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Towards a model of urban planning in a bureaucratic context: The distribution of transit service in Manhattan

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TOWARDS A MODEL OF URBAN PLANNING IN A BUREAUCRATIC CONTEXT: THE DISTRIBUTION OF TRANSIT SERVICE IN MANHATTAN

by

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Abstract

TOWARDS A MODEL OF URBAN PLANNING IN A BUREAUCRATIC CONTEXT: THE DISTRIBUTION OF TRANSIT SERVICE IN MANHATTAN

by

Martin S. Rosen

Adviser: Professor Leanne Rivlin

This dissertation focuses on the urban planning process, specifically urban transit planning, within a large urban public bureaucracy. It is designed to uncover an appropriate model of the decision-making process in planning by examining actual service outputs and impacts.

Initially, the development of planning and planning theory in the United States is discussed. A similar survey of transit and transit planning follow. Due to the compelling role that the bureaucratic organization plays in transit planning the major contributing theories from relevant fields -- organizational theory, public administration, political science -- are reviewed. Special attention is given to the literature on service delivery which offers an avenue for an empirical study.

Two opposing models of the planning process emerge from the literature: an External Control model and a Technical-Bureaucratic model. The former suggests that external forces form a major determining factor in decision-making, while the latter posits a formalized technical routine which remains immune to external influences. To test these opposing models, a study was conducted of the distribution of surface transit service throughout Manhattan.

Manhattan bus ridership data obtained from the New York City Transit Authority were used to establish an Average Passenger Load (APL) variable of surface transit service levels according to route segments. Bus route segments were matched with census tracts to compute APL levels for each tract. A multiple regression analysis was computed between key socioeconomic factors in the 1980 United States Census and the APL variable.

Results revealed only minor evidence to support the External Control model. In spite of this outcome, a number of reservations about the alternative Technical-Bureaucratic model are explored as are various implications to planning and transit service delivery that emerge from the study. Particularly salient are issues surrounding an adequate definition of, and role for, equity in the planning and distribution of transit services.

Acknowledgements

After a two year leave of absence overseas I returned to discover that the entire database upon which I was to base this dissertation had been systematically destroyed. It should have been enough for me to toss in the towel. That I did not is largely attributable to some wonderful support and encouragement from a number of people.

My dissertation committee members have been invaluable. My appreciation goes to Gary Winkel, whose special interest in transit and consistently brilliant insights in a range of disciplines, sparked the idea for this dissertation in the first place and then kept it going over some rough spots. Also, much thanks to John Mollenkopf, whose input, based on his exceptional scholarship in related fields, helped guide my work more than he probably realizes. He was particularly generous in allowing me invaluable access to census data tapes for use in this study. Thanks also to his CUNY Data Center and Marta Frisch for her invaluable assistance with the census statistics.

I cannot imagine being blessed with a better adviser than Leanne Rivlin. Throughout my inordinately lengthy stay in graduate school, she has been unfailingly supportive and giving. Her efforts to guide and assist me through the process, as I moved around three countries, went far beyond any possible professional obligation. By keeping her faith in me, I was able to maintain my belief in myself.

Thanks must also go to the officials at the New York City Transit Authority who granted me access to their ridership data long after I had stopped working there.

When this dissertation was in its infancy, my immediate family consisted of my parents, Sam and Elsie, and sister, Linda. My thanks go to them, for their support, encouragement and patience over the many, many years. Enough years in fact that my family now includes a wife and three children. (Message to David, Michael and Techiya: your abba is finally available on sundays to take you to the Science Centre, thanks for waiting; ice creams on me.) To my list of family supporters I can now also include my in-laws Harry and Faye who gave up a daughter to suffer along this seemingly endless odyssey, and yet never failed to be anything but encouraging.

If ever they decide to give out a Nobel Peace Prize for patience and self-sacrifice, then my wife, Suri Epstein, has a lock on it. A public apology to you for the too many weekends and evenings of suffering an absentee spouse, abandoning you for yet another library or computer. How does one ever repay, or even thank, someone who gave of their best years? I am not sure why or how you put up with me -- or should I say without me -- for so long. Suri, it really is finally done and ... this one is dedicated to the one I love.

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INTRODUCTION

This study was inspired by a five-year stint (1981-1985) the author spent working as a transit analyst and planner in the Operations Planning department of the New York City Transit Authority. During that time, the question of just how effective a planning process functioned within this large bureaucratic venue kept surfacing. It became especially salient during this period due to a series of federally-funded large-scale bus ridership studies in each of the five boroughs that were being conducted by the department.

What was particularly surprising was that these studies represented the first comprehensive data-collection effort ever conducted by the Authority. In other words, there just did not previously exist a useable data base for supporting planning decisions. This, of course, raised a question as to how decisions had been made in the absence of this sort of critical information.

Given that the Operations Planning Department was the only planning division within this large bureaucracy, and home to all its professional planners, it would have seemed to have been the obvious source for all routing and service adjustments. In reality, nothing could have been further from the truth. Indeed, it became increasingly evident during the author's tenure that given the size of the system, relatively few route changes or service adjustments were ever implemented (the preference being to leave well enough alone), and even of those few that were, none had originated from the planning department.

Martin Wachs, opens his recent collection of articles on Ethics in Planning with a reprint of a piece by Peter Marcuse which "rekindled an intellectual interest in planning ethics which had been dormant for more than a decade." (Wachs, 1985:xvii) In the article, Marcuse examines a number of case studies and the professional obligations of planners (Marcuse, 1976). Early in his discussion, Marcuse dismisses a possible argument to which planners might resort to evade ethical responsibility for the use of their end products; one that he demonstrates is common to engineers.

What is particularly interesting is the description of the typical engineer's role upon which Marcuse basis this supposed distinction. As opposed to the planner who is expected to give clients "sound and independent advice...takes responsibility for the formulation of the problems as well as

the answer...", the engineer is part of a hierarchical structure, whose assignments are implemented by others, and is rarely consulted about the definitions of his task or its criteria (Marcuse, 1976:267). Furthermore, the engineer is given little authority to alter the assignment and is briefed inadequately about its overall objectives and strategy.

This is particularly revealing in that the description of the engineer's position is almost identical to that of the transit planner within the NYCTA. If that was the case then a number of additional questions arise: what was the source of the few planning changes that were implemented, and what was the actual function of the planning department? While the answer to these questions are somewhat obfuscated by the complex layerings of the organization, certain themes became evident that could lead to a construction of hypotheses about the workings of these processes.

Firstly, the operating departments wielded much more power and influence than the planning department. This can be largely attributed to the organizational make-up of that time by which the operating departments reported directly to upper management (and indeed formed part of upper management) while the planning department usually reported to operations. Some of this reporting structure was likely a function of certain personality conflicts and poor professional relationships between department heads. The end effect of this organizational arrangement was that decisions that could be

classified as planning decisions (route and service changes) came largely from the operating division which had neither planners nor any formal data base or data-gathering capabilities from which to work.

While the actual origin of specific service changes are almost impossible to trace, it appears that most were based on the "instinct" of operating management. To better understand this, it should be pointed out that the operating division was run, at every level, by individuals (almost exclusively male) who had started "at the bottom" and worked their way up. These were people who, with little formal education had begun working as maintenance workers or bus operators, and had, over the decades, advanced through the ranks to positions such as superintendent or division heads. It is perhaps quite understandable that someone who had undergone this sort of personal history would develop something of a distrust or even dislike for a professional class with advanced degrees, but a limited range of "real-world" experience. This attitude could perhaps be best summarized by a statement the author once overheard from a depot chief while working on a survey at that bus depot: "What does some guy in a suit and a fancy computer know about how much or where service is needed compared to the guys who are out there every day for years driving the buses?"

It would appear that this anti-professional bias was a major factor in limiting the input from the planning department during those years. The planning function was

largely reduced to a supporting role for decisions that were typically already made elsewhere. The planning department would usually find out about decisions only after they had already been incorporated by the operating department into new schedules. Occasionally, a request would come to the planning department from upper management for supporting data for a proposed route alteration. Again, the original sources for these proposals were usually impossible to identify. But, on at least one occasion it became apparent that the source of the request was a local elected official, with excellent connections to the MTA board.

In this particular instance, directions were given to gather data to support rerouting of a bus line for a small segment. The existing route travelled along a single avenue for most of its distance. The proposed adjustment would create a jog requiring buses to travel a few blocks out to another avenue for a short distance and then return to the original avenue. (Even a short diversion such as this in heavily congested lower Manhattan, results in not insignificant extra requirement in operating resources.) Apparently, this particular politician resided on the very avenue that the new bus routing would now serve.

Without a comprehensive data base with which to work, it is extremely difficult to formulate route planning decisions with any degree of confidence. Isolated surveys that are hurriedly organized to produce some data to support these

types of decisions are suspect, even without a pre-existing bias. By framing the investigation in a particular manner it becomes abundantly simple to arrive at supporting evidence for almost any specific route alteration.

In this particular case the requested route alteration was implemented by the operating department even before any (suspect) supporting data were produced. Indeed, once comprehensive data were analyzed, it indicated that the rerouting was a huge mistake, diverting necessary capacity from the original avenue. This analysis was completely at odds with the unsubstantiated information upon which the operating division based its decisions. (A memorandum to that effect was written by the author to the head of the planning department, but its eventual fate is unknown.)

An earlier piece of evidence that suggests a potential bias in New York transit service delivery can be gleaned from an analysis of the dynamics of urban decision-making which described the case of some proposed Manhattan bus route changes back in 1966 (Yates, 1977). Residents of two neighborhoods opposed to these changes, Greenwich Village and West End Avenue, were able to enlist local politicians and community groups, and prepare a movie which they presented to the board of estimate at city hall. The mayor responded favorably and directed the bureaucracy to revise its plans.

Yates contends that the mayor responded in this situation because he was facing a well-organized neighborhood and because the issue was specific and concrete...

> and, most important, the decision did not involve a zero-sum game. The mayor was able to improve the position of the Greenwich Village and West End Avenue residents without making any other community worse off. The political benefits of adjusting the bus routes substantially outweighed the costs, and, as a result, the central decision maker was able to make a quick decision. (Yates, 1977, p.121).

At one level, Yates, a respected academic who was working in the mayor's office at the time, was accurate: no single community would immediately perceive itself as worse off because of the mayor's intervention. But, his analysis failed to consider that the particular neighborhoods involved contain a higher than average representation of residents who are professionals, well-educated, and white. In Yate's own words, these people are "well-organized."

Had the impacted neighborhoods been located in East Harlem or the Lower East Side, Manhattan communities at the opposite end of the socioeconomic scale, it is unlikely that a similar outcome would have materialized.

It is apparent that, over the course of time, this type of selective external political influence on the bureaucratic decision-making process could cumulatively erode equitable

service distribution. This issue is examined at length in the current study.

Structure of Study

> We cannot avoid...including within the reach of environmental psychology aspects of these fields concerned with planning and designing the human environment.

Thus Proshansky, Ittelson, and Rivlin (1976, p. 4) introduced the second edition of their text Environmental Psychology. They go on to assert:

> The constructed world, whether it's a school, hospital, apartment, community, or highways, is simply a particular expression of the social system that generally influences our activities and relationships with others. (p. 5)

In sum, a knowledge of how decisions are made about the planning of the constructed world improves our understanding about the operation of the community at large. It is the aim of the proposed study to examine an urban community by drawing on the theoretical sources of a number of related disciplines in order to analyze a set of urban planning decisions in one particular element of its fabric, the transit network.

In answering the question, "why an environmental psychology?", Heimstra and Mcfarling (1978) state that professionals in "environmental design routinely make decisions that modify the physical environment in such a fashion that the behavior of many individuals may be

affected." The significant role played by the transportation system of a large urban area in the lives of its population has been often noted by social scientists (cf. Altman, Wohlwill & Everett, 1981) as well as by urban researchers and scholars. As Victor Gruen (1964) remarked in his treatise on the vitality of the "Heart of the City",

> Mass transportation is a public service needed for urban health, just as is a sewage system, street cleaning system, or police force. (p. 130)

Transportation as a public good is typically built into any public goods theory which aims to maximize social welfare (Moore, 1978). That it is not just a conceptually significant issue, but also of utilitarian import is revealed by surveys taken in urban areas across the United States which consistently indicate transportation as one of the main concerns of most citizens, even ahead of problems related to drugs, homelessness, education and employment (Larson, 1988). In spite of the forcefulness of the assertion that transportation has become one of the most critical issues in the urban environment, it is often viewed as a "luxury problem, only to be dealt with when other more fundamental problems are solved." (Gakenheimer, 1967).

The current study attempts to analyze the process by which transportation planning decisions are acted upon and implemented. The aim is to develop an integrated model of organizational decision-making that will account for the planning process in a large public agency. As planning has

developed over the last few decades, it has increasingly become the realm of bureaucratic organizations. The next section of this thesis will offer a survey of this development in urban planning.

Literature from both modern organizational theory and urban planning theory are examined in an attempt to conceptualize a model of the planning process within an urban public agency. A chapter on the bureaucratic and organizational decision-making literature from sociology, political science and public administration follows the review of theories on planning. Building from these surveys, two alternative explanatory models of the planning processes within an organizational bureaucratic environment are constructed.

It is these two alternative models that form the basis for the present study. A methodology for testing the models in an actual field setting is delineated. The methodology is then applied to a broad set of planning throughputs from a major urban transit planning agency in order to compare the hypotheses that form the essence of the opposing models. The results from this analysis form the basis of a final discussion of the role of public transportation planning in a contemporary urban setting.

It is important to note that the present study is not a traditional organizational analysis of a planning agency such as those conducted on other types of government bureaucracies

and agencies (cf. Blau, 1963; Heydebrand, 1973). The methodology for such an analysis would entail a comparison of different planning agencies with the aim of better understanding how the organizational structure correlates with individual and group characteristics within the agency. Rather, the objective of the current study is substantially different. Our present concern is the decision-making process of the organization and its relation to the final service throughputs to the public at large.

It is relevant to cite at length some of the comments by the eminent political scientist, Norton Long, in his recent summation of the fields of political science, public administration, urban politics and policy analysis (Long, 1992). In it, he laments the loss of focus on what ought to be the bottom line: the condition of the individual. Since government is studied because it affects the production and distribution of values to the population, the goal of research should be a political explanation of this phenomenum. Yet the efforts have been focused on power, on Dahl's (1961) question: "Who governs?" While granting that this indeed is an important issue, even more critical is the question: "what difference does it make?" Long's critique extends to the bulk of political research, including various authoritative works ranging from Smith's Power Games (1988) dealing with the president and Congress, to Sayre and Kaufmann's (1965) major treatise on New York City which largely left unexamined any

impacts on the population. Long argues that the key to relevant research is to determine "how segments of the population are differentially affected in important dimensions of their lives" (1992, p.110). He notes that the census could be a useful source of data which so far has not been properly utilized. In the absence of systematic inventories of conditions there is no means to examine the performance of cities and governments, or understanding the source of the conditions of the population. This failure to seek pertinent understanding and explanations has resulted in missing what should be the bottom line of research.

It is an objective of the current study to examine precisely what Long terms the bottom line: the actual impact on various segments of the population.

Goal of Study

It is envisioned that a descriptive paradigm of the urban transportation planning process will begin to emerge from this study. As in any social science model, it will primarily serve to help in acquiring new insights into the current reality and allow better prediction of events (Rein, 1976). Additionally, it can possibly act as a guide to the interventions that are relevant and right by suggesting ways of accomplishing goals within existing bureaucratic planning terms of reference.

Chapter 2: THE DEVELOPMENT OF URBAN PLANNING

Town planning evolved in the late 19th Century in America as a response to rapid urbanization spurred by the Industrial Revolution. Early urban growth accelerated rapidly with the number of urban centers doubling every few years in an unchecked expansion. Powerful private interests, often well-connected politically, guided economic development in "city plans" that offered little towards alleviating mounting environmental and other civic problems. It was not too long before American cities began experiencing the same sorts of problems that had plagued their older European counterparts: lack of adequate infrastructure, overcrowding, slums, and a haphazard growth pattern.

The earliest attempts to provide urban centers with plans were viewed as detrimental to the overwhelming concern of maximizing economic growth. However, the mounting problems stimulated demands for reform from many corners. This, along with the growing culture of democracy, nurtured a sense of responsibility for the greater public welfare. Concerns ranged from essentials such as adequate clean water supplies to amenities such as romantic pleasure grounds.

By and large though, most of these early demands called for superficial changes to the city fabric. They emanated from various grass-root sources, such as churches and women's groups. Reformers of the day viewed politics as a necessary

evil towards accomplishing various municipal reforms. Absent was any science of urban planning, no specialists or systematic surveys and data, nor any legislation to control the ever-increasing growth. Yet economic and social forces were at work transforming the city into a new kind of entity that demanded a new kind of approach.

With the increased immigration of the early 1900s, lower classes began to gain growing power in the city. Large landowners and real estate developers feared the encroaching riffraff and demanded "protection" against them (Lubove, 1962). Along with the bankers who feared for the security of their mortgages in areas nearby the enlarging tenement areas, these interests put pressure on local governments for tools to control expansion.

The reform movement adopted an elitist response to these developments. Determining that only the educated could properly decide on the necessary actions, they effectively excluded the immigrant poor at every step of the decision-making process. Under the guise of ameliorating conditions for the poor, the reform movement actually did much more to serve the interests of business (Hays, 1964).

City planning as a separate entity evolved from the reform movement with the founding of the American City Planning Institute in 1907, although some would name 1909, the time of the first National Conference on City Planning, the

birthdate of urban planning in the United States (Hall, 1989).

Garden City Movement

Early urban planning in this country, unlike Europe, was to fall under the influence of a variety of sources that were wholly unrelated to the social reform movements of the time (Scott, 1969). Chief amongst these were utopian visions, such as the Garden City Movement transplanted from England. The brainchild of Ebenezer Howard (1965), an English journalist for whom planning was a hobby, the Garden City Movement was an attempt to build alternatives to cities, which he came to view, from the perspective of his London window, as a dirty, crowded, evil affront to nature (Jacobs, 1961).

Planning to Howard was a series of permanent, static acts, essentially paternalistic, if not authoritarian. Existing cities were a non-issue to him, little of value could be salvaged from them. His Garden Cities would allow the poor masses to live in smaller self-sufficient enclaves in proximity to nature.

While only two complete Garden Cities were ever actually built, the ramifications of their tenets were far-reaching (cf. Stein, 1966). Through proponents such as Patrick Geddes, these ideas influenced the majority of the first generation of American planners (such as Lewis Mumford and Catherine Bauer). Planners came to view their role as primarily problem-solving

through the addition of patches of open space. More intricate issues of urbanization were left to other powers.

Another, slightly less important influence on early city planning, was born at the Chicago World's Fair in 1893. A profusion of pompous, monumental white neo-Classical structures impressed a populace dulled by the filth and congestion typical of urban centers of the time. Business interests were particularly enamored of this type of grandiose gesture as a relatively painless means of diverting attention from badly needed social reforms.

City Beautiful Movement

The profession of city planning now had inherited a new mission. No longer were they limited to small workings in isolated parts of the city. They could proudly bring "order" to entire cities. And from Cleveland to San Francisco, via the hand of master planners led by Daniel Burnham, city upon city was to erect its civic center as the focal point of a grand mall, park or boulevard. These structures were impressive, perhaps even "uplifting", yet they had little to do with what was evolving around them. The mission of planners had shifted from the "City Orderly" to that of the "City Beautiful" (Gans, 1968). Burnham would advance the argument that cities should use aesthetic appeal to attract wealthy people and their capital (Hall, 1989). As part of

this appeal, planners acted to segregate land use into clearly defined areas for the first time.

While the city planners were busy erecting grand monuments, the reformers from whom they had split away, were making some progress on legislation effecting health, sanitation, fire safety and housing issues. Even with the split there was still some overlap in the memberships of the two movements (Ranney, 1969) and, as some would argue, the reform movement had a sizeable influence on planning, especially in the adaption of ideals about rationality and the neutrality of expertise (Judd & Mendelson, 1973). However, the mainstream of the planning profession was too involved with its various aesthetic and utopian visions to concern itself with the reformation of society.

It should be reiterated that the reform movement itself has been severely criticized by numerous scholars regarding a number of underlying deficiencies (Hays, 1964; Lubove, 1962). One of the major targets of the movement was the machine politics that operated on a system of patronage and political favors in most major cities of the era. Yet, the machine was able to introduce capital for badly needed city services such as transportation, at a time when regular governmental channels were not up to the task (Merton, 1969). Furthermore, the existence of the political machine allowed immigrants a means of access to the local government that was otherwise unavailable to them.

Influence of the Scientific Method

The next wave to wash over the burgeoning planning profession was brought on by the newly popular scientific method. By the 1920s and 30s, the expectation grew that a politically-unencumbered, scientifically-grounded professional planner would be able to best serve everyone's interests. A favorite tool of the new breed of planner was zoning. Starting with the New York Zoning Ordinance of 1916, the application of this tool rapidly spread to the point that some 750 communities had ordinances by 1930. It was found to have as much of an impact on a city as did the monuments of the various City Beautiful movements, and at a far lower expenditure. Even better, it allowed the merchants of Fifth Avenue to protect their territory from the flood of poor immigrants. So potent a tool was zoning that even the federal government interceded on its behalf when the court legislated separate nonconforming use in the case of the Village of Euclid v. Ambler Realty Company in 1924 [297 Fed. 307, 316 N.D. Ohio].

Other than zoning, planning has been habitually viewed as the antithesis of laissez faire capitalism (Lowi, 1969). As a result, it has been for the most part restricted to the realm of local levels of government in the United States (Ranney, 1969). The major exception to this trend was the national planning effort brought about by the social and economic pressures of the Great Depression of 1929. In a favorable

political climate, the National Resource Committee was created and then a National Resources Planning Board. Under the enthusiastic leadership of President Franklin D. Roosevelt, New Deal public works projects such as the Tennessee Valley Authority were spawned, and even a National Planning Board was empowered to work on issues ranging from economic development to transportation (Scott, 1969). However, as soon as the crisis subsided (with the advent of World War II), New Deal laws and similar efforts were, for the most part, rescinded and federal intervention waned. The National Planning Board was dissolved in August of 1943. Planners were once again to confine themselves to local land use planning.

Over the following decades, the scientific-rational prototype dominated the planning profession (cf. Michael, 1968). The planner was essentially carrying out the interests of the business class in creating the City Efficient by adapting various tools created by the legislature. These tools, the zoning regulations, bylaws and schemes such as urban renewal, were more often than not, thinly disguised efforts to uproot stable lower class neighborhoods in order to "clean up" the CBD for a wide-ranging coalition of real estate interests.[1] Indeed, the planner soon became absorbed into the

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[1] The number of American cities that went through this unfortunate process is significant; Philadelphia, New Haven, Boston, San Francisco, etc. Stable lower class communities were ripped apart, often for the slightest of pretexts. (For more detailed discussions of the negative impact of urban renewal on various lower class neighborhoods see Gans, 1965; Greer, 1965; and Mollenkopf, 1983).

overall government bureaucratic structure. By the time President Kennedy brought technocrats into the Federal Government in the 1960s, this mode of planning had already been well established as the professional standard.

As technocrats, urban planners lacked a clearly defined sense of ethical or professional commitment to anything other than a neutral efficiency (Judd & Mendelson, 1973). In essence, the profession existed largely to legitimate and implement the interests of powerful political and economic groups and to serve the maintenance needs of organizations within which they worked (cf. Altshuler, 1965; Mowitz & Wright, 1962). To these ends they adopted efficiency as their prime goal and adopted the rational planning and computer-based techniques that traffic engineering had championed. Any social impact aspect of planning was ignored as the focus was purely physical and locational (Jacobs, 1961). Care and feeding of bureaucracies became of paramount importance (Webber, 1974).

Planner as Bureaucrat

Until the late 1960s, the technocratic planner was assumed to operate under a value-free decision-making framework (Klosterman, 1983). However, the renewed sense of social justice that swept the country in the 1960s spurred by massive riots in urban ghettos along with the civil rights and free speech movements, highlighted the desperate lack of

improvement in the conditions of the disadvantaged produced by these traditional planning methods (Gans, 1968). Grass-root actions, such as the riots in Watts and the first revolt to stop an urban freeway (the Embaracdero Freeway in San Francisco), brought external pressures to bear. A sense of urgency arose within the profession that alternative approaches to planning were necessary to meet this challenge (Seeley, 1962).

Advocacy Planning

Within this charged atmosphere, more political and value-laden theories of planning burst onto the scene (Benveniste, 1972; Bolan, 1971; Rabinowitz, 1967). Jane Jacobs (1961) opened her celebrated book on American cities by stating "This book is an attack on current City Planning..." (p.1). Paul Davidoff's "advocacy planning" (Davidoff, 1965) was considered a watershed in the development of participatory alternatives in the field. Advocacy planning posited that the planner should go out into the community to solicit proposals and then act as an adversary on their behalf.

While advocacy planning and other forms of participatory planning have gained much theoretical interest[2], and even some degree of practical acceptance (cf. Burke, 1979; Kaufman, 1974), their history has been somewhat spotty. Criticisms

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[2]Participatory planning became so de rigueur that the American Institute of City Planning supported its application in their code of ethics (AICP, 1980).

have been levelled at these approaches for everything from a lack of homogeneity, community feeling and common interests in action, to a consistent failure to evoke the real interests and participation of lower income groups (Mazziotti, 1974; Peattie, 1968; Piven, 1970). Some commentators went so far as to brand these approaches as a means of legitimation of public authority to induce political quiescence for potentially controversial decisions. Smith (1979) explained the diversionary nature of these procedures as follows:

> By stressing the supposedly democratic character of such consultative processes as 'citizen participation' and 'pluralistic advocacy planning,' various reference groups have been placated sufficiently to induce them to accept consequences of public policy that were incompatible with their material interests. (p. 259)

Anti-Planning Reaction

Perhaps as a reaction to this perceived failure, various groups splintered off from the planning mainstream. Whether neo-anarchist, humanist, Marxist, or neo-Marxist, these movements only were united in their blanket condemnation of the profession as devoid of proper politics and as serving to legitimize the state. In sum, the planner does no good (Wildavsky, 1973).

Role of the Planner

However, these splinter movements tend to remain at a theoretical distance from the profession and thus have had relatively minor impact on the actual practice of urban

planning. In his extensive survey of professional planners, Vasu (1979) found that most prefer a role of technician over that of policy advocate, even though they will admit to the politicized nature of their calling. This may be largely a function of the professional role of the planner whose major client is not the urban poor, but the government and all it represents. Indeed, this tremendous rift between the theory and practice of planning remains to this day. In a recent symposium on the state of the profession, eight of its most eminent practitioners made almost no mention of the actual things planners do (Hall, 1989). This lack of a clear professional role or identity has had a psychological impact on planners. A psychotherapist who studied planners found that working in the typical bureaucratic structure created anxiety, defenses, and led to organizational dysfunctions such as opposition to collaboration (Baum, 1987).

The debate over the role of the planner within the present societal structure continues to produce a diverse spectrum of opinions. Some would argue that planners not only inform decisions, they also influence them in important ways (Dye, 1973; Hollander, 1970; Lasswell, 1958). More widely embraced is the position that planners have only a marginal impact in the larger scheme of things (Altshuler, 1970; Cohen, 1970; Perin, 1967).

More recently, planning theoreticians such as Allen Scott and Manuel Castells, have moved away from dealing with the

theory-action gap towards empirical studies of economic and social changes that have developed into a sort of urban political economy (cf. Castells, 1985; Scott & Storper, 1986). Others, such as John Friedmann and John Forester (Forester, 1985) still attempt to build a theoretical foundation. But, as one commentator on Forester's writings put it, "stripped of the dense Teutonic undergrowth, it sounds like advocacy planners of 15 years ago." (Hall, 1989).

Most commentators on planning agree that the profession is in transition. As Barry Checkoway (1986) observed, "Contextual conditions are causing change and challenging planners to reconsider earlier approaches."

There is some irony in all this struggle with its identity, for urban planning today faces similar basic problems to those that were at its roots, the urban underclass. Tellingly, the almost complete geographic segregation and separation of minority and poor in the city has remained a constant from the start (Shalala & Vitullo-Martin, 1989).

Chapter 3: THE EVOLUTION OF URBAN PUBLIC TRANSPORTATION PLANNING

The rapid urbanization of America had a significant impact on transportation planning in particular. Although it can be posited that the central concept of a city, to begin with, is the minimization, if not elimination, of the need for travel (Robertson, 1980), the critical dependence of urban areas on a sound transportation network has always existed. The symbiotic relationship between a city and its transportation network is such that the latter has served to give form to the megalopolis (Bell & Tyrwhitt, 1972). Likewise, urban transportation has always played an important role in city planning from the days of Daniel Burnham's landmark Plan of Chicago (Black, 1979). An analytical basis for the interdependence of transportation and urban land use was presented for the first time in 1954 (Mitchell & Rapkin, 1954).

Public Transportation in the Early Years

Before the production of the automobile and the advent of decent public transportation, the city was highly concentrated, with the wealthiest residents able to command the convenience of the prime central city location. With the advent of the earliest public transportation, steam railroads,

the upper classes moved to more desirable, larger and less densely arranged housing on the periphery of the increasingly congested urban centers. By the end of the 19th century, streetcar networks were being introduced in cities, further intensifying development pressure in the urban center. It has been noted, by A.M. Woodruff, then Dean of George Washington University, that the streetcar constituted the first major change in urban transportation since "Abraham left Ur." (Perloff, 1961). Historians have argued that this development in urban transportation was fundamental in creating the unique spatial characteristics of the modern city (Glaab & Brown, 1967). Others argue that importance of this invention should not be overemphasized and it should be viewed as providing a quantitative rather than a qualitative change in the industry compared to the horse car (Sawers, 1984).

Whatever the case, the trolley certainly made for cheaper and easier travel for larger masses of people. Muckracker Burton Hendrich (1921) marvelled at the trolley's

> [e]normous influence in extending the radius of the modern city, in freeing urban workers from the demoralizing influence of the tenements, in offering the poor classes comfortable homes in the surrounding country, and in extending general enlightenment by bringing about closer human intercourse. Indeed, there is probably no single influence that has contributed so much to the pleasure and comfort of the masses as the trolley. (pp. 122-123)

An authoritative study of the influence of the trolley on the population of a major city was Sam Bass Warner's analysis of Boston (Warner, 1962).

Government Takes a Role

Up until the early part of the 20th century, private interests dominated the "public" transportation systems in every major American city. Indeed, until the late 1950s, most urban mass transportation service was still operated by private companies organized on a for-profit basis. It was not until the 1920s that the federal government began to play any role in urban transportation. By and large, urban transportation, unlike highways, was viewed as a local responsibility. As long as there remained profits to be made in public transit, it remained a private venture. The overriding planning principle of the time was, quite understandably, maximization of profits for the independent operators. Numerous competing companies sprung up to vie for the most heavily travelled routes. Often, it was those who were best connected politically who won the franchise to the most profitable routes.

The New York City experience in this regard was typical of most of the major urban transit systems of the day. In the 1880s, Jay Gould, his son George, and Russell Sage assumed control of the highly profitable monopoly known as the Manhattan Elevated from Cyrus Field and others who had directed its construction. They were more concerned with financial returns than improving transportation, as they closely guarded their title to one of the most choicest properties in the nation (Grodinsky, 1957). While rapid

transit was dominated by Gould and associates, the street (trolley) franchises were divided amongst a number of established families and estates who held 999-year titles for which they paid the city practically nothing (Hendrich, 1921). These franchises could only be terminated by condemnation for which they would be compensated for all facilities and right-of-ways (Carman, 1919). Attempts at reform, such as the Street Railway Act of 1884, did little to curb the abuses. In his summary of the impacts of this private franchise system on the nation's transit systems, Cheape (1980) concluded "For their work, promoters took millions of dollars. Their haste for personal profit, their techniques of finance, and their underestimation of capital costs saddled city transit systems with excessive fixed charges." (p.215) It was actions such as these that resulted in systems ill-prepared for the challenge of the private automobile that led to the eventual collapse of comprehensive public transportation in the United States after World War I (Woodworth, 1926).

Transit in Decline

At the turn of the century, hundreds of cities had together nearly 30,000 miles of electrified track and hit a peak of 45,000 miles in 1918. After an initial rapid increase, ridership grew only gradually till 1920 and thereafter declined. By the 1930s, the streetcar networks across the United States were in descent. A combination of

corruption and poor management created a situation where over one-third of the hundreds of transit companies in the United States went bankrupt (Smerk, 1975). At the same time, the private automobile industry was undergoing a rapid acceleration in its growth. Between 1900 and 1930 the number of automobiles exploded from 8000 to some 26 million.

However, the decline of the streetcar networks cannot be attributed simply to a preference for the private automobile. Indeed, the facts speak otherwise. Public transit ridership doubled, from 9.8 billion in 1935 to 19 billion in 1945, at a time when automobile ownership was rapidly expanding. Rather, it was the increasing power of the automobile industry that began the erosion of the still viable streetcar system (Smerk, 1975; Snell 1984).[3] These corporations used their increasing profits to systematically dismantle streetcar systems across the country. For instance, in 1936, General Motors purchased the New York City streetcar system, then the largest in the country. Within two years, the streetcar network had been all but converted to a bus system, a vehicle that GM just happened to produce.

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[3] An alternative argument to Snell's has been recently advanced by Adler (1991). He proposes that auto production restrictions during WWII caused the upsurge in transit ridership and that in Los Angeles at least, it was Pacific Electric Railway's own failure to deal with labor and maintenance issues, as well as the opposition of outlying suburbs to investment in city transit, that had more impact on the dismantling of streetcars and the build-up of freeways.

The steady trend towards a complete private monopolization of public mass transit grew to the point that the United States Supreme Court was forced to finally take action. When it finally did, in 1951, it found that only ten companies held virtual control of all public transportation in the country. The penalty levied for this illegal trust: a paltry $5000. With this sort of acquiescence on the part of the government, private interests were to eliminate over 100 electric systems across the country.

While trolley ridership peaked in 1920, urban buses were growing steadily from the 1910s to the late 1940s (except during the early Depression years), and only began their steady decline after that point. The energy crisis of 1973 spurred a modest growth in ridership, but nowhere near the levels experienced earlier. Similar to events surrounding the demise of trolley systems, bus systems suffered from the abandonment by private interests as they became unprofitable.

By World War II public transportation ridership on all modes had peaked and was to begin its long period of decline. The systematic dismantling of the cost- and fuel-efficient streetcar systems assisted the promotion of the private automobile as a viable means of transportation in the city. At the same time, the growing decentralization of cities made it increasingly difficult and less profitable for public transit systems to operate, particularly in the new low density suburban areas. The extension of service to these

outlying areas resulted in lower ridership per mile and offset the profits generated in more highly concentrated corridors. Once transit began running up large deficits, private interests were quick to desert, leaving local governments holding the bag.

Transit Planning as a Profession

Almost by default, government had become the main provider of public transportation. Yet, by creating the many new independent transit authorities that proliferated after the 1930s, transportation decision-making was effectively obscured from public scrutiny and a coherent overall policy became difficult to achieve (Mollenkopf, 1975). It was at the advent of the state's acceptance of transportation as a government function that transit planning was to become a professional field of its own. Yet, perhaps due to its early history as a private concern, transportation planning had a difficult time divesting itself of the profit-making legacy of the earlier capitalist ownership. Indeed, the new bureaucratic autonomy acted to encourage alliances with the private sector (Mollenkopf, 1975).

If one area of urban planning can be said to have been more formalized and technocratic than any other, it was clearly transportation planning (Gackenheimer, 1976). Transportation planners in post-World War II America were the first to embrace the latest developments in mathematical

analysis of aggregate social behavior and apply them to lavish models of land use and travel demand (Zettel & Carll, 1962). Swept up by the enthusiasm for the scientific method, planners sought the latest intricate economic models of cost-benefit analysis, cost-effectiveness, and location theory. These transportation planners viewed themselves with their new methods as the elite of a field still mired in an intuitive-aesthetic approach adopted from architectural theory (Black, 1979). Highway and urban roadways were the primary concerns in this era of rapid expansion. As transit ridership declined, the interest shifted to building more roads for private automobiles. It was a time when oligarchs such as Robert Moses were able to create public authorities which became their personal empires and then use public resources to further augment their power through the roads they had built (Caro, 1974). The highways not only served to move influential people about, they bulldozed the lower classes out of the way of new development (Moses displaced some 250,000 people), an ideal combination. At the national level as well, the emphasis was on roadways rather than public transportation or energy and environmental concerns. The Federal Highway Act of 1962 called for "comprehensive, continuous and cooperative" urban transportation planning, but the focus was on automobile growth and building more roads to alleviate congestion (Levinson & Weant, 1982).

It did not take too long for the mainstream of the planning profession to adapt the tools and direction of transportation planners. As the planner was forced to adapt to the bureaucratic context, the shift from the role of a planner to that of a manager made these technocratic methods more appealing and useful. At the same time, the essential identity of the planner and transportation planner became more obfuscated (Orski, 1980). To make matters worse for the transportation planner, the carefully calibrated scientific models were not ameliorating the increasing congestion in the nation's cities. By the end of the 1950s, the traffic planners and engineers who once held an unchallenged position in the public eye were rapidly falling from favor. The profession was totally unprepared for the mounting criticisms and a suddenly changed political atmosphere, particularly as they had always viewed their work as apolitical.

Civil disobedience and riots that erupted across America in the 1960s, while not directed specifically at transportation planners, impacted the agenda of the profession. The Governor's Commission (1965) reporting on the causes of the Los Angeles riots, highlighted inadequate transportation as a major obstacle for holding jobs, attending schools, shopping and other needs. At a psychological level, the deficient transportation system was cited as a "major influence in creating a sense of isolation" in the Watts area (p. 38).

With the mounting external pressures brought about by the shifting political mood in the country, transportation planners began reflecting on their identity much as urban planners were. Many began identifying themselves more as managers rather than as planners (Black, 1979; Hassell, 1980). Others proclaimed that, in a time of pluralism, faced with a multiplicity of communities of interests, the true role of a planner was as a mediator and interpreter of the various demands (Webber, 1974).

Today's transportation planners face a dilemma in their occupation that they are not often willing to accept. A recent observer of the field noted that they must come to terms with the overriding role that politics plays in transport decision-making "If you don't understand the political process, nor willing to get out in front of it, you're going to get what you deserve in a lot of ways," he warned (Feaver, 1988).

Chapter 4: APPROACHES TO BUREAUCRATIC DECISION-MAKING

One potentially fruitful approach for a deeper understanding of the urban planning process, particularly transit planning, is an examination of organizational and bureaucratic literatures. For the most part these literatures have grown from the fields of sociology, political science and administration into new interdisciplinary subfields of their own.

As urban planning has become more intractably intertwined into the bureaucratic structure of modern society, it makes sense to examine the existing approaches that have developed to understand these phenomena. A brief overview of some of the various strands of literature is presented as background to the construction of a theory of urban transportation planning.

Organizational Theory

I. Max Weber

While sociology's modern organizational theory can be said to have been initiated by Merton's (1957) seminal work on bureaucracy, he was essentially dealing with the basic issues posed by Max Weber thirty years earlier (cf. Collins, 1986). Some have argued that even Weber's ideal type of bureaucracy was actually preceded by Hegel's formulation of a theory of

modern bureaucracy in the Philosophy of Right (1976). However, due to its philosophical treatment, Hegel's model was nowhere near as influential as Weber's (Shaw, 1992).

Weber conceived organizations as "iron cages" imprisoning people in rule-bound rationalism, and bureaucracy as a potential threat to liberal society, but also as a tool of effective government for which there was no feasible alternative in modern society to sustain the current level of civilization and culture (Mommsen, 1989). Merton, for his part, accepted the importance of bureaucracy, but insisted that further study was needed to determine its implications. While he retained Weber's emphasis on rationalism, he also stressed the critical role of organizational structure.

Merton's students at Columbia represented the intellectual forefront in the analysis of organizational structure: Peter Blau, A.W. Gouldner, S.M. Lipset, James Coleman, P. Selznick. Their major objective was the development of a general theory of organizations (cf. Blau, 1956; Blau & Schoenherr, 1971; Gouldner, 1954; Selznick 1948).

While organizational theory has often been criticized for lack of empirical research, this was hardly the case with this school of researchers. Indeed, the work of Blau and Selznick is replete with actual case studies on a multitude of variables (scale of organization, division of labor, hierarchical levels, task differentiation, etc.) of organizational structure (cf. Selznick, 1949). Blau's

analysis of the dynamics of bureaucracy (1956) moved beyond Weber's "regulators" to examine the informal relations that create a dynamic in the organization. Yet, for all the statistical aggregates that were produced, an insufficient theoretical base prevented the means to establish particulars of individual cases. Furthermore, this micro-level focus on the organization did not permit detailed analysis of the impact of external forces on bureaucratic decision-making.

II. Herbert Simon

Perhaps the central figure in the development of theories of organizational decision-making outside of traditional sociology was Herbert Simon. As early as 1949 Simon had argued that administrative decision-making worked differently than most of the then popular theories were describing. Drawing on his expertise in psychology, the Nobel Prize holder in economics and administration developed what was hailed as the first sophisticated model of organizational decision-making.

Simon had begun his work on organizational theory in the 1930s, building on the earlier research of Chester Barnard (1938). Simon began with a definition of administration as decision-making and took as his basic unit of analysis the premises for decisions.

According to Simon (1964) decisions were of two types: valuative and factual. The key to factual decisions are the

alternatives and consequences, with an overriding dependence on expert or technical knowledge. A decision-maker must first list all possible courses of action, then select the "plausible" alternatives, anticipate the best outcome, determine all consequences, and finally decide how to meet the ends. Some of the critical factors influencing the decision-making process in this model included: constraints via multiple goals, limited information, previous training, and identification with a particular social subgroup. Valuative decisions, on the other hand, are related simply to political expediency.

Simon postulated three major categories of actors in organizations: entrepenuers, employees, and customers (Simon 1959; March & Simon, 1958). However, the complexity of government agencies created difficulties in this classification. For instance, is the legislature to be viewed as entrepreneurial or as a customer?

In Simon's view, organizations are primarily set up to influence the decision-making of its members. As a result, the organization itself is the most critical determinant of individual decisions.

Administrative techniques were developed based on assumptions of rationality developed by Simon and the neoclassical public choice and political economy schools that followed. This was especially true within the federal executive branch of government, but found its way into every

other level of government as well. These techniques, predicated as they were on human rationality, failed, since humans just do not process all information logically (Schott, 1991). Furthermore, people do not hold transitive preferences nor do they frequently "satisfice." Cognitive research has revealed that the brain's logical processes receive information later than the more primitive areas.

As Schott (1991) has argued, it would seem that Simon's notion of humans operating with "bounded rationality" (Simon, 1959) should be replaced by the concept of "bounded irrationality." Recent research in cognitive science suggests that the true basis of administrative behavior lies more accurately within the parameters of psychology than economics, the non-rational rather than the rational. Indications of this paradigm shift can be found in the recent organizational work by Argyris and Schoen (1982) which has moved towards cognitive theory.

Political Approaches to Theories of Decision-Making

Within political science, decision-making has been treated from a broader political basis than in the sociological and administration literature already cited. The political context there has served as the basis for a number of competing theories of how actual decisions in society are made, and who makes these decisions. Indeed, the question of

how decisions are made usually plays a secondary role to the issue of who makes the decisions. During the 1960s and 70s a great deal of research was undertaken in an effort to establish empirical support for one or another of these competing theories. The two most widely proffered approaches to the American power structure were the theory of elites and pluralist theory.

I. Theory of Elites

A long tradition of elite theories stressed the role of distinctive leaders (cf. Hunter, 1953). The theory of elites proposes that a powerful controlling group operates out of economic self-interest to retain the existing order of capitalism in society (Domhoff 1967; Miliband 1969; Mills 1956). While not totally monolithic, the elite tend to be convergent and unified in their overall goals, ideology and value system, which is typically disjointed from those of the working class. A certain basic level of cooperation is required from the working class, therefore some level of responsiveness to their needs is required.

It has been argued by some theorists that no clear boundaries exist between the workers, the professional-managerial class which controls them, and the power elite anymore. Members of any class can potentially move to another under certain conditions. This helps creates a sense of motivation in maintaining the system, even to those outside

the elite. Others have set out to prove that a relatively cohesive capitalist social class does exist.

II. Pluralist Theory

Pluralist theory postulates a society made up of competing groups with shifting alliances (Dahl, 1961). The government acts as a neutral mediating agent while these divergent groups bring their political resources to bear on a particular decision of import to them. An unstated assumption is that all groups agree to abide by the system and the resulting decisions, even those that are not in their favor, in order to maintain its continued stability.

Groups can apply pressure to almost any level of government at any decision point. In pluralist theory, "all groups have about the same capacity and opportunity to shape government action, and politics becomes a contest for the right to shape the direction of governmental policies." (Dolbeare & Edelman, 1977, p.444).

III. Critique of Elitist and Pluralist Theories

Both the elitist and pluralist approaches share a gap in their description of the mechanics of modern decision-making, the undeniable role of the public bureaucratic structure. Indeed, the debate between the two factions has been seen, in a critical article by Jones (1981), as bringing the field of urban analysis to a virtual standstill. A mounting concern

within the field has been the need for more empirical studies to open new lines of theoretical inquiry. Jones states that the failure of urbanists to gather sufficient data has created a lag between the cutting edge of theory and empirical studies. Urban service distribution literature represents a productive direction according to Jones. It is to this literature that we now turn.

Urban Service Delivery Theory

Charles Tiebout's (1956) paradigm of the city as a marketplace of local governments, each providing a package of services and taxes, and competing for citizen consumers, set in motion a focus on city government as a provider of services (Sharp 1986). As theoretical and empirical analysis of organizations and bureaucracies, particularly those of public agencies, grew more specialized and complex, a wholly separate area of analysis developed that focused specifically on the delivery of public services by government agencies. Vincent Ostrom (1977) suggests that this shift from power and influence studies to service delivery systems, as being the most promising current development in the study of human and political experience. Service delivery analysis can reveal the effect that exercises of power and influence have upon the potential welfare of citizens as recipients of services.

Service delivery may be conceptualized as a natural outgrowth of political theory which views the state as having

a monopoly over legitimate force and is essentially unitary and hierarchical. It was on this basis that Max Weber formulated his "ideal type" model of bureaucratic administration, which forms the essence of a public service delivery system (Rheinstein, 1967). Weber held an essentially antinomical position which both welcomed and opposed modern rational techniques of bureaucratic service delivery. With all its associated drawbacks, Weber viewed this bureaucratic system as indispensable in advanced society.

Another conceptual departure point for service delivery is the theory of public goods which conceptualizes types of non-market decision-making appropriate to public economics (Olson, 1965). The concept of public goods originated with Samuelson (1954) who suggested that goods are either public or private. But the dichotomy of private-public goods became cloudy and later theories conceived of a continuum from pure public goods to pure private goods (Hanson, 1978).

Public transportation does not fall neatly into a definition of pure public good since it does not fully meet the criteria of jointness of consumption (two or more citizens can take advantage of the service without displacing someone else). It can more easily match a category termed by economist Richard Musgrave (1951)as "merit" goods. These are primarily private goods which can be satisfied by the market but become public because they are considered so meritorious as to be provided by the public budget.

Public service delivery differs from the private sector in a number of essential ways. For instance, urban public services are not "marketed" and therefore the demand for them cannot be measured in terms of the willingness to pay. Rather, citizens register their preferences for delivery of a particular service, at a particular place and time. Where in the private sector, the price for services determines its distribution, in the public sector at most, only a nominal price is charged. These sorts of deviations from the traditional private market model required the development of a more appropriate model of public service delivery.

Since the 1960s, scholars have been announcing the need for more complex models of how this critical function of the government operates (Ostrom et al., 1961; Margolis, 1964). Niskanen (1971) was the first to develop a rigorous and well-developed formal model of bureau behavior. Mique and Belanger (1974) criticized the Niskanen model and developed an alternative of their own. Orzechowski (1977) provided a cogent review of the differences between the two models and then went on to present yet a third alternative.

All these models have in common a central emphasis on the costs of production in public service delivery as compared to the private sector. Work on the various interorganizational influences on public bureau behavior has progressed more slowly. As Parks and Ostrom (1981) emphasize in their review of the literature, few other empirical or theoretical

applications of bureaucratic organizational concepts occurred until the mid-70s, which paralleled a lack of theoretically related empirical measures of this structure.

Much of the service delivery work that occurred over the next decade was sponsored by the National Science Foundation and concentrated on the organization of service delivery in the public sector in metropolitan areas. These empirical studies examined services dissaggregated by service type (police, garbage) and categorized by producers, consumers and providers. Relying on matrices of all producers and consumers for each area, comparisons were made between monopoly providers and a set of smaller providers to study the cost efficiency of bureaucratic organization.

By 1979, scholars would still decry the general lack of grounded research on municipal services (Nivola, 1979). In his review of the existing research, Rich (1982) defined two major problems as contributing factors to this state of affairs: the inadequate conceptualization of equity, and the issue of what to measure. However, Rich goes on to admit that the first issue may well be unresolvable. Merget and Berger (1982) add substance to this perspective by asserting that varying conceptions of equity tended to confuse rather than clarify thinking on the subject. They illustrate this by way of situations where disparate conditions of municipal services corresponding to race have fallen under the purview of the Equal Protection Clause of the Fourteenth Amendment and yet

have yielded contradictory interpretations by the court (Merget 1981). Many of the problems associated with the conception of equity vary according to the type of service delivery under analysis. Also critical to the equity issue is the phase of the service delivery measured, Rich's second issue. This second issue, the phase of the service to be measured, has been handled in a variety of ways by different researchers. Much of the earlier research examined the "inputs", usually conceptualized as the budget allocated to the provision of a service to a specific group or area. While this methodology offered a certain ease of collection, it suffered from a lack of precision in describing the actual services that resulted from budget expenditures. The Oakland study (Levy, Metsner and Wildavsky 1974) was the first major study to challenge the construct that inputs are directly related to service outputs. As this deficiency has become more evident, more recent research has shifted towards measurements of "throughputs" and "outputs." Throughputs are defined as the activities funded by inputs, and have been operationalized in such ways as the number of personnel, or the pieces of equipment allocated to different groups or areas. Outputs are the final products of agency activities.

Even the introduction of outputs as the focus of service delivery research has not solved all the difficulties associated with this type of investigation. Some critics have

argued that outcomes such as fixed service sites and facilities cannot be easily moved in response to political factors, resulting in the minimization of political influence and exaggeration of bureaucratic distributional rules (Koehler & Wrightson, 1987; Mladenka, 1989). Furthermore, an analysis of fixed site facilities may result in misleading conclusions because of population shifts. "Because of population shifts, service resources initially intended for a white population may now be utilized by blacks. Minority neighborhoods may receive high service levels only because whites have abandoned the city." (Mladenka, 1989, p.560).[4]

The present study will build on this service delivery literature, which has been viewed by a number of scholars as being the most important key to the understanding of urban politics (Ostrom, 1977; Peterson, 1981; Rich, 1982; Yates, 1974, 1977), while attempting to avoid the various pitfalls in this type of research.

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[4]Unfortunately, in order to counter this problem, Mladenka elected to utilize the distribution of expenditures as the key variable. This only serves to solve one difficulty by introducing another, as per our earlier discussion on inputs vs. outputs.

Chapter 5: METHODOLOGICAL APPROACHES

As has been discussed earlier, urban planning today takes place largely within a bureaucratic structure and is therefore largely guided by organizational mechanics. A number of recent commentators on the future role of urban planners have noted the importance of understanding the operation of these organizationally-rooted processes of decision-making (Alexander, 1984). However, the bulk of the literature in organizational decision-making has concentrated on the influence of various internal variables on policy throughputs (Blau & Schoenherr, 1971; Heydebrand, 1973). This trend has run contrary to the theoretical position of many political scientists who examine the broader social-political-economic context of bureaucratic decision-making.[5]

Conflicting evidence has been raised on both sides of the issue as to which set of factors play a more critical role in actual bureaucratic outputs. A strong case is made by service distribution researchers that organizational decision-making rules predominate over any political influence (Naurdulli & Stonecash, 1981; Thomas, 1986). This orientation is shared by structuralists who stress the lack of internal market control

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[5] There is much current interest in political science on the impact of political control on bureaucratic outputs at the federal level. For some recent theoretical and empirical studies refer to Chubb, 1985; Moe 1982, 1985; Scholz and Wei, 1986; Weingast and Moran, 1983; and Wood, 1988.

and the insulation of bureaucracies from manipulation which attempts to reorient the bureaucratic mission (Ostrom, 1983). There exists a formidable literature on bureaucracy that would also support this model (Downs, 1975).

The opposing theoretical position is held by policy researchers whose argument runs as follows: Once environmental factors are controlled for, the structural characteristics of the bureaucracy have little influence (Dye, 1967; Hofferbert, 1974). This viewpoint is shared by instrumentalist political theorists who tend to view bureaucracies in terms of the social backgrounds of their top-level decision-makers, and hence in terms of outside control.

For the current study, two alternative models or hypotheses will be examined:

MODEL #1 Technical-Bureaucratic Model. This model places emphasis on various internal variables for policy outputs. Organizational decision-making rules predominate over any potential political influence since bureaucracies are judged to be insulated from external pressures.

MODEL #2 External Control Model. In this formulation, the role of bureaucratic functioning is minimized while the major determining factor for decision-making is viewed to be external. These external influences can take the form of direct pressures exerted by individual citizens or

organized neighborhood coalitions, or indirectly, as a result of latent racial discrimination or lack of political powers.

Both models have strong rationales operating in their favor, but have rarely been tested empirically. For instance, the first model is strongly supported in Robert Lineberry's review of the literature on policy distribution (1985). Lineberry concludes that "almost no study of urban service distribution has found that urban politicians continue to tilt services to the benefit of their supporters." Instead, Lineberry, and other scholars in the field (Mladenka, 1989; Naurdulli & Stonecash, 1981; Thomas, 1986) can cite a number of empirical studies that have favored a system of bureaucratic decision rules for allocating public services to neighborhoods in services as varied as public schools (Levy et al., 1974), library services (Lineberry, 1977), recreational services (Mladenka, 1980), street repairs (Antunes & Plumlee, 1977), and sanitation (Jones, Greenberg, Kaufman & Drew, 1980). Almost none of these were deemed to be structured to meet the needs of elected politicians. This conclusion has been echoed by other political scientists who have determined that the evidence indicates an absence of any systematic bias in service delivery and an adherence to bureaucratic rational technical criteria (Elkin, 1987).

On the other end of the spectrum, there are any number of sources that see an implicit or explicit political influence operating on public planning bureaucracies. Indeed, this seems to be the prevailing description offered by those who actually work in these planning agencies themselves. It appears as a reoccurring theme in one of the few in-depth studies of planning professionals, Personality, Politics and Planning (Cantanese & Farmer, 1978). They quote, for instance, Leon Eplan, the Commissioner of Planning for Atlanta and (then) President of the American Institute of Planners, as stating that "planning is a political process. The person who does not realize that every planning decision is a political decision is not going to get very far." (p. 55). This theme continues, in a recent work by Williams and Gates (1985), with the charge that urban politics is a continual struggle between the haves and have-nots over the distribution of collective goods. According to this view citizens and bureaucracy operate in a purely adversary relationship.

Some theorists argue that citizen demand is a predominate force in service delivery patterns. Wildavsky (1979) maintained that bureaucrats respond to actual citizen demands and therefore tend to favor small portions of potential clients. More recently, Sharp (1986) has argued that the preponderance of evidence suggests that urban service bureaucracies are "structured to deliver on demand." (p.4)

Some recent reexaminations of the urban service delivery literature have led to challenges to the conclusions drawn by researchers who had concluded that the preponderance of evidence indicated the primacy of bureaucratic decision-making rules (Mladenka, 1989). More precisely controlled analysis of previously misinterpreted data (Koehler & Wrightson, 1987), and other more recent research have found variables such as "percent nonwhite" (Cingranelli, 1981), or "percent poverty" (Boyle & Jacobs, 1982) as significant influences on the distribution of resources and services.

Occasionally, there have been calls to combine the dual contributions of the political context and the organizational role in determining public policy (Wong, 1988). Mollenkopf (1979) has proposed that both approaches offer a contribution in that structurally autonomous government agencies exist, but they are designed and put in place by historical actors.

The major problems inherent in examining the contextual and bureaucratic impacts on decision-making has been in the attempts at the operationalization of the demand variables and policy outputs. Typically, the measure of outputs has been in terms of monetary outlays alone (Lewis, 1981; Schuman & Gruenberg, 1972). This approach introduces a basic deficiency into the equation; the concentration on spending and not on actual outcomes. According to Rich (1981), this engenders an analysis of production but not distribution; an examination of efficiency, but not of equity.

As has been noted earlier, only a scattering of empirical studies exist which attempt to operationalize actual outputs. One of the first, and still a classic in the field, used variables such as the number of books in different public library branches, and linked street construction to traffic flow in Oakland (Levy et al., 1974). Bryan D. Jones has been very active in the field for over two decades, having examined a massive amount of data on such services as garbage collection rates in Detroit (Jones, Greenberg, Kaufman & Drew, 1980) and, more recently, building inspections in Chicago (Jones, 1985). Kenneth Mladenka has done a series of studies on services such as policing, libraries and parks in Houston (Mladenka and Hill, 1977, 1978) and then parks in Chicago (Mladenka, 1980, 1989).

In terms of transportation-related research, there appears to be little other than studies of road conditions in Oakland (Levy, et al., 1974) and Houston (Antunes & Plumlee, 1977). There have also been some studies which have examined various (non-transit) aspects of service delivery in New York City such as sanitation, police, fire, and social services (Boyle & Jacobs, 1982; Sanger, 1982), but all have relied solely on monetary expenditure measures.

Aside from these, and a handful of others[6], the issue of variations in bureaucratic outputs is an area that is clearly

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[6] For recent surveys see Lineberry, 1985; Mladenka, 1989; and Meier, Stewart and England, 1991.

under-researched, particularly when it comes to the issue of public transportation. Indeed, the service delivery literature does not reveal a single study of public transportation services. It is the aim of the proposed study to begin to fill this gap and to place the results within a theoretical framework relevant to a model of urban planning.

Methodology of Current Study

An accurate portrayal of the actual sources of influence can only be determined by a quasi-experimental design analysis of a real-world situation. The proposed study will attempt just such an analysis in order to determine the influence of bureaucratic decision-making and political context on the delivery of urban transportation service by a large government agency in a major urban center: New York City. The policy throughput will be operationalized as the level of surface transit service delivered, defined by the average passenger load (APL) factor of all vehicles in a given time period within each segment (see page 58 for detailed explanation as to the calculation of the APL).

In order to determine the influence of external context on the throughputs, comparisons will be made of the dependent variable (APL factor) across a range of socioeconomic areas in one borough of New York City: Manhattan.

Census Data

Census tracts, from the 1980 United States census, will serve as the segments of the Borough to be analyzed. Due to the high population density of Manhattan, the geographical size of the census tracts located there are small enough to allow for a relatively refined level of analysis.[7] As previous studies have shown, census tracts can be used as proxies for neighborhoods; since tract boundaries are drawn with attention to socioeconomic composition, they are intended to be socioeconomically homogeneous (Jones, Greenberg, Kaufman & Drew, 1980). While some heterogeneity of population characteristics will certainly exist within certain census tracts, the study's utilization of all residential tracts and the subsequent examination of overall trends in the data should serve to overcome this possible difficulty.

A further potential complicating factor in this research is that, since a bus route cuts through an amalgam of tracts, the possibility exists that these tracts will comprise dissimilar socioeconomic rankings. This conceivable difficulty is mitigated by two actual conditions and one experimental justification. Firstly, service levels on any given route (particularly the lengthier uptown-downtown routes) often vary along the length of that route due to specifically implemented schedule alterations and/or field

[7] Manhattan, New York City's smallest borough at 34 square miles (88 square kilometers), is divided into approximately 300 census tracts.

directives. These would take the form of "short-turns" (buses which only cover portions of a route and then are turned back) or "dead-heads" (buses which travel through stretches of a route without providing service). Thus the service levels, even on the same route, will often vary between the different sectors along that route. A further mitigating factor is the geographic reality of Manhattan which, not unlike most urban areas, remains highly segregated socioeconomically.[8] Not only are individual census tracts thereby easily categorized, but even contiguous groupings of tracts tend to fall within similar levels. Thus, most of the shorter routes in Manhattan, including almost all the crosstown routes, would fit this pattern. Finally, the experimental design aggregates **all** service levels in each tract which should act to dissipate most remaining inconsistencies introduced by those routes which traverse a wide range of tracts. Since any given tract will be assigned a score based on the surveyed service of **every** route traversing that tract, the pooled score for that tract will reflect the overall service levels and temper any spurious results from one particular route.

This use of census tracts is by no means unique. In their study of service delivery in Detroit, Jones and colleagues (1980) used census tracts as a spatial unit of

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[8] The persistent urban condition of socioeconomic separation and segregation was referred to in an earlier chapter. The reader is directed to a recent review of this subject by Shalala & Vitullo-Martin (1989).

analysis. While not precisely corresponding to neighborhoods, Jones et al argued that the ease of obtaining demographic data far outweighed any possible loss of socially meaningful spatial units. This is especially true in Manhattan which is even more concentrated.

The first step in the analysis will include a careful assessment of the residential character of each individual tract. Any tract which is predominately non-residential will be eliminated from the study. This appraisal will be based on a systematic examination of City Planning zoning documents and maps. Non-residential tracts are eliminated from the analysis as they do not have an immediate bearing on the issue at hand, i.e., the level of service for specific socioeconomic groupings of residents. As a first cut, any tracts with less than 3,000 residents will be eliminated from the study for this reason.[9]

The remaining primary residential tracts will then be matched to the New York City Transit Authority (NYCTA) and the Manhattan and Bronx Surface Transit Operating Authority (MaBSTOA) regular (non-express) bus routes operating within each tract.

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[9] Population in Manhattan census tracts ranges from zero to 16,380.

Average Passenger Load (APL) Variable

As stated earlier, the dependent variable for the current study was operationalized as the average passenger load or APL for each census tract. The APL was calculated through the following procedure. First, each bus route traversing the target census tract was determined by overlaying a New York City Transit Authority Manhattan bus map with the U.S. census tracts. Routes selected met the criteria by either intersecting or converging with any boundary of the target tract. Next, the total number of riders onboard buses at points along each route falling within the target tract during the peak morning period (7:00 AM to 10:00 AM) was computed from ridership counts provided by NYCTA[10]. This figure was then divided by the total number of buses which actually operated in the target tract during that same time period. Numbers for all routes were aggregated by tract to produce a single APL for the tract as a whole.

As mentioned earlier, the typical measurement of service output has traditionally been a strictly monetary measure. However, this yardstick is at best indirect, and potentially is meaningless in its equating of sameness with real equity. In other words, the amount of dollars allocated to an area

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[10] The NYCTA currently gathers ridership counts on a route-by-route basis throughout the year (except for the summer season when only special counts are done due to irregularities in travel patterns). Most routes are surveyed once every three to four years. Counts are made by trained full-time ride checkers who are positioned at various points along the route.

results in differing impacts depending on intervening factors such as the efficiency of service delivery and the extent of pre-existing needs.

The passenger load factor avoids these shortcomings by including within it a direct measure of the level of service relative to the actual ridership demand. To illustrate this a bit more clearly, it should be noted that when the level of service is sufficient the APL will be at a moderate level since enough buses are providing service to meet the demands of the ridership. As the APL increases, the loads on each bus are increasing due to lack of sufficient service for the existing ridership demands. This results in crowded and uncomfortable travel conditions, and can lead to longer average passenger waiting due to the inability to board overcrowded buses.

Ridership loading statistics are gathered on an ongoing basis by the Operations Planning Department of the New York City Transit Authority. The most recently available counts (1986-1989) serve as the data base for the current study.

In order to analyze the relationship between the independent variables and the dependent variable a multiple regression analysis will be computed. Independent variables culled from 1980 United States Census data will include the key socioeconomic factors of income levels, percent of professionals, and non-white racial percentage. Table 1 lists the variables available from the 1980 U.S. Census outputs

Table 1

Selected Variables from 1980 U.S. Census Tract Data[11]

[Table P-7] Race & Spanish Origin

- White
- Black
- Spanish Origin

[Table P-10] Labor Force Characteristics

- Employed Persons:
  - Executive, administrative and managerial occupations
  - Professional specialty occupations
  - Professional and related services

[Table P-11] Income and Poverty Status

- Household Income:
  - Median

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[11] All figures are in absolute numbers by tract, except for income which is in dollars.

which will be examined in the current study. Table 2 presents the actual description of the variables selected for the current analysis.

To the degree that proponents of Model #2 would argue that external pressures impact decision-making, the factors in Table 2 represent the dimensions of indirect and direct influence that can be brought to bear. Tracts with the greatest concentration of resident wealth and professionals will have most influence by way of political connection or neighborhood organization (Coulter, 1985; Verba & Nie, 1972) or by citizen-initiated contacting (Nie, Powell & Prewitt, 1969; Sharp, 1982). Thus these factors should show up as correlated negatively with the APL according to Model #2. Latent racism and lack of political power would result in poorer services to areas of high non-white concentration (Cingranelli, 1981; Koehler & Wrightson, 1987). Thus, the APL would be predicted to correlate positively with a high non-white presence in Model #2.

Therefore, on the basis of the resulting regression, the beta weights and their accompanying signs will be used to determine whether the predicted values of the correlation relate to the actual ridership levels in a systematic manner. A strong correlation between the independent variables and the dependent variable, as indicated by a high multiple R with a significant F ratio for the model as a whole, will tend to

TABLE 2

DESCRIPTION OF PREDICTOR VARIABLES DERIVED FROM CENSUS DATA FOR USE IN ANALYZING SOCIOECONOMIC LEVEL IN CENSUS TRACTS

Variable	Description
White	Percentage of Whites in tract
Black	Percentage of Blacks in tract
Hispanic	Percentage of Hispanics in tract
Pros	Percentage of employed persons in Professional or Managerial positions
Income	Median family income in tract

support Model #2. The lack of any consistent relationship between these variables, resulting in a non-significant F ratio for the model as a whole, will conversely lead to a rejection of Model #2 and lend support to the randomized results expected by proponents of Model #1. Table 3 summarizes the predicted relationship between APL and each of the predictor variables under the two different models.

TABLE 3

PREDICTED RELATIONSHIPS WITHIN CENSUS TRACTS OF APL[a] AND PREDICTOR VARIABLES UNDER TWO PROPOSED MODELS

High APL[a] within tract	High median Income	High percentage of Professionals	High percentage of Blacks	High percentage of Hispanics
Model #1 : Technical-Bureaucratic	none	none	none	none
Model #2: External-Control	negative	negative	positive	positive

[a] For this table and those that follow APL (Average Passenger Load) refers to a measure of the average number of passengers per bus along segments of a route (see 58 for full description).

Chapter 6: RESULTS

Data from uptown-downtown routes were analyzed separately from crosstown routes due to their different characteristics. As a result of the elongated shape of Manhattan and its demographic stratification, uptown-downtown routes are much lengthier on average, and typically traverse a range of different socioeconomic tracts. Crosstown routes are shorter and tend to run across tracts of similar socioeconomic strata. To isolate possible complications due to these differences, the two types of routes were grouped and tested separately.

Descriptive statistics are presented in Tables 4 and 5. The mean APL (average passenger load) is similar for both categories of routes (29.2% and 30.3%). However, differences in some of the predictor variables surface. Crosstown routes have a higher average percentage of whites (65.6% vs. 50.9%), professionals (44.7% vs. 37.6%), and a higher mean income ($26,146.22 vs. $20,824.97). Concurrently, the uptown-downtown routes have a higher mean percentage of blacks (25.9% vs. 10.9%) and a lower mean income. The mean number of Hispanics are about the same in both cases (19.7% and 19.1%). It is also important to note that the standard deviations for mean number of Whites and Blacks are much higher for the uptown-downtown routes.

TABLE 4

DESCRIPTIVE STATISTICS FOR DEMOGRAPHIC AND APL MEASURES ON CROSSTOWN ROUTES

Measure	Mean	SD
APL	29.2	13.0
White	65.6	30.0
Black	10.9	15.7
Hispanic	19.1	20.4
Pros	44.7	18.9
Income	26,146.22	16,286.11

Note. $n = 97$

TABLE 5

DESCRIPTIVE STATISTICS FOR DEMOGRAPHIC AND APL MEASURES ON UPTOWN-DOWNTOWN ROUTES

Measure	Mean	SD
APL	30.3	8.8
White	50.9	36.8
Black	25.9	33.2
Hispanic	19.7	20.0
Pros	37.6	21.0
Income	20,824.97	12,925.00

Note. $n=185$

A Pearson correlation matrix of the five predictor variables (see Table 2 for full description) Black, Hispanic, White, Professionals and Income, along with the dependent variable of APL is presented in Tables 6 & 7. As might be expected, highly positive correlations are found, on the uptown routes, between WHITE and PROS r=.93, and WHITE and INCOME r=.78. High negative correlations are seen between BLACK and PROS r=-.66 and, to a slightly lesser degree, between BLACK and INCOME r=-.55 and between HISP and PROS r=-.59. All results are significant to the $p<.001$ level.

The results are similar, although not as pronounced on the Crosstown correlation matrix. This is probably related to the more homogeneous nature of the population in the tracts along these routes which would tend to suppress the extremes. As noted above, the crosstown routes have lower standard deviations in the percentage of Whites and Blacks.

Next, the five predictor variables were regressed on the criteria variable of APL. Multiple regressions were run on the full model for both the uptown-downtown routes and the crosstown routes separately using the SAS Maximum R multiple regression computer program (SAS Institute, 1985). Multicollinearity was not considered too critical a problem, as the main method of analysis was Maximum R multiple regression, which permits the simultaneous evaluation of multiple independent variables by partialling out

intercorrelates among the variables that may inflate the degree of prediction (Cohen & Cohen, 1975).

The initial regressions revealed no significant F scores for any of the variables either in the uptown-downtown, (model $F = 1.525$, $p = .1830$), or crosstown, (model $F = 1.205$, $p = .3128$). This would indicate the overall results were of no significance. However, an analysis of the residuals indicated certain observations which were clearly outliers statistically.

Further investigation of the 10 outliers in the uptown-downtown data exposed convincing evidence for their being removed from the regression. Seven of the 10 outliers were generated by observations from Bronx route buses which cross over into upper Manhattan. Largely due to the physical narrowing of Manhattan at the upper (northern) end, there are no strictly Manhattan crosstown routes above 116th Street. All crosstown routes in that area are designated by the New York City Transit Authority as Bronx routes (which is where the preponderance of their length does in fact operate due to the narrowness of Manhattan in that area). Although these routes are classified as uptown-downtown routes in the Bronx, they in fact operate crosstown for their Manhattan stretch and would therefore more logically be reclassified as such for purposes of the present analysis.

TABLE 6

PEARSON CORRELATION COEFFICIENTS OF PREDICTOR AND CRITERION VARIABLES ON THE UPTOWN-DOWNTOWN ROUTES

	APL	WHITE	BLACK	HISPANIC	PROS	INCOME
APL	1.0					
WHITE	-.07	1.0				
BLACK	.05	-.8***	1.0			
HISPANIC	-.08	-.49***	-.45	1.0		
PROS	-.02	.93***	-.66***	-.59***	1.0	
INCOME	.07	.78***	-.55***	-.51***	.83***	1.0

Note. n = 185

*** $p < .001$

TABLE 7

PEARSON CORRELATION COEFFICIENTS OF PREDICTOR AND CRITERION VARIABLES ON THE CROSSTOWN ROUTES

	APL	WHITE	BLACK	HISP	PROS	INCOME
APL	1.0					
WHITE	.10	1.0				
BLACK	-.13	-.73***	1.0			
HISPANIC	-.05	-.87***	.32**	1.0		
PROS	.16	.92***	-.60***	-.84***	1.0	
INCOME	.15	.73***	-.48***	-.65***	.78***	1.0

Note. $n = 97$

** $p < .005$. *** $p < .001$

The remaining three outliers were recorded at the stop next to the termination of the route and thus produced extremely low ridership figures which served to skew the results. (It was for this reason that any terminal points on routes were initially eliminated from the analysis). With the removal of these 10 irregular observations, the regression did produce a significant F value for the model ($F = 3.238$, $p = .0082$). However, only three of the predictor variables exhibited significant relationships in a stepwise regression analysis: Black, Professionals, and Income.

A further residual analysis was conducted, and an additional eight observations were found to be outliers statistically. An analysis of these outliers indicated that they too should be removed from the uptown-downtown regression due to their location near the end of routes. Table 8 presents the results of a Maximum R multiple regression analysis on the uptown-downtown routes after elimination of all 18 outliers. The Maximum R improvement technique was developed by James Goodnight and is considered superior to the stepwise technique and almost as good as all possible regressions.

The two alternative hypotheses, as delineated earlier, anticipate divergent outcomes for the regression. To restate: the Technical-Bureaucratic Model would predict a random distribution of APL throughout the various socioeconomic

TABLE 8

MAXIMUM-R STEPWISE MRA FOR DEPENDENT VARIABLE APL ON UPTOWN/DOWNTOWN ROUTES

Predictor	Total R^2	C(P)	*F*	ΔR^2	$F(\Delta R^2)$	ß	SE ß
Income	.17	3.36	33.27***	.17	33.27***	0.0	0.0
Black	.18	3.52	17.64***	.01	1.84	-2.5	1.8
Pros	.19	2.48	12.93***	.02	3.06	-8.0	4.5
White	.19	4.05	9.77***	.002	0.43	3.4	5.1

Note. $df = 5,162$ for final rotation.

*** $p < .001$

tracts. The alternative External Control Model would predict a positive relationship between the APL and the variables of Black and Hispanic, and a negative relationship with the variables of White, Income and Professionals. In other words, there is an expectation of more crowded buses, or poorer service in areas with higher concentrations of blacks and Hispanics, and better service in areas with more whites, higher income areas, and areas where more people with professional and managerial occupations reside.

In the uptown-downtown analysis no significant relationship was uncovered between APL and the variables of White or Hispanic in stepwise and Maximum R regressions. While there was some significance in the regression with the remaining three variables ($F = 12.93$, $p = .0001$), the direction of relationship supported the External Control Model only in the case of the weakest of the three, Professionals. In the regressions, while the variables of INCOME, BLACK and PROS together produce the best model, only the variable of INCOME independently shows significance in regards to the parameter estimates ($t = 4.05$, $p = .0001$). When PROS is isolated as a factor, it shows a non-significant relationship to APL ($t = -1.06$, $p = .11$), as does BLACK ($t = -.063$, $p = .53$).

The best model of the multiple regression thus indicates that areas with higher income had more crowded buses, and in these cases, areas with more black residents had less crowded

buses and areas with more professionals had less crowded buses than would be expected by chance. As indicated, only the latter result would support the External Control Model.

Crosstown routes only revealed a factor reaching any level of significance when the seven observations from the Bronx routes that had originally placed in the uptown-downtown analysis were included. Parameter estimates did not indicate significant relationships with any of the variables. Table 9 presents the results of a Maximum R multiple regression analysis for these routes. As shown, the best overall model includes BLACK, PROS and WHITE. The direction of the beta values is in a positive direction for BLACK and negative for WHITE, as would be predicted by the External Control Model.

TABLE 9

MAXIMUM-R STEPWISE MRA FOR DEPENDENT VARIABLE APL ON CROSSTOWN ROUTES

Predictor	Total R^2	C(P)	*F*	ΔR^2	$F(\Delta R^2)$	ß	SE ß
Black	.06	6.51	6.61	.06	6.61*	13.15	5.11
Pros	.11	3.74	4.74	.04	5.8**	17.77	8.17
White	.13	2.98	2.79	.03	4.87**	-22.18	13.27

Note. $df = 4,95$ for final rotation

* $p < .05$ ** $p < .01$

Chapter 7: DISCUSSION and IMPLICATIONS

The central question of the current study has been: which model best describes the delivery of transit service in the modern urban setting, a Technical-Bureaucratic Model or an External Control Model. While the results would not absolutely indicate a rejection of either model, the preponderance of evidence certainly favors the Technical-Bureaucratic Model. Indeed, of the three significant variables in the uptown-downtown analysis only the weakest even corresponded in the expected direction to the External Control Model.

However, after a careful examination of the results, a further assessment indicates there are enough gaps in the complete set of results to restrict full acceptance of the Technical-Bureaucratic Model. Furthermore, as a result of the unexpected direction of the variables, additional reflection on the unique nature of the social-spatial geography of Manhattan would give caution to a complete rejection of the External Control Model.

It had been assumed at the start that, by virtue of the random mixture of tracts and routes combined in the analysis, any peculiar or non-random settlement patterns would be subdued. In other words, since all tracts were aggregated before the regressions, any peculiarities related to a single

route and the subset of tracts it traversed would be overwhelmed. For instance, since ridership tends to be higher at the midpoint of a route than at the ends, this should not impact the overall results since some routes are fully within low income areas and others are completely within high income areas. However, upon further consideration, it was felt that the uniqueness of Manhattan may have had a residual impact on the results.

Uniqueness of New York City

In terms of any number of measures, New York City defies easy comparison. Despite some recent outmigration, New York City still ranks as the most populous city in the United States. With 7 million inhabitants it covers 1,044 square kilometres in five boroughs. As a major center for finance, banking, insurance, communications, publishing, fashion, design, retailing, advertising and tourism, the greatest concentration of its activities and residential development is in the 57 square kilometres of the Borough of Manhattan. This density is unusual by North American standards.

Even when compared to the other boroughs of New York City, Manhattan itself presents a rather unique demographic portrait. Over 40 percent of Manhattan's residents work in managerial and professional occupations compared to a range of 17 percent to 25 percent in the other boroughs (1980 Census). Similar disparities exist for the other socioeconomic

variables such as levels of education and income whereby Manhattan far surpasses the other boroughs. Much of this can be attributed to the professional and financial services that replaced the outgoing manufacture sector in Manhattan. Even though Manhattan lost approximately 500,000 manufacturing jobs during the 1970s, the white collar sector expanded. While the other boroughs simply lost manufacturing jobs with little else to fill the void, Manhattan attracted a professional middle class that invested in its neighborhoods. As a result of its prominence as an international financial and cultural capital, Manhattan also has the highest cluster of upper-income earners in the city.

These data do not mean that Manhattan is too homogeneously well-off to have served as a representative case study. In 1980, 14.6 percent of Manhattan's population lived at or below the poverty line and were on public assistance. Blacks and Hispanics represented 45 percent of Manhattan's population compared to only 33 percent of Queen's, and not far from the 50 percent of Brooklyn's. Both racially and economically, Manhattan contains a diverse population base.

It has been widely recognized that the intense activity of Manhattan would not be possible without an efficient public transit system. And indeed, in a singular pattern for the United States, 85 percent of the 1.5 million peak-hour commuters to the central business district travel by public transit, another 5 percent by privately-operated buses and

only 10 percent travel in cars. Despite this transit orientation, the streets of Manhattan are frequently clogged with traffic and measures to further discourage car usage are constantly sought. Complementary initiatives have also been attempted to reverse subway ridership trends which have been in decline since 1947 and bus ridership trends, which while less severe, have also declined since 1970.

A tenable argument exists that the urban reality of New York is so unique as to make any generalization to other cities pointless. However, a number of scholars have pointed out that New York is perhaps no more exceptional than the United States is exceptional. One should no more reject a case study based in New York than in any city in the United States. Furthermore, as Bellush and Netzer (1990, p.5) have argued, "most of the structures, processes, actors and pressures that are central to an understanding of New York City government have counterparts in other cities".

It is a truism that each city has its own unique social, physical and economic ecology, and Manhattan is no exception. However, Manhattan -- restrained by its island location -- does tend to differ from the majority of large urban centers in that its residential density does not radiate from a single downtown core in the typical concentric circle pattern. Rather, the population in Manhattan is unevenly distributed, with pockets of even higher densities interspersed amongst the generally high overall density. The bus routes which overlay

this distribution and are the subject of this study, follow the grid pattern of streets and avenues crisscrossing this uneven distribution.

Higher income and white residential areas in Manhattan tend to be concentrated in the areas known as the Upper East Side, and, to a slightly lesser extent, the Upper West Side. Both these areas are within the geographical midsection of Manhattan. Conversely, the lower income and non-white residential areas tend to be concentrated in the upper (northern) and lower (southern) geographic segments of Manhattan.

Given the configuration described, bus lines which travel the length of Manhattan will inevitably traverse the lower income areas at the ends of the route, and the higher income areas at the middle of the route. When this factor is coupled with the usual ridership patterns along a bus route, there results a complication in the proper interpretation of the data. Peak ridership points on bus routes tend to occur most frequently in the middle segment of routes, precisely where the higher-income tracts are located in Manhattan.

This indeed was the result of the data in the current study. The income variable was the most significant **positive** correlate with the APL, but **only on the uptown-downtown routes.** In other words the highest ridership concentrations matched the highest income areas on these routes. Pointedly, the crosstown routes, which tend to travel through more

homogeneous sets of tracts, demonstrated no significant correlations for income. This latter result would support rejection of the income results from the uptown routes as spurious. For it would seem that the influence of the typical ridership patterns of a typical bus route (highest at mid-points) coincided with the unique spatial reality of higher income tracts overwhelmingly being located at the midpoint of the uptown-downtown routes to create a result that was not replicated under more random conditions (the crosstown routes).

A similar explanation can be drawn for the negative correlation of Blacks with APL on the uptown-downtown routes. The areas of highest Black population concentrations are in upper Manhattan, mostly at the ends of these lengthy bus routes. It is particularly revealing to contrast this result with the **positive** correlation which was generated from the crosstown data. Routes that travel crosstown through largely Black areas tend to have poorer service than similar routes through white areas.

This crosstown outcome may lead to support for the External Control Model, but this too is far from indisputable. Firstly, the degree of correlation, as mentioned, was not very high. More importantly, the results did not become significant at all until the additional observations from the Bronx routes were entered into the analysis. While the logic of including these observations is persuasive (these segments

of the routes represent the only crosstown bus service in upper Manhattan), it may be that the decision-making process under the Technical-Bureaucratic Model simply suffers from a lack of good information in this situation. A complete explanation of this phenomenum would require a similar study on all Bronx bus routes. Suffice it to say that the simple categorization of these routes as Bronx routes would lend support to the idea that these routes are treated in some manner differently from Manhattan routes.

The one remaining finding which supports the External Control Model, the negative correlation of professionals and APL, is somewhat complicated. Part of the confusion lies in the striking absence of similar correlations with factors that would normally be associated with professionals: education and income. One could argue that this result alone does lend further evidence to the theory that those who can best articulate their concerns to those in power, or are best-connected, can indeed impact the level of service provided their neighborhoods.

This one finding would support an External Control model in that it violates the neutrality expected by the Technical Bureaucratic model. The concept of an articulate citizenship having impacts on service delivery in the urban context has been the source of a good deal of debate. It raises issues of the impact of citizen contacting, political participation, and

bureaucratic responsiveness. Through what means would this professional class influence the decision-making process?

Citizen Input into Government Decision-Making

In Verba and Nie's (1972) work on citizen participation, four modes of participation are identified: voting, campaigning, individual contacting and communal activity. They also classify participants as: totally inactive, totally active, voting specialists, campaigners, parochial activists and communalists. Political participation is defined as any instrumental activity through which citizens attempt to influence the government to act in ways which are preferred (p.26). As a number of researchers have found, this participation is often through groups at the local level concerned with improving their areas (Lamb, 1975). Indeed, broad-based electoral coalitions are usually not feasible for urban service issues which affect only a limited number of citizens.

The standard socioeconomic model of political participation places occupation, income and education as the primary influences on the degree of participation by citizens. Individuals in higher social status positions, it is asserted, have the civic orientation and concerns that will lead to participation (Verba & Nie, 1972). A good deal of evidence exists regarding the very limited participation by poor and working-class populations in civic organizations (Milbraith,

1965). While Gittel (1980) has pointed out that this research ignored certain other avenues of participation for these classes such as trade unions and fraternal organizations, she concludes that the bulk of research still verifies their comparatively minimal participation in traditional political organizations.

This again raises the question of how to explain the results of the present study which determined that the impacts of education and income were not significant. While occupation played a role, its impact was only minor. Other empirical service delivery studies, such as a study of citizen contacts with Detroit service agencies (Jones et al, 1980), have also failed to confirm this traditional model of participation by the socioeconomic upper strata. When Verba and Nie themselves examined a national data base applied to their four modes of participation, they found the model worked well for campaign and communal activity, less well for voting, but not at all for particularistic contacts. This is especially enlightening in that it is just these sorts of citizen contacts which would likely have the most critical impact on variations in local service delivery as compared to the national political arena.

The degree of impact of this form of public participation on actual decision making has been the source of much discussion. In systems analysis, political demands were originally conceived as one form of external input into

political systems (Burnett, 1984). Cornelius (1974) expanded on the issue of political demand-making by developing the first model based on **needs**. His formulation posits that an individual must first perceive a need, then must determine that the government is indeed capable of satisfying that need, and finally, must be aware of the necessary channels through which to pursue the need.

Subsequent scholars have elaborated on this theory of needs and have shown how they are often a function of location (Jones, 1980). This spatial conception of needs is particularly relevant to an urban service such as public transportation. For instance, when a particular citizen requires access to his/her place of employment, this need exists independent of any individual characteristics and indeed can be changed or eliminated simply by a shift in location. Sensitivity to a spatial factor is what most clearly separates urban public services from other forms of government intervention.

As critical as this spatial factor is, it does not extract urban services from the influence of racial or class biases. Indeed, the available evidence indicates that contemporary sociospatial patterns are increasingly inequitable as a consequence of the segregation of races and income groups deployed throughout the metropolitan region (Gottdiener, 1985). Consequently, policy analysts have argued that sociospatial inequities have become progressively more

salient as public policy issues for local governments (Fainstein & Fainstein 1980; Megret 1981).

Measurement of Government Responses

Beyond any examination of a demand-making process, the issues of government response and output must be considered. Indeed, this was the central focus of the current investigation. A noted economist put the issue as how the government decides to best distribute each set of services to each household (Shoup, 1964). He went on to note that the usual criteria of equality, equity, and efficiency are often in conflict. Equity is most typically related to the issue of needs (Viterriti, 1982). In other words, according to this view, those who need more, should receive more. This differs from a strictly egalitarian arrangement in which all resources are distributed equally without regard for individual differences or needs. Efficiency is somewhat difficult to measure in service agencies as compared to the tangible products of manufacturing firms (Balk 1978).

The APL measure used in the current study was conceptualized as a measure of equity **and** efficiency. Any number of alternative measures (revenue per mile; service miles; frequency of service) could have arguably been used to measure transit on strictly an efficiency level, and indeed these alternatives represent the typical statistics gathered by transit operators for their own records and for reporting

to state and federal agencies (such as the federally-required Section 15 data). They all meet a general definition of efficiency as the maximum level of output for the minimum expenditure of resources.

However, effectiveness indicators also are often used to measure the impact of a particular service on the environment in which it is provided (Hatry, et al., 1977). In this regard, the APL measure fulfills this function in that it directly measures the degree of service provided to a neighborhood and thereby includes an assessment of equity.

Is the relationship between efficiency and equity in the decision-making process often one of conflict as Shoup has asserted? More recently, Bramley (1989) has argued that local public services are provided according to different standards which give rise to a variation in the territorial distribution of resources. Within a public finance framework, certain alternative broad approaches to service distribution were constructed. The **normative** approach relies on the determination of needs by third party professionals to calculate output. A needs-related output standard developed by Bramley was adopted as the official recreational needs assessment formula for England. The rationale supporting this standard was related to concerns with participation rates in order to equalize outcomes. With regard to recreational needs, Bramley argued that a standard could be simply derived by population use weighted by age.

This standard stands in sharp contrast to an **individualistic** approach which stresses allocative efficiency derived from a demand function and equalization of output (Culyer, 1980). Within the individualistic approach Bramley identified two measures: a service-related welfare standard equalizes welfare per capita, while an allocative efficiency standard equalizes at the margin ratios of benefit to cost. Both these standards rely on measures of direct user benefit as derived from the estimated demand function and disregard any external benefits. Calculation of this standard is more difficult than a needs-related standard since one must determine the level of output in each locality which comes closest to satisfying the criterion. In order to derive the solution, Bramley constructed a simulation method requiring an iterative procedure with varying levels of output entered until the required level of usage is just exceeded (Bramley, 1989). Bramley's own research showed that standards based on equal usage differ radically from an allocative efficiency standard, and substantially from an equal provision standard. Interestingly, regressions he ran on actual expenditures revealed little relationship with any of these standards (Bramley, 1989). An earlier study on public transportation in England, came to a similar conclusion (Evans, 1985).

The proliferation of conceptualizations of equity in the policy literature has made for a good deal of confusion. At least five different interpretations of equity have been

offered by policy analysts: equality, need, demand, preference, or willingness-to-pay, or some combination of these concepts (Lucy, 1988). The commonly held concept of **equality**, or equal treatment for equals, raises all sorts of attendant problems as has been discussed. For instance, would the appropriate measurement of equality be one of expenditures, frequency of service, hours of service, ridership levels, or per capita usage?

As already mentioned, a commonly applied basis for equity involves the measurement of **need**. As a basis for determining equity in distribution the argument would be that those who need more transit service should get more, or should pay less, than others for the same service. Traditional bureaucratic rules would supply more transit service to those areas where ridership is highest. But this ignores the fact that low-income people may actually need the service even more but just cannot afford to use it as often on a discretionary basis, thus artificially driving down their apparent level of need.

The typical approach by planners and public officials to public services relies heavily on the utilitarian paradigm which attempts to maximize overall aggregate social welfare (Beatley, 1988). The paradigm has been described by J. S. Mill as "The creed which accepts as the foundation, utility, or the Greatest-Happiness Principle, holds that actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of

happiness." (Mills, 1961 p.194). The focus though is not on who specifically benefits or loses, but the net aggregate results across the entire population. For instance, a particular bus routing may be chosen because it will generate the greatest ridership and revenue regardless of the fact that it may not serve those who need it the most. In other words, there could be frequent service provided for an exclusive shopping area, while entire areas with low-income people needing to travel to work could be bypassed altogether.

John Rawls (1971), in his seminal work, *A Theory of Justice*, directly attacked the utilitarian model. He constructed an ethical framework in which he characterizes society as an inherently cooperative venture wherein each person's benefits and burdens are fundamentally arbitrary. Within this framework, a "Difference Principle" asserts that social and economic policies must offer the greatest benefit to the least-advantaged group. Once public institutions have improved the conditions of the average member of this group, they implement the "lexical difference principle" which requires them to maximize benefits for the next least-advantaged group. Thus, under this framework, transit routing decisions would not necessarily be of the greatest net benefit unless they also resulted in maximal benefit to the least advantaged.

A number of problems in implementing the Difference Principle have been brought forward (Beatley, 1988). There

are the ever-present practical limitations on the scope of planners to actually advance the interests of the least-advantaged. Even if those can be overcome, there remains theoretical issues in delineating the relevant social groups, determining the appropriate parameters, and even the determination of which goods should be considered "primary goods" according to Rawls. Should levels of transit service be determined by income levels? Low income people may need cheaper transit fares, and they tend to be more transit dependent than others, but should that mean that they necessarily receive more service?

The current study has examined actual distribution of transit services in New York City based most strongly on the **demand** criterion. Demand is essentially a variation on economic market principles in that those who seek more of a service should receive more of it. Using demand as a measure of equity in service distributions can be problematic. For instance, by basing library book purchases on the basis of actual use, there can be a definite bias towards residents in middle-income areas compared to low-income people. However, basing bus routes on ridership levels is more likely acceptable in that ridership levels tend to be highest amongst low-income persons.

Ideally, a **preference** measure would eliminate some of the shortcomings of the demand concept of equity. As indicated earlier, actual demand fails to account for low-income people

who would take many more discretionary trips if cost was not an issue. Preference would measure this demand by presenting the choice without a cost attached. However, accurate measurement of preference is extremely difficult. Non-behavioral measures, such as surveys, interviews or focus groups can provide some degree of information. Indeed a strong argument can be made that just these sort of latent demand surveys should be conducted by transit operators, particularly in disadvantaged areas.[12]

It could also be argued that the measure used in the current study contains a strong element of the **willingness-to-pay** concept in that any transit rider is paying for that ride. By this measure of equity, those who benefit from the service pay for it, while nonbeneficiaries do not pay. Support for this concept is driven by a behavioral basis which views mere expression of preferences as too abstract, perhaps insincere, unless one is required to sacrifice at least some resources or make some kind of trade-off. However, a compelling problem arises in the strong relationship between this concept of willingness-to-pay and the ability-to-pay.

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[12] It has long been something of a mystery to this writer as to why transit service is typically distributed without even the most minimal attempts to measure potential ridership. As elusive as these data may be, it would serve the highly useful purpose of encouraging greater transit ridership by supplying service in a proactive, rather than the typical reactive, manner. The answer to this may lie with the bureaucratic guidelines to be discussed further on.

Transit remains one of the rare urban public services which requires a willingness-to-pay on a per use basis. This differs substantially from the vast majority of public services, (such as police, fire, streets, garbage, libraries, etc.) where not even a minimal fee applies regardless of one's use or lack of use. This raises a particularly troubling question as to the relative usage of different services by various socioeconomic groups.

Transit generally is used most frequently by lower income groups (Pucher, 1981), especially for nonwork trips (USDOT, 1992). Yet, it is perhaps the prime example of a pay-per-use service. A strong argument exists that middle- and upper-income groups benefit the most from services such as police and fire protection for they have the most to lose. It is also likely that they benefit far more from other no-fee public services such as streets (they own more cars) and libraries[13]. One might counter that attempting to charge for use of most other services would be administratively awkward. Yet the unique approach of user fees for transit service does raise some difficult challenges to the basic principles of equity in urban service distribution.

One question has to do with the equity of distribution among different types of service functions. This differs from

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[13] In fact, in what has become the watershed study of urban service outcomes, it was revealed that in Oakland, California, the bulk of new library book purchases went to branches located in the wealthiest neighborhoods where higher levels of circulation already existed (Levy et al., 1974).

the issue of distribution of public resources within a particular service function (Rich, 1979), the area of investigation for the current study. Distributions within a particular service, such as transit, are typically decided by planners and administrators within a single bureaucracy. However, distribution of resources among different services is usually determined by elected officials. It is these officials who are most susceptible to the influence of individuals and groups through means such as voting organization and financial resources. Therefore, though specific transit routing and service decisions may generally fall outside the sphere of influence of external actors, the allocation of resources to transit as a whole can fall prey to these power brokers. It may well be a consequence of these lines of influence that has institutionalized transit fares, and indeed encouraged their increases, whereas user fees have not been introduced for most other urban services. Thus, even if it is determined that transit services have been distributed equitably throughout the service area, there still can be a fundamental inequity in the distribution of resources to transit as a whole compared to other services.

While the entire issue of transit user fees is beyond the scope of the present study, it is worthwhile to note that the usual criteria for determining the type of service most eligible for fees for service would indicate something entirely at odds with current practices. Generally,

those services which are considered more specialized, discretionary, and with a highly identifiable subset of users (e.g. municipal golf courses), are most appropriate to charge users the cost of those services (Lucy, 1988). Transit on the other hand, strives to attract the broadest population base and is mostly used for non-discretionary travel. Therefore, by the usual standards, transit users should not incur a usage fee, or at the very most, a very minimal fee.

As is well known, the reality is quite different. Fare increases, often substantial, have come to all transit systems with familiar regularity. In 1990, fares and revenue paid for almost $3 billion of the $5.7 billion operating costs for New York City transit. Across the United States, the farebox contribution to total revenue which had stabilized from 1980 to 1983, has increased since then, reflecting fare increases during the 1980s (USDOT, 1992). More importantly, the actual share of cost varied by type of service. Indeed, according to one study, those riding less than one mile paid fares that were $0.17 more than actual operational costs, while 25-mile-trip riders, the high-income class in the suburbs, paid fares which averaged $3.17 less than the costs (Wachs, 1985).

Political scientists have described how capitalist interests strive to control local government budgets from siphoning money from production and accumulation by pressuring for service cutbacks when fiscal distress develops (Morris, 1980). Increased user fees are simply another means of

service cutbacks. As fiscal constraint grows, budgetary retrenchment has dramatic impacts on both service delivery and user fees.

Insofar as businesses have mobility which enables them to threaten to move from jurisdictions that tax them too heavily, they are able to influence the financing of the public sector (Peterson, 1981). This private sector control of the local public sector may even function without any knowledge or intention on the part of these firms. It simply is a function of the interdependence between the fiscal condition of local governments and the economic well-being of their home industries (Watkins, 1980).

This interdependence is not regarded as altogether negative by all. According to Peterson in his book City Limits (1981) the economic prosperity of the private sector creates jobs and tax revenues for public programs and other benefits that trickle down to all residents.[14] But as Kantor has argued persuasively, any redistributive impulse that is present in urban communities runs up against the limitations of their economic dependency (1988). He points to one of the notable exceptions to this as New York City when its postwar revenue base allowed it to expand its redistributive role in services, for instance by keeping transit fares low. But the

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[14] Community power and neo-Marxist critics have taken issue with this view of a common economic and political interest in a city. They argue that conflicts can occur over any number of economic growth issues.

more recent fiscal reality, especially since the city's budget crisis, has had a devastating impact on funding.

The Role of Bureaucratic Decision Rules

While the relationship between local revenues and private economic activity sets some limits on general expenditures, the patterns of services and the distribution of services can still vary considerably according to Rich (1982). As was earlier mentioned, his review of the behaviorally-oriented research on urban service distributions suggested that local bureaucracies play a crucial role in determining service levels and distributions (Rich, 1982). Those aspects of the Technical-Bureaucratic model that were favored by the empirical results in the current study, reflect the "bureaucratic decision rules" that appear to be the most powerful explanation of observed service delivery patterns in a range of research (Sanger, 1982). These decision rules routinize behavior, simplify tasks, and provide a convenient and economical basis for action. They are the formal and informal guidelines that allow planners and administrators to make the multitude of decisions they confront on a daily basis.

Bureaucratic decision rules are rarely the result of a fully rational decision-making model in which all possible alternatives are evaluated and the optimum one is selected. The costs associated with this sort of process are very high

due to the sheer number of alternatives. In order to transform the process into something more manageable, a number of different approaches have evolved. At least four different approaches to bureaucratic decision making have been identified by Pierce (1974). These include: political decision making, process decision making, systems decision making, and programmed decision making. **Political** decision making is composed of various conflict resolution processes such as bargaining and coalition formation. **Process** decision making is an incremental approach for seeking an acceptable decision which Lindblom (1959) has termed "muddling through." When an organization's goals are reasonably well defined and agreed upon, a **systems** decision making process which systematically searches for the appropriate one is possible.

It is the **programmed** decision making approach which most closely resembles the actions of the Technical-Bureaucratic model. When the goals and responses of an organization are not open to serious challenge then a standard set of operating procedures can function. The programmed approach has been recognized in private sector organizations for a few decades. March and Simon (1958) coined the term "performance programs" to describe an organization's predetermined response to recurrent situations. These performance programs allow an organization to avoid the inefficiency of repeatedly examining all possible alternatives for repeated similar situations. As

Simon describes it: "decisions are programmed to the extent that they are repetitive and routine, to the extent that a definite procedure has been worked out for handling them so that they don't have to be treated *de novo* each time they occur." (Simon 1960, pp. 5-6). In other words, if ridership on a particular route is rising, then increase the service; if it is falling, then cut back service.

However efficient the programmed decision making approach may be, it suffers from a number of major drawbacks. Situations which may appear somewhat comparable will be responded to similarly even when this is entirely inappropriate. Little discretion is available for responses which become fixed and inflexible. For instance, as has been illustrated earlier, it may well be that lower income areas require more transit service than ridership data alone would indicate. By basing the amount of service strictly on bureaucratic decision rules that respond simply to current ridership levels, no consideration is allowed for factors such as the ability to pay. There is little room for more creative approaches such as new types of local service or even alterations in routes.

Yet, to a bureaucracy struggling to provide service in a context of limited resources, the path of least resistance is to invoke a formal allocation of outputs according to prescribed guidelines. These guidelines can easily be justified in terms of professional standards aimed at ensuring

efficiency and effectiveness in service delivery, even though they likely have been adopted simply because they make the job of allocating outputs easier.

Bureaucratic Autonomy

It has also been asserted that another motivating factor in bureaucratic agencies is the desire for autonomy and freedom from external interference (Lineberry & Sharkansky, 1974). These intentions would clearly put it at odds with the very foundation of the external control model which posits an acceptance of, and responsiveness to, just these sorts of influences. Yet, Sayre and Kaufman found in their research on New York City that "bureaucratic groups, especially as they mature in their organization and in their self-awareness as cohesive groups, share with all other groups the aspiration to be self-sufficient and autonomous." (Sayre & Kaufman, 1960, p.405) It may well be that the New York City Transit Authority has indeed reached a stage of its development as a bureaucracy that enables it to resist all such external pressures. One of the major tactics used by bureaucracies for resisting encroachment is in their promotion of technical expertise and stringent rules of professionalism. Cyert and March (1963) described this process in the private firm which hires an accountant or an engineer not simply as an individual, "but also a large number of standard operating procedures that have been trained into the new member of the

organization by outside agencies." (Cyert & March, 1963, p.105) A similar analysis has been applied to the increasing professionalization in public service agencies (Jones et al., 1980).

The expertise of transportation planners, for instance, make them indispensable to the operation of the modern transit agency. Political forces have limited direct control on the bureaucracy because this expertise is necessary for its continued functioning. In his examination of the Chicago Building Department, Jones (1985) demonstrated how the specialized talent and expertise of certain staff professionals made them immune from external pressures even in the context of a well-developed political machine and even in the presence of political appointees.

Indeed, bureaucracies were termed the "new machines" in urban politics in a provocative article by Theodore Lowi (1967) which compared party-based and bureaucracy-based machines. These new machines resemble the old machines in their nearly autonomous structures of power. Unlike the old machines that responded to a higher political authority - usually the mayor, the new versions are loyal only to their specific agency and to professional norms. New York City was considered a prototype of these new autonomous islands of power by Sayre and Kaufman (1960). A recent analysis of New York's bureaucratic structures found little change in its corporate culture of the civil service (Blank, 1990). While

different mayors have been able to influence the "overall tilt" of the system, the variations were marginal at best. This does not mean that there have been no fluctuations in the bureaucratic structures of New York over the past few decades. Back in the early 1960s, Sayre and Kaufman (1965) viewed the city as essentially managed democratically with a centralized political power base which was still able to exercise some control over the various emerging bureaucracies. But by 1970, Sayre would declare that this power had been fragmented and decentralized to a number of bureaucratic agencies which had grown to such an extent that they became more powerful, autonomous and insulated entities (Sayre, 1970).

Indeed, this pattern of transformation was not entirely new. Throughout its history, New York had seen the shift between centralized and decentralized authority a number of times (Rogers, 1990). In the late nineteenth century, New York City was organized mainly on a decentralized ward basis, with patronage politics determining major decisions. The municipal reform movement, led by a middle- and upper-class elite helped to transform the system into centralized and "professionalized" bureaucracies.

The Cyclical Patterns of Bureaucracy

In this regard, New York is not unlike any other organization. As Larry Greiner (1972) pointed out in an influential article, patterns of evolution and revolution are

displayed cyclically by all organizations which fluctuate between centralization and decentralization. As organizations increase in scope, they require bureaucratization to establish uniformity, standards and control. This eventually stifles their flexibility at the local level. This can present a problem in that geographically dispersed parts of an organization can be quite diverse in their needs to serve different markets. Pressure for decentralization mounts. Decentralization then results in fragmentation and failure to follow a common policy. The cycle keeps recreating itself.

Transit in New York does not easily fit into a similar pattern. Beginning with the amalgamation of various private companies into a single city agency, the historic direction has been towards increasing centralization. Even in transit's transformation from a city line agency into a public authority it has not demonstrated any move towards decentralization of powers. In fact, since it underwent a consolidation of its powers under its regional parent, the Metropolitan Transportation Authority, the New York City Transit Authority has even resisted attempts by city agencies to participate in design of new routes and strives to limit the information it releases to the Board of Estimate (Walsh, 1990).

Activist mayors have been able to exercise some indirect influence over some authorities by appointments to their boards. And, especially since the fiscal crisis of the 1970s, the business and financial community have become more involved

with authorities. This certainly is divorced from the original ideal of the public authority as a means to remove political compromise (Axelrod, 1989).

Indeed, this has colored the view of authorities by many consumer groups. Back in the 1960s, Sayre and Kaufman were able to proclaim that civic groups liked public authorities for what they could accomplish on issues such as transit. But by the 1980s this was no longer true. As their actions increasingly fell well short of earlier expectations conflicts developed between the authorities and the very groups who had earlier supported their formation. This was certainly true of the New York City Transit Authority which was hit hard by the fiscal crisis of the 1970s forcing it to defer maintenance and allow equipment to age and service to deteriorate.

Chapter 8: CONCLUSION

If the providers of urban services, such as the Transit Authority, are truly bureaucratic machines staffed by technical planning experts applying neutral rules and guidelines essentially free from external influences, is this a satisfactory arrangement? In terms of the present study: having demonstrated the evident success of the Technical-Bureaucratic Model, does this mean that the disadvantaged are receiving fair treatment?

A number of flaws in the strictly technical application of so-called equitable distribution rules have been discussed. These problems relate to the difficulty of determining an adequate definition of equity, the confusion of the notion of willingness-to-pay with the ability to pay, and the inability or disinterest in considering latent demand. Furthermore, the more fundamental problem of differential treatment of transit and other urban services in terms of payment for use has been highlighted. Beyond these problems, the very professionalism of the bureaucrat can act in a manner contrary to the needs of users.

The Role of the Professional in a Bureaucracy

This thesis was predicated on an examination of the role of the transportation planning professional within the

contemporary urban context. It became increasingly clear that the defining issue was the impact of the bureaucratic milieu within which the planner functions. However, professional planners also bring to their position within the bureaucracy a whole set of expectations and experiences that can interact with the bureaucratic system in producing outputs.

Professionals are dominated by middle-class biases which lead them to design services that appeal to middle-class clients. These biases were evident in an interesting investigation into the failure of landscape architect students to provide designs for a community that the actual clients would like (Low, 1982). A thoughtful analysis revealed the problem as a "professionalization" of these students, which had already habituated them to the standard norms and practices of their chosen professional culture. Similarly, these professional norms, which are supposed to guide the planning and distribution of services in a way that helps everyone, usually result in helping some more than others. Those that are helped most are typically those whose life experiences most closely resemble those of the planner. In the final analysis, these "neutral decision rules" have a definite class bias (Levy et al., 1974; Lipsky, 1980; Sjoberg, Brymer, & Farris, 1966).

In a recent piece of research on the distribution of recreation services in Chicago, Mladenka (1989) was able to introduce a number of major improvements over previous

methodologies which had failed to establish any biases. His thorough analysis revealed that a class bias had become pre-eminent (replacing a racial bias). Apparently, distribution rules were greatly biased towards areas that maintained stable middle-class neighborhoods. It would seem that the planners of park and recreational facilities in Chicago were most likely to provide these services to precisely the sorts of areas in which they would live, or at least, with residents who lived the sort of lifestyles with which they could best identify.

While the various sources of bias in the bureaucratic public service agency discussed earlier are perhaps beyond the reach of the individual planner working within the structure, these personal and professional class biases are not so. Through an understanding of the influence of these biases on the decision-making process, there remains the possibility of breaking their shackles.

A new term that has occasionally surfaced in the literature is "heroic bureaucracy". Coined by Marcus (1981), with thanks to Levy et al. (1974) who only found unheroic bureaucracies in their research, it refers to efforts to devote public resources to social problems in a new manner. The resulting outcome is a larger distribution of benefits to groups with less (Couto, 1991).

There are other encouraging signs. Mladenka's (1989) longitudinal research in Chicago also revealed that traces of

racial bias in resource distribution had all been eliminated over a 22-year period. And results from the present study revealed almost no evidence of racial or economic bias in the distribution of transit services in Manhattan.

Despite these occasional successes, planners would do well to recall the words of Norton Long over three decades ago:

> Planners usually fail to recognize that plans are policies and policies, if they are to be more than art for arts sake, require politics to give them life...The question is not whether planning will reflect politics, but whose politics it will reflect,...what values and whose values will planners seek to implement? (Long, 1958, p. 168).

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