select one of these states as the most preferred? Having asked that question, Professor Arrow answered it with a clear and, despite the subsequent efforts of many fellow scholars, irrefutable no. Political scientists who try to interpret elections, like me, have been tied in knots ever since. In recognition of this discovery, of his subse-

quent work in welfare economics and of his path-breaking theory of risk, Professor Arrow was awarded the Nobel Memorial Prize in Economic Science in 1972.

Professor Kenneth Arrow

Professor Ostrom, Professor Nelson, Ladies and Gentlemen. We've been asked to talk very briefly, so I suppose I'm allowed to talk a small multiple of the time I've been introduced. I think the paper for today is an extraordinary new viewpoint. Of course, it's been reflected in Professor Ostrom's earlier work, but it's new to the rest of us. It's the idea that there is a system of public authorities which meet many demands on the public sector and that the economic and political conditions for producing them vary from one to the other. As a result, just as in industry, we're not surprised to find a great variety of production forms in which some industries are dominated by small firms, others by large firms. Large firms themselves may have different kinds of structures in different industries. There are industries in which small firms and large firms co-exist very well, others in which the tendency is very much toward one or the other extreme. We don't expect to have a neat map of the industrial structure. Indeed, one of the problems with attempts at socialist organization was that, apart from many other defects, the planners found it easier to cope with uniform kinds of structures, which may have fit some sectors of the economy much better than they fit others.

There are two aspects to this. One is the fact of multiplicity of levels where demands of the particular neighborhood for public goods can vary for reasons such as income. The other, you have questions of efficient production as such as we find in an industry. Professor Ostrom and her collaborators have emphasized that, even if one could separate production conditions from collective consumption decisions, in this case by having producers who are larger or smaller than the units which they supply to, some aspects are going to be done "in-house," so to speak, and it is

there that scale economies play a role. Another aspect that comes in is the fact that not only is there multiplicity, but the institutions and appropriate institutional sizes and scopes interact. One can have relationships among these, for example, the provision of the intermediate services in the police. I think these are extremely important insights into the design of governmental structure and possibly have applications at even higher levels, for example, at the questions of the formation of international institutions, where again institutions of different scopes may be appropriate.

A few questions Professor Ostrom might want to think about occur to me. One of the questions that you raised was the responsiveness of institutions, and you emphasized that when there's a heterogeneity of tastes, there are problems in forming a consensus and that breaking down into smaller units, leads to greater homogeneity. But you also emphasize the role of personal contact, that when officials are in face-to-face contact with individuals, then they can get a better sense of what the community needs and greater efficiency in the provision of goods. One wonders at what scale responsiveness ceases to become valid. One would assume that face-to-face contact begins to lose its possibilities at probably very small levels, fairly small in the modern world. It wouldn't have been small in the middle ages, but a city of a hundred thousand is fairly big, and there are lots of cities of a hundred thousand in the United States. There is already presumably a loss of the direct contact, except, of course, with the most influential members of the community. So the question is, at what point does the responsiveness question cease to play a role? When you get beyond a certain point bigger and smaller don't really have anything to do with responsiveness.

The second question I have is based on your saying that the relevance of complexity may impose some limitations. We find, and I believe this is a general fact, that participation in local elections is almost universally lower than that of state or presidential elections, state elections less than presidential. This happens even though you might say from a rational choice point of

view that your vote counts more the smaller the electoral context. In the national election, I'm only one vote in sixty million or so. I'm less likely to have an effect nationally than in the city of Palo Alto (I don't live there, but it's my neighboring city) which has maybe twenty-five or thirty thousand voters. I presume that there's a higher chance in Palo Alto of being a pivotal voter. The chance also increases that I could have an effect, through not only the formal act of voting, but trying to influence others through political discussions. And yet, as I understand it, the participation in these local elections is considerably lower. Also, for example, if you ask people who the president of the United States is, a very large number of people will know the answer. Ask who the mayor of your city is and you'll find a much lower fraction are able to answer it.

I would suggest that the question of locality is somewhat of a paradox. It's possible, therefore, that the more complex the structure, the harder it is to concentrate. A California ballot is a very formidable kind of thing. It's a huge book with something to the order of one hundred and fifty items to be voted on. This includes, of course, propositions, referenda, as well as offices, but we have national offices, state offices, county offices, city offices. In addition, there's the water district, the transportation district, and all the propositions. The truth is, though I consider myself somewhat of an average informed citizen, I scurry around at the last minute to determine what do I think of x versus y for the position of county assessor. I have never heard of either one of them. I couldn't really name the Board of Supervisors in my county; around election time I could, but I don't remember it now. And so this raises the question of the sensitivity of local government to the local conditions. The fact is that individuals have scarce abilities of transacting information. They appear to choose more through the process of national information than local.

Finally, to cite one example of decentralization, in the late sixties or early seventies, I don't remember exactly when, New York City decided to decentralize its education system. The local

school districts were given very considerable powers, not, of course, as decisive as the central authority, but still very considerable powers. I think the general perception is that this has brought the introduction of a great deal of corruption, such as local machines, preservation of jobs, and the like. The general picture I get from the newspapers is that this has been a big obstacle to education reform. Perhaps Professor Ostrom would like to comment on that example. Thank you.

Professor Michael Nelson

When you look up political economy in the dictionary it says something like the following: “economics in the policy making process.” Right next to that definition is a picture of Thomas C. Schelling — or at least there ought to be. Born in Oakland, California, educated at the University of California at Berkeley and Harvard, Professor Schelling is a much-published Professor Emeritus of political economy at Harvard and a Distinguished University Professor at the University of Maryland. At various times, he has served in the White House and has been a consultant to the Departments of State and Defense, among others. Bargaining and conflict resolution have been his main theoretical interests and he has applied his understanding of them to matters as diverse as foreign aid, arms control, military strategy, crime, terrorism, race relations, climate change, and business ethics. In 1977, Professor Schelling won the Seidman Award and said something so gracious upon receiving it that I hope you will forgive me for reading it to you. “Let’s keep in mind,” Professor Schelling said on that occasion, “the one we’re honoring today. I’m receiving the Award because somebody loved Frank Seidman, respected and admired him and wanted to preserve his memory. And it’s part of my purpose to do the best that I can to make this memorial occasion one that you will remember until the next recipient comes next year to do honor to the Seidman family.”

Professor Thomas Schelling

I had lunch with a colleague on Monday and told him I was coming to Rhodes College for this ceremony. He asked me who the recipient was to be this year and I said Elinor Ostrom. He said, "Oh, I am studying her right now." I don't know what he was reading; as Professor Nelson told you, it could have been one of a hundred things that he was studying, but I said, "You find it interesting, don't you?" And he said, "More than that, I need her." And I asked, "What do you mean you need her?" He said, "Well, my family owns a small property bordering a lake in Maine and there are about eighteen of us who own properties surrounding the lake. We have a lot of needs and a lot of problems and no government and no market." I said, "How do you handle that?" He said, "We talk. And pretty soon we find how to meet our needs and how to solve our problems."

I said, "All the problems?" He said, "Not yet. One of these properties is a horse farm, and when it rains severely the runoff from the horse farm takes pollutants into the lake. That's our worst problem." I asked if they were making any progress? He said, "Yes, we're making progress. We're talking."

I don't know how many of you noticed, but last June was the fiftieth anniversary of a commencement address by Secretary of State George Marshall at Harvard University in which he invited the countries of Western Europe — actually Western and Central Europe, only Western Europe responded — to come up with a plan to receive financial help from the United States to recover from the damage and deterioration and neglect that the war had left in their economies. An interesting process developed. The United States in 1948-49 put up four or four-and-a-half billion dollars, but the European national recipients would have to divide it among themselves before they could have it.

The question was, how would they ever agree on dividing that amount of aid among countries, some of which were as well to do as Denmark and some of which were as poor as Greece, with dif-

ferent kinds of government, different standards of living, different degrees of wartime damage, different pre-war living levels and so forth? The question was, how were they to do it?

They engaged in something for which I coined a name, namely multilateral reciprocal scrutiny. Each national government had to put together a plan. Now, this was back in the days when national income accounting was brand new, right after the war, but they all had to fill out these newfangled things known as national accounts. They had to indicate what they were doing about consumption, what they were doing about private investment, what they were doing about government investment, where their investment was going, what they were doing by way of food rationing, gasoline rationing, whatever it might have been. All so that the bottom line would be a claim by these countries on some of the four billion dollars with which to finance those imports that had to be paid for in dollars.

What they did was argue. They argued for several months, and every country had to make available to every other country all of its detailed plans. When they were inconsistent, such as what Denmark planned to import from France didn't correspond with what France thought it was going to export to Denmark, they had to find a way to reconcile the differences and so forth. The time became close to when they were going to have to reach a final decision and, in the end, I have to admit, they didn't quite make it. They didn't quite agree purely on the basis of talking.

But they came close enough that they were able to agree on a team of two persons, trusted people, who were designated the arbitration team, and those two people did arrive at a decision with which every recipient country appeared to be reasonably content.

So I call it multilateral reciprocal scrutiny. They had no market, no government; it was simply to put themselves in the position of agreeing how to divide it. If they didn't agree, they couldn't have it. They managed to find a way to divide it.

In a couple of months, about one hundred and fifty nations

will be represented by thousands of representatives in the city of Kyoto, Japan, and they're going to talk about how they might divide up something that could be as valuable, as precious, as important in magnitude, as the Marshall Plan was. Namely, their emissions of carbon dioxide as a result of burning fossil fuel. They will probably talk about how to divide up reductions from current levels; but whether you're talking about reductions to some level, or how much is allowed, is pretty much the same thing.

There are people, like my colleague Kenneth Arrow and two thousand other economists, who are hoping that a market can be established. I am very skeptical it will be. I have a hunch that about the only thing that may work will be something like the multilateral reciprocal scrutiny that the Marshall Plan countries engaged in. I think eventually it may be that countries will have to face criticism over what they're doing, submit their plans for scrutiny, answer critics, both at home and abroad, and maybe out of it will come, ultimately, some kind of agreement.

But, at least, the Marshall Plan is the only historical precedent I've thought of for what nations are going to be trying to do for the next many years with respect to their carbon dioxide emissions. Elinor Ostrom is about the only theorist who has really shed light on the importance of these processes and how they may work. Thank you.

Professor Michael Nelson

Amartya Sen is an Indian both by birth and by citizenship. Educated at Presidency College in Calcutta — which in terms of excellence is Rhodes, Williams, and Amherst all rolled into one — and at Trinity College, Cambridge University, Professor Sen has taught over the years at Cambridge, Oxford, the London School of Economics, and Harvard, among other universities. In January he will leave Harvard, where he serves as both the Lamont University Professor and as a professor of economics and philosophy, to become Master of Trinity College, Cambridge. The

Trinity appointment came from Queen Elizabeth, one of the few uncontroversial decisions she has recently made. Along the way, Professor Sen has published twenty books as well as articles beyond counting. Eleven years ago he stood before you as the 1986 recipient of the Seidman Award. Here's what the economist Robert Solow said about Professor Sen on that occasion: "Economics has a thousand ways to talk about efficiency and none to talk about equity. Amartya Sen's influence is a strong counterweight in the opposite direction."

Professor Amartya Sen

Professor Ostrom, Professor Nelson, and friends. I am really privileged and delighted to be here on this lovely occasion. I would first like to thank Professor Nelson for his kind remarks.

I have been a long-time admirer of Elinor Ostrom's works, and it is wonderful to be able actually to hear her presenting and developing ideas which have fascinated us for quite a while. Her theories, on which she worked with her husband (Vincent Ostrom who is also here) and others, has had a major impact on thinking in the social sciences. The impact should be, I believe, even more in the particular field of economics, since the departures she proposes can make the subject significantly more engaging, for reasons that my predecessors — Professor Arrow and Schelling — have already discussed.

To supplement what they have said, I thought I should make a couple of brief comments related to her presentation, but also providing historical parallels. Elinor Ostrom began with contrasting Adam Smith's market-oriented views and the writings of Thomas Hobbes. I am going to take that as my point of departure. My point is not so much that Elinor Ostrom has spoken only about one side of Smith's work (this, I think, is also true), but that Ostrom's work is closely related to some of the basic concerns that Adam Smith, the father of modern economics, had. Ostrom and Smith would make quite a good team.

It is certainly the case that Smith was a great defender of the market mechanism — and perhaps the most original and powerful theorist showing how the markets worked. But it is also important to note, particularly in the context of Professor Ostrom's more skeptical work, that Smith too was quite a diverse thinker. He was both an advocate of the market and deeply skeptical of its reach — skeptical precisely for some reasons that relate closely to Ostrom's own forceful work.

Unlike some of his contemporaries, Smith saw the need to regulate the working of the market to overcome its limitations. One of the most interesting debates on the folly of unrestricted market mechanism involved Adam Smith and Jeremy Bentham — two stalwarts of late eighteenth century thought. The subject was usury and the case for and against anti-usury legislation that prohibited the charging of excessive interest rates. Smith was in favor of such legislation; Bentham was against it, on grounds that an unrestricted market mechanism could deal with this matter much better. In an intense "letter to Dr. Smith" (written in March 1787), Bentham made a great attempt to explain to Adam Smith why he was wrong to be so distrusting of the market mechanism. Bentham had hoped that Smith would revise his Wealth of Nations, taking note of Bentham's reasoning and, after visiting Smith in Scotland, expressed some confidence that he had convinced Smith on this. Unfortunately, for Bentham, there is no evidence that he had, and the Wealth of Nations was not revised in any way to take note of Bentham's counter-argument.

Why did Smith distrust the market in matters related to usury? Smith was concerned that people who can borrow money at extraordinarily high rates of interest were often guided by exaggerated expectations of a kind that would be difficult to vindicate and sustain. There are, Smith argued, "projectors" and "speculators" who are misguided themselves and "spread" misinformation through their behavior. They may not only create some chaos for themselves, in the long run, but they may influence others' beliefs in a misguided direction — thereby spreading not knowl-

edge, but lack of knowledge. This particular subject — and the related phenomenon of “herd behavior” — have remained fruitful fields of contemporary economic research (see, for example, Abhijit Banerjee, “A Simple Model of Herd Behavior” in the Quarterly Journal of Economics, 1992). Smith’s skepticism in this case illustrates how he was most disinclined to take the virtues of the market mechanism for granted, and the very economist who taught the world how the market works and why it achieves as much as it does, also wanted economists to view the market mechanism — and indeed all institutions — in a suitably critical way.

Professor Ostrom’s works bring out, among many other things, the need for institutions other than markets. Smith’s own position was very similar to this. He did put great emphasis on showing the achievements of the market mechanism, because the virtues of the market were relatively little conceded at that time. In practice, markets were thwarted by a whole lot of traditional controls. Smith focused on the logic of the market mechanism as a corrective that was badly needed in the world that he saw around him. His opposition to overbearing control applied to other institutions as well. For example, Smith was critical of the formulation of the Poor Laws in Britain, which supported the indigent, but not on the ground that such support was a bad thing (which, incidentally, was the position Malthus took), but on the ground that the Poor Laws imposed too much restriction on the choices that the poor had. In particular, since the Poor Laws were locally administered, Smith was concerned that the poor lost their protection as they moved from one region to another, and thus the working of the Poor Laws interfered with labor mobility in search of new jobs and new economic opportunities.

This particular issue, by the way, is rather relevant to contemporary social welfare legislation in this country. Now that there are general shifts in the administration of benefits from Federal to State levels, the same issue of barriers imposed by local variations (discussed by Smith in the context of the Poor Laws) is potentially a problem here too. The movements of the potential benefit

recipients between the States may be guided by the local nature of the social support (varying from State to State), and this can artificially influence labor mobility away from the search for jobs and economic opportunities.

Smith was also very concerned, as is Elinor Ostrom, with different motivations that influence our behavior. There is a common misinterpretation of Smith in attributing to him the belief that self-interest was the only motive that moved people and that this motive was adequate enough to deal with all problems of economic performance. This was never Smith's view. He did think that self-interest gave us enough incentive to seek exchange; this is illustrated by the example he presented, which is so often quoted now, that the butcher, the baker, the brewer and the consumer, all have self-interested reasons to seek exchange. But he also discussed the need for institutions and behavior modes that sustain gainful exchange, with mutual trust and low cost of transaction. He also discussed activities other than exchange, such as production and distribution. He also considered the need for public expenditure in producing enough public goods, including a literate and educated population with vast mutual benefits. He was very conscious of the fact that there are many things that a society and the economy need which are not bought and sold in the market in the standard course of events, and the issue as to where to go from this recognition engaged Smith a great deal. Adam Smith would have been very interested in the institutional and motivational enlightenment that Elinor Ostrom's works provide.

Finally, I should also mention that Smith would have been very sympathetic to what Tom Schelling said on the importance of public discussion. Indeed, the need for public discussion is quite central to Smith's general social beliefs, and in this respect, he was very much a product of — and an important part of — eighteenth century “enlightenment” which had so engaged French and Scottish intellectuals at that time. This is a subject also on which there are clear connections between Smith's and

Ostrom's works.

Professor Michael Nelson

Professor Ostrom will now respond to these comments.

Professor Elinor Ostrom

I agree with most of the very complimentary things said. Some of these ideas I can hardly challenge. I will address some of the questions that Ken Arrow has asked. I think they're quite important. The first one had to do with responsiveness and whether one could have a responsive government at a population level of one hundred thousand, two hundred thousand, or five hundred thousand. My sense is that this is difficult. Thus, one does need to find ways of having institutions that represent twenty thousand, thirty thousand, forty thousand, even fifty thousand rather than one hundred thousand as base. At the same time, these smaller base units need to be embedded in a system that may eventually deal with six million or eight million people. We will be seeing metropolitan areas of such size. But somewhere there has to be a base, because voting isn't very effective and voting turnout is not high for local elections. When there are major issues, people really do feel that they can come out to public meetings, that they can have discussions with one another, and that such a meeting is a meaningful event. The base isn't going to be THE meaningful unit for solving all problems. If there isn't a smaller unit, there are many smaller problems that are very difficult to solve. So a federal system in a metropolitan area is as important as a federal system in a very large country.

Let's turn to the New York example because I think it is a problem of misunderstanding the design. That was a decentralization system and basically one had O.P.M. involved. O.P.M. = other people's money. It's addictive — especially when you have a very large district and then you have a local district that does not have to raise its own taxes. It's dealing with other people's money

and there's not much rigor in such a system.

This is what happens with a lot of tragic problems in developing countries where the national budgets are forty percent or more from donors and local government gets ninety to ninety-five percent of its very limited money from the center.

Corruption can be a very substantial problem. Local voters don't feel as though they can go down and pound on the desk and say "It's my taxes." Yes, it's my taxes in a very long- distanced way, and I want the personal services, I want the jobs, etc., in my neighborhood. But if it's your own taxes, you have a different set of relationships than when you have a decentralized system that is funneling money down that doesn't appear to be your own.

The problem of complexity is very difficult. I stressed in my presentation that it was neither good nor bad. The problem is, how do we keep information sources related to the problems at hand? We have had an evolution of the media, which means the evening news is something most of us watch, but it is pretty much focused on national and international news. One may get five minutes of local news, but that's still for the metropolitan area as a whole. I think this change in media coverage also leads to problems of turnout because there is little T.V. news specifically related to local elections.

I think there are other mechanisms of a fragmented metropolitan area that increase information. I think we have the beginning of some new methods of communication that may open up possibilities that did not exist in the last thirty years and I speak here of the Internet. My little local town, it has only fifty thousand, now has a web site and that web site is quite active. It is brought up to date. There's a current budget and all sorts of information so that citizens who want to know about what's happening — when the next city council meeting is, when the zoning commission meets, agendas, etc., etc. — can check it out. Many communities now have local web sites. I don't think that technology will solve problems, but it will provide a way of packaging relevant information for smaller groups where other current media pack-

age it for six million people rather than forty or fifty thousand.

I think we have such distinguished panelists that we should go to a full panel and get questions from the audience.

Professor Michael Nelson

The floor is now open, and again, if any of you have a question and I call upon you, please come to one of these microphones so that all may hear.

Audience Question

I don't know if you're familiar with our local government situation in Memphis, but we have a city government and a county government and Memphis dually elects representatives to the county government. I'm amazed that our representatives of Memphis vote for the benefits of the county without giving the people of Memphis, for example, new parks. It just seems to be really interesting that, if you call them on it, it's like for some reason they need to be going with the county. I don't think it's necessarily a black-white thing, but most of the population, at least half, is black, but I'm just appalled at the lack of, for example, the lack of downtown parks. There's no place downtown to play soccer, play baseball, play football, but we're building new parks in the county and our Memphis representatives are voting in favor of them. So I'd just like you to comment in terms of your perspective on voting and what to do about it.

Professor Elinor Ostrom

Not knowing the local circumstances I'd be very hesitant to comment. What I do find is that various local issues are indeed complex. I'll draw on some analytical thinking. Those of us who are political scientists study logrolling, and have learned that sometimes you can't examine a vote on a particular issue apart from the other issues that may be involved. If I were to try to dig in, I would

try to understand how a vote might have occurred. People in a legislature sometimes say, "Well, if you'll vote for me in the issues I think are important, I'll vote for the issues that you think are important." And you have to understand it as a complex combination and in order to answer that question you'd really have to look at vote trading and see if that's part of what's going on.

Audience Question

Can I ask a similar question in a slightly different context. In your study of police forces the implication was that by increasing the number of police forces you could increase the number of police officers on the street with a smaller force. That having multiple providers of that public service within the metropolitan area increased efficiency in some measure. Could you comment on the equity issue, the distribution of the service within a metropolitan area? Is that improved or worsened or unchanged?

Professor Elinor Ostrom

I can't comment for Memphis obviously, but I've written three or four analyses of equity issues and I happen to think they're crucial. We have a statistical artifact that makes those questions very difficult to sort out. And by that I mean all statistics for metropolitan areas give you means, and the mean for the city of Memphis or the city of St. Louis, which is an extremely large area, averages all that variation within these large areas into one number. For the suburban communities in a metropolitan area, you take all the diversity and, since those are aggregated in smaller units, each of those means has less variance. And so it always looks like there's more inequity because of the way the numbers are presented. You see that one place has more taxing and one place has more officials, one place has more schools, etc. But that has averaged out for the very large units. All of those disparities that exist inside a center city are averaged so it has only one

number. Thus, even to address equity you have to break up the center city analytically into sub-units and start looking at what is the service delivery at the sub-unit level. How fast do the police come in to all of the different kinds of neighborhoods inside a center city? One needs to compare the variance within the center city to the variance in the suburbs. When you do that kind of analysis, I have not found a large center city with a lot of different kinds of neighborhoods that did not have as much variance in its services to the citizens inside that city as was represented among the suburban jurisdictions in the same metropolitan area. So, some neighborhoods inside large cities get excellent service and some neighborhoods don't. If you look at the number of officers on the street in different districts, it's not even. If you look at other services, they are not distributed in an even manner across a very large jurisdiction. But it takes a lot of digging to really get into that. Our surface ways of aggregating many of these data make it look like it's all the same when there is an immense amount of variation.

Audience Question

My question also indirectly deals with the situation here in Memphis. Is there a line at some point where municipalities become so small and so fragmented within a general center city where governance and inter-governmental cooperation become unfeasible? You've presented a very persuasive argument that smaller cities are able to govern more effectively, but cannot that come into clash with the interests of a greater community.

Professor Elinor Ostrom

Yes, there are scale questions in terms of this. If you have a metropolitan council and all the jurisdictions are represented in it, and there are five hundred as opposed to sixty or eighty or a hundred, you have a scale problem there. How many different people have to be at the table to address metropolitan issues? I

don't want to hold up the St. Louis metropolitan area as having no problems. Obviously it has major problems, but it does have ninety-six jurisdictions besides the city. I'm now staying within the state and not crossing over to East St. Louis, because when you have state lines we have quite different situations. There are with ninety-six municipalities and a number of very effective metropolitan-wide institutions that have been able to evolve. And so, staying with something like eighty to a hundred units in a metropolitan area, at least, we've seen the feasibility of it.

Now, a great deal of that depends on imagination, on the willingness to work together, and on the entrepreneurship. I have seen immense antagonism between patrol and detective bureaus within very large police departments. This is inside an agency. You would hope that doesn't happen, but I've seen it. Many of us who have worked in large enterprises have seen it, where one bureau hates another one. I've also seen cities that hate their neighbors and don't work with them.

So simply creating an opportunity to be represented in a small unit does not guarantee that everyone will work wonderfully together. On the other hand, trying to cope with some of these multi-lateral budgeting problems is extremely tricky. We know from the game theory that's a particularly powerful set of incentives, with lots of problems with it. So you've got a complex trade-off. You need enough of the small units to get the face-to-face representation in the neighborhood, but if you get too many units for the metropolitan area you have escalated the problem of solving cross-jurisdictional problems. I think you have a very wise observation.

Audience Question

You've moved away from the question I was going to ask, having to do with the size of the unit. In our area we have a city school system and a county school system. There are about one hundred thousand in the city system and about forty thousand in

the county system. The city system has eight or nine hundred administration people, the county system has less than a hundred administration people. The county system has a much lower cost per pupil than the city system and an ACT score, or whatever they use as a college entrance score, equal to the average of the state or better, whereas the city system average is much lower. I think the majority, at least, of the people in this room probably got their pre-college education in a very small system that was locally controlled and supplied with local taxes only and I think that, in most cases, they got a very adequate education. So it seems to me that if you have to look at the size of an institution in terms of efficiency, we might find that we definitely can get too big and perhaps not too small when it comes to school systems. I guess that the thing that troubles me the most is when you look at the variation in efficiency it seems to be related to size. Is that really size or is it because the larger system lends itself to a bureaucracy-type of organization and the loss of efficiency that comes with that?

Professor Elinor Ostrom

I think you have put your finger on some important issues. There is never one single factor. Size is always a particularly tricky variable because many things change as soon as you scale something up and other things tend to change with a change in scale. Your pointing to the size of the administrative staff is very much the foundation for the finding regarding the number of officers out on the street that is based on data from the eighty metropolitan areas. The proportion of a police department that is devoted to administration is positively related to the size of the department. I assume that there are many more administrative layers in the larger school, from the data that you're giving us.

On the other hand, we can't look at either education or policing and simply look at the school in terms of how do kids get good scores and how do you achieve equitable and efficient deliv-

ery of services. We have to be looking at a complex of other variables, but I think you've raised some very interesting questions.

Audience Question

This is a question relating to the provision of education. I'm trying to expand or continue with the New York City example. If I think of a situation where a big city decentralized the provision of education, I can also stop worrying about a situation where, because of the inequalities of the distribution of income, the districts, or the local areas which are in the inner city, are not able to buy a good quality of education while the suburbs are able. That leads to all sorts of social problems even though you are breaking up a city into local neighborhoods which have homogeneous preferences within themselves.

Professor Elinor Ostrom

There is no empirical evidence that quality of education is positively related to cost of education. At the time that the number of school districts were consolidated in our country, we started with about a hundred and twenty thousand in 1910. There was a major movement to consolidate based on the monocentric theory that there were economies of scale and that you needed larger units for financing. We reduced the number from a hundred and twenty thousand to about fifteen thousand between 1910 and 1950. Part of our early interest in doing the work on policing was at the point when we got started, which was in the early 1970s, the recommendation was made to go from forty thousand police departments to four hundred. There was no research that supported that, just as there was no research on the earlier educational reform. It was a belief system, it was obvious that we would be better off. There are now a variety of other fine economists who have done some excellent studies. Hanushek has an article called "Throwing Money at Schools" where he shows clearly that simple relationships between the amount spent and performance

do not exist. Now, that doesn't mean that money doesn't make any difference. But concentrating on "can people buy the best" is, I think, not necessarily the right way to concentrate. The question is, can people who are poor and may have family situations that need even more understanding and appropriate education, can they find ways of really being active co-producers, solving problems, getting motivated, getting organized, getting daycare, doing all the things that are needed that really meet the needs of inner cities. Some of these services they can pay for, but redistribution needs to be from a quite large unit. There are ways of getting a local formula for some aspects of redistribution. Then the question is: does it go to the school district or does it go to the family as a voucher? There are huge debates about this. There is lots of evidence back and forth. I think people see vouchers as a panacea and that voucher systems are the only way. In my opinion, vouchers have to be part of a panoply of institutional arrangements that we think about. Vouchers are a way of solving redistribution that give families more voice as to where their children are going to go. I would hate to see all education done on voucher systems as our only technique of solving problems, but it is one of the techniques that can be thought about as solving some of the problems of equity in the educational sector.

Audience Question

I'd like to return to the issue of voter participation, except that wisdom these days seems to work on the assumption that the more people that vote and the more you extend suffrage, the better outcome you're going to have. I don't know how we define that better. I know there are some states now that don't accept voter registration cards as proof of citizenship and there are stories of voter buying. But we have a situation where you have two groups of people. When you have a large transfer government and part of these contribute to the revenue of the government and another part receive that revenue, there's going to be a situation

where the people are going to vote differently, I think. The two lambs and the sheep voting on what they have for dinner, for instance. I wonder if Professor Arrow, especially, knows of any studies that are being done right now on universal suffrage, which is assumed to be the best. They say “Boy, not that many people voted.” Maybe it’s a good thing that not that many people voted sometimes, because then you get the people that really have a stake in that, are interested, like in off-year elections for instance.

Professor Michael Nelson

Let me invite all the panelists to chime in on this one.

Professor Kenneth Arrow

I’m afraid that I’m not acquainted with the research in this area or even if there is any. I don’t believe in compulsory voting, which some countries have. If a person really doesn’t want to vote, I agree with the general principle that it’s probably a good idea that person not vote. If a person is either quite indifferent and then forced to vote rather arbitrarily or if he or she is less informed, why force him or her to vote on his or her lack of information. The point I was making about not voting was the symptom that this reflects. I was not trying to say that more voting is better, but why would you expect people to vote less in a local election than in a national election? Professor Ostrom might know the literature on this as to why people don’t vote, but one obvious possibility is that they’re just less informed about it and they do not have any strong opinions because they haven’t bothered to look into it. It’s interesting why in a local election there is often a low turnout. Maybe it’s because the stakes are less important to them, though you wouldn’t think so because a lot of the local issues are extremely important to schools, roads, police care, and so you wonder why the local elections don’t attract voters. I don’t have a very good answer. It’s certainly not forcing people to vote, it seems rather that the lack of voting is a symptom

of the fact that local districts are not giving any information to the people.

Professor Thomas Schelling

I was contemplating whether to remain silent and to be thought ignorant or open my mouth and remove all doubt. I was going to say that I think one reason people vote in national elections, especially presidential elections, is that it's very, very easy to dislike at least one candidate.

Professor Amartya Sen

There are two distinct issues here. One is why people vote, on which Tom Schelling has just commented. Given the low chance of affecting an electoral outcome (defined in terms of who is elected), the disliking of one candidate may not give any more reason for voting than liking other candidates. But if participation in an activity of the community is taken to be important in itself, then outcome (more broadly defined) is not only who won, but whether one had participated in that person's election (or in a disliked person's non-election). Thus participation is itself a motivation for voting.

The questioner was concerned, however, with a different issue — a second issue of relevance of voting and non-voting. Why do we take a high turn-out to be a good thing? Isn't it better that only those who feel strongly should actually vote? The outcome then depends chiefly on the choices of "people that really have a stake," as the questioner puts it. That point is well taken, but I guess the worry comes from the fact that different groups have systematically different voting behavior, which can override what they have in stake. For example, the very low turn-out of African-Americans relates not so much to any immunity that their interests have from public policy variations, but to a kind of skepticism of mainstream politics which can be changed only through greater participation. The systematic differences between

the different racial groups raise interesting social questions about how electoral politics is perceived, how much faith or cynicism the different racial groups have about governmental functions — central and local. The perceptual issues are, thus, quite central to voting and non-voting, and it is not just a matter of having or not having an interest “in stake.”

Professor Ostrom

This is something that, if we were just starting, we could now have a good hour’s worth of discussion. Given the lateness of hour, we won’t. I think one of the crucial things is to expand our image of citizen participation. Voting is a very important part of participation, but being able to call on the telephone and get a reasonable answer, to go to local meetings, and to do a variety of things beyond voting is also an important part of participation. In our own studies, where we looked at a wide variety of participatory acts in which citizens could engage, we did find a positive correlation between small- to medium-sized and very large size.

Professor Michael Nelson

On behalf of the panel, let me thank you for coming. Please join me in thanking Professors Ostrom, Sen, Schelling, and Arrow for being with us today.

PRESENTATION OF AWARD

September 27, 1997

by

KENNETH J. ARROW

1972 Nobel Laureate in Economics

Professor of Economics, Stanford University

Member of Award Selection Committee

Professor Ostrom, Chancellor Harlow, Ladies and Gentlemen. I quote from the Objective of the Frank E. Seidman Distinguished Award in Political Economy. "The Seidman Award recognizes distinguished contributions to Political Economy by ... social scientists who ... have demonstrated their dedication to improving human conditions. The Award seeks to honor scholars who have advanced general understanding of the roles of democratic well-being and social welfare." It has been awarded since 1974, to a long list of those who have distinguished themselves by the originality of their analyses of the process of policy choice. Today, we wish to honor *Elinor Ostrom*, by adding her name to the list of honorees. By so doing, we are also adding to the luster of the Award.

Lin Ostrom is indeed one of the innovators in the study of the public economy. In one form or another, research in the field goes back to Thomas Hobbes' mid-17th century picture of the state in the book called *Leviathan*. Man without society, so says Hobbes, is doomed to poverty and conflict. Men and women therefore surrender their freedom to an all-powerful state in order to protect themselves from the horrors of the state of nature. Of course, both the stark horror of the state of nature and the need for an omnipotent sovereign have been greatly modified by later thinkers. In particular, the role of the market in achieving a domain of unforced mutual benefit has been increasingly recognized, most notably and persuasively by Adam Smith a hundred

years after Hobbes. On the other hand, the state need not be the possessor of unlimited powers. The social contract to create the state envisaged by Hobbes could be interpreted as demonstrating the primacy of the citizens over the state and therefore a basis for democratic control, as in eighteenth century writers like John Locke and Jean-Jacques Rousseau. The citizens could demand a sheltered area against state power.

In much attenuated form, the Hobbesian picture has been adopted by a group of what is called welfare economists, a branch of economics which concerns itself with applying economic theory to the formation of public policy. The market handles efficiently a great many problems of resource allocation, but it does not handle all. In recent years, the failures have been identified by such colorful figures of speech as, "prisoner's dilemma," or, "tragedy of the commons." These are situations in which what is in everyone's interest, or at least in most people's interest, is not in any one individual's interest. To take two topics which have been the subject of Professor Ostrom's research, police and the use of common property resources are both activities for which the market, even under the most special assumptions, does not handle optimally. In both cases, there are benefits which the individual actor does not capture and therefore will not spend enough resources for.

Common property resources are those to which a considerable number of individuals have free access. They are scarce, but the market imposes no charge for their use. A classic example is fishing. The fish are scarce; what is taken by one fisherman is not available to others. But the oceans are not private property; anyone with the equipment can fish in them. There will be overfishing and a reduction in the supply of fish. Similar is the use of underground water for irrigating crops. Underground water flows, it does not stay put, so that any one farmer can, in effect, use the water initially lying beneath the properties of others without charge.

The biologist Garrett Hardin used the inefficient utilization of

common property as a simile under the title, “the tragedy of the commons.” (Actually his specific target was population increase and for this purpose I think the simile is extremely misleading. So I don’t want to endorse the critical usage that has been made of this concept.) Specifically, he targeted the medieval custom of grazing cattle on common land. It did not occur to him to ask why commons lasted for many centuries. According to his view this would be an obvious disaster, and why the commons only disappeared when landlords, asserting a more modern concept of property, took over the common lands for their own use.

The market did not function in these commons; nor did Hobbes’ dread Sovereign intervene to set things right. Even the modest remedies that welfare economists talk about, taxes or transferable licenses, were absent. Lin Ostrom and her collaborators have brought new insights by careful observation combined with good theory. Institutions and rules will develop, not always, but will frequently develop, to curb obvious inefficiencies. Perhaps these can be thought of as small-scale social contracts, but they are certainly not the surrender of authority to an all-powerful sovereign. Rather they are limited grants of authority for specific purposes. They appear in the control of fishing and of water usage and many other examples of common property.

What is new here, in the work of Professor Ostrom, is the perception of a whole system of interacting public agencies, not the unique control by one. Public authority is seen as a plural system, not a singular one. Of course, local governments of all sorts have been with us for a long time, but it was easy to think of them as creatures of the larger State. Not so, in Professor Ostrom’s system. They appear instead as spontaneous creations of order, which indeed have to be integrated with other agencies of public control, at the same or at different levels.

This has led Professor Ostrom to the still broader view of the mutual adjustment of public authorities. Just as firms in the market, public authorities are competitors and also cooperators. Economic considerations, such as economies of scale, are highly

relevant to the allocation of responsibility. The Federal system in the United States has indeed remained relatively fixed in legal form over two centuries. But in fact the allocation between the responsibilities of the Federal government and of the states has shifted radically and is still shifting under the impact of changed conditions as well as changed ideals. The structure of local government has been much more variable, even in form, and it is on this subject that Lin Ostrom and her collaborators have done so much creative work.

What Professor Ostrom has introduced to us, then, transcends both political science and economics, while unifying them. The range of political solutions to market failures is far greater than the simple ideas of neo-Hobbesian welfare economics. There is not just a single level, but a whole system of more general kinds of property rights, adjudicated at a whole variety of levels and driven by informational efficiency, responsiveness to needs, and pressures toward minimum cost.

For these new insights, our gratitude is expressed by the Frank E. Seidman Award. The Award is here, but let me read the citation:

The Board of Trustees and Rhodes College bestow upon ELINOR OSTROM this Award in recognition of your distinguished career as a scholar, outstanding teacher and leader in the social sciences; for your highly acclaimed efforts in the study of political economy theory and policy analysis; for your profound study of the extent and nature of common-pool resources and your exploration of the variety of social institutions that have evolved for their control; for your achievements in the resolution of institutional behavior; for your exploration and evaluation of the rational choice theory; and, for your erudite guidance in inspiring others to contribute to the broader political and economic knowledge of your chosen field. Granted the twenty-seventh day of September in the year One Thousand Nine Hundred & Ninety Seven, in Memphis, Tennessee.

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