

Transport and Regional Development

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ABSTRACT

Present transport techniques are producing systems incapable of completion and not generally related to land-use services, social facilities, or total economic development. Yet, transport planning is not a separate field from these others, nor from land planning. We need interdisciplinary studies which balance land-use and transport-use within specific ranges of intensity in selected regions of the environment. This is part of the strategy of managing complex interconnected systems for maintaining agreed quality standards. Transport elements are keys to regional development policies. Various forms of metropolis will dominate regional strategies, and we cannot envisage perpetual growth but rather a controlled evolution towards a dynamic balance in each region.

The Split

Rapid advances in the field of transport technology and practice have, in the last 20 years, created an almost autonomous field called *transportation planning*.¹ This field has moved ahead of the related fields of urban and regional planning, land-use and community planning, to the mutual disadvantage of all who are concerned with establishing better living conditions.^{2, 3, 4} Instead of an integrated attack on the problems of urban and industrial society, there has been a massive drive by transport specialists to advance their techniques; instead of resulting in mutual advances in the professions dealing with land-use and transport, a separation has developed between the professions dealing with the environment:⁵ that which should not have been split, has been split.⁶ The result is that the conventional urban planner has been restricted to a

limited role, dealing with land-use aspects; and the means of circulation have become almost exclusively the practice of the engineer. The early successes of such techniques as the *gravity model*, and the adaptability of single-purpose transport planning to exploit computer approaches, have combined to accentuate this split. The conventional planning profession has lagged far behind in the application of similar techniques to land-use and density problems. The sad result is that land-use and transport, which are inextricably intertwined, have become separated.⁷ Increasingly, the environmental planner is restricted to dealing with what are termed *land-use* problems. His contributions to transport studies tend to be limited to the service function of calculating land-use trends, and to certain comments, in a philosophical tone, on the problems involved.⁸ The engineer is generally charged with the creation of transport networks, so as to “solve problems”; and because the philosophical issues (and the total environmental problems) are outside his framework of reference, and not susceptible to precise mathematical techniques, they are treated as of marginal interest. For lack of a clearly united professional analysis of problems, as a whole, political decisions become confused and the net result is the creation of bigger problems, perhaps worse than those which went before.⁹

The Need

The need is for an integration of the two fields, that is, for developing techniques which deal with the *whole* problem of “land-use-and-transport”; and also with the problem of regional development.¹⁰ We must question the fundamental problems relating to the origin of traffic movements. An example is the rapid increase in week-end traffic⁹ out of metropolitan areas, in search of recreational areas. The current answers in North America are, generally, to increase the number of routes and their capacities and, in essence, to accept the inevitability of the trend. It can be argued that this accentuates the trend. It is surely worth asking whether the creation of a more attractive urban environment, or the creation of new urban centers in attractive recreational environments, should not also be part of the armory of the planners of land-use and transport systems?¹¹

Another example is the trend for rural depopulation, centralization in metropolitan areas, and for long-distance commuting to existing urban growth centers. These attractions, like those of the recreational problem, get built in to the gravity-models and the result is generally to accentuate the established pattern. This can only serve to increase the strain on the facilities involved, and to emphasize the inherent problems. Suppose, by contrast, that there was enough research on “optimum advantage” of certain kinds of facilities to state that under no circumstances should

interurban routes exceed 4-lane-divided, controlled-access design? Would not our ingenuity soon indicate new regional development strategies to avoid some existing problems, and to prevent such problems as interchange-breakdown,^{12,13} road congestion, and inflexible constructions? Or suppose that we used transport planning deliberately to create a constellation of related urban nodes, rather than to augment existing centers? Or suppose we chose to divert some of the growth into static or actually declining areas and regions?¹⁴ A decision to aid the decentralization of industry, or to create attractive growth-centers in the best place among a member of marginally competitive places, or to create new towns of 250,000 people in new locations, would radically change many of the current obsessions in transport and land-use planning.

The Incomplete Networks

Analysis of the existing proposals for regional metropolitan and urban networks, by independent comparative studies and by examination of the individual proposals themselves, shows that, in general, in North America there is a reliance on the power of technology to cure everything, and a basic assumption that the money supply is endless.

Some of the current symptoms:^{15,16}

- a. there is evidence that great networks have been begun (expressways) but that there are not enough funds available for their completion in the allocated time-span.
- b. generally, it appears that there will be very few major urban areas in which the expenditures on such networks will result in real improvement in 20 years.
- c. in most urban areas, it appears that the emphasis on expressways has been at the expense of the subsidiary arterial systems (and frequently appears to be a substitute for the completion and revision of arterial systems). This may inordinately increase loading on the partly completed primary expressway networks.
- d. generally, the expressway network is imposed on the regional and urban structure in an insensitive way, and in most urban areas it appears to generate another cycle of urban decay.
- e. in most urban and regional areas, there is inadequate research on the consequences of expressway building; they may be increasing environmental instability. The cure may be worse than the supposed disease.

These are major challenges to the environmental professions. There is as

yet very little research on the key question: how to create and maintain¹⁷ a balance between road-use and land-use in a given sector of the environment, and in the urban area or region as a whole; and how to guide and permit change in land-use, in road and rail facility, in underground services, in population density, and in intensity-of-use, so as to maintain “dynamic equilibrium” without creating decay, congestion, and imbalance in the systems of

- a. land use
- b. underground and supporting services
- c. social facilities
- d. transport facilities¹⁸

The incomplete networks now generally work to generate imbalance and near chaos. We need an ecological concept in our joint work. Roads are for people and not for vehicles! Perhaps we should think back to means of minimizing traffic movement, and ways of avoiding unnecessary trips: perpetual motion should cease to be our ideal.

The Challenge of Metropolis

The metropolis is a new phenomenon. Instead of resisting it, ought we not to encourage the creation of new metropolitan “axes of development,” and seek to divert some of the pressures on existing core areas of present-day metropolitan centers? The challenge of metropolis is its promise of more freedom of choice, more rewards; and despite all the vast environmental problems, the attraction of the metropolis will increase. This is a power which can be used to overcrowd that which exists, or to create a more balanced structure. But to adopt the second course means to think in terms of largescale regional development.¹⁹

Major research studies all over North America have served to indicate the future scope and extent of existing and incipient metropolitan areas. As yet we lag far behind Sweden, Denmark, and the United Kingdom, and even behind France, Japan, and the Netherlands in the use or application of this research. Repeatedly, fine studies are made by teams or by specialists in regional and metropolitan planning; and repeatedly, these and the monumental transportation studies which so hopefully presaged a new grasp of these problems, become obsolete and forgotten. This is because they are not part of a national process (at the Federal level) of integrated “land-use-and-transportplanning.”^{20, 21}

Yet, the challenge of metropolis increases rather than diminishes. The U.S. Advisory Committee on Government Relations, in 1965, estimated that by 1975 urban renewal and highway programs would displace

825,000 families (more than four times the total up to 1965). They also noted that in some cities the relocation process had been hampered because of initial shortages of alternate housing. Apart from the problems already inherent in the metropolitan areas, there is the implicit stress of the projected population increases. The U.S. population is expected to double by the year 2010 (it could more than double). Of this vast increase, some 80% is likely to be in the metropolitan areas. Even in the lesser increases the projection is immense: in New York State from 16,000,000 (1965) to 30,000,000 in 2020. In the San Francisco Bay area, at the opposite end of the scale, the Conservation Study Commission, in 1965, presented to the California State Legislature an estimated increase from 4,000,000 people to an estimated 14,000,000 by 2020. That would be 3.5 times the 1965 level. In Canada, the Economic Council has indicated "the fastest rate of urban growth" (average annual percentage growth 1951-61) among industrialized nations; a projected population increase of 5.8 million people in total urban population by 1980, most large cities doubling their population within 20 years, and a 60% increase in larger centers by 1980.²²

In summary, the words of the Economic Council of Canada appear to apply to all of North America:

"the regional and interurban aspects of city growth are relatively unexplored, and it appears that analytical and institutional arrangements for dealing with an emerging range of problems are scarcely developed."²²

The advance reservation of space for the corridors of transport has not been made; the statutory regional development plans and resources development commitments for the forecast increases simply do not exist; all this, despite some excellent theoretical work and research studies. It is a tragic prognosis. It is avoidable.^{23, 17}

Questions of Development

There is no magic about 1980 or any other year; but there is evidence that the whole process which is already forecast could be repeated in the decades after that, and perhaps again and again. It is not difficult to see a total saturation of existing metropolitan areas: the North-East Corridor of Gottman's "megalopolis" analysis (Boston-New York-Philadelphia-Baltimore-Washington) predicts a 150-200% traffic increase by 1980. Passenger air travel is predicted, in the same corridor, to increase four times the national average. Most urban regions show similar trends.

There is growing concern in the European planning profession for the results of this in terms of the actual environmental quality which results.

This is a concern that at some level (perhaps 2,000,000-3,000,000 population) the balancing of systems of land-use and transport is possible. Hence, a good quality of environment results; but beyond some such point, the technology needed to handle problems (such as 16-lane freeways and multilevel interchanges) becomes dominant and destructive of living conditions.²⁴ The Buchanan report also seems to indicate that at some point the whole environment must be totally rebuilt to make a precarious and probably impermanent adjustment to traffic technology.²⁵

There is also, in the less powerful economies, a growing concern for road-pricing, and for exerting econometric controls over road networks, to avoid embarking on an interminable search for dynamic flexibility, and to allow certain levels of stability to be established.²⁶

At the root of both professions (land planning and transport planning) it is possible to see the emergence of an approach not unlike that of the conservation engineer: diminish the flood volumes to be dealt with. This demands an interdisciplinary approach:

- a. establish regional development policies which will result in a lesser demand and need for traffic
- b. plan for the most convenient relationships of land-uses, densities, intensities, and nodes of development to minimize movement¹⁷
- c. divert development from overdeveloped (i.e., impossible) situations to create new poles of attraction and reduce peaks^{27,17}
- d. avoid development strategies which increase concentration; seek instead to disperse development and decentralize. This means an earlier creation or recognition of the eventual metropolitan structure. It may even mean (as in Randstad Holland,²⁸ or the Copenhagen "finger plan") diverting to undeveloped areas and depressing growth in mature areas; or (in London for example) actually removing and relocating development, as in the creation of the new town of Milton Keynes (250,000 population), between London and Birmingham
- e. use urban renewal as an instrument to improve traffic systems¹⁷
- f. recognize that, while the best, most attractive, *immediate*, and *limited* benefit-cost ratio will clearly be obtained where traffic and demand are already heaviest, this must necessarily invite a repetition of the problem, on a larger scale. But the best *long-term* and *total* benefit-cost ratio will usually be quite different. Roads are too important to be left to the engineers; they are an instrument of regional development^{29,26}
- g. then plan for the unavoidable minimal levels, and off-peak operating

conditions, and use the creation of new poles of attraction to draw off accumulating demand²⁷

- h. develop control measures which will enable the optima to be maintained²³

It appears that the future for the united and cooperative endeavors of the allied professions involved constitutes a major imperative overriding, all sectional, and specialist concerns. North America is in danger of having all the advanced techniques and little of the practical application. By taking an interdisciplinary and integrative approach: by being concerned for prevention rather than cure, we may yet recognize in both theory and practice that land-use and transport are indeed inextricably intertwined, and that where they are planned compartmentally, the result is an unsatisfactory set of living conditions.³⁰

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