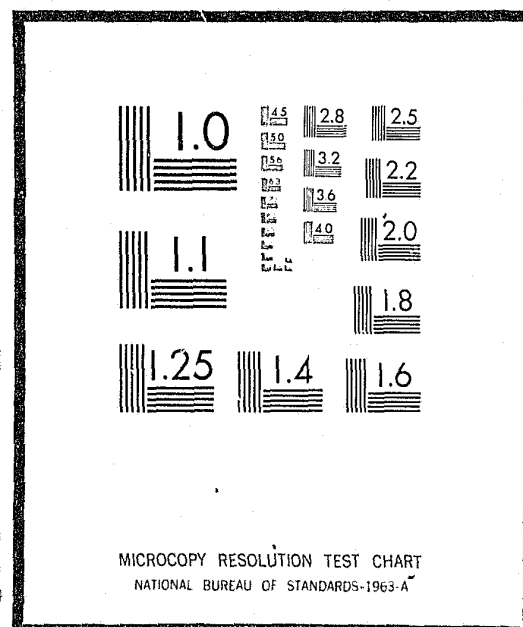


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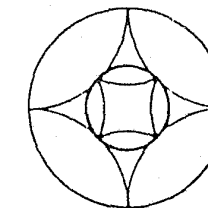
Police Services Study Technical Report

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SIZE AND EFFECTIVENESS IN THE DELIVERY OF HUMAN SERVICES

by

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SIZE AND EFFECTIVENESS IN THE
DELIVERY OF HUMAN SERVICES*

The existence of numerous small agencies for public service has been widely viewed as a cause of the ineffectiveness and inefficiency of service delivery. Consolidation of public agencies has been a major aim of administrative reorganization. This is true no less for the human services than for other public services. Consolidation has been of three types: the merger of adjacent political jurisdictions; the integration of agencies into super-agencies; and the combination of small, distinct operating units into larger, more comprehensive units.

Public education is one of the human services most extensively consolidated in the United States. In 1942 there were 108,579 school districts in the United States. Twenty-five years later, the number of political jurisdictions responsible for public education had been reduced to 21,782 - only one-fifth the 1942 total. During that same period, the size of the average school was greatly increased. Not only were political jurisdictions merged, but the size of the operating agencies within jurisdictions were also increased.

In other human services consolidation has not been so extensive as in education, but the creation of health planning districts, state social service agencies, and umbrella super-agencies for human services are all instances of the effort to bring together in a single administrative structure the service efforts of previously separate agencies. Integration of social services through administrative consolidation at state and local levels has become a national goal under the Allied Services Act. HEW Undersecretary Frank C. Carlucci expressed the purposes of service integration this way: "There is only one way to manage human service programs sensibly, and that way is to manage them comprehensively." (Calucci, 1974, p.7).

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A similar emphasis has prevailed at the Law Enforcement Assistance Administration where inducements to local police departments have been structured to favor consolidation of small local police agencies.

But will consolidation really improve services? Or may it, perversely, make human service agencies even less effective and efficient. Certainly the students who were educated in the consolidated schools of the 1960s seem no better prepared than their older brothers and sisters who, on the whole, were educated in smaller institutions within more numerous public jurisdictions. I know of no study directly implicating school consolidation in the lower reading levels and SAT scores of the more recent public school graduates, and other factors are almost certainly involved. Nevertheless, the quality of education is not generally better now than before that massive nationwide change. Studies of the costs of public education also suggest consolidation does not always increase efficiency. For example, high schools with 1500 to 2000 students are likely to be more efficient than larger units, and diseconomies of scale are likely to occur in administration of school districts with more than 45,000 pupils (Hirsch, 1970).

Neighborhood police services are another set of human services which seem not to be improved by provision through large-scale organizations. Here the evidence is cross sectional rather than longitudinal. In comparative studies of the quality of public safety and citizen satisfaction with local police in several sets of matched neighborhoods small police agencies have consistently been found to be more effective and efficient (E. Ostrom, 1975). Where levels of financing for neighborhood police service are similar, the areas served by smaller agencies are safer and the citizens more pleased with police behavior. Where the large agencies have markedly greater expenditures, the levels of service in the matched neighborhoods tend to be equivalent for large and small departments. Thus, the Indianapolis Police Department was spending roughly the same amount per capita on police service to three of its neighborhoods as were the police departments of the three adjacent towns with which the Indianapolis neighborhoods were matched for study purposes. In each of the towns served by small police departments, there was less criminal victimization and citizens were more satisfied with police behavior than in any of the demographically similar Indianapolis neighborhoods (Ostrom and Whitaker, 1973). In contrast, the Chicago Police Department was spending over

17 times as much per neighborhood as were the small village police with which it was compared. In this case the study neighborhoods all were inhabited by lower-income black residents. The level of safety and satisfaction was no higher in the Chicago neighborhoods despite the wide difference in police expenditures. In fact the only difference detected was a greater level of citizen trust in local police in the areas served by the small village departments (Ostrom and Whitaker, 1974). An examination of the size of police agency serving respondents in the first nation-wide victimization survey also found that citizens served by smaller agencies were generally less likely to be victims of crime and more likely to rate their police highly (Ostrom and Parks, 1973).

Larger agencies are not necessarily more likely to be more effective or efficient. Elinor Ostrom has, in fact, proposed an alternative hypothesis:

Whether increasing the size of urban governmental units will be associated with a higher output per capita, more efficient provision of services, more equal distribution of costs to beneficiaries depends upon the type of public good or service being considered (Ostrom, 1972).

Some types of service may be provided more effectively or efficiently by large organizations, while other services may be better delivered by small organizations. Evidence suggests that education and neighborhood policing may be two services of the latter type. Is there any basis on which we might predict which other public services may benefit from small-scale organization? I believe there is. Both education and neighborhood policing share many important characteristics with other human services such as health care and counseling. The purpose of this paper is to suggest that human service production necessarily differs from the production of most other public services in ways that make large-scale organizations less able to deliver service effectively.

The explanation for the relationship between size and service effectiveness which I propose is tentative. It needs testing to see which, if any, of the posited relationships are supported by relationships to be found in human service delivery situations. What is presented here is a set of plausible models which can form the outline for research into the operation of human services delivery. Elinor Ostrom,

Roger B. Parks and I are currently directing a study which will examine some of the posited relationships in the context of neighborhood police services. Our findings will contribute to an assessment of the validity of the generalizations which follow. Other work, especially in other fields of human service, is needed to test the warrantability of these assertions, however.

Coproduction as the Critical Variable

Coproduction refers to the voluntary activities of service recipients in support of the service activities of service agents. In coproduction, the agent and the subject of the service work together in determining what is to be done and then in doing it. Both are active participants in the service delivery process.

Human services are not simply services for people. They are services with people. The distinction is important. Education, health care, counseling, neighborhood policing - all these involve the interaction of a service subject - the person being served - and an agent. The purpose of the service activity is to change people rather than to change things in their environment. Thus, the service subject does not receive a finished product. Rather, the service subject's own change is a part of the "product" that is sought. This distinction between human services and the manufacture of tangible goods has important implications for the processes of human service production. The comments which follow develop the position that human service delivery can be improved by revising service activities to explicitly encourage coproduction between agents and service subjects. Forms of organization which may facilitate coproduction of services are then considered.

The major proposition on which this argument rests relates the coproduction of human services to the effectiveness and efficiency of production:

- P₁ The more service subjects and agents work together to produce a human service, the more likely the intended outcomes will result and the more likely the costs of agency service activities will be lower.

The central place of the service subject in the production of human services has frequently been overlooked. Most considerations of the processes of producing services have focused on the activities of the agents. The implicit model of production is that of manufacturing: the construction of the product is independent of the behavior of particular users of the product. Ignoring the involvement of the service subject does not eliminate that involvement, however. As Victor Fuchs has noted:

One lesson that our study of productivity in the service industries keeps forcing upon us is the importance of the consumer as a cooperating agent in the production process. To the best of my knowledge, this point is neglected in the analysis of productivity in goods-producing industries, as well it might be. After all, productivity in the automobile industry is not affected by whether the ultimate drivers are bright or stupid, or whether they drive carefully or carelessly.

In services, however, the consumer frequently plays an important role in production Productivity in education, as every teacher knows, is determined largely by what the student contributes, and, to take an extreme case, the performance of a string quartet can be affected by the audience's response. Thus we see that productivity in many service industries is dependent in part on the knowledge, experience, and motivation of the consumer (Fuchs, 1968, pp. 194-195).

To the extent that coproduction does facilitate delivery of human services, a major policy issue is the identification of organizational arrangements which can improve the possibilities for greater coproduction. Are smaller agencies more likely to be effective because they encourage production? More importantly, if small agencies do encourage coproduction, how does size affect the participation of service subjects and agents in common production of a human service? Understanding which organization characteristics are related to size and to coproduction might enable us to have greater confidence

(and success) in efforts to improve human services delivery through reorganization.

One way in which organizational arrangements which may influence coproduction is through the limitations they impose on the service activities of agents. A second way in which organization may influence coproduction is through its effect on the congruence between agents' and subjects' service goals. We can refer to the first as a question of management and the second as a question of representation. Although management and representation (or administration and politics, to use two somewhat parallel terms) are not discrete and undoubtedly interact with each other, it is useful to simplify this discussion by initially ignoring the interrelationships. We shall return to them later. First we examine the ways in which agency size may influence routinization of agents' activities. Then we examine the ways in which size of political jurisdiction may influence agreement on service goals. We then turn to some interrelationships between the organization of management and representation.

How Does Size Affect Management?

The expected management effects of size on coproduction of human services can be outlined as follows:

- P_{M1} Agencies serving larger populations will tend to have more employees.
- P_{M2} Agencies with more employees will be more likely to have a more hierarchical communications structure, and
- P_{M3} Agencies with more employees will be more likely to have more specialization of agent assignment to service activities.
- P_{M4} Agencies with more hierarchical communications structures are more likely to have agents' service activities more routinized.
- P_{M5} Agencies with greater specialization of agent assignment to service activities are more likely to have agents' service activities more routinized.
- P_{M6} Agencies with agents' service activities more routinized are more likely to have less coproduction of human services.

A large serviced population will usually require more employees. Even discounting the additional support personnel which may be required, a school, for example, will usually need to double its number of teachers if the number of students is doubled. Certainly, it will have to do so if the student-teacher ratio is to remain the same. Similarly, a police department will seek more personnel if its serviced population is increased. In general, of any two agencies producing the same human service activities, the agency serving the larger group of people will have more employees.

The more people working within an agency, the more difficult it is for any one of them to become aware of what the rest of them are doing. Job specialization and hierarchical communication are organizational arrangements commonly used to permit the central direction of large numbers of people. Both specialization of the assignment of activities to agents and hierarchy of communications encourage routinization of agents' activities. Thus, these three aspects of bureaucratic organization commonly occur together (Hawley, 1974).

Routinization of activities is the standard technique used for centrally coordinating the efforts of many individuals. The bureaucratic human service organization is based on the assumption that agents need little or no discretion in service delivery activities. According to the production model implicit in any structure of highly specified procedures, decisions about how best to treat classes of problems can be specified in advance by production design specialists. The application of appropriate responses can then be delegated to agents whose capacity for making decisions is provided through the set of problem definitions and responses set forth in the bureau's manual. The agent is not expected to exercise discretion or initiative. Nor is the service subject expected or encouraged to express his or her own perceptions or purposes for the service. In the bureaucratic model, the subject's situation is assumed to be knowable by the agent through the application of proper investigative techniques. The subject is viewed as passive. Once the agent has classified the subject's situation, the agent has determined the subject's need. Having classified the service subject, the agent has also established which response is appropriate for the subject.

In short, the bureaucratic model of human service production rests on the assumption that human service delivery, like most modern manufacturing, is a process of applying a well understood technology to a series of standardized cases - in James Thompson's terms, that a long-linked technology is appropriate for human service (Thompson, 1967). Routinization neither recognizes nor permits the interaction of service subject and agent in the mutual development and application of responses. To the extent that coproduction of human services improves service delivery, routinization of service activities is inappropriate because it precludes coproduction. This is the argument for small scale for management.

How Does Size Effect Representation?

The expected representation effects of size on coproduction of human services can be outlined as follows:

- P_{R1} Political jurisdictions with larger populations will tend to have less contact between service subjects and responsible elected officials.
- P_{R2} Political jurisdictions with fewer contacts between service subjects and elected officials will tend to have less congruence between subjects' and officials' service goals.
- P_{R3} Political jurisdictions with less congruence between the service goals of the service subjects and the responsible elected officials will also tend to have less congruence between the service goals of service subjects and service agents.
- P_{R4} Political jurisdictions with less congruence between the service goals of service subjects and agents will tend to have less coproductive service activity.

Generally speaking, the larger the population of a political unit, the less contact is afforded between individual members of the public and their elected officials. Representation by districts, the election of more officials, or the operation of political parties may tend to weaken that

relationship, but it would seem likely that, other things being equal, larger jurisdictions would have less contact. (See Hawley, 1973).

Contacts between service subjects and elected officials are thought to be important because they permit the exchange of information about the importance of human services. Some types of contact may be more salient than others in this regard, and operationalization of this variable should acknowledge a number of separate sorts of contact from voting to letters to face to face discussions to informal social interaction. Also important in determining the congruence of service goals of elected officials and those to be served is the extent of agreement on goals for service within the serviced population. Still, the extent to which elected officials are able and willing to adopt service goals similar to those of their constituents would seem to be highly dependent on the extent of communication between constituents and representatives.

When there is less congruence between the service goals of service subjects and elected officials, we would also expect to find less congruence between the service goals of service subjects and agents. While the mechanisms which maintain the responsiveness of public agents to elected officials are various and function with various degrees of exactness, we would nevertheless expect to find agents' service goals and officials' service goals to resemble each other. Service programs are often developed jointly by agency personnel and elected officials. Elected officials have authority and responsibility for the selection and retention of at least some personnel and expenditure patterns.

Where there is less congruence between agents' service goals and the service goals of the people to be served, we expect to find less coproduction. Service subjects can be expected to voluntarily participate in service activities when they see those activities as conducive to some goals they seek. Otherwise, their participation will be granted only reluctantly and the benefits of coproduction will not be realized. The less human service activities are responsive to those being served, the less effective they are likely to be.

The Interplay of Management and Representation

Each of the two causal models just presented is overly simple, no doubt. Each ignores the ways in which variables

in one model may affect the variables in the other. Figure I presents the two models as causal diagrams. The arrows indicate the expected causal sequence and the signs the expected direction of association. The management model is on the right and the representation model on the left. Figure II introduces two new variables and a number of new relationships between variables which serve to connect the two models at earlier points. The argument for this interconnection between the two models can be stated as follows:

- P_{I1} The larger the population to be served the less likely each service subject is to be close to the agent(s) who serve him/her.
- P_{I2} The larger the number of service agents, the less likely each service subject is to be close to the agent(s) who serve him/her.
- P_{I3} The closer each service subject is to the agent(s) who serve him/her, the more likely the congruence between agents' and subjects' service goals.
- P_{I4} The closer each service subject is to the agent(s) who serve him/her, the more likely the contact between agents and the subjects they serve.
- P_{I5} The more contact between agents and the subjects they serve, the more likely the congruence between agents' and subjects' service goals.
- P_{I6} The more contact between agents and the subjects they serve, the less likely the agent is to use routine service activities.
- P_{I7} The more the congruence between agent and subject service goals the less likely the agent is to use routine service activities.

Proximity of agents to the people they serve is usually less the larger the population being served. Unless other factors operate to reduce the size of each agent's potential group of serve subjects, this will be the case.

Figure I

Representation and Management as Separate Influences on Coproduction of Services

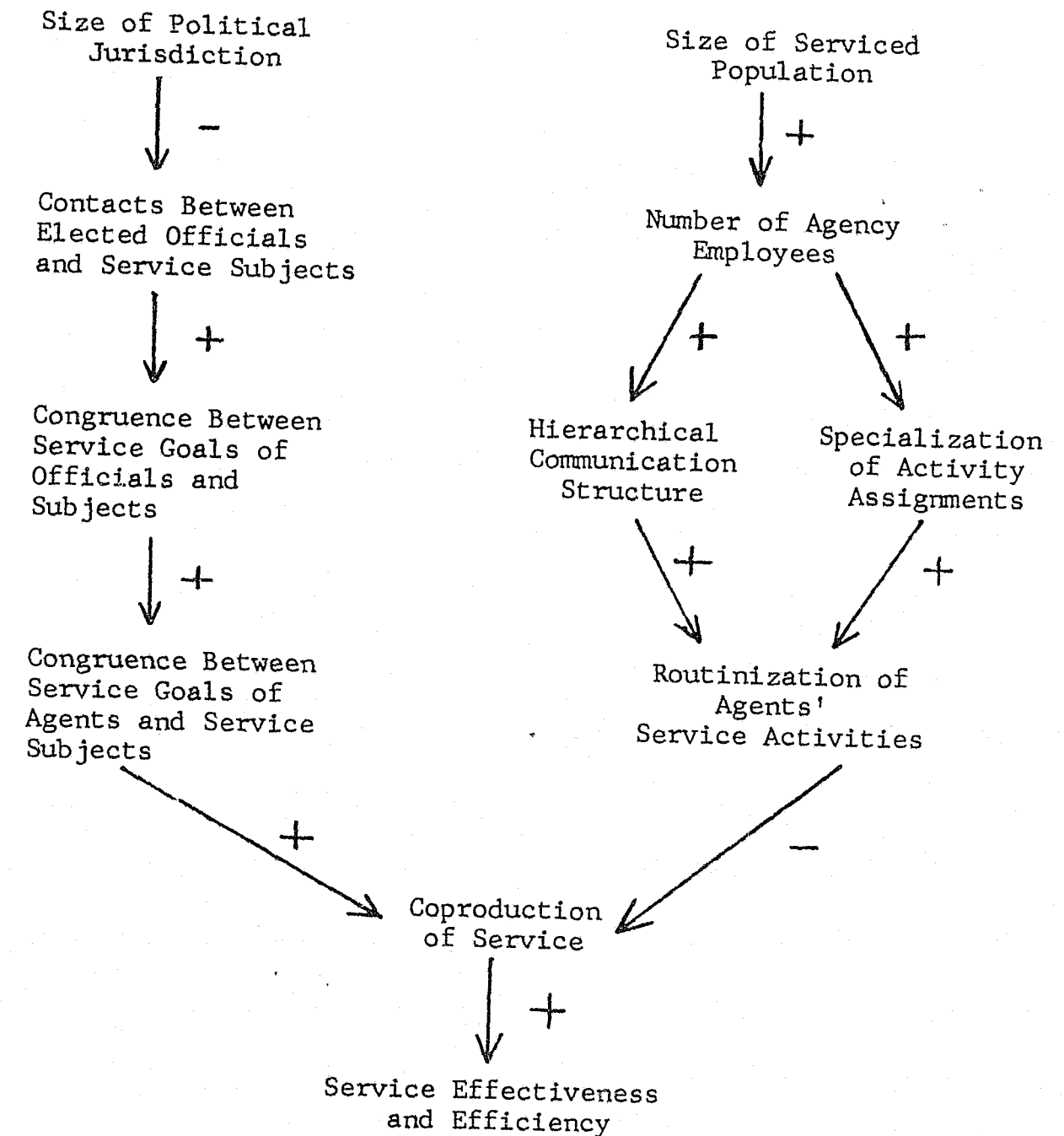
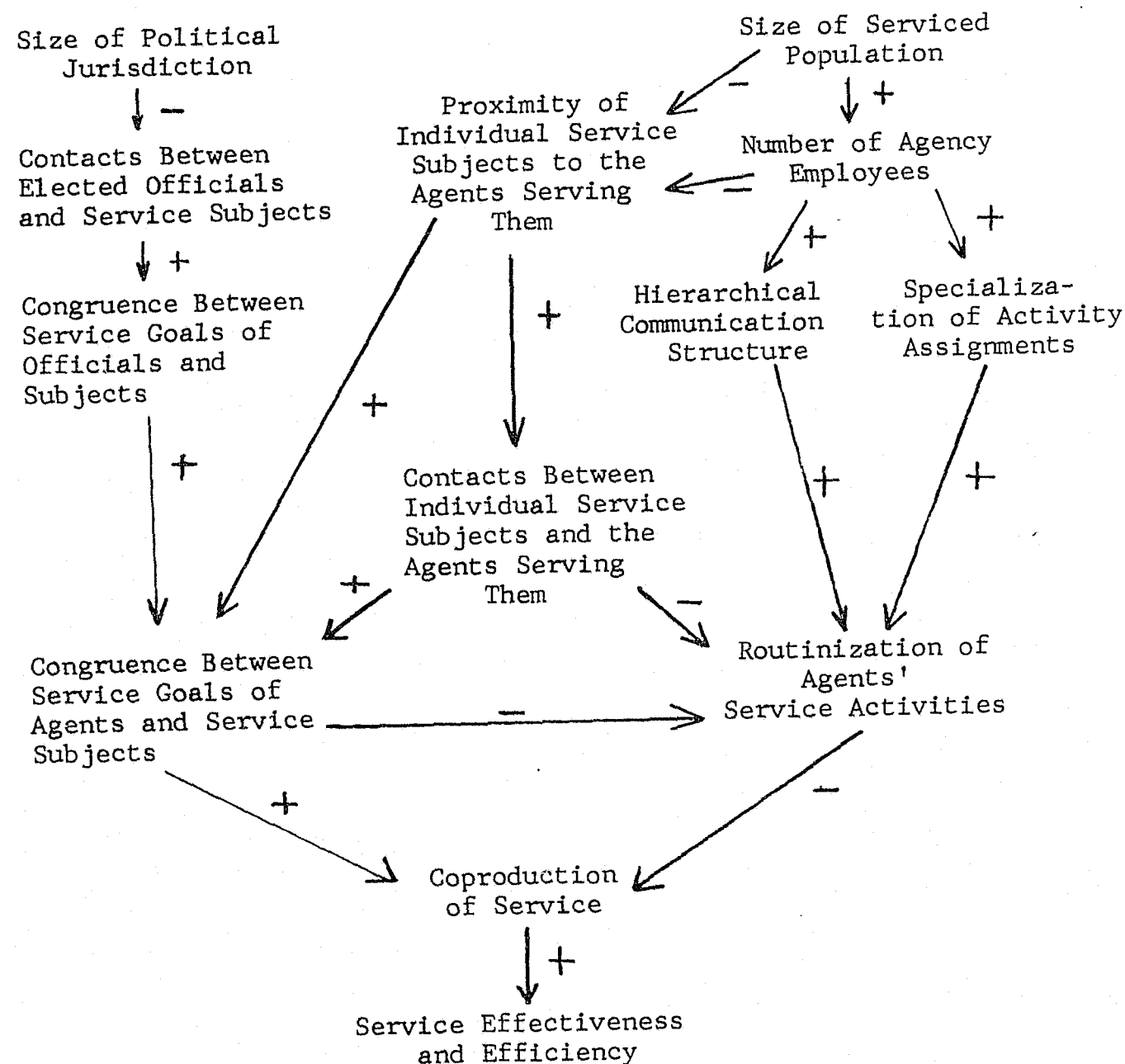


Figure II

The Interrelationship of Representation and Management Influences on Coproduction of Service



Proximity, like contact, is a variable of numerous specific instances. A service subject can be close to an agent geographically - they can live on the same block or in the same neighborhood - or culturally - they can share the same religion, ethnic identification, or sports team loyalties - or personal - they can be friends or relatives. Larger serviced populations are less likely to have service subjects who are served by agents who are close to them in any of these ways. Similarly, the more agents there are available to serve a group of people, the less likely each service subject is to be served by someone close to him or her.

The greater the proximity between agents and the people they serve, the more likely there will be contact between those same individuals. The kind of proximity may well influence the kind of contact which occurs. Greater proximity and greater contact should both facilitate greater congruence of agent and subject service goals, however. People who are from similar situations and those who communicate with each other can be expected to be in greater agreement about the purposes of human services.

Both agent-subject contacts and agent-subject agreement on service goals should be associated with less routine service activity by agents. The more contacts agents have with the people they serve, the more likely they will be to view service subjects as individuals having distinctive needs and having the ability to work with the agent in the development of appropriate responses to those needs. The greater the congruence between the service goals of agents and subjects, the more the agent can rely on outcomes rather than procedures to justify his/her activities to the service subject. When there is little agreement over the goals of a service, agents frequently justify their service activities by pointing out that they are standard procedures and are therefore above justification. When there is agreement on goals, agents and subjects can work together to determine what activities are more effective in realizing the common goal. Greater congruence of goals and less routinization of service activities are both expected to enhance coproduction of service.

Testing the Explanations

Police services in metropolitan areas are provided by political jurisdictions of widely different sizes through agencies of varying size to populations of quite different sizes. Figure III presents the sizes of the political jurisdictions,

Figure III

Size of Local Political Jurisdiction,
Police Agencies, and Serviced Populations
for Police Patrol in 80 Metropolitan Areas

Number of	(N)	Median	Inter-quartile Range	Maximum
Residents per political jurisdiction	(994)	4990	1,718 - 18,610	1,064,714
Residents per serviced population	(1011)	5416	1,917 - 17,300	650,325
Sworn officers per agency	(1011)	9	3 - 29	1,376
Sworn officers per 1000 residents in the serviced population		1.7	1.0 - 2.4	

agencies, and serviced populations for general patrol in 80 metropolitan areas of under 1.5 million residents (Ostrom, Parks, and Whitaker, forthcoming). The diversity of organizational arrangements for patrolling in metropolitan areas is to many observers a symptom of poor service. For example, the National Advisory Commission on Criminal Justice Standards and Goals recommended "recombination and consolidation of police departments with less (sic) than 10 full-time sworn officers ...". As noted above, there is considerable evidence contrary to this blanket recommendation. Bigger is not always better in neighborhood policing. What we do not sufficiently understand, however, are the ways in which size affects service quality and cost. Some possible explanations have been sketched in this paper, but it remains to be seen how well the experiences of police agencies and those served by police support these explanations.

The diversity of arrangements for neighborhood policing illustrated in Figure III provides an opportunity for examining the ways in which size affects the quality and cost of public safety services involving police patrol. A sample of neighborhoods can be selected representing the different sizes of political jurisdictions, police agencies, and serviced populations. Each of the variables in Figure II can be operationalized in terms of neighborhood public safety. By extensive examination of the processes of representation, management, citizen-police interaction, and citizen and police activities related to improving public safety, the links between size and service can be better understood. Members of the Police Services Study are currently operationalizing service process variables in preparation for such a study. Elinor Ostrom, Roger B. Parks and I are directing that project.

The evidence on the relationship of size to service is not yet in for human services. There are, however, enough suggestions of diseconomies of scale to imply that the organizational patterns developed for manufacturing may not be appropriate for human services. Vincent Ostrom identifies this incongruity between organization experience and organization theory as the Intellectual Crisis in American Public Administration. He suggests that our experience with public administration of services presents quite a different picture from theory of hierarchical organization on which consolidation proposals are based. Two of his basic propositions of democratic administration are particularly relevant to this point:

A variety of different organizational arrangements can be used to provide different public goods and services. Such organizations can be coordinated through various multi-organizational arrangements including trading and contracting to mutual advantage, competitive rivalry, adjudication, as well as the power of command in limited hierarchies.

Perfection in the hierarchical ordering of a professionally trained public service accountable to a single center of power will reduce the capability of a large administrative system to respond to diverse preferences among citizens for many different public goods and services and cope with diverse environmental conditions (p. 112).

Earlier I suggested that routinization of human service activities may often be detrimental to effective service because it focuses evaluation on the activities being performed by the agent rather than on the consequences of those activities for the people being served. How a service is "delivered" becomes more important than whether, in fact, it is "received." That same preoccupation with instituting standard operating procedures has dominated much of the discussion and practice of organizational reform. Even more than evaluations of the effectiveness and efficiency of such service activities such as police patrol or programmed learning, we need evaluations of the ways in which size affects the delivery of human services.

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