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THE GLOBAL CITY OF THE TWENTY FIRST CENTURY:[1] Analysis of its Salient Determinants & their Spatial Implications

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ABSTRACT: The paper pursues a sequel of three objectives. First, to identify the salient functional determinants of the *global city* and to analyze them in an interactive framework. Second, to conceptualize the spatial implications of these determinants as well as their counteracting tendencies. Third, to attempt to highlight the distinguishing features of the incipient city in general, and those of its Asian segment in particular.

INTRODUCTION

Currently, the human race is passing through a transitional period of history which is composed of a differentiated mix of primary, secondary and tertiary civilizations. The composition of this mix is in a state of flux and has been changing at varying rates in different countries, depending the availability of technologic, economic and human resources in them.

One of the distinguishing features of this transitory period is the accelerative speed with which the functional determinants are getting changed in various parts of the

world. Toffler has very appropriately highlighted this progressive dynamism by pointing out that the *First Wave* of change - the agricultural revolution - took thousands of years to play itself out. The *Second Wave* - the rise of industrial civilization - took a merely three hundred years. It is likely that the *Third Wave*[2] - the tertiary civilization - will sweep across the history and complete itself in a few decades.

Substantively, the study comprises six parts. Part one is introductory. Part two deals with the analysis of the functional determinants of the Global City in an interactive framework. Part three goes into the spatial implications of these determinants as well as their counteracting tendencies, and their facilitating and hindering roles in the formation of the Global City. Part four attempts to draw a functional and morphological scenario of the Global City. Part six describes the distinguishing features and the requisite restructuring of the Asian segment of the global city. Finally, part five highlights the salient conclusions of the study.

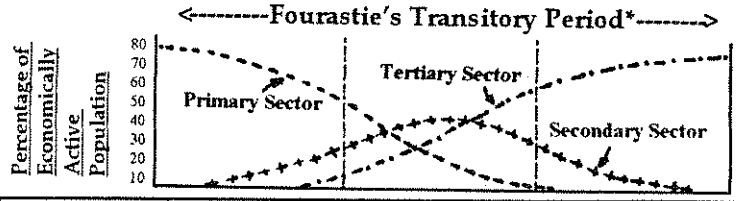
THE FUNCTIONAL DETERMINANTS OF THE GLOBAL CITY

The identification of salient functional determinants of the Global City is based on the premise that under ideal conditions, the socioeconomic and political functions of the inhabitants dictate the form of human settlements rather than getting dictated by it. This is particularly true in case of sustainable and autonomous social systems

have been undergoing structural transformation at differential rates.

Fourastie[3] & Gross[4] have very appropriately highlighted the structural transformations which various countries have been undergoing during the last three centuries due to technological progress (figure 2). Fourastie has advocated that the current era of industrialization is a "transitory period" in the history of mankind during which societies transform from "traditional" (agriculture based) to "tertiary" (service occupation based) civilization.

Fourastie's thesis is illustrated by the percentage shifts of the economically active population in the three sectors of economy, viz., primary, secondary and tertiary. He has divided the transitory period into three stages according to the job generation capacity of the three sectors of economy. During the first phase of "take off", industrial job generation is great which absorbs the labor force rendered surplus in the primary sector. The second stage of "expansion" is characterized by fast technological progress which reduces the job creating capacity of the secondary sector, and brings sharp increases in the tertiary sector employment with a continued decrease in the employment capacity of the primary sector. The third stage of "achievement" is marked by very fast technological progress, resulting in a decline of the secondary sector's relative role as a generator of added employment, and continuation of growing employment trends in the tertiary sector with respective employment decreases in the primary



Characteristics/ Indicators	Before 1800 Traditional Civilization	Take off	Expansion	Achievement	Beyond 2000 Tertiary Civilization
Technological Progress*	Zero or very weak	Notable	Strong	Very Strong	Considerable and Growing
Primary employment*	Stable	Decreasing	Decreasing	Decreasing	Stable
Secondary employment*	Stable	Growing	Stable	Decreasing	Stable
Tertiary employment*	Stable	Stable	Growing	Growing	Stable
Crises*	Under production in primary sector	Over production in primary sector	Severe over production in primary & Secondary sectors	Over production in secondary sector	Under production in tertiary sector
Revenues*	Land tax	Income tax	Confusion in tax structure	Systematic reduction and elimination of land & income taxes	Service charges

	Pre-industrial	Industrial	Post-industrial
Demographic†	- Low life expectancy - Low education	- High life expectancy - Much more education	- Very high life expectancy - Highly educated population
Socio-cultural†	- Relatively little differentiation (fused)	- Considerable differentiation (refracted)	- Still more differentiation
Normative values†	- Localism	- Activism - Cosmopolitanism - Nationalism	- Humanism - Megapolitanism - Transnationalism
Power structure & social system†	- Restrictive elites - Centrifugal tendencies	- Multiple elites - More integration with growth of nationalism	- Dispersed elites - Less integration with growth of Transnationalism
Institutional†	- Small government sector	- Large government & mixed sectors	- Large public & private service sectors
Transport & communication network†	- Weak	- Highly developed	- Still more highly developed

Figure 2: General Characteristics and Socio-physical Indicators of Human Settlements during the various Transitory Phases of Human Civilization.

Sources: Adopted from:

* Fourastie, op. cit., p 212 (translated by Jakobson).

† Gross, op. cit., p 215.

sector. Viewed in this context, the industrialization phase should be taken as a means rather than the end as it acts as a bridge between the traditional and tertiary civilizations.

Gross has also attempted to identify socioeconomic characteristics of pre-industrial, industrial and post-industrial phases of human civilization. The people in the pre-industrial phase, among others, may be characterized as having low life expectancy and low education which becomes high during the industrial phase and very high during post-industrial phase. Values during the three phases change from localism to cosmopolitanism, and finally to megapolitanism and transnationalism respectively; likewise, the power structure changes from restrictive elites to multiple elites in an industrial phase and to dispersed elites in post-industrial phase. Institutionally, a pre-industrial phase may be characterized by small government sector; the industrial sector with large government and mixed sectors; and the post industrial phase with large public and private service sectors.

PHYSICAL IMPLICATIONS OF THE FUNCTIONAL DETERMINANTS

Each of the functional determinants, shown in figure 1, eventually gets manifested in space interactively. Some determinants are more dynamic than the others and, therefore call for changes in their situs at differential rates. Jakobson & Prakash[5] have probed into this interaction by investigating structural shifts in economically active

population and the urbanization patterns in eight developed as well as developing countries. Their study revealed that Fourastie's conceptualization as valid in all these countries, although their temporal occurrence and the rates of growth and decline of employment capacity were different in each country depending on the level of prevalent technology. Also, in none of the countries under study, the third stage of "achievement" had clearly begun.

Fourastie's conceptualization, and Jakobson & Prakash's empirical study lead to the inference that technological progress, structural changes in employment (measured in terms of its predominance in primary, secondary and tertiary sectors), level of urbanization and the physical development pattern are highly correlated as indicated diagrammatically in figure 3. They have further pointed out that the growths of employment in the tertiary sector and

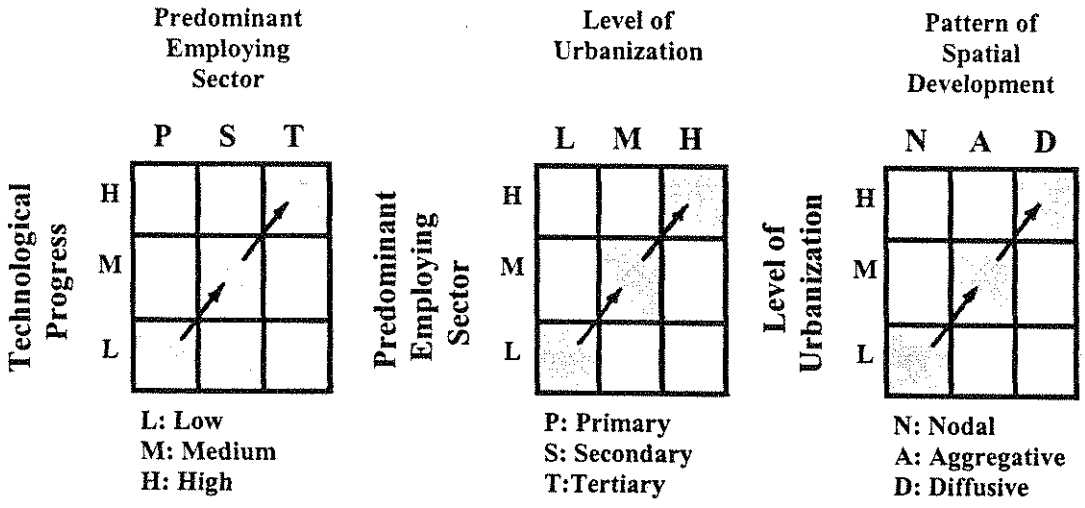


Figure 3: Correlation between Technological Progress, Structural Changes in Employment & Spatial Development Pattern

Source: *Adapted from Fourastie, op.cit., Jakobson & Prakash, op.cit.*

urbanization both follow a rising s-curve and that in pre-industrial societies the physical development pattern is "nodal" due to low level of urbanization which becomes "aggregative" during the industrial phase with the increase in the urbanization level, and eventually changes to "diffusive" during the post industrial phase with high urbanization level. There is also sufficient evidence in the pertinent literature that urbanization is largely irreversible and any attempt to reverse or delay the process will only lead to a scattering of meager resources[6].

Although there are a number of studies which attempt to substantiate that urbanization and national development are highly correlated[7], yet the doctrine of urbanization and global development is of a recent origin[8] and has been brought about by the tremendous shrinkage of the globe due to transportation and communication technologies. Proponents of globalization are even claiming that globalization of economy (and its spatial consequences) is an irreversible and inescapable trend, precipitating fundamental transformation in the overall socioeconomic system[9].

Figure 4 highlights the implications and complexities involved in the process of formation of the global city. It comprises two sets of diametrically opposite, highly dynamic and interacting variables, one, facilitating and the other, hindering the formation of the global city. Each set interactively impacts the global city and in turns gets a feedback from it through a system two back to back

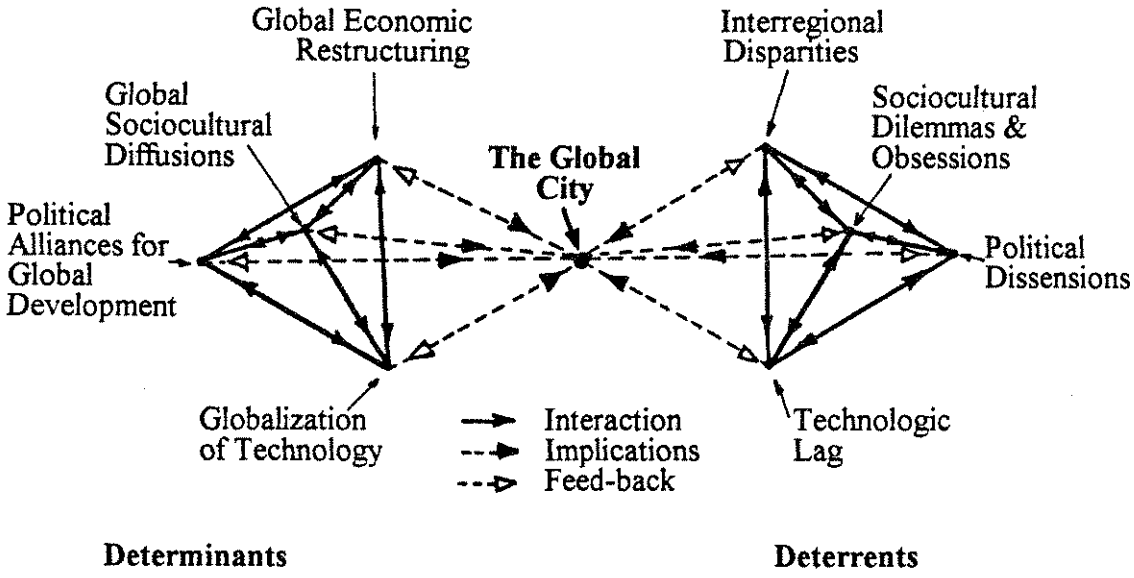


Figure 4: Physical Implications of the Functional Determinants and Deterrents

prismatic frameworks. The beauty of the back to back a prismatic framework is that each of the five variables in each set is directly connected with each other and can influence and in turn get influenced by each other.

Facilitating roles of the functional determinants hardly need any emphasis. For instance, in the realm of global economic restructuring multinational corporations have played a major role in expanding production space across national boundaries as a form of Foreign Direct Investment (FDI), whereas banks have contributed to the internationalization of financing services[10]. Technological diffusion, particularly in the field of transportation and communications, has not only much wider global coverage, but it is also revolutionalizing the traditional concepts about physical distances between places, and the relationship

between the places of residence and work. Distances between places are being measured in terms of time rather than in miles and kilometers. It is now possible to have breakfast in London and lunch in New York the same day. Likewise, the communication technologies are reversing the notion of a journey to work. For instance, millions of dollars worth computer programming is being done in Bangalore (India) and transmitted electronically to its national and international clientele.

Socio-cultural diffusion is, however not as extensive as technological diffusion. Its diffusion gets initiated by foreign immigrants and international tourists. It is much more selective and takes place differentially as it involves accommodation, resolution and rejection of cultural traits and social mores. For instance it is possible to have a China Town in San Francisco, but is not possible to diffuse the Chinese culture across the board in the United States of America. By the same token, it is possible to export American fast food culture sporadically around the world but it is not likely that American culture will be totally globalized.

Political alliances result in the formation of nation-states such as EC (European Community), NAFTA (North America Free Trade Agreement), OAS (Organization of American States), OAU (Organization of African Unity), GCC (Gulf Cooperation Council), ASEAN (Association of Southeast Asian Nations). These Regional Cooperations for a Development

tend to promote transfer of technology, resolution of cultural conflicts and globalization of economies.

Along with the positive influence of the facilitating determinants, the global city will also be subjected to varying degrees of adverse effects of the counteracting deterrents as described in figure 4. For instance, the cultural interface with the development process leads to a number of interacting dilemmas and obsessions, which work against the concept of globalization, such as equity-efficiency measures which, apart from being opposed to each other, are also inherently interrelated because equity could be achieved through efficiency measures and vice versa. The equity-efficiency measures, coupled with a technologic lag may lead to interregional disparities which may in turn, may give rise to anti-urban and pro-urban attitudes. These attitudes differentially promote political dissensions which obviously work against the formation of the global city.

One of the major implications of the globalization process, as pointed out by Kim & Cha, will be the decline of the regulatory power of nation-states as the process will involve an increased movement of capital, products, labor, information, people and other factors of production across national boundaries[11]. Such regulative power will increasingly shift to international organizations such as WTO (World Trade Organization), EC , NAFTA, and to local governments. Globalization will also tend to change the comparative advantage of regions and localities, estab-

lished within the context of the nation-state. Indeed, the competitiveness or comparative advantage of localities will have to be established within the global context[12].

A SCENARIO OF THE GLOBAL CITY

An attempt toward the portrayal of a holistic scenario of the global city, circumscribing the entire system of human settlements, will be based on a number of following empirically substantiated facts and assumptions.

(a) Although human functions change much faster than the form of human settlements due to their physical inertia and fixity of investments, it will be assumed that eventually the form of the global city will closely follow its sustained functions;

(b) Morphology of the global city will mainly be influenced by two factors, viz., (i) locational tendencies of its functional determinants at the macro level, and (ii) physical development patterns at the micro level.

(c) All countries of the world are currently passing through various transitional phases of human civilization as outlined by Fourastie and are heading toward tertiary civilization with its consequential high level of urbanization, albeit at different speeds[13].

Based on assumptions (a) and (b)(i), stated above, table 1 is an *a-priori* effort to discern the locational tenden-

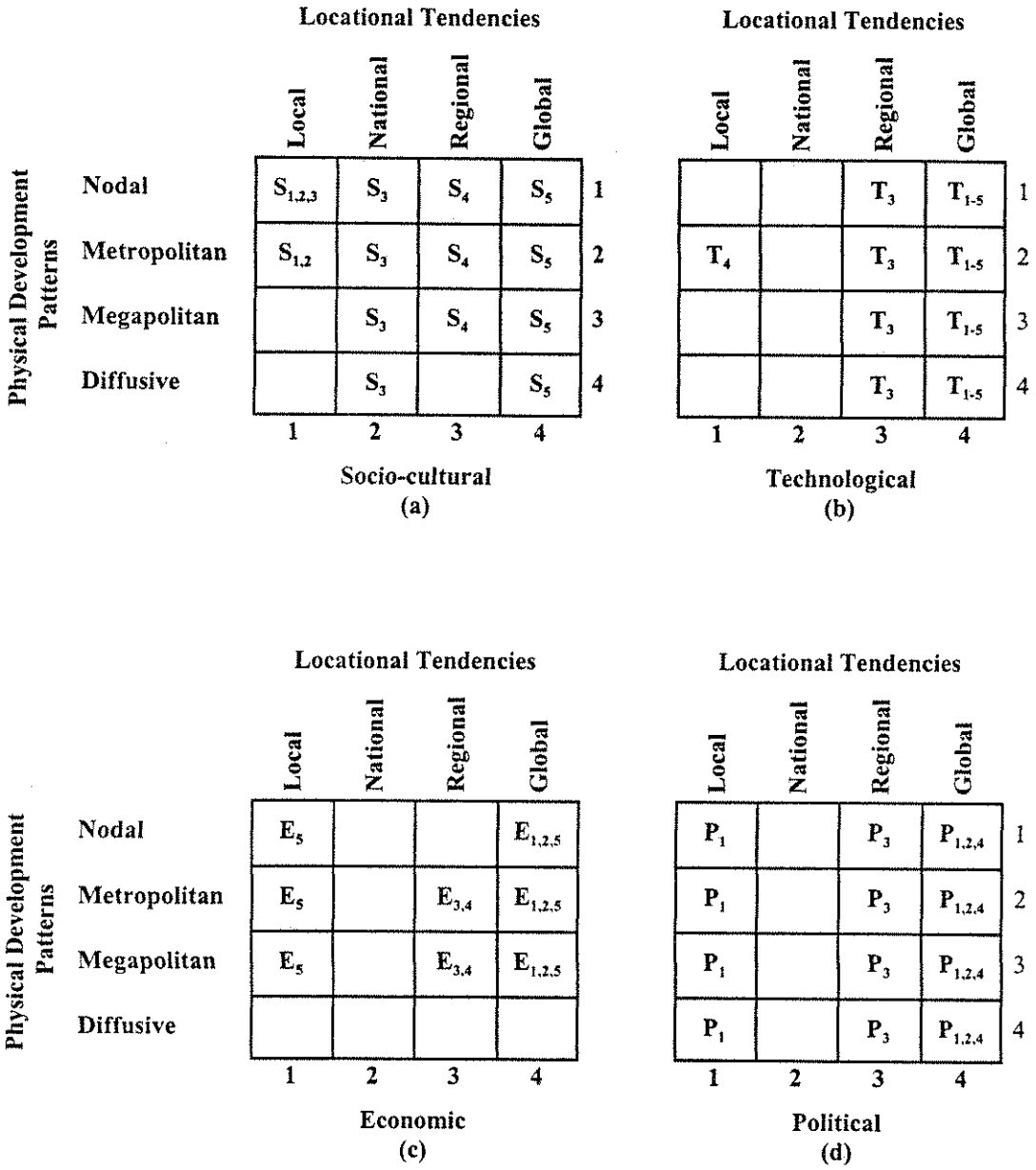
cies of various subsidiary categories of the functional determinants of the global city. Table 1 makes another assumption that due to incredible shrinkage of distances in terms of travel time and diffusive nature of physical development patterns at high urbanization level, the sub-national level will lose its significance in the global context. The table, therefore considers four hierarchical levels, viz., local, national, regional and global. Regional level, in the global context would mean sub-global level and as such its size will be at great variance. For instance, it could be as small as a group of countries, such as GCC Countries, or it could be as large as a continent, such as the European Community (EC), or it could even be larger than a continent, such as the Organization of American States (OAS). The table is self explanatory and tends to indicate space specific, semi-space specific, semi-foot loose or foot loose tendencies of various categories of functional determinants of the global city.

Figure 5 makes an attempt to synthesize the locational tendencies of the subsidiary categories of each of the determinants with their micro physical development patterns. Various subsidiary categories of each of the four determinants have been shown in the appropriate cells of their pertinent matrices by the subscripted alphabets (shown in parentheses in table 1). It may be pointed out that a sub-category shown at the higher level of geographic hierarchy can locate at all the lower hierarchic levels, however, the reverse is not true. For instance, let us

Table 1: Locational Tendencies of various Functional Determinants in the Global City

Functional Determinants & their Subsidiary Categories		Locational Tendencies*			
		Local	National	Regional	Global
Socio-cultural	- Religious Places (S_1)	✖			
	- Historic/Cultural Areas (S_2)	✖			
	- Ethnic/racial Predominance (S_3)	✖	✖		
	- Cultural Diffusions through Tourists (S_4)			✖	
	- American Fast Food Culture (S_5)				✖
Technological	- Transportation Technologies (T_1)				✖
	- Communication Technologies (T_2)				✖
	- Information Media (T_3)			✖	✖
	- Medical Technologies (T_4)	✖			
	- Space/Satellite Technologies (T_5)				✖
Economic	- Globalization of Production (E_1)				✖
	- Globalization of Financing (E_2)				✖
	- Foreign Trade Agreements (E_3)			✖	
	- Regional Economic Communities (E_4)			✖	
	- Alleviation of Tariffs & Control Regulations (E_5)	✖			✖
Political	- Awareness and Alleviation of Environmental Problems (P_1)	✖			✖
	- Self issuance of travel visas (P_2)				✖
	- Regional cooperation for Development (P_3)			✖	
	- Interregional Cooperation for Development (P_4)				✖

*Checked cells indicate the locational tendencies of the subsidiary categories of the functional determinants.



Note: S_{1-5}, T_{1-5}, E_{1-5}, and P_{1-4} refer to various sub-sets of the functional determinants of the Global City as indicated in parentheses against each of them in table 1.

Figure 5: Locational Tendencies and Physical Development Patterns of Various Sub-sets of the Functional Determinants in the Global City.

consider the various categories of the socio-cultural determinants in figure 5(a). S_1 and S_2 only appear in cells C_{11}[14] and C_{21}, meaning thereby that religious places, and areas of historic and cultural significance are space specific rather than ubiquitous in nature, e.g., Makkah, Madina (Saudi Arabia), Harduwar (India) and Vatican City (Italy). The status of these cities will, of course, get reduced to a micro level when viewed in the context of the Global City. S_3 appears in the entire second column and also in cell C_{11}. This is indicative of two phenomena. First, ethnic and racial predominance is generally not found beyond the national level, for instance, the predominance of Chinese, Japanese, Indonesian ethnicity will be mostly limited to their respective countries and is not likely to get globalized or even regionalized. Second, ethnic and racial predominance can be found globally but in a nodal form (e.g. China Town in San Francisco). Likewise, S4 (cultural diffusion), brought about by tourists, appears to be a regional phenomenon and takes place in towns, metropolitan cities and megalopolitan complexes, more frequently visited by the tourists. Finally, the appearance of S_5 in the entire fifth column, points to the ubiquitous nature of American Fast Food Culture. One can find McDonalds, Pisa Huts and Kentucky Fried Chickens globally in all the physical development patterns.

Figure 5(b) indicates the "global sweep" by various types of technologies, with regional emphasis of information media; and that some metropolitan cities may stand out

as centers of par excellence in medical technologies. Likewise, figure 5(c), E_1, E_2 and E_5 appear in cells C_{14}, C_{24} and C_{34} which indicate that globalization of production and financing functions, and alleviation of tariffs and control regulations will take place in towns, metropolitan cities and megalopolitan areas. Reappearance of E_5 in cells C_{11}, C_{21} and C_{31} further indicates that besides the international organizations, the local level will also play a significant role in the alleviation of tariffs and control regulations[15]. The assignment of E_3 and E_4 to cells C_{23} and C_{33} indicate that the foreign trade agreements and regional economic communities will tend to have a regional impact and will mostly utilize the metropolitan and megapolitan infrastructure.

Finally, figure 5(d) indicates the role which the various categories of a political determinant will be playing in the formation of the global city. Awareness and alleviation of environmental problems (P_1) have become a global political issue because environment is transnational. Nevertheless, all environmental problems get initiated in the local arena; therefore, these problems require global regulations and local actions. This contention is evidenced in the international forums held under the auspices of United Nations Environmental Program (UNEP) and the increased role being played for the environmental protection at the local level. Assignment of P_2 in the entire fourth column indicates that the globe trends to become borderless for travelling purposes, as it may be

possible to issue one's own visa for any country through a personal computer, just as one can make air bookings from a home computer. Also, Regional Cooperations for Development (P_3) are already at the anvil which entitle the citizens of cooperating countries to work anywhere in the region. This model is going to move up gradually one more step in the hierarchy which will lead to Interregional Cooperation for Development (P_4). Once this happens, the globe is really going to become borderless in the true sense of the word!

A cursory look at the four matrices of figure 5 would lead to the inference that with the exception of socio-cultural functions, the national level will play a very nominal role in the global city as the international and the regional agencies will provide the requisite coordination. However, the local level will play a potential role in solving the global problems and implementing the development programs. Also, the regional (sub-global) level will not only be important in its own rights, but will act as a "means' to achieve globalization progressively through interregional coordination.

Table 2 attempts to generate explorative alternative scenarios of the global city by utilizing the technique of morphological analysis[16]. It shows mutually exclusive parameters of socio-physical development along with their variations. Fourteen parameters pertaining to socio-physical, secondary resources and developmental aspects, and their respective variations lead to 26,453,952 explorative

Table 2: Morphological Analysis for the generation of Development Alternatives of the Global City

Parameters		Variations (Attributes)								
1.	Social Organization	Communalism	Pluralism	Universalism						
2.	Social-Psychological Aspects	Socially Integrated	Socially Segregated	Socially Blended						
3.	Density of Population	Low	Medium	High						
4.	Size (hierarchical level)	Village	Town	City	Metropolis	Megalo-polis	Gigalopolis	Ecumeno-polis		
5.	Economic Base	Diversified	Specialized							
6.	Place	Land Based	Under ground	Floating on Water	Under Water	Space	Planets	Land & Water	Land, Water & Space	Land, Water, Space & Planets
7.	Density of Development	Low-Rise	Mid-Rise	High-Rise	A mix of L, M & H Rise					
8.	Pattern of Development	Concentration	Decentral-ization	Decentralized Concentration						
9.	Technological Resources	Low	Medium	High						
10.	Human Resources	Low	Medium	High						
11.	Financial Resources	Low	Medium	High						
12.	Planning	Normative	Functional							
13.	Implementation	Turnkey Project	Phased Development	Phased Program						
14.	Institutional Set-up	Public	Private	Autonomous	Semi-Autonomous					

- Number of Alternatives = 3 x 3 x 3 x 7 x 2 x 9 x 4 x 3 x 3 x 3 x 3 x 2 x 3 x 4 = 26,453,952
- The dotted line indicates the selected alternative.

Source: *Enlarged and adapted from Anis-ur-Rahmaan, op.cit. P.44.*

alternatives! Many of these scenarios may be physically, if not theoretically, impossible. However, as pointed out by Delp[17], that even the illogical alternative may sometimes trigger a feasible solution.

Although it is not possible to describe such a large number of alternatives, much less to evaluate them, yet it may be worthwhile to pick up a probable alternative scenario and highlight its attributes. The dotted line in table 2 indicates the parametric attributes of the selected scenario. It represents a global city which will be intensive as well as extensive in its physical character with a mix of high, medium and low rise structures, built on the ground as well as underground, and extending into the sea semi-submerged, with detachable floating suburbs, and orbiting industrial satellites in space augmented by outstations on the Moon and the Mars!

The social organization of the selected global city will be based on the principle of universalism rather than communalism or pluralism. The global community will be based on understanding and accommodation. Linguists are already predicting that hundred of languages spoken in various parts of the world would eventually be taken over by a few international languages which will be spoken and understood globally. Likewise, only a few religions, which are based on the equality of mankind and are transnational and transracial in character, will outlive a multitude of world religions; and even the surviving religions will eventually get merged on the basis of mutual complimentari-

ties and mass appeal rather than competition on the basis of vested interests and communal rivalries.

Functionally, the global city may be characterized as socially blended rather than socially segregated, and therefore, the controversial concept of "exclusionary'[18] will be replaced by "inclusionary'[19] zoning. There will still be cultural, racial and religious variations, but the human relationships will be based on understanding and accordance rather than misunderstanding and discrimination. As the entire ecosystem will work as one community; economic activities would locate globally on the basis of relative advantage rather than locating in various countries on the basis of absolute advantage[20]; and as a consequence, the economic base of the various segments and districts of the global city will be specialized rather than diversified. Nevertheless, at the global level the economic base will be highly diversified. Although the ecosystem will be interplanetary in nature, yet due to a revolutionary breakthrough in communication technology, the friction of distances will be reduced to a bare minimum. As a consequence, the locational contiguity of human activity systems will lose its significance, and therefore the locational development may follow a pattern which may be described as "decentralized concentration" at the global level; whereas, the local level would tend to follow megalopolitan and diffusive pattern of physical development.

The various units of the global city will be integrated by means of a very efficient electronic mail network. People will not have to move every time they change a job, but it will simply require a change of computer terminal[21], or in other words, the work will come to the people rather than people traveling to work. The global city will be endowed with surplus of energy due to uninterrupted solar radiation in the space colonies and atomic fusion on other planets. The problem of solid waste disposal would also be obviated as most of it would be recycled. Peak hour traffic will no longer pose a problem as the places of residence and work are going to be combined in the electronic cottage[22]; and even the universities may start imparting education electronically.

Obviously, the selected scenario of the global city appears highly utopian. But same impression was created by most of the innovative development concepts propounded in the fifties and sixties. However, due to the accelerative pace of technological advancements, some of these concepts have already either been surpassed or are being outlived. For instance, Frank Lloyd Wright's proposal for a mile high city, put forth in the fifties for Chicago's Lake Front[23], has already been dwarfed by the "Volcano City' project[24] proposed to be built by the Japanese on an artificial island approximately four miles in diameter. The volcano shaped city, inspired by Japan's Mount Fuji, will be more than 2.5 miles in height and would allow its inhabitants in the upper levels to look down on the clouds below them.

Likewise, Dioxides' transnational "Ecumenopolis'[25] which envisaged that world's population will live in one universal city by the end of twenty first century will perhaps start spilling over into the sea and into space much before the end of twenty first century. Some of the incipient concepts, mainly tabled by the Japanese, are already on the horizon. For instance, the Japanese are suggesting floating islands which could serve as an alternative to creating new coastal space by landfills. One such proposed project, called Floating Station "Jonathan" could be moored in deep water and accommodate scientific and recreational facilities, including a one thousand-room luxury hotel. Another artificial island proposed by Japan's Taisei Corporation could be used in relatively shallow waters. The man-made island would rest on the sea floor and be accessible by either boat, a helicopter or an underwater tunnel connected to the main land[26].

Doxiades concept of the "Universal City" was received with great skepticism in late sixties but today, about thirty years later, very few people would question the claim that this world has already become a global village because it is easier to communicate with any country of the world from the window of a personal computer than to communicate with various houses from the window of a village house. Commenting on the supercities of tomorrow, Conway has opined: "Whether the super macro engineering projects of the future tower past the clouds or brave the

ocean depths, neither the sky nor the deep sea may limit the potential of tomorrow's supercities."[27]

Viewed against the backdrop of the aforementioned innovative projects currently in the pipeline, and the accelerative technological advancements, the scenario of the global city of the twenty first century, described in this section, does not appear as theoretical as it did at the outset. It may indeed be one of the feasible and even normative development alternatives of a human habitat of the twenty-first century, and perhaps an updated version of Doxiades' Ecumenopolis!

THE RESTRUCTURING OF THE ASIAN SEGMENT OF THE GLOBAL CITY

This section will attempt to briefly describe the urbanization process in the Third World countries in general with a specific reference to south and southeast Asia; and to highlight some of the distinguishing features of the Asian segment of the global city of the twenty first century, described in the last section.

Although the process and the role of urbanization in South Asian and Third World countries is distinctly different from that of the western developed countries, it has often been adjudged with the western yardsticks. For example, McGee[28] has compared the urbanization in the Third World countries with the western model. In so doing, he has designated the growth of urban areas in Western Europe during 1800-50 as "true urban revolution" which was closely related to economic development and industrialization in

particular. He has also pointed out that the "true urban revolution" of the industrialized nations transformed rural societies into urban societies. Comparing with this western model, McGee has contended that the majority of the Third World countries are undergoing a phase of "Pseudo Urbanization" and that it is deceptive to see the current rapid city growth in the area as indicative of economic development. Examples, wherein the process of urbanization in developing countries has been measured by western yardsticks are not lacking in literature. The approaches adopted and/or the positions taken by Hauser[29], Davis[30], and Robinson[31] are a few cases in sight.

However, a number of scholars have viewed the urbanization in the developing countries quite differently depending on their orientation and the "school of thought' to which they belong, for instance, Sjoberg's[32] point of view is completely different from that of McGee. According to him "much of what has been written on the subject is the product of premature generalization, based on limited observation of the western experience." Breese[33] also observed that urbanism and urbanization in newly developing countries are enormously complex subjects.

The fact of the matter is that the urbanization processes of the west and that of the Third World countries are the product of two completely different sets of socio-economic, cultural, political and technological variables and consequences. Some of these variables have been uniquely different in the developing countries; whereas others,

which have succeeded certain events in the west, have differentially preceded them in the Third World countries. For these reasons, it is not fair to call the western process of urbanization as "true urban revolution" and that of the Third World countries as "Pseudo Urbanization". It could at worst be called "Hybrid Urbanization" or at best "New Urbanization".

I call the process as "hybrid" because the developing countries had the advantage of having before them the examples of advanced countries; i.e., the sequence of occurrence of various processes and various factors which lead to the growth of industrialization and the consequential urbanization. The developing countries were and still are in a position to borrow the technical know-how and the technology from the western countries. Broadly speaking the experience of the advanced countries may be described as "develop and learn" as far as the technological progress is concerned. As compared to this the experience of the developing countries may be described as "learn and develop". This reverse cycle can also be explained in sociological terms. For example, western phenomenon has often been termed by the sociologists as "cultural lag", meaning thereby that technological advancements have been outpacing the cultural change. As compared to this, in the case of Third World's cities, the technologies of mass communication media per se, on one hand are responsible for increasing the "cultural lag' because of being available so readily, and on the other hand are offsetting the "cultural

lag" by providing an awareness of other technological advancements which are not available in these cities. I am, therefore, tempted to say that these cities are facing a diffused combination of "cultural and technologic lags".

One of the most potent factors which has changed the complexion of the process of urbanization in the developing countries is due to the differential infusion of technology. For instance, whereas in certain areas technology could not cope with the levels of expectation of the citizens, it came in its full play in the field of health services. As a consequence, infant mortality rates were drastically reduced and life expectation substantially increased. This led to population explosion, which is one of the salient factors which made the urbanization process in the Third World countries essentially different from that of the developed countries.

It was in fact in 1967 that for the first time, a major departure was made from the "prior doctrines" which were based on views impregnated by western concepts. The participants of Pacific Conference on Urban Growth[34], inspired by Takashi Fujii, (a Japanese economist) recognized the process of urbanization in the developing countries within its own 'rights' and propounded the concept of "New Urbanization"[35].

After having briefly described some of the salient distinguishing features of the Third World Urbanization, let me now zoom on to the Asian segment of the global city. Although Asia is the largest of the seven continents of the

earth with an area of 17.35 million square miles, its status in the global context will be reduced to that of a segment of a city. Likewise, various countries and provinces, therein will function like urban districts and neighborhoods respectively.

Asia is also the most populous continent. According to the UNPF[36], Asia accounted for 58% of the world population in 1994. The United Nations, after taking the decline in the fertility rates into consideration, have estimated that the world population during the period 1994-2025 would increase from 5.5 to 8.5 billion and that of Asia from 3.2 to 4.9 billion during the same period. Although the share of Asia in the world population will slightly decline to about 57.6% in 2025, yet it will account for 56.6 percent of the total increase of about 3 billion in the world population during 1994-2025 period. The United Nations has also predicted that the world population by the year 2050 will be about 10 billion.

The Asian segment of the global city will manifest a unity in diversity - a diversity of world's most ancient and richest cultures, a diversity of economies, a diversity of political systems; nonetheless, it will still be an Asian community with reflections of oriental values and highly family oriented. It will be both a major exporter of manpower and importer of jobs from the other negative, zero and low population growth segments of the global city. The Asians will be traveling intra- and interregionally mostly for jobs in the tertiary sectors. Likewise, multinational

corporations will be relocating and/or establishing new plants in the various districts of the Asian segment on the basis of relative advantage. In addition, it will be receiving a major bulk of international tourists which will open up a multitude of employment opportunities in the service sector.

The problem of chronic shortage of food will perhaps be solved by resorting to capital intensive and innovative techniques like hydroponics, aeroponics, multilayer agriculture, higher yield and improved variety of livestock farming and grain production.

CONCLUSIONS

The study of the pertinent literature leads to the inference that all the nations of the world have been and are getting transformed from traditional agricultural based civilization to the high technology based tertiary civilization due to globalization of technology, economic restructuring, socio-cultural diffusions and political alliances. It also manifests that the current era of industrialization is of transitional nature and acts as a bridge between the two civilizations. Various countries of the world will pass through the industrial phase with a temporal differential. It is analogous to the ripples in the sea waves moving towards the coast - most of them reach the coast with different wave lengths and at different time!

The journey to the tertiary civilization, which is a pre-requisite for the global city, would be different for different nations in terms of its timing, ways and means. It is a journey of hope and despair - hope for those who are prepared for it; and despair for those who will be caught unaware. Different countries would be taxying from different directions, at different speeds with different types of technological equipment in different state of preparedness to take off for the civilization of the twenty first century. However, the transition will not be without joltings; and will involve technologic lag, interregional disparities, socioeconomic dilemmas and obsessions, and political dissensions.

The iterative interaction of the functional determinants and deterrents will get manifested in the spatial hierarchy in accordance with their locational tendencies at the macro level, and their specific physical development patterns at the micro level. As such, the global city due to a variety of "contexts' inherent in its formation will represent a unity in diversity. As a result of unification of diversities, the global city will infuse drastic changes and even reversals of many traditional concepts, viz., the process of urbanization will be replaced by "rurbanization' wherein rural-urban phenomenon will form interdependent parts of a composite whole rather than dichotomies[37]. National barriers and autonomies will be reduced to a bare minimum. People will travel on the globe like they travel in a city.

High tech jobs will come to the worker's residence and replace journeys to work.

The achievement of cost effective transition to the tertiary civilization and smooth formation of the global city with sustainable socioeconomic benefits, will, among others, necessitate: (a) adaption of an unprejudiced "purpose oriented' rather than "problem oriented' approach; (b) proactive planning for the "future of the future' rather than reactive planning on incremental basis; (c) preventive rather than costly curative or remedial measures; and (d) capitalization of the facilitative effects of the determinants of the global city as well as minimization of its deterrents as identified in figure 4.

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13. Jakobson & Prakash, op.cit.
14. According to the established conventions of matrix algebra, the first and second subscripts always refer to the rows and columns of the matrix respectively.
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18. Exclusionary zoning has the effect of keeping out racial minorities, poor people, or additional population of any kind from

entering a community. The techniques include large lot zoning, high minimum residential floor area requirements that increase housing costs, discretionary decision making processes that may permit a community to deny certain applications and conceal the real reasons (Albert Solnit *et al., The Job of the Practicing Planner*, Chicago, American Planning Association, 1988, p.184).

19. Inclusionary zoning is a positive and active program in a community to attract racial minorities or low- and moderate-income residents. Inclusionary zoning devices usually include offering incentives or bonuses to developers for building low- or moderate-cost housing or exceptions to traditional controls. Such practices are still rare, but are being experimented within a number of communities. (Albert Solnit, op.cit., p.187)
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