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Time and Space of Urban Agglomeration

Belo Horizonte, December 2001, Confrence Urbanization and Environment

Abstract

The paper examines the time-space-coordinates of modern cities. Time and space refer not only to dimensions of nature, but also to the role that capitalist accumulation and its concomitant agglomeration effects play in establishing a social time-space pattern. One effect is the "ecological footprint" of urban agglomeration which is much larger than the urban territory. Another effect is the spatial and temporal externalization of ecological effects in order to maintain positive site effects. This is part of a strategy to improve the position of given cities in the interplace-competition on global markets. The imposition of capitalist rationale on natural and traditional time-space-structures can be observed in city maps. The acceleration of time and the reduction of distance in order to minimise circulation-time can be achieved by substituting "somatic" energies with fossil energies and the corresponding technical devices and forms of social organization. As a result of this substitution, cities become the centers of industrial artefacts. One "revolutionary" consequence is the disappearance of the farmer as a social figure and the growing urbanization of the world. But at a certain level of development, the advantages of cities (acceleration and short distances) are becoming a "positional good" which not everybody has access to. Evidence for the existence of positional goods can be seen in the form of the daily traffic jam. Cities are like nodes in a global network which is dominated by the dynamics of financial markets. The consequences for social life in cities and the urban environment are enormous. Due to the inherent tendency of acceleration, the dependency on energy supply and disposal sites for urban emissions, cities become vulnerable to terrorist attacks, even more so given their symbolic value. The destruction of the Twin Towers in New York is not the only, but the most horrible and spectacular example.

Introduction

I would like to try to suggest some theoretical connections between the increasing urbanisation of global space and the environment. One could try to simplify the discussion by referring to the obvious environmental destruction in and by cities – the mountains of garbage lining streets, the poisoned water, the bad air, the cement landscapes, the manipulated produce in the grocery store etc. We could easily compare Friedrich Engel's remarks on the catastrophic situation of 19th century English cities or Charles Dickens descriptions of urban life in those times to modern descriptions of the cities of millions that exist throughout the world. And the conclusion would be that in many parts of the world, the urban situation has improved, in Europe or North America. But in many other regions of the world, the situation of the city is precarious. Here it must be noted that cities reflect in geographic space the class and gender structure of a society, the ethnical and racial cleavages etc.. The environmental conditions are worse for the poor as for the rich in their better situated districts. But the smog is more or less 'democratic' in the sense that it affects everyone, and the traffic jams are as much a reality for poor passengers on a bus as for the wealthy driver of a Land Rover.

'Time and Space Compression and the City

It is possible to gather a great deal of material on these aspects of urban life. But I would like to look more fundamentally at the question of the connection between urbanisation and the environment. Cities first came into existence during the Neolithic Revolution – culture arises from agriculture as Nicholas Georgescu-Roegen (1971) aptly points out. Cities were centres of culture, markets for the exchange of agricultural surplus, communication (the annual markets, the 'kermesse' were always information markets), the arts and science. Rulers, both military and political, always had their homes in cities. The land was ruled from the city, in order to cream off the agricultural surplus. Otherwise the land followed its own rhythm of daily and seasonal rhythms. Large parts of the land were well beyond the reach of the cities anyway – 'Russia is big and the Tsar is far away' as the popular saying goes– and well into the 20th century, the vast majority of the population lived on the land and from the land.

Modern urbanisation begins with the industrial revolution. The new industrial areas in middle England, the Ruhrgebiet, Upper Silesia and the industrial belts from Chicago

and Detroit to the Great Lakes have a very recent history. The accumulation of capital produced the 'spatial fix' (David Harvey), urban agglomeration. The geography of the industrial era is a different one from the time before. And the more the industrial system expanded, and the more agriculture was industrialised, the fewer people were needed on the land. In the early phase of capitalism, landless and jobless people were forced by the state into work- or reform houses where they were prepared for the discipline of manufacturing and industry. Later this was no longer necessary. The cities were attractive compared to the 'idiocy of rural life' and un-rooted masses were drawn into them. The growth of the cities exceeded their ability to absorb, so that many people ended up not in industry but rather in what we today refer to as the informal sector. Cities as they expand develop a typically three-tiered arrangement: the well ordered quarter for the urban elite with high income and good infrastructure. The extreme opposite is to be found in the 'favelas', the 'bidonvilles' or 'shantytowns' of the poor and excluded, poorly situated and with precarious living conditions. Incomes are derived often from the exploding informal sector (even though this term only comes into popular use in the 1970s) and illegal or criminal activity. The third quarter is for the official labour force, who live in developments or complexes in the tradition of Corbusier's living machine. They emanate the spirit of mass production, mass consumption, mass inhabitation, and mass fabrication of buildings as well as of massive exploitation of nature.

The city requires massive surface area, energy, and disposal sites for urban emissions (garbage, waste air, sewage). Even a vertically-oriented city like New York requires a huge surface area to supply water, groceries, energy and dispose sewage, waste air, garbage from its 70 plus-story skyscrapers – the assumption that a city concentrated on little surface area grows only upwards, is an illusion, emanating from high prices of real estate. The New York principle is no better than the Los Angeles principle. Urban life leaves as a rule big 'ecological footprints'. In the course of economic development, temporal and spatial externalisation takes place. Heinrich von Thünen conceived of food production for the city in the form of concentric circles around the city. Obviously, this is no longer the case today. A relationship to the land around the city has largely disappeared. With the help of logistical chains, the goods of daily consumption are brought in from great distances: in the 1990s, a large portion of the mineral water in Almaty in Kasachstan came from the German Federal Republic, 4000

km away, rather than from the mountains surrounding it. German mineral water companies with superior logistics were able to beat out the local competition. The tomatoes in the Ver-o-peso market in Belém do Pará are being imported from Sao Paulo, 4000 km away, and only in insignificant quantities from the nearby tomato fields of Sao Tomé. The fresh tuna for sushi in New York is flown in from the Pacific. The wine in a standard supermarket in Berlin comes from South Africa, Chile, Australia and of course France and Italy. Transportation over long distances represents an enormous ecological problem. The transport involved in world trade requires the amount of energy that a population of 150 million, such as Brazil's, consumes, not to mention the further environmental consequences of urban consumption.

In the competition of cities on the world markets, the winning cities are those which manage to externalise most efficiently and least conspicuously their environmental costs. The ecological effects of urban life are hardly noticed by city dwellers, because they are kept spatially apart or only become apparent with the passage of time – and normally these effects are not experienced by the city dwellers themselves. For this reason, the interest in ecological sustainability is less than what it needs to be to effect political change. Thus, great importance is attached to the question raised in Agenda 21 from Rio de Janeiro in 1992: urban population must be aware of the “ecological footprint” they produce.

Some people thought that in the transformation from Fordism to post-Fordism and with the increasing significance of non-material production (the ‘New Economy’, ‘Knowledge and Information Society’), the environmental consumption of big cities would be reduced. This is obviously an illusion. The transportation of people and goods is increasing, despite information technology. More than this: modern information technologies support logistics which make the transportation business all the more profitable. In the process of optimisation, the number of kilometres is reduced. This reduction is more than compensated for through the increase in the amount of goods. The post-Fordist city is not the same as the virtual city because individualisation has its own wide-reaching ecological consequences. These include higher expectations of mobility, qualitatively and quantitatively higher standards of living space, and the ‘not in my backyard syndrome’ (NIMBY): the externalisation of the ecological burden through the organisation of urban living is expected to rise rather than to decline.

The rationalisation of space and time in modern capitalism

The coordinates of the space and time-compact globe are identical everywhere on earth: and these are established through the logic of money. The terms of credit determine the rhythm of global time. Maturity on debts – and no longer the harvest cycle in agrarian societies or the turnover time of fixed capital as in ‘big and dirty industry’ – define the horizon of activity and the period of the business cycle of global financial capitalism. People are spending their every day lives in ‘banal space’ and ‘banal time’ (Milton Santos). All beings are naturally placed into the coordinates of rhythms of day and night, between wake and sleep, hunger and thirst, bad and good moods. The monotony of the undifferentiated flow of time is disrupted by markers - holidays which must be honoured. But the forms and radius of thinking are circumscribed by a space and time matrix which reflects an abstract reason and transcends culture. Global networks follow an abstract logic, in the same way that the Spanish city planners planted Latin American cities on the landscape, indifferent to natural conditions, guided only by considerations of political rule. Buarque de Holanda applies here the metaphor of the ‘tile layers’, who tiled cities onto the landscape like in a random space (Buarque de Holanda 1995: 101ff). The lack of consideration for the actual space applies equally to the development of modern traffic and energy supply systems, from artificial lakes to dams to power-lines: here too the ‘tile layers’ are at work.

The urban plan of a small Adriatic port town in Apulia, south of Bari, which is designed for optimal orientation by tourists, displays the contrast between the seemingly unordered maze of streets of the ‘centro storico’ and the right angles of the new housing blocks along perfectly straight streets: ‘like tiles’, as Buarque de Holanda described the Spanish city planning in Latin America. The contours of the old city conform to those of the coast and land, the new city conforms to the logic of the city planners indifferent to natural features. The prices of the properties are more relevant than the natural relief. The logic of capital supersedes the logic of nature.

past and the future. The future appears at best as a 'presented future' (Anders 1972: 123), as a discounted future, or as a simple extrapolation, as a 'defuturised' future' (Anders 1972: 125) and is thus transformed into the present of a later time wrenched out of the past. The past, then, is a "present minus", the future a "present plus".

The all-encompassing present is responsible for the conservatism of a market economy which is otherwise highly dynamic and fast-moving. Bankers, who should actually be open to innovations which influence future interest rates on credit loans, are only willing to operate within very narrow guidelines, because firstly they are used to discounting the future in order to calculate the present-value of future returns and secondly, the credit required for the realisation of future projects relies on securities that are accumulated in the past. The best future is therefore that which is equivalent to the present, only with an expanded growth that allows for the payment of the interest rates. The market economy thus replaces historical time with physical-logical time, as Nicholas Georgescu-Roegen (1971) so convincingly argued in his thermo-dynamic critique of neo-classical economics. The future is, in this conception, a quantitatively bigger, in its prognosis inflated 'present plus' and the past is correspondingly a 'present minus'. The axis of time is not a historically unchangeable, directional vector but rather a spoke which turns around a centre which is clearly determined by the present. The same can be said of the understanding of space. It is subjected to organisational reason, brought accurately and methodically 'to order'. Here is also the point of access for the globalisation of culture, which numbs local and national cultures, its integrating effect made possible by the synchronicity of local presents and its global reach. The cultures of the world are being melted by globalisation into one worldwide hybrid culture.

The logic of present-oriented thinking extends into political life as well. All national states come at some point into existence, and at some later point, they dissolve, and in the interim, effect significant changes in the social, economic, cultural and national realms. The past is as important for social memory and practical awareness, for the identity of the individual and the history of the society as the 'Future project' is for the conceptualisation of the wishes, needs, and Utopias of the citizenry – which, as a result is constantly engaged in a contradictory discourse. Without this connection to time and space, democratic society is in principle not possible. But in the rhythm of political processes, the present is systematically being invested with more weight than the future, as the interests of present generations overshadow those of generations to come.

Prognoses are therefore required, not Utopias. The present serves to prolong, not to allow for a different kind of thinking or projection, but to bring disparate tendencies, contrary programs and subjects together into one political sphere of action. The rationale of the (world)market imposes itself on the political process. Decisions are being met with an increasingly short term perspective and by increasingly short-sighted actors. These changes also affect the nation state and the personnel which makes the political decisions. Under conditions of globalization the nation state is not disappearing. The “pluriverse” of nation states however is undergoing profound transformation. Firstly geopolitical unilateralism is coming back with the result that a dominant nation state exerts its power on all the other states. This change indicates that the tendency to a “geo-economy” (Luttwak) is countervailed by the other tendency to a new geo-political order with national states of very different relational power within the world structure. Secondly, there are states collapsing or failing or being captured by private actors such as TNCs. This is the case in parts of Africa, but also in some of the transition countries of the former Soviet Union. Systematic grand corruption is the most usual means to capture the state for the private objectives of economic actors. Thirdly the “orderly” states of the OECD-world transform from a “Keynesian” intervention state following the target of full employment and social security to a “competition state” (Cerny) following the predominant objective of increasing competitiveness in interplace competition. Thus, the nation state does not disappear, but it is changing the “logics of action”.

The reasons as well as the consequences are not everywhere and every time the same. Historical and empirical studies have to be undertaken in order to understand the differences more adequately. However, on a generalized level it is possible to distinguish between time and space-regimes of extraction, of production economies and of economies which are overwhelmingly involved into financial transactions, into *arbitrage*.

In order to accentuate the differences between extraction, production and arbitrage it is useful to briefly consider the specific spatio-temporal regimes and their characteristics (I have analyzed this in Altvater 1998). Figure 2 shows that in extraction economies *natural* place is still economically important whereas in a *production economy* place is *artificially* restructured in order to improve competitiveness in global space by optimizing economy of time and by accelerating production as well as communication-

processes. This is only possible by integrating services into production; thus, a production economy only is thinkable as a production economy of goods and services. *Arbitrage* activities are decoupled from place, space and time. They only aim at exploiting temporal (speculation) and spatial (arbitrage) differentials. Consequently, competition (and therefore the performance of markets) depends on predominant economic activities - whether they are undertaken in extraction, production or circulation.

At the end of the twentieth century even the most developed capitalist countries return to a new form of arbitrage capitalism fostered by financial innovations and the rapid growth of financial markets. It is as exploitative as pre-industrial merchant capitalism but on a larger, global scale. In the world of arbitrage capitalism circulation chains have an hierarchical order. On the top there are the big players of the international financial system which exploit differentials of interest, exchange rates, and stock market quotations. They are moving huge amounts of capital from one place to the other following the smallest differentials in the global space - and triggering by doing so currency and financial crises which affect even big economies (1994 Mexico, 1997/98 several Asian countries; 1998 Russia, 1999 Brazil, 2000 and 2001 Turkey and Argentina). They intrude into an “emerging market” (declared as such by international organizations like the IMF or by positive ratings of rating agencies) and exploit favourable conditions before leaving the “emerging market”, i.e. a given country or a given region and changing them by means of massive capital flight into “submerging markets”. Via financial relations nearly all regions in the world are interlinked, and therefore a region only can be understood in its dynamics in so far as the global space and decision making units anywhere on a small island in the world are taken into account.

On commodity markets arbitrage also takes place, e.g. in the form of outsourcing. Components can be bought on external markets where they can be produced at lower costs. Components can be regarded as “like products” price differentials between different production sites matter for management decisions, and workers are laid off because of calculations following the logic of arbitrage. The comparability of “like products” has enormously been facilitated due to the progress in logistical systems which reduced dramatically transport-, communication- and other transaction-costs

On the lowest level of arbitrage capitalism there are small commodity vendors who buy commodities at one place in order to sell them at another place with a small profit. This “shuttle economy” is the form of arbitrage capitalism which can be observed in transformation economies on (informal) market places, on the trains (and airplanes) connecting Western and Eastern Europe or in the big tourist hotels. In Russia these small vendors are called “*tchelnokii*”; and they exploit the west-east slope of prices and of quality. They receive their start-up capital often from people belonging to the mafia, and thus illegal money laundering is combined with legal activities in an open world economy. Arbitrage is not necessarily criminal, but the step from pure profit making by trading legal goods or services to criminal activities, such as smuggling, trafficking drugs and weapons, illegal migration and prostitution, recycling of money etc. is a small one. As arbitrage capitalism dwells on all levels and in all places of the capitalist world system, criminal activities are also virulent everywhere and therefore the need for new forms of global regulation and governance. Even the G8-summit of Birmingham in May 1998 asked for more control of criminal activities on global markets.

The great advantage of arbitrage activities is that it avoids the problems of the physical and social restructuring of space and time requested by production and extraction economies. The participation in circulation activities promises fast profits without being enforced to change the social, economic, and political system, i.e. without requiring the necessary changes of the social regime of time and space for the establishment of a modern production economy. Thus arbitrage has a conservative character. *Firstly*, arbitrage is very short sighted and therefore supports myopic accumulation strategies. It contributes to the destabilisation of exchange rates and therefore undermining the environment of stable economic data which is necessary for long term planning in production. *Secondly*, arbitrage (on a world wide scale) does not diminish differentials, in that it increases rather than lowers risks of capital investment. This is one of the most persistent reasons for high (real) interest rates on global markets and for the weakness of investment into productive facilities. *Thirdly*, arbitrage compels economic agents into the informal economy, because this is the only place where it seems to be possible to avoid the hard budget constraint of global monetary standards. But the informal sector itself is a source of arbitrage activities, mostly on a small scale, thus the “victims” of arbitrage contribute to its maintenance. Whatever form arbitrage takes - criminal mafia-like businesses or harmless informal sector activities - its impact on the competitiveness

of the place of production in global competition is negative. Arbitrage activities are an impediment to a successful transformation of CEE economies and societies.

Table 2

Spatio-temporal regimes and characteristics of extraction, production, arbitrage

	<i>extraction</i>	<i>Production and services</i>	<i>arbitrage</i>
Basic characteristic	<u>natural</u> endowment of resources	competitiveness of artificial places (production sites)	exploitation of differentials in circulation
Spatio-temporal regime	(natural place) and global space	(artificial place, global space) and time	annihilation of place, space, time
Environmental Effects	A residual black hole; huge waste disposals; contamination and reduction of bio-diversity	Permanent conflict between “life world” and “system world” (Natural remnants vs. infrastructure for expansion and acceleration)	Ignorance vis-à-vis nature and therefore unawareness of destructive tendencies
Actors	Unions, Capitalists (TNCs), Governments Landowners, CSOs	Unions, Capitalists, Banks, Governments, Internat. Org.; CSOs	Monetary Wealth Owners; Fund-managers, Governments, Internat. Org.; Internat. NGOs

Arbitrage is a mode of economic activities far away from the natural environment of a region or a city. Extraction is bound to the natural endowment of a place and after having extracted natural resources, especially non-renewable mineral and energetic resources, there remains a “black hole” (“um buraco preto” – Euclides da Cunha in “Os sertoes”), i.e. an ecologically degraded territory. In a production-economy however the place is artificially restructured by man-made artefacts (above all material infrastructure) for accelerating production and communication processes. “Time is money” and by acceleration costs are reduced and therefore the competitiveness of the place in the competition in the global space – ceteris paribus – will improve. But

acceleration also has a negative impact on the environment because of the interference of the economic time regime with natural and social time regimes.

The dissolution of the social relationship to time and space in societies organised around the principle of the market economy has many consequences. The first and least dramatic relates to the predominance of the present over the future and the consequences that this bias has for the social sciences and their inability to make prognoses, an inability which is often unjustifiably critiqued. Secondly, the abstract, global regimes of space and time dominate people's everyday, banal experience of space and time. 'Time is money' and according to this universal formula, all differences of time and space experience are irrelevant. Paradoxically, this mechanism can also be interpreted as an expansion of the horizon and not just as a loss of culturally-determined orientation.

Cities, Markets and Nodes of Networks

Culture develops first where agriculture already exists. When an economic surplus can be produced – and this is the great achievement of the Neolithic revolution (the transition to sedentary agriculture) – then, cities blossom as places of culture and trade. Trade is constantly taking place, in every season, within the city and between city and the land. A division of labour develops which results ultimately in a system of expertise. Then, trading relationships begin to extend beyond the nearest land. Cities grow as nodes along trade routes. Specialised markets and fairs (see Braudel 1986) govern the rhythm of the city. Markets become 'Kermesse', annual markets. These are always more than merely a market place in which goods are traded. Here, social connections which are vital to urban life and peace, are forged and maintained.

Cities rule over the land. This is to be witnessed at both the micro and macro level. Cities developed in the first place with the emergence of modern European capitalism, first in Italian Venice, Genoa, Florence etc and later in Amsterdam, Bruges, Gent and London, which were oriented to the Atlantic. The early hegemonic systems of the capitalist world markets were dominated by European cities, not by national states. Cities thus influenced the development of regional societies as well as the global order. This is significant not only to the economy but also to the political organisation of territory and in the spiritual realm of religion. The seat of the pope is in Rome and his

Easter blessings are received *urbi et orbi*. The Muslims turn to Mecca to pray. at the same time cities are places of intense social activity and communication and thus are much more than mere market places where goods are exchanged. They are also social and cultural forts against the disembedding mechanisms of the market, because social life in them is far more concentrated than it is on the land. Social relation in a city mostly are “thinner” than on the countryside. But they are easier to be created and functionally to be established for different purposes may they arise from business life for an exchange of opinions from an academic community or for the preparation of political decisions from the political community.

All this is changing in the course of modern globalisation. What goes on in the money and capital markets of today is largely invisible, unlike in the trade of goods, where products can be held, seen weighed, considered and smelt. One can smell markets but *‘pecunia non olet’*. This has consequences for the aesthetics of the buildings in which money and capital is traded. They are designed exclusively to accommodate financial services and not offer space for the social communication which was once associated with the trade of goods. Their naked functionalism is hidden by facades, which in the case of modern banks are especially ostentatious and unwelcoming to all those who do not belong to the wealthy clientel. The market is omnipresent in cities. The ‘Kermesse’ no longer has anything to do with the market, just as the market no longer has anything to do with the annual market, or October Fest – other than the fact that these events have become tourist attractions. In the markets of global capitalism, the social relationships once associated with the market place, have been reduced to a functional minimum.

This has consequences for the rhythm of time. While fairs and seasonal markets were once the social highpoints in the calendar year, social rhythms today are determined by money. Economic time eclipses natural and social time. Interest periods, due dates on credit, currency swings etc dominate social and natural rhythms. They operate independently of day and night, summer and winter, and even the rotation of the earth around itself. As the market is reduced to its basic function as a place for the exchange of goods, the territorial situation of the city ceases to play a significant role. Thus, the world’s trade and financial metropolises have all taken on a similar face in the last decades. It is no longer the building style and urban lifestyle that influence the look of a city, nor the language or clothing. The same disconnected, random, fully exchangeable mixture of architectural ‘Solitaires’ are to be found everywhere as well as –

paradoxically - the loss of uniqueness and of diversity. This tendency can be interpreted in the language of thermo dynamics or according to the law of entropy (Gellner 1991; Altvater 1993). The tendency of global entropy is only challenged with quantitative means, in the same way that money only distinguishes from itself quantitatively: Which of the trade and finance centres possess the highest sky-scraper? Is it Chicago, New York, Kuala Lumpur or Shanghai? And how do we see Berlin's old-fashioned 'Traufhöhe' (height limit) of 22 metres in comparison? Of course, this is a weak form of resistance against entropy. But in a world of the (neo)liberal "*pensée unique*" and of the '*reductio ad unum*', of interest arbitrage and of rating, resistance to entropy cannot take place through the qualitative means of cultural distinction.

A new geography of cities has come into existence. They no longer grow in space, they are placed in space at nodal points of the network of the global market. The 'global city' develops as a 'nodalised' city. They are places for the turnover of money and transportation services, terminals for the trade of goods and drugs and tourist sites, where the managers of these processes can amuse themselves. Not all cities serve all these functions. Money centres don't necessarily have to be cities. 'Some random tip of land...rising out of the ebb (of the sea) where no taxes are paid' (Couvrat/Pless 1993: 135) can suffice just as well. Which is why the little city of Luxemburg and the cityless Bermudas or Cayman Islands are just as important money trade centres as New York, London, Tokyo and Singapore, and are significantly more important than large regional cities like Mexico City, Caracas, Sao Paulo, Berlin and Rome. The off-shore finance centres in Israel, Russia the British Island of Guernsey or the American states of Montana and Delaware have much more in common with the islands mentioned above than with their own political neighbours or the other states within their territories. Brokers on Wall Street sell Mexican or Brazilian investments without ever having been in these countries, or being able to speak their languages – and never have to be confronted with the political or ecological consequences of their investments. The effects of these activities are only considered within the narrow horizon of the investor; side-effects play no role and an awareness of them is generally damaging to business.

Moreover, Offshore Financial Centres (OFCs) have a considerable impact on extraction as well as on production and service economies because the formation of interest rates and exchange rates heavily influences costs and prices of goods and services, under certain conditions much more than the efforts to increase competitiveness by means of

technical improvements, organizational restructuring, productive increases or wage cuts. Wage reductions very often in the last decades have been compensated by a revaluation of the currency. Whereas the former process – wage and other cost-reductions – is under control of actors of the place, the formation of exchange rates is the result of developments of the global place.

Transportation and trade centres are not necessarily located in big cities either. Thus is the airport in Frankfurt more significant than that of Berlin or Rome. Terminals like Rotterdam or turnover places for goods (entrepôts) like Singapore are important nodes in the network of world trade. The drug trading centres are located where the markets are big and the government lax. And both these can change, making the location of the trading centre flexible. The same goes for tourist centres, because here it is a “positional good” (Fred Hirsch) which is being offered: a nice landscape, a pleasant climate, a warm and clean sea – qualities which are lost when too many tourists come to appreciate, use and ultimately overuse them. These places are nodes in the global networks Contemporary cities have no permanence, they exist as long as they are able to perform a function within the global network. The ‘eternal city’ that Rome once was, no longer exists. Of course, cities do not disappear from the earth, but they change their functional place in global space with heavy consequences for the territory.

The globalised city is thus reduced to a place within the network where particular functions are efficiently served. The remaining characteristics – the way of life of inhabitants, the culture, the architectural style, the tradition – are façades covering the bare functionality of the city in the global network. This aspect of disembodiedness is the flipside to the city’s inclusion in a global network, it is the price to be paid for functional acceptance as a ‘global city’. Cities have always been places where the contrast between societal wealth and poverty was most evident. The rich have always protected themselves from the ‘imposition’ (as they perceived it) of the poor. But the rich had as much of a territorial connection to the city as the poor and this united them, as it formed a common basis for city politics, in particular for the provision of public goods, from urban parks to a local health-system, from education to food safety and security, from public security to the city’s esteem in the world. Public goods are defined by the non-exclusion principle, non-rivalry of their use and high positive external effects (as public bads are defined by high negative external effects). Some public goods must be created immaterially (rules which increase human security), other provided

materially (infrastructure), and others such as the global (and local) commons must be conserved.

Having stressed the importance of public goods and of inequality within cities as well as among cities in different world region, we have to be aware of the extreme divergence between cities in the contemporary world. The following table collects some empirical evidence:

Table 3

Socioeconomic Indicators and Indicators on Infrastructure and Environment

City	Households below poverty line (%)	Informal Employment	Murder per 1000	Water supply % of households	Sewerage % of households	Regular Waste Collection
Abidjan	36,5	64,6	0,097	61,7	45,0	70,0
Cairo	42,9	-	0,007	89,0	91,0	65,0
Nairobi	27,4	51,5	0,062	78,0	35,0	47,1
Rio de Janeiro	18,5	33,6	0,750	95,3	87,1	88,0
Curitiba	5,7	33,0	0,120	95,5	75,4	95,0
Lima	29,4	48,8	2,300	69,9	68,8	57,0
Bombay	17,0	68,1	0,140	54,7	51,4	90,0
Jakarta	8,5	33,3	0,010	14,7	0,0	84,0
Metro Manila	13,2	20,4	0,090	95,1	80,3	85,0
Amsterdam	20,5	2,0	0,070	100,0	100,0	100,0
Copenhagen	-	-	0,100	100,0	100,0	100,0
Moscow	15,0	16,0	0,300	99,8	99,7	100,0
New York	16,3	-	0,230	99,9	98,6	-

Source: UNCHS, Global Urban Indicators Database

The table (3) clearly shows the differences between cities in the developed and in the developing world. The importance of an urban informal sector is very different, ranging from more than 60% in Bombay or Abidjan to very low shares in developed countries. The same picture is displayed with regard to environmental indicators, such as the percentage of household connected to water supply, sewerage and waste collection.

Disembedding and the Energy Question

In the course of capitalist streamlining, energy sources are not rationally exploited. During the fossil-industrial revolution, the energy basis is radically converted from

biotic to non-biotic (mainly fossil) sources. The **streamlining** begins with the harnessing of wind and hydro power (Debeir et al 1989), which, as stationary, grounded energy sources, are incapable of supporting the spatial mobility, urban-industrial agglomeration and temporal acceleration which capitalist accumulation requires. The availability of these renewable energy sources is indeed limited. It is with the use of *exosomatic*, mainly fossil energies since the 18th century, that humans cease to be restricted by the limits presented by time and space and their somatic energy. Now, the acceleration of time which forms the basis of the modern time regime is possible. Now cities can be converted into cities of millions and form a global logistical network.

The continuity of gradual development was interrupted by the industrial era. Population growth increases, the 'wealth of the nations' grows with the greater division of international labour and cities grow and change. The historian Cipolla offers an interesting insight:

“A fundamental continuity characterised the pre-industrial world, even after radical upheavals like the rise and fall of the Roman empire of Islam and the Chinese dynasties. As C.H. Waddington wrote, 'If an ancient Roman were to return to the world 18 centuries later, he would have found himself in a society that he would have had no problem understanding. Horacio would not have felt way out of place as a guest of Horace Walpole and Catull would have felt quite at home among the wagons, ladies and burning lamps of 18th century London by night.' This continuity was interrupted between 1750 and 1850. Within three generations, the industrial revolution had caused an irrevocable interruption in the course of history...” (Cipolla 1985:2)

With industrialisation, the market is silently driven by thousand horsepower motors out of its social 'bed', in a way that had never been possible in the history of mankind as long as the horses actually had to be mobilised. With the increasing productivity of labour comes a transition from absolute to relative surplus production. Marx also employed the phrase the 'real subsuming of labour to capital' (MEW 23: 531pp) to describe the method by which productivity is increased in industrial forms of production. This suggests that the subjugation of labour (and we can add of natural conditions, of time and space) to the capital regime represents nothing other than a disembeddedness from those forms associated with traditional energy power systems. Techniques are developed faster than ever before in human history because they must keep pace with the dynamic of accumulation. Innovation becomes the driving force. Abstract reason forms the justification for fossil fuels and the corresponding energy conversion systems. Today the constructions of Leonardo, conceptualised in an era of

limited biotic-endosomatic energy sources, can be realised: the helicopter that Leonardo thought up can now fly.

With the opening of a realm of possibility which was inconceivable prior to fossil energy, 'embeddedness' seems like a procrustean bed. The process of disembedding is to be experienced as a widening of the horizon. A social revolution which was to experience its highpoint and conclusion in the second half of the 20th century followed: 'the downfall of the peasantry' (Hobsbawm 1995: 365pp). In this historical 20th century process, the industrial revolution reaches its provisional conclusion as the class which has its origins in the Neolithic revolution, is destroyed. All culture stemmed from agriculture, as Georgescu-Roegen notes. Now culture must stem from industry and must be concentrated in cities. Even the working of the soil has been industrialised. "The industrial revolution was...the beginning of an extreme and radical revolution, the extent of which only sectarians could have anticipated" (Polanyi 1978: 68).

As agricultural production began to function independently of natural conditions, it was possible to satisfy the hunger of the populations of the northern sphere. Even in the 'rich' societies of Europe in the 19th and early 20th centuries, and in the major famines (in Finland or Ireland), many people starved (Ponting 1991: 88pp). But there is a high price to pay for this 'disembedding mechanism': the crises of evolution, witnessed in the dramatic reduction in the variety of the species, the loss of soil resulting from overuse, the monotony of food and all industrially products – as mass production meets the needs of mass consumption. And in the course of this 'social revolution', the knowledge of centuries regarding the appropriate use of soil is lost, or rather transformed into expert knowledge, protected by 'intellectual property rights' within the framework of the WTO, monopolised by the agro-industrial TNCs. No less important, this transition is also responsible for the transformation of the time regime, from an agrarian time cycle of growth and harvest to a fragmented regime of differentiated acceleration in different spaces. Of these various spaces, cities are the fastest. That is their competitive advantage in the global race.

Cities are the manifestations of these historical changes. Industry requires cities, especially due to the agglomeration or 'site-effects'. Cities present themselves as providing infrastructure, qualifications, research potential; the possibility of concentration for delivery and receiving companies, the 'shortest' and simplest possibilities for communication. With industrial mass production come mega cities,

cities of millions. These are magnets for people from the land. The modern 'knowledge society' is no exception; the facilities for education, science, information and culture are concentrated in cities, despite the possibilities of decentralisation that modern media seem to offer. The best means of personal communication are not replaced, only extended, by electronic nets. It also becomes clear, however, that this urban advantage is a 'positional good' (Fred Hirsch): when too many people live and work according to the maxime of 'time is money', they end up in traffic jams. When cities become too big, they become inhospitable.

The result: the city is the manifestation of the most energy-intensive way of life of the industrial modern which has not been abolished in the post Fordist era. The patterns of production and consumption, the manner of reproduction, and the ruling structures are poured in cement, they are canalised in streets, they have their spatially fixed citadels and symbolic forms. If sustainability is to become a criteria of urban development, traditional standards will have to be radically reformed. But cities are the fixed expression of a social history and thus are not to be changed quickly. It has been shown that the urban agglomeration that results from the dependence on energy supply and other resources has made cities very vulnerable. Changes in modes of production and life can not be effected by individual measures but rather through organisations of the civil society. This is obviously a topic that can only be mentioned and not elaborated on in this short paper.

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