

**DISCUSSION PAPER**

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on

**Panayis Psomopoulos's**  
**TOWARDS MEGALOPOLIS**

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TRENDS IN URBANIZATION

Attitudes to studies of the future may take two forms. One stems from a wish to know what may be in the future in order to prepare for it; the other stems from a wish to know what may be possible in the future in order to make it happen. The best futurists encompass both these attitudes. That is, they project the current trends, they identify the consequences and they examine the possibility of influencing these trends and consequences. The work of the Athens Centre of Ekistics described by Mr. Psomopoulos is in the best tradition of the latter approach.

The trends which the paper identifies are frightening. Global population growth, urbanisation, and poverty being the key issues. Other references, although not agreeing in detail, bear out these projections.

It took mankind more than a million years to reach a population of one billion; the second billion required only one hundred and twenty years; the third billion thirty-two years and the fourth billion fifteen years - that is from 1960 - 1975. By the year 2000 it is expected to be more than 6 billion and, on the Athens Centres' scenario of ultimate equilibrium, it might finally level off at around 20 billion sometime in the next century.

It is also anticipated that, of the 2 billion plus increase in world population expected between 1975 and 2000, more than 1.5 billion will be citizens of developing countries - particularly Low Income Asia (680 million), Sub-Saharan Africa (330 million) and Latin America (1,250 million).

Between 1920 and 1970 the proportion of the world population living in towns and cities increased from 19 to 37 per cent and by the year 2000 over half of the world's population is likely to be living in urban areas. This urban migration, especially in the developing world, clearly involves enormous numbers of people. Between 1950 and 1975 the urban areas of developing countries absorbed some 400 million people and between 1975 and 2000 the increase will be close to 1,000 million.

By comparison, between 1950 and 1975 the urban areas of industrialised countries absorbed some 200 million people and between 1975 and 2000 the increase is expected to be only about 120 million.

Otherwise stated, the average annual growth of urban population in the period 1970 to 1980 was 4% and rising in developing countries and was 1.2% and falling in industrialised countries.

Also, whereas urbanisation in industrialised countries took many decades, permitting a gradual evolution of urban systems, the process in developing countries is occurring much more rapidly.

A comparison of city size emphasises the differences in the pressure of urbanisation between the developing and the industrialised countries. Table 1 of Mr. Psomopoulos' paper indicates that in 1950 only one city in the developing countries, Greater Buenos Aires, had a population of over five million compared with five cities in the industrialised countries. By the year 2000 it is anticipated that the developing world will have about forty cities at

or above five million and, of these, at least eighteen are expected to be over ten million (see Table 3).

In the last decade cities like Mexico City and Sao Paulo have been growing at more than half a million people per year.

It is clear therefore that the pressure for change in urban form and systems arising from population growth is now, and will continue to be, very severe in the developing world, particularly in the low income areas of Asia, Latin America and Sub-Saharan Africa.

By comparison growth of urban population in the industrialised countries is falling to quite modest levels of less than one per cent per annum.

It follows that the pressure for change in urban form and systems in the industrialised countries will not emanate primarily from the growth of their own urban population. It is more likely to emanate from other pressures, such as the search for less costly and more efficient means of communication, the search for more effective, efficient and pleasurable use of time and the need to conserve scarce resources.

In the developing countries the situation is quite different. The pressure on urban systems from the sheer scale of population growth is overwhelming. The technology and the management skills to cope with it are not adequate and these countries cannot afford to buy from the industrialised world. A view of possible futures in the urban structures of these countries will then be

very different, on current trends, to that in the rich and technically advanced nations.

DEVELOPMENT OF TECHNOLOGY

Perhaps it is worth identifying first some things which are not likely to change. Take for example, the human body. The size of humans and how they are born, grow, function and die is not going to change too much. The nature of human beings as a gregarious, self aware, moral species will, hopefully, not change. This for a start imposes certain conditions on the new technologies and the future urban forms.

It means, for example, that there will continue to be a demand for food, shelter, water, power, waste disposal and transportation. There will continue to be a demand for personal mobility. The characteristics sought from the transport system, for example, will still be that it is, independent, ground based, highly manoeuvrable, weather-proof and each unit must be able to enclose at least two persons and some baggage. The units may have no wheels, they may hook into guided systems, they may have pollution-free power sources, but they will still occupy, both in motion and at rest, approximately the area of a small automobile. This, in turn, means transport rights-of-way not radically different from our current highways.

The most dramatic technological evolution which is currently taking place is in communications and particularly in the area described as 'tele-mobility'. In theory this technology could revolutionise such activities as work, shopping, education, medical care, entertainment and so on, by eliminating the need for people to travel or to assemble. This offers the possibility that the metropolis or megalopolis might evolve into a series of relatively independent neighbourhoods or 'urban villages'.

The dispersal of land-use activities and the creation of mixed developments in neighbourhood units or 'urban villages', with all the daily requirements close to hand, certainly could reduce the compulsion to travel. Unless there is real restraint on travel it also increases the choice of facilities within the same travel parameters. People are such contrary creatures that all the evidence to date suggests that when such dispersal takes place travel does not decrease. The duration and range of trips remains fairly constant and the opportunity is used to extend the choice of activities. This is not to deny the benefits of urban villages or neighbourhoods but, of itself, such a structure is not likely to reduce urban travel congestion.

The demand for a high level of urban mobility in units which can have sufficient independence for door to door service simply will not go away and the technical evolution will require to produce units which will give urban citizens the individual advantages of such a system while eliminating or reducing the social, environmental and resource costs to the community.

Much technological development will create its own market in the contrived competitiveness for labour-saving and entertainment devices. The effect on urban life style may be significant, but the consequences for urban systems will not be great. Examples are television, telephones and freezers. These have had a great effect on life style, but not a lot on urban form and the basic needs of urban citizens for food, water, power, dwelling, heat, daylight, rubbish disposal, sewage disposal, and so on, are not likely to change. The technology for satisfying these demands will evolve, but not in a way likely to make significant changes in urban form.

' It is hoped that there will be developments in such things as district heating and recycling of waste products to make them self-financing, but again the effect on urban systems and town form will be marginal.

Whereas in the urban areas of the developing world the overwhelming need is to introduce urban systems and services for the first time, in the industrialised cities the main thrust is likely to be maintenance, replacement and extension of old systems. Therefore, it is in the developing world that the real opportunities for large scale innovation exists.



OPPORTUNITY FOR CHANGE

The rate of change of urban land-use in industrialised countries is unlikely to exceed one or two per cent each year. Alterations to the urban form can therefore only be long term and marginal. The major change has to be in the way in which the existing urban area and its systems are used.

The most probable locations of significant opportunities for physical change are in the central business districts, where commercial pressures generate a continuous redevelopment process, on the periphery of the central business district where urban decay and obsolescence and neglect tends to predominate, and in the outskirts and suburbs where the new planned neighbourhood developments are usually found.

These development and renewal processes do allow a slow planning evolution to take place, especially if it is coupled with control on the use of the static areas. This implies comprehensive and integrated management and planning of existing and new urban development.

The traditional concentric or cartwheel form of cities, surrounded by a green belt, needs to be re-thought. High density corridor developments or linear grids, with a series of dispersed centres can be shown to satisfy the criteria for efficient urban systems more flexibly, more efficiently and at less cost. This is the area in which Mr. Psomopoulos has, I believe correctly, counselled us to stop fighting urbanization and instead to seek to tame it and he also has identified "multinuclear band formation" along well defined "axes of urbanisation" as the evolving form of most of the world's megalopolis. The

increase in the number of megalopolis structures from 12 to 160 between 1970 and 2000 will be dominantly in the developing parts of the world.

Paradoxically in the developing world their greatest problem - rate of growth - is also the source of their greatest opportunity. Urban areas often double within ten years. The scale of land development and change is very rapid. This raises the possibility that, if only it could be planned, managed and controlled then innovative urban forms and systems could be developed which would promote the general criteria of efficiency, quality and equity.

Unfortunately the omens are not good. The lack of resources of all kinds makes it very difficult. There is a lack of knowledge, there is a lack of institutional authority, there is a lack of effective control, there is a lack of money. Those responsible for planning and for urban services can barely keep up with what is happening, far less get ahead of it and control it.

The key must surely lie in the development of some international consensus on land utilization and this is rightly stressed by Mr. Psomopoulos. Land is currently the main source of wealth and is consequently the battleground between the rich and the poor. The introduction of change is thus complicated politically and technically difficult being inhibited by vested interests, by cultural attitudes, by extensive bureaucracies, by abuse and by corruption. Despite these problems it is vital that we respond to the challenge presented to us by Mr. Psomopoulos when he wrote in his paper "we must discover what the inevitable future is which has been decided by nature and man; what can

be controlled by us; what the most desirable city for man is and finally how , we can write the specification for it, lay its foundations and build it".

It would be naive, however, to assume that if 'we' - the technocrats - did come up with the recipe which would tame urbanization and offer hope to the urban poor then the world at large would be motivated to use it.

A useful study on Future Development Dimensions (Reference 4) identified three possible attitudinal scenarios. The first is the prevailing one of 'Stubborn Persistence' characterised by a resistance to change in consumptive life style and ignoring the symptoms and warnings of such prophets as the Athens Centre. There would be a continuation of nationalism, of political ambition, of economic greed and of international distrust. Global problems are seen as somebody elses' concern. The second scenario is labelled 'Big Brotherhood' and assumes a large base of popular support for a strong central leadership which can, even dictatorially, take bold and forceful actions on global problems. The insidious aspect of this scenario is the danger that the controlling mechanism would persist and grow into a George Orwell type of monster. The possibility of a gradual change in direction is the basis for the third scenario called 'Forward to Basics'. This would be characterised by a general awareness that we live in one world and not three, that uncontrolled population growth anywhere affects everyone and that global conservation and resource management is good for everyone. There would be a widespread feeling that global and national institutions will never agree on solutions and therefore never take collective action to avert disaster. As a result a grass roots movement could gather momentum throughout

the industrialized world. Eventually the dispersed elements of such a movement would influence regional and national politics as a first stage to promoting international action. There are clear signs of such a process happening now. The disturbing question is whether it can gather sufficient momentum before it is too late. Perhaps the contribution of the thirteenth I.C.U.S. Conference is to point stridently to the frightening trends and also to proclaim the message of hope by showing that there can be another future and so to encourage the popular ground swell of impatience with the lack of international action.

John Galsworthy wrote "If you don't think about the future, you cannot have one" and Robert Theobald said "the challenge is whether we shall recognize that there are no solutions to our present problems within our present pattern of thinking".

Putting these two quotations together convinces me that we need to think about the future and we need new patterns to our thinking. The work of the Athens Centre of Ekistics does both of these things.

REFERENCES

1. McNamara - on Population, Finance and Development  
World Bank, June 1977 Vol. 14 No. 2
  
2. World Bank Development Report 1979
  
3. Urban Transport - Sector Policy Paper - World Bank
  
4. Future Development Dimensions - Daon Corporation