

URBAN PLANNING, POLICY AND MANAGEMENT*

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Abstract: This paper deals with some important sources of confusion in discussions of urban issues. The first part distinguishes urban planning as a "future oriented" activity, from urban management which is primarily concerned with resource allocation. (The nature of urban development — interdependence and long life — makes a long-term perspective important.) When urban management aims to implement a plan the two are complementary. Urban policy covers a broader range of issues. The second part distinguishes four levels of debate about urban issues: ideological, political, operational and technical. Frequently debates in urban studies are not coherent because the participants are arguing at different levels and therefore make different assumptions about what is given and what can be varied. It is argued that the various levels form a hierarchy so that debates at any level need to assume particular positions with respect to higher level questions. Ideological issues include individual *versus* collective perspective, capitalist *versus* socialist, the appropriate role of markets and governments and the relative weight given to equity and efficiency criteria. The examples of political issues discussed are rationality *versus* group pressure as explanations of government behaviour, and whether planning is mainly a political or a professional activity. Operational issues include the appropriate level of government for carrying out urban functions and the role of statutory planning and other policy measures. Technical issues focus on predicting the effects of policy measures and external changes on cities. The different levels are illustrated by a discussion of policy towards inner city areas.

Introduction

Urban planning is a well established field of activity: it is incorporated in legislation and is the recognized activity of special purpose public authorities and a profession with its own training courses and professional organizations. In recent years people from other disciplines have taken an increasing interest in urban policy, and have included planning among the aspects of urban policy under discussion. Planning has also been criticized by those who believe that it has been ineffective in achieving government objectives. They see the need for more management of cities and less emphasis on long-term planning. The first section of this paper distinguishes between planning, policy and management and shows how they are related.

The second, and larger section of the paper attempts to focus the debate about urban policy by distinguishing the different levels of questions which different writers have been asking and by showing how they relate to one another. It seems useful to distinguish ideological, political, operational and technical questions. People arguing at different levels are unlikely to come to grips with one another and recognize, let alone resolve, their differences.

Planning, Policy and Management

Among the meanings of the verb "to plan" given by the Oxford Dictionary, that which comes closest to its meaning in relation to urban policy is "to

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arrange beforehand". Planning is essentially an activity that is oriented to some future result. There is a sense, of course, in which all activities take a certain sequence: they are planned, carried out and then produce a result. But plans that are concerned with where urban facilities, services, housing and the like will be located are — or should be — always concerned, not only with the immediate future but also with the long-term future. Streets, houses, parks, schools, shops and factories last for a long time and cannot easily be moved, so it is very important to look well into the future in deciding where, and how large to build them, and what kind should be built.

Because urban buildings and infrastructure nearly always stay in the same place for a long time, and because the spatial relationships between them have a great influence on how a city functions, the term "planning" has special significance for location — whether at an urban or regional scale. If someone is known simply as a "planner" it is almost certain that he is a town planner — a "planning authority" is concerned with urban or regional planning. Economic planners, corporate planners and service planners are seen to be special cases. Of course other kinds of planners, such as transport, water and other service planners are also concerned with location. The distinctive feature of "planners" in the general sense, or land-use planners, is that they are concerned with the location of everything — all land uses — and with the spatial relationships between them.

The need to plan future locations (land-use) arises from interdependence — the best location for housing depends on where jobs are located and vice-versa — and from the fact that different facilities are installed at different times and by different people, firms and public authorities. The "plan" provides for them all. If they are located as a result of separate and independent decisions taken at different times by different people the spatial arrangement is unlikely to be particularly efficient or equitable.

It is sometimes useful to distinguish between the making of plans and their implementation. From a semantic point of view the distinction is sensible. "Arranging beforehand" is not the same thing as carrying out those arrangements. From the point of view of division of labour and making use of diverse skills also, this distinction has advantages. Planning requires vision, imagination, and an ability to grasp the relationships between different elements of the urban fabric. Implementation requires hard-nosed bureaucratic skills, an ability to design and implement controls, to negotiate with government departments and authorities and to cajole businessmen.

It is not surprising that many planners find the making of plans exciting and intellectually and aesthetically challenging, but find implementation a pedestrian and often disheartening chore. Bureaucrats are impatient with plan-making. They see it as woolly and idealistic and believe that it ignores market and political realities. Many worthwhile plans gather dust while decisions about urban development are made in response to current economic and political pressures, with only a cursory bow towards avoiding the worst excesses that can result from unbridled greed.

Many administrators who have become impatient about the visions of the planner can still see the need to maintain some minimum standards and to make allowance for efficient provision of public services. They have proposed

that we give less attention to planning and more to urban management.¹ Management is primarily concerned with the day-to-day decisions that need to be made about location. It sees a need for collective (public) decisions and sees most of those decisions to be concerned with resource allocation. Hence the tendency of the advocates of urban management to redefine planning as resource allocation in cities.

There is a sense in which plan implementation is primarily management, and giving greater attention to urban management is a desirable shift in emphasis towards implementation. Urban management has, in one respect at least, a broader sphere of action than planning. Planning authorities have never been very successful in getting the cooperation of those public authorities responsible for provision of infrastructure services and social services such as education. But urban management regards land-use and service location as part of the same problem and all grist to its mill.

In one sense, the advocates of urban management are more guilty of a lack of realism than the advocates of traditional planning. Except in small centres where the local authority is responsible for land-use planning and for the provision of services, there are no authorities in Australia which could perform the functions of urban management, and therefore there can be no urban managers. There have been attempts in some State governments to exercise urban management but they have made little progress to date. These attempts are taken up again later in this paper.

As long as urban management is primarily plan implementation it falls within the traditional planning framework. But if it became independent of planning, and pursued its own separate objectives such as efficiency in the provision of services, outside the land-use planning framework, it would become a series of distinct policies rather than any part of urban planning. One of the strengths of urban planning is its holistic approach. It includes economy in the provision of services as one criterion among many in devising plans for the future shape of cities and regions. Without such comprehensive plans to provide criteria for their actions, operational authorities are likely to pursue partial, different and often conflicting objectives.

One of the advantages of urban management, at least in theory, is that it can include other policy instruments as well as land-use controls — the main tool available in traditional plan implementation. On the other hand one of the absurdities of the recent discussions of urban management has been the concept of negotiated planning as an alternative to land-use controls based on adopted land-use plans. Negotiated planning means the use of the power to control land-use in negotiating what development rights individual private land owners might be granted, as a means of achieving other policy objectives. Presumably the outcome of the negotiations is always uncertain when they begin so that the result, in terms of land-use depends on the bargaining positions of the negotiators. While this procedure certainly uses land-use controls to achieve public objectives, usually by requiring contributions in cash or kind towards

¹Australian National Commission for Unesco, *Urban Management Processes*, Proceedings of a seminar held in Adelaide 22-25 August 1977, Canberra, AGPS, 1978.

the cost of public facilities, it is not part of planning in the sense of "arranging beforehand". Negotiated planning might be loosely described as unplanned planning, or controls without planning: "wait and see what development is proposed and use the power to control land use to make the best deal you can".

I would not want to argue in favour of completely rigid land-use planning, so that once a plan is adopted it must be adhered to, come hell or high water. But I would argue that in the trade-off between predictability and flexibility the long life and fixed location of urban development should push urban planning further towards predictability than most other kinds of planning. To simplify, planning without management is fruitless, but management without planning is pointless. Both statements are over-simplified but they do highlight the fact that each needs the other.

Policy is a much more general term than either planning or management. It encompasses both the objectives sought and the instruments used to achieve those objectives. Both planning and urban management are instruments used to achieve policy objectives. The term "planning objective" is simply an abbreviation for "policy objective pursued through planning".

At the level of policy we need to be concerned both with those measures that are directed at influencing or controlling location and with those which, while mainly concerned with other objectives, still have an effect on location. We also need to ensure that, as far as possible, different measures do not have conflicting effects. Those who analyze spatial aspects of society and the economy, and those who make policy decisions, must concern themselves not only with possible conflicts between different parts of location policy, but also with the operations of the institutions involved in each and with the complementary and competitive relationships between them. The remainder of this paper deals with aspects of urban (that is location) policies, and concentrates on policies that have been implemented through planning measures.

The Debate about Urban Policy

The debate about urban policy in general and planning in particular has suffered from the fact that the proponents are often arguing at different levels.² Some take as given the very aspects of policy which others question. Sometimes economic, social or political arrangements are taken as given because the author approves of them; on other occasions because he or she sees no likelihood that they can be changed. Few academic authors tell us the reason, even on those rare occasions when they spell out what they assume. I hope that this part of the paper will help clarify this discussion by assisting readers to classify policy discussion into one of several levels. At each level there are two kinds of discussions. The first is analytical: an attempt to understand why policies have been adopted and what effect they have had. The second is

²These reflections arise in part from comments on my own writing by Andrew Parkin, "Cities Without Politics", *Politics*, 16, 1979, pp.291-4; and Leslie Kilmartin and David Thornes, *Cities Unlimited*, Sydney, Allen and Unwin, 1978.

prescriptive: recommendations about policy measures that should be adopted to achieve a desired objective.

These different levels form part of a hierarchy, in the order of ideology, politics, operations and techniques. The more general level of debate comes higher in the hierarchy. It is only if some agreement can be reached about the higher level questions that a useful analysis or discussion can be carried on at the lower level. To tackle questions about the operations of planning or other policy authorities, for example, it is necessary to take some ideological position and to make some assumptions about how political influences work. Those who believe that they are value-free technicians of urban policy may be unaware of the ideological or political positions they are taking but are none the less adopting particular positions.

Ideology

Views about urban policy differ most sharply at the ideological level. For the radical right there should be no such thing as urban policy. Freedom, they would argue, cannot be maintained if governments interfere with the rights of the individuals, especially individual property owners.³ Such libertarians believe that there should be very little government activity in cities. In particular, questions about distribution should be settled at the national level and redistribution should occur solely through cash payments. Governments should not enter into urban policy. Most, if not all services could be provided by private firms,⁴ or by cooperation between small groups of families or property owners. Few urban scholars in Australia take this extreme view, though there are elements of it in some of John Paterson's writing.⁵ I find the views of the radical right appealing in their consistency but lacking in humanity. They seem to take a view of the world which is far too individualistic to be useful in urban policy debates.

At the other extreme, the radical left is more numerous and more articulate. They too are not primarily concerned with urban policy as such. In their view current urban problems are a symptom of inappropriate relationships between capital and labour in production. Without a radical change in those relationships there is little that can be achieved to improve cities, and little point in trying. People like Manuel Castells, David Harvey and Ray Pahl have, in different ways, helped us to understand the implications of Marxist analysis for urban policy.⁶ In particular they have shown more clearly that urban questions are almost always simply the manifestation in cities of broader social questions. They have also highlighted the importance of the distribution of power in determining the way issues are resolved. Although they aim to be

³D.R. Denman, *The Place of Property*, Geographical Publications Ltd., Berkhamstead, England, 1978.

⁴D.R. Booth, "An Analysis of Private Land Use Controls and Private Cities as Systems to Produce Public Goods", Ph.D. Thesis, UCLA (University Microfilms, Ann Arbor), 1970.

⁵For example, John Paterson, David Yencken and Graeme Gunn, *A Mansion or No House*, Urban Development Institute of Australia, (Victoria), Melbourne, 1976.

⁶Manuel Castells, *The Urban Question*, London, Edward Arnold, 1977.

explanatory their theories are difficult to test. In the end one has either to accept their view of how society functions or to reject it, largely on faith or intuition. For myself I find some of their insights valuable but the implications of their analysis of society for urban policy difficult to understand and, as far as I understand it, difficult to accept.

Even if one accepts their analysis of society there are quite pragmatic reasons why one need not follow their view on policy. The fundamental changes in production relationships that they advocate seem most unlikely to occur in Australia. If that is true, they have little or nothing to say that is helpful. The question about how best to provide for collective consumption, of course, remains.

Between those two extremes are found the majority of policy analysts, including myself. There is still plenty of room for ideological disagreement even among those who claim the middle ground, between those who believe that solutions to urban problems must be sought mainly through government actions and those who believe that the main problems arise from inappropriate actions of governments and the general inefficiencies and insensitivities of bureaucracies.

There is some hope that empirical research can help to narrow the gap between these two ideological positions (for example, comparisons can be made between the experience of different countries). But it is unrealistic to expect too much. One group has an idealized view of the efficiency and discipline of the market and can see all the shortcomings of bureaucracies. The other is impressed with the monopolistic and exploitative aspects of private industry, the inefficiency of the market, shown for example in property speculation, and the inequity of the distribution of income and wealth the market produces. It sees government activities as a far better alternative and often turns a blind eye to their inefficiencies. One reason why it is difficult to reconcile these two views about the roles of governments and the market is that the ideal situations about which each group enthuses seldom occur. Even if they do occur in another country it is most likely that the results of adopting their policies would be different in Australia. For example, Australian business would probably behave differently from American business even if it were given the same freedom, and Australian authorities would be unlikely to perform in the same way as Swedish authorities even if they were given the same expanded powers and responsibilities. Indeed it can be argued persuasively, as Hugh Stretton has,⁷ that the particular roles played by the public and private sectors are much less important than how each behaves.

Ideological considerations affect the policies advocated even by those who accept the present broad distribution of responsibilities between government and the private sector. For example, one of the underlying problems in urban policy is that the demands of individuals for places to live, and of businesses for places to operate (and where they provide jobs and services) often change more rapidly than social and physical infrastructure (much of which is provided by

⁷*Urban Planning in Rich and Poor Countries*, Oxford University Press, 1978.

governments) can be moved, or wears out and can be replaced. Passive or adaptive planning, which has been the main philosophy governing Melbourne's planning, for example, concentrates mainly on attempting to predict future private demands and then meeting the demands for infrastructure that result. More active planning puts more emphasis on trying to influence, or even direct the demands of private firms into locations where their demands will contribute to the efficient use of the available infrastructure. One approach takes the demands that arise in the market as given, the other tries to influence those demands. Which emphasis is adopted depends on how much a government wants to encourage growth in employment and how far it believes it can push firms around without losing them to another city or State.

The distinction between radical and conservative views seems to have fewer clear implications for urban policy than the distinction between those who want a more individualist and those who want a more collective society. Most people want to conserve some things and to change others. Physical conservation — of natural or man-made features of the environment — may be best achieved through radical changes in social relationships. That was the view of the Builders Labourers Federation. Those who want to change the social system, either to a more individualist or to a more collective one, may see marginal or gradual (rather than revolutionary) changes as the way to move towards their goal. For example, people on the radical right argue for reduced government controls in particular areas and the radical left for a more equal distribution of services in urban areas. Radicals of both kinds want to use policy measures not only to guide and restrict change, but also to stimulate and lead it.

Some people believe that the main objective of urban policies is to achieve a more equitable distribution of welfare by redistributing income, wealth and welfare from the rich and advantaged towards the poor and disadvantaged.⁸ For others the main objective is to improve the efficiency of resource allocation in both the short and the long term. Economists have long recognized equality and efficiency as two major social objectives (a third, stabilization, has only indirect relevance for urban policy). Neoclassical economics holds that, at least over significant ranges of the achievable levels of efficiency and equality, more of one can only be obtained at the cost of having less of the other.⁹ The reason is that they believe that differences in income are necessary to provide an incentive for owners of resources, including labour, to use them in the most productive way. Social Darwinists draw on biological analogies to support this view.¹⁰ That viewpoint is challenged by others who deny that the expectation of higher income is necessary as an incentive. One of the few empirical tests of this proposition is known as the New Jersey Income Maintenance Experiment.¹¹ It showed that placing a floor on incomes had little effect on work behaviour:

⁸David Donnison with Paul Sato, *The Good City*, London, Heinemann, 1980.

⁹For example Arthur Okun, *Equality and Efficiency: The Big Trade-Off*, Brookings Institution, Washington, D.C., 1975.

¹⁰Garrett Hardin, *The Limits of Altruism*, Bloomington, Indiana University Press, 1977.

¹¹Harold W. Watts and Albert Rees, *The New Jersey Income-Maintenance Experiment, Vol. II Labour supply responses*, New York, Academic Press, 1977.

people worked almost as much even when their incomes were guaranteed. Economists have tended to ignore the social and psychological satisfaction people gain from working and contributing to society. Although empirical studies, including some experiments,¹² can help to resolve these differences in belief about the need for financial incentives, such beliefs are firmly based in differences in views about the nature of society.

Whether or not equity and efficiency are competing objectives, the question of which should be the primary focus of urban policy remains. Those who are primarily concerned with efficiency give most of their attention to issues such as traffic congestion, efficient public transport, efficient provision of public services, land speculation and the resource allocation effects of taxes and charges. Those who are primarily concerned with distributive issues will place more emphasis on policies such as housing standards and housing costs at the lower end of the market, access to jobs and services, variations in levels of taxation, and differences in quality of services between locations.

Every policy measure both influences the efficiency of the allocation of resources and affects different groups of people in different ways, though often one of these effects is much more important. The relative importance to a policy analyst of the efficiency and equity objectives will affect not only the choice of policy issues that are analyzed but also the policy measures that are considered and the relative weight that is given to their allocative and distributive effects in evaluating them.

An example may help to illustrate the conflict. It is easy to demonstrate that the present level of congestion on many city roads is inefficient and that some road users would be prepared to pay significantly more than their current costs of road-use in the form of a road user charge, while others would not. An optimal user charge would allow those who value road-use most to use them under less congested conditions since others would be priced off them. However such a charge would change road-use from being essentially a free service to being priced. It would allow those who can afford to pay more to use them and make things more difficult for those who cannot. The final effect on different groups depends on what is done with the revenue, but there is a strong likelihood that the poor would be worse off and the rich better off. Therefore our attitude to charging for the use of congested roads depends, in part, on the relative importance we place on efficiency and equity objectives.

Politics

Some people believe that governments make most of their decisions on the basis of a rational analysis of ways of achieving agreed objectives and others believe that policy decisions are mainly the outcome of a struggle between different groups for power and influence. The differences between these views are seldom as clear as the ideological differences discussed above. Those who believe in the power of rational policy analysis generally accept that different

¹²Vernon L. Smith, "Experiments with a Decentralised Mechanism for Public Goods Decisions", *American Economic Review*, 70, September 1980, pp.584-99.

groups have different objectives and that any policy measure has different effects on different groups. The fact that they give little attention to the process of policy formation presumably reflects a belief that governments are mainly swayed by rational analysis — which examines ways of achieving gains for particular groups — or at least that their behaviour can be analyzed usefully in this way. This does not deny the importance and complexity of the political processes by which such group interests get translated into policy actions, but it does assume rationality in the long term.

The alternative view is that some groups have much greater power and influence in the political system than others, and that governments often act to preserve the power of such groups as well as to pursue specific policy objectives. The dominant group may be a racial group, capitalists, the ruling class, or even a regional group. Detailed analysis of political processes can help us to find out which groups have been successful in influencing policy, but it is much more difficult to test very general hypotheses about the influence of capitalists. People who hold this view are naturally pessimistic about achieving redistribution through government actions. If governments are under the thumbs of the rich or the capitalists they are unlikely to carry out more than a token amount of redistribution.

On a more prosaic level the study of the politics of urban policies can show how those policies influence the distribution of income, wealth and access to services between income, racial and ethnic groups and even age groups. Some policy decisions depend on which department or authority is more powerful. Other policies have been adopted because they benefit a particular minister's electorate. This has been particularly important in location policy since some services or facilities can readily be located in marginal electorates.

There is another important respect in which policy analysts differ in their approach to politics. It has become fashionable to stress that planning is a very political activity since planning actions and decisions always favour some groups at the expense of others. Those who regard planning as primarily a redistributive process see it as a way in which the relatively poor can use their political strength to lessen the economic disadvantages they suffer relative to the wealthy. Planning and other aspects of urban policy are among the items on the agenda in the struggle for shares of the product of society.

Some others, who also regard redistribution as an important part of planning, take a quite different approach. They see it more as a professional and less as a political activity. To them, the planner shares with the social worker and the housing manager a responsibility for assisting the weak and powerless. Their approach also is altruistic but, since they rarely ask the poor directly what they want, it tends also to be paternalistic. This approach seems especially suitable in relation to the very poor who are unlikely to be either numerous enough or skilled enough to exert much political muscle.

This somewhat old-fashioned approach has real limits since it does nothing to redistribute power to poor people so that they can determine their own future. Doing good by stealth can only last as long as the electorate can be misled, and appealing to the altruism of the powerful depends on their benevolence. At best it can be professional, compassionate and effective; at worst insensitive and degrading like some of the worst public housing. The

election of a radical right government, or cutting of funds in periods of economic stringency can spell the end of such policies.

Mobilizing the poor politically involves alerting everyone, including the rich, to the distributional results of planning. Where the majority of voters have middle or higher incomes, as they do in Australia, forcing planning even further into the political arena may reduce rather than improve the ability of planning authorities to use planning to improve the conditions of the poor. Those on middle incomes may combine with the rich to force planning measures that disadvantage the poor. It is difficult to assess the likely results. How far have the failures of planning resulted from an incorrect analysis of the likely results of policy measures and how far from the actions of powerful groups whose well-being and wealth they threatened? If the former has been the main reason, then the professional/paternalistic approach can be held responsible for much of the failure, but if it was the latter (opposition from the rich and powerful) this approach may be better than politicization of planning issues. But it is only through the exercise of political power that any permanent redistribution can occur, and even minority groups, if they become active, can exercise a good deal of power.

Operation

If agreement can be reached about the ideological and political assumptions it is useful to begin to discuss operational questions about how to implement urban policies and what kinds of institutional arrangements are most appropriate for their formulation and implementation. There are a large number of questions here. I want to focus on one particular area that I have already introduced in discussing urban management: the distinction between operational and statutory planning.

The only way in which traditional land-use planning can be implemented is by formulating and getting community and then government acceptance of statutory plans, which then provide the main criterion for the exercise of land-use controls. If a change in land-use is consistent with the land-use plan it is permitted; otherwise it is not allowed. The procedure seems simple. The preparation of plans is, in theory at least, open and participatory since the plan is exhibited, can be objected to and is subject to public hearings. It is democratic in that the whole process is under the control of local governments or State government authorities. The rights of individual land owners are protected through rights of appeal at both the plan approval and the development application stages.

Statutory planning should not be idealized. Neither the preparation of draft schemes nor the administration of development controls allows for either openness or participation: on the contrary these procedures are secretive and open to manipulation by those with "inside knowledge". The appeals system tends to become legalistic, costly and time-consuming and the planning issues are often lost to sight.

Statutory planning has encountered endless difficulties in attempting to control land-use and implement land-use plans. Some of the reasons for its difficulties are easy to identify. Statutory planning decisions frequently oppose

market forces. They often reduce the profits of individual land owners and developers compared with what they could make if the controls were relaxed. (It is arguable, of course, that their profits, as a group, would be even lower if there were no statutory planning, but this does not deter a particular developer, whose profits depend on a particular zoning decision, from trying to get it.)

There is one particular difficulty that might be overcome by a different, operational approach to planning. Land-use plans include, at least implicitly, plans for future development of a wide range of urban services including transport, education, health services and open spaces. Since the appropriate location for these and other services depends on both the present and future location of housing, commercial and industrial areas, joint planning is obviously sensible. Unfortunately different services are provided by different departments or authorities that are responsible to ministers who are equal in rank to the minister for planning and more senior in the government hierarchy than local councils. Many were well established before land-use planning became a serious activity of governments. They jealously guard their autonomy. Unlike private land owners, they are not required to get approval from the planning authority for their developments.

Operational planning is primarily oriented to planning, scheduling and installation of government services. It has so much potential for helping governments to achieve their location objectives that a number of attempts have been made to develop it into a coherent operation and to link it to statutory planning. While statutory planning works through controls that are essentially indicative and negative, operational planning acts through positive activities: urban investments of governments. It can include the whole public sector role in urban investments and servicing: public land development, public housing, provision of industrial estates and sites for shopping centres.

While such a step may seem rational and efficient it can only be taken if a high level of coordination can be achieved between the different responsible governments, authorities and departments. This is a formidable organizational problem in itself even without the jealousies among, and competition between authorities. Nevertheless, some progress is being made and there is certainly now a greater awareness of the problems and the possibilities of operational planning.

Operational planning is mainly concerned with the implementation of a particular plan which contains its own ideological assumptions. It is not surprising that the whole issue seems beside the point to those who are primarily concerned with the redistribution of power, and seems downright dangerous to those who do not accept the ideological assumptions on which the plan is based.

Techniques

It is really only when most of the ideological, political and operational aspects of urban policy have been agreed that those technical questions that have preoccupied many academics and consultants should be considered. Many technical studies claim to be neutral with respect to ideological, political and operational issues. But in reality the "technical" solutions they have

proposed have ideological, political and operational implications that are hidden from view rather than exposed and defended. Most of the technical aspects of policy analysis revolve around two questions: first, what are the likely changes in the city in the future, especially as it grows; and secondly, how would it respond to various external changes and specific policy measures? Urban models are mostly designed to answer those questions. A few, especially in the transport field, are more ambitious and aim to sort out which policy measures will give the best results, judged by some simple criteria. These in particular have implications for each of the higher levels.

It is fairly fashionable now to say that most of these models, and especially those that aimed to model the whole city, have borne very little fruit. This includes the transportation models which cost millions of dollars to calibrate and had some general influence on the spending of many more millions of dollars. The reasons for their failures are fairly obvious. They are all based on a view of a city as a system. That in itself simply says that its various aspects are highly interdependent. But the models, like all models, are necessarily based on a grossly simplified abstraction of the urban system. Urban model-building requires more knowledge than we have of which are the important relationships that need to be incorporated in the model. I would argue that general models of cities are impossible. There are too many important relationships to be incorporated into a manageable model.¹⁴ They have, of course, taught us something about the complexity of cities and some simpler, partial models have proved more useful.

The comprehensive models were built on very shaky foundations in another respect as well. There has not been enough research for us to specify accurately all the relationships that form the building blocks for the models; for example, we do not understand adequately the factors that influence where people choose to live and where they choose to work. In the interests of technical virtuosity the "experts" built models with strong internal logic that were based on an inadequate understanding of the real world they were trying to explore. The models reflected their authors' greater interest in techniques (for example, the intellectual fascination with entropy maximization) than in real policy questions.

Disillusionment with the results of large model building is not limited to studies of location. In economics many of the econometric models that filled the pages of the best journals are seen now to have produced disappointing results.¹⁵

Even if they had worked in terms of their own objectives they would have contributed little to policy. First, they have seldom regarded the distributional results of policy measures as important enough to predict, though this is less true of some recently developed simulation models of the housing market. Secondly, they could at most help with plan-making; they have little to contribute to the perhaps more important field of plan implementation, though

¹³Max Neutze, *Australian Urban Policy*, Sydney, Allen and Unwin, 1978, chapter 10.

¹⁴Hugh Stretton, *op. cit.*

¹⁵Richard Lipsey, "World Inflation", *Economic Record*, 55, 1979, pp.283-96.