CHAPTER 6

HYPER REGIONS
AGAINST
SLOW CITIES

WE WANT IT ALL!

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WE WANT IT ALL!

The exponential growth typical of the cities of the twentieth century has positioned the biggest cities of the globe as one of the main players of our demographic development. In this sense, the humanity has seen in cities its lifeline, although there has always existed a contradiction: the virtues of the great metropolis were hardly compatible with the characteristic benefits of rural life.

Indeed, on the one hand, cities densify the territory, encourage interaction, enable rapid and efficientmovements of people and goods and concentrate economic, political and cultural flows. As a consequence, the size of the urban centres increases until reaching a scale of a regional type: the Hyper-regions. On the other hand, its distressing pace and speed, its high pollution levels, the collapses of internal mobility and the lack of proximity of basic services are inconvenient compared to the rural environments where these things do not occur. All that led to the proliferation of so-called slow movements, and the notion of slow cities in particular, converting this duality of interests or demands in both senses into the true contemporary urban paradigm.

Therefore, the main urban challenge we face is to be able to superimpose both these necessities in one and the same urban reality. This reality is not proposed as a unique or bicephalous element, but as a mixed entity capable of articulating the abysmal difference of times, speeds, scales and dimensions that mediates between the hyper-regions and the slow-cities.

Can we go to the airport by bicycle? Can we densify the large productive poles in terms of housing? Can we radically combine different speeds in one and the same urban phenomenon? Ultimately, can we design the cities that would simultaneously respond to the both scales?

Regional city scale

Many of the biggest cities on the planet such as Beijing, Sao Paulo, Moscow, Paris or Mexico City have throughout the 20th century reached a regional scale reached throughout the 20th century a regional scale, the result of the demographic and economic development that in turn has fuelled the territorial growth without precedents. Traditionally, the territorial scope of the cities was limited by their location close to the routes that could have commercial links to other regions. Since the main means of mobility were on foot or on horseback, the distances between the settlements had to be small, the fact that was constraining the territories with large settlements. However, the emergence of the Industrial Revolution represented a radical change: the increase and the improvement of the means of transport through interventions such as the steam engine contributed to the fact that many territories ceased to be remote and inaccessible, and that few and small settlements based on them were able to connect with the other cities and to expand thanks to their incorporation into the markets.
This was especially applicable to the cities producing coal and other minerals, as well as those trading cotton, stone, wood or ceramics. They began to grow rapidly because the steam engine served as a commercial link and propitiated the development of the old cities and the emergence of the new ones.

One of the consequences of the accelerated and mostly chaotic growth of the cities was the differentiation between an established center and a series of surrounding neighbourhoods. In these neighbourhoods the new coming bourgeoisie were settling, that unlike the courtier class did no longer base its power on a supposed blood nobleness, but on the economic opportunities provided by the possession of the production means. These means of production were in turn located even further on the outskirts of the cities and consisted of factories and heavy machinery industries the surroundings of which were quickly occupied by working-class neighbourhoods.

Throughout the twentieth century, this model of growth persisted with some variations, especially in Europe and the United States. The emergence of the large financial centres densified certain urban areas in an important way, the expansion areas and large avenues unified urban centres that originally were independent, and the green spaces were revealed as fundamental to soften the roughness and ill health of the working districts.

The historic center ceased to be the “geometric” center of the city, and during its inexorable expansion absorbed the surrounding populations and settlements.
In any case, the urban spot of the western city continued to grow until reaching the regional scales, and in this sense the proposed geological limits ceased to be an obstacle to the virtually unlimited extension of the cities all around the world.
In this respect, most of the inhabitants of Europe and the United States have been living in large urban agglomerations for decades now, whereas during the 20th century much of the rest of the world continued to inhabit rural environments.

However, in the last third of the past century that situation begun to change, and several countries situated within other contexts are experiencing the accelerated urban growth. China, India, Brazil, Mexico, Russia and some African countries are good examples of that, and while in Europe the population growth has remained fairly stable in recent years, in the above-mentioned countries the acceleration has been dizzying. There are cases such as Nigeria, the population of which is going to multiply in the future and much of it will live in the cities. Lagos, for example, had the population of only 300,000 in 1950. This figure reached 13 million in 2015, and it is expected to surpass 24 million by 2030.

One of the consequences of these demographic accelerations and their inevitable regional expansion is the necessity to respond to a series of demands of the territorial scope, such as managing speeds, times, distances or scales, which is typical for hyper regions and for a global territory made up by multiple interconnected mega-cities. Slow City
In contrast to an increasingly fast-paced, frenetic and hyper-active urban world, the slow movement became a cultural turning point in the end of the twentieth century. Its agenda is broad and diverse, but its common denominator is to question the principle according to which “faster is always better”. On the contrary, the slow movement claims the importance of doing things in the best possible way instead of the fastest possible way, and most importantly, it puts the quality above the quantity.

Although it first appeared in Rome in 1986 in protest of the opening of a McDonald’s restaurant, this movement is not limited to the concept of “slow food”, but covers other areas as different as “slow fashion “, “slow gardening”, “slow goods” or “slow media”. The field of urbanism is no exception: its discipline has also received “slow” approaches, mainly through the trend “Cittaslow”.

Founded in Italy in October 1999, it aims to improve the quality of urban life through 50 criteria structured in three main areas: resist the cultural homogenisation of the globalisation, respect the environment and promote a healthy lifestyle.
Thus, in the context of the modern world made up of the cities that vibrate under the premise that time is gold, the slow movement celebrates the value of contemplation, such as the value of enjoying our daily routines in a quiet and peaceful way. Going to work by bicycle, walking, or talking with one's neighbours are the activities that should be recovered and kept because of their ability to increase the wellbeing of those who practice them, and in no case these activities should be marginalised as if it were a mere waste of time. It is therefore a compliment to the slowness that can be very attractive to a citizen of London, Moscow or Beijing. In the face of traffic jams, noise, asphalt and haste, the "slow city" proposes a pacification program in search of more habitable spaces.
In order to officially be a Cittaslow, there are several requirements to respect, among them the necessity of not exceeding 50,000 inhabitants and comply with a manifesto of 55 criteria. In this sense, the case of Ferrara is paradigmatic: despite meeting all the criteria established by the movement and having practically as many bicycles as inhabitants, the fact that they exceed 50,000 individuals makes it impossible for them to receive its official recognition, portraying the scale limitations of this movement and its difficulty to explain or assume the contemporary urban conditions.

Many slow cities into one hyper region

The real challenge for the urbanism in the 21st century is not to dream utopianly of converting the huge metropolis of the planet into the slowcities, as some more radical groups from a redemptive and fundamentalist ecologism seem to wager, applying to the arguments from the neo-populist perspective very active nowadays in the European cities, but to superimpose these two urban realities in different speeds and scales, organising demands of the opposite sign of the society while offering the solutions that use the buffers of each model in the search of compatibility.

If cities have become the predominant habitat of our century, we must work to reconcile the speed, interaction, and density of the hyper-regions with the sustainability, human scale and health of the slow city. The challenge is not easy: while slow cities base their value on the notion of “proximity”, hyper-regions stand out for their value of inter-connectivity as a node, because of their ability to link to the other nodes, even the ones located far away.

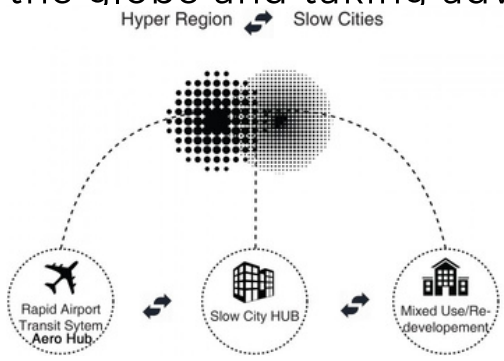
The proximity involves walking or cycling, reduced distances, low speeds and little or no pollution. It also implies producing in the same place as consuming, and establishing affective bonds with one’s immediate environment enabling the rewarding, persistent, unique and rich in stable identities contact.

On the contrary, the hyper-regions manage a completely opposite but complementary scale: if we speak of the mobility, large airports, maritime terminals or train stations connect us with any part of the world in just a few hours. The hyper-regions handle high speeds, they have ecological impact, and the displacement does not generate great interference in the territory that they cross, in general these are anonymous spaces, flat and neutral, places where the optimisation of flows prevail the ones possessing an eminently technical and expeditious vocation. On the other hand, the intra-urban movements are time- consuming, massive and often motorised, indispensable and tiresome. Combining both realities consists above all in solving a problem of the synchronisation and of the circular economy: one of the keys to connect one reality with the other is to be able to understand the different tempos, paces and speeds in order to foster their coexistence, and especially to identify entry points establishing a value chain around the model, the same way as in the economy. An exercise with these characteristics would imply rethinking several of our habits in the context of this new challenge: How can we participate in the virtues of the hyper-regions based on the slow city positions? Or vice versa.

The aim is to identify hypotheses that arise from understanding the anomalies of the model, we have studied different scenarios, such as the most archetypal cases of the cities like Newark in the Metropolitan Area of New York with the urban structures of the slow cities scale while concentrating at the same time huge leading infrastructures of a hyper-region, such as the international airport.

Would it make sense to make a check-in directly at an urban train or bus station, with a direct access to the runway and the plane? And why would we need an airport, when we just need a runway? Or why should we keep increasing the commercial areas of the air terminals in parallel with the reduced to a minimum waiting times while boarding if it would not be necessary to concentrate them all just to distribute them after that? Finally, why should we keep multiplying the transfers to the airport with private cars or taxis in the huge concentrations with pendular and obligatory routes, generating traffic jams, pollution and waste of time and money?

In general, it is about understanding of how a strategic dialogue can be established between the key elements of the hyper-region with some characteristics of the slow city lifestyle in order to achieve a plural, complex and connected urban reality. It is precisely this ability to articulate differentapproaches is the one that the urban sciences of the twenty-first century are interested to study, with a particular focus towards its immediate application to the major cities of the globe and taking advantage of economies of scale to



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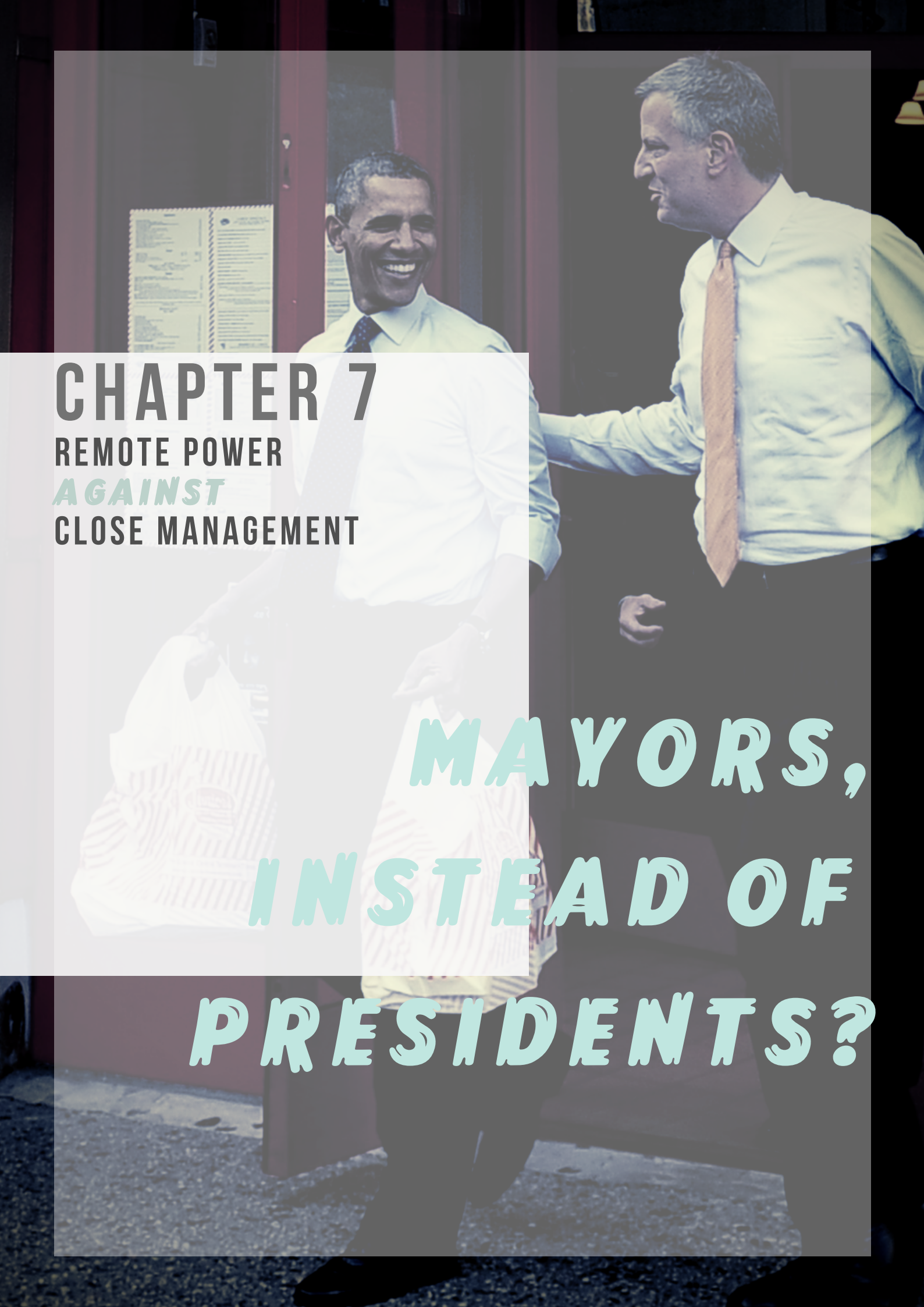


CHAPTER 7

REMOTE POWER *AGAINST* CLOSE MANAGEMENT

MAYORS, INSTEAD OF PRESIDENTS?

CHAPTER 7. MAYORS INSTEAD OF PRESIDENTS?

One of the main debates related to the governance is how to find out what is the most appropriate territorial resolution. In other words, what should be its geographical scope? At what scale should we put the minimal unit of governance? The answers to this question have varied a lot throughout the history, going from the fine-grained proposals such as those of the primitive tribes or the Greek Cities-State, towards the solutions of lower resolution like the great empires or the global utopias. Half way between the two scales of governance, the modern time proposed the duality of State-Nation, and in the last century this model was the primary one. However, the strong urbanisation process experienced during the 20th century and the global scale that many of the issues involve, reveal the great paradox we face: we deal with the practical problems typical of the 21st century with the political instruments proposed in the middle of the seventieth century. Thus, if the nineteenth century was the century of empires and the twentieth century was the century of States, the political horizon of the twenty-first century begins to outline the city as the main player of the world's political events. Therefore, it is a return to the Greek "polis", but neither in the same way nor in the same form. And most importantly, this is a great opportunity for the design, management and governance of the urban event, in a society that increasingly demands participation, but that does not have neither the tools nor the information and the knowledge of the complex rules that regulate our cities.

Planetary issues

The Nation-State as a political instrument was born in the treaties of Westphalia Peace signed in 1648 and that ended the Spanish War of 30 years and the German War of 80 years. Those provisions transferred the feudal sovereignty legitimised in the concept of inheritance to the national sovereignty legitimised in the concept of nation, and the territorial extension based on the wish of its ruler to the territorial extension limited to the extension of its nation. Thus, the foundations of the State-Nation duality were fixed, although that political instrument in fact did not begin to be minimally respected in Europe until the end of the World War II.

Although the State-Nation formula has been considered by many historians as a substantial progress at the ethical and political level compared to its feudal antecedent, today its relevance in the global political landscape has been diminished, opening a series of questions with this respect: Why has the Nation- State lost its relevance as a political instrument? Why is it viewed by its citizens as an entity without sufficient authority in front of other political and economic entities? And most importantly, why can't it face the main contemporary challenges? There are, broadly speaking, two lines of argument that justify this thesis, and they are articulated around the same axis: the scale.

Firstly, the Nation-State is usually small in size and its interests too local to face the issues that have taken on a planetary scale since the end of the 20th century. Global terrorism, refugee crisis, international economy, climate change, mass tourism, etc., the problems that go beyond the borders of the States and that cannot be solved by the specific action of a State or by the sum of de-coordinated actions of several States.
A very illustrative example of this phenomenon is the recent and long-awaited agreement between the United States and China to reduce their CO2 emissions, which correspond to almost 45% of total emissions.

Although this agreement is necessary, the result has been discouraging because of its more than evident insufficiency. On the one hand, the reduced figures are still very high (16.4Tm of Co2 per US citizen compared to 7.4Tm of Co2 per European citizen), and on the other hand, their credibility is quite limited given the lack of firm commitments and considering other experiences of doubtful success such as the systematic breach of the Kyoto protocols.

The states are highly concentrated in their local, territorial and internal interests, therefore the alliances that can eventually be woven regarding the global issues are rather weak and ephemeral because they do not produce immediate domestic benefits to the states. Something similar happens with the confusion with which the latest cases of global terrorism have been approached internationally, and especially regarding the European management of the refugees problem, an issue where an absolute lack of coordination between the European States has been revealed with respect to the extent of its borders' rigidity and impenetrability.

Secondly, the scale of the Nation-State is too big for democratic participation that would seem significant and stimulating to its inhabitants. Indeed, between the administrative structure of the State and the day-to-day of an average citizen sufficient distance exists there exists a sufficient distance so that its political action is not perceived as a relevant one. More often there appears an impression that the structures of the State have been detached from the social base that empowers it, and in this sense, it seems difficult to understand, what type of local and immediate feedback can the political, social and economic demands of the citizens have, beyond the possibility of going to vote every 4 years.
It seems clear that one of the greatest difficulties of the duality State-Nation is its scale: on the one hand, it is too small to face the planetary challenges of the 21st century, and on the other hand, it is too big to represent a political structure that is close to the citizen. In this context, many voices from different areas suggest that a framework consisted of a series of interconnected cities could be formed as the most appropriate political instrument for the twenty-first century. But why should cities be chosen to assume this role?

Why cities?

There are several reasons for proposing the city as the most relevant governance scale to the global and local needs of the 21st century. First, the cities concentrate the majority of the world's economic flows, approximately 80% of them. Second, they are home to more than half of the global population and are expected to reach 2/3 by 2050. Third, they are the main source of cultural, social and political assets that shape our society, which explains why 75% of the information produced comes from the urban area. Fourth, its ecological relevance is as high as unfortunate: up to 70 percent of all the global pollution has occurred in the cities. And finally, they have a socio-cultural element that singles them out: they are not frayed and constrained by the national and state disputes regarding the sovereignty and nationalism, something that allows the interaction between them to be much more effective.

But most important, the city allows the citizens to perceive and apply the values of participation, collaboration and community with much closer results than in the Nation-State. Thus, and after the transition from the Greek "polis" of Pericles towards the Nation-State of the Westphalia Treaty, there is a political return to the "polis" as the main democratic institution. However, the "polis" of the 21st century should no longer be a cast of monads as in Ancient Greece, but a network of cosmo-polis. A fabric of urban activity poles that constantly interact in order to respond to the migratory, tourist, economic, energy and business systems that in addition to being multiscale are nowadays rhizomatic and transversal.

To this effect, we already have institutions such as UCLG (United Cities and Local Government), the C40 that assembles the 40 most important cities in the world, or the Global Climate Pact of Cities (2010) that are responsible for providing an infrastructure institutional framework through which to settle agreements, treaties and inter-urban projects. The city has a central position in the contemporary political, economic, cultural and demographic landscape, and therefore any alteration in its functioning has the potential to propose deep transformations.

This is also a great opportunity to redefine our political horizon, going beyond a technocracy that in many cases seems to stab in the dark without knowing very well where to direct its instruments. The case of the Smart Cities companies is very significant. After raising and exalting a series of apocalyptic forecasts for the planet without future, a cutting-edge technology as a redemptive agent is proposed from its departments, under an elegant umbrella of the Smart Cities that has already become a trend. It implies a biblical rhetoric that however has a serious disadvantage: when we review its urban competence, we don't find in its vocabulary such fundamental terms as space or public transportation, health or education, accessibility and infrastructures, the common assets that are privatised and developed by the multinational agents with evident - though legitimate - economic interests.
The question is what kind of intelligence does my city need? And not the one of what intelligence do they offer to me. That is the question that Barcelona asked thus creating the first international group of municipalities for the intelligence and information management in the urban environments of a public nature, the City Protocol Society.
It is no coincidence that the cities with the fastest growth in the world, do so in the surprisingly similar way given absolutely different conditions, within the regimes of low democratic value, in the environments with structural and historical inequalities, or with the economic or technological wealth: from Beijing to Tokyo, through Rio de Janeiro or Manila, humanity has identified the city as a place of the potential salvation, a space of multiplication of opportunities, even in the worst scenarios.
In this context, it seems appropriate to pursue again the "polis" of Pericles, but not only as a successful urban densification and a relevant scale of governance, but also as a democratic paradigm.

A Parliament of Mayors

A change of scale of governance as described above not only implies the necessity to recognise the figure of a mayor, a mayor of the metropolitan scale rather than of a municipal one, as a political agent that has both the maximum authority and the maximum proximity in the same time, but also to modify all the organisational chart that supports it.

In this sense, several theorists such as Benjamin Barber, Don Tapscott or Richard Florida have proposed the need to constitute a Global Parliament of Mayors, an institution that above all serves to connect and coordinate the urban policies. Now, it is a voluntary network of the political representatives that is not yet empowered to act in a legally binding way, but rather to discuss and identify the best practices in the urban management, to enact model ordinances and to advocate for more effective urban policies.

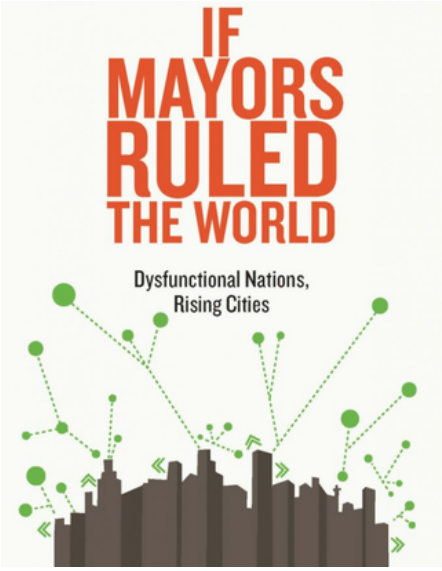
In addition, it seems crucial to count with a municipal team of administrators who in contrast to the state's agents are forced to be practical, empirical, much more approachable and less dogmatic in terms of ideology in order to face the present challenges.

There are many recent examples of the problems to which the municipality has responded better than its national counterparts, and what is more important, where they have shown a much more open and receptive attitude towards the experimentation.

It is true that the implementation of such an organisation would entail a new layer of bureaucracy, offices, departments, etc., which are precisely the slow and hierarchical tools to be avoided. However, it must be considered that the challenge now is to create an inter-urban cooperation platform. Ultimately, it is about the global parliament of cities, an initiative that through the mayors and the other urban political agents must interconnect urban problems in order to articulate the coordinated responses. In fact, the physical encounters take place once per year, while during the rest of the year, the council meets through the virtual platform developed by the GPM (Global Parliament of Mayors) itself. This platform allows the decision-making and the exchange of information among the members of the cities, through the debate and the discussion regarding the series of proposals coming from the mayors themselves and from the urban networks of participation formed by the civic and private sector agents.

It is evident that the new information technologies enable and foster this model, not only within its own organisation, but also, and fundamentally, in the capacity of connectivity with the society itself in an immediate and massive way, for the decision making in the urban environments of the increasingly participatory democracies.

In any case, the goal of this type of initiatives is very clear: it is about being able to make decisions of a global scope that will be implemented in the local context. In contrast to the limitations of the States that are each time conditioned further by the national issues and slowed by the rigid and bulky bureaucracy, cities appear as a fresh, relevant, agile and efficient political tool able to face the global challenges of the 21st century.



CHAPTER 8

URBAN RATIOS *AGAINST* REAL TIME DATA

FORGET TO REMEMBER!

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FORGET TO REMEMBER!

When Ildelfons Cerdá invented the term “urbanization”, he named an urban resource whose value does not merely consist in its capacity to respond to the social, techno- logical and economic context of the industrial society in the 19th century. On the contrary, it also consisted in its ability to anticipate the characteristic needs of the twenti- eth century. This virtue enabled the scheme of the Catalan engineer to overcome the majority of requests set by the 21st century with certain confidence, even though thesocial and economic context was completely different. However, the development in recent years of the infor- mational society initiates some considerable and unfore- seen questions regarding our urban future. It pushes the limits of resilience applied during this last century in the scheme of Cerdá, mainly in those cities where the growth has been exponential.

In any case and without any doubts, the perspective of our urban future poses many contradictions and paradig- matic anomalies: until the present day, the future of our cities seems to be reduced to a discussion between two models that crisscross their paths each time with more frequency. On the one hand, we inhabit a traditional city: complex, historical, prescriptive and subject to multiple political ups and downs. On the other hand, it is an automatic city that lies be- fore us: smart, hyper-technified, sponsored by large technology-related multina- tional companies and legitimised by the comfort, security and self-sufficiency that it supposedly gives us.

In the territory that intercedes between both models a great debate emerges. Ultimately, the challenge is systemic: How can advanced cities overcome the post-industrial model of a city that cyclically enters into crisis and that is based on consumption and an obsolete post-war welfare system? Throughout the 20th century, the post-industrial city has based its development in intensifying and optimising modern processes: zoning, specialisation, com- mercialisation, etc. In this sense, its operative is mostly based on informational ratios. It is therefore an accumulative system, within an industrial logic of the stock: the city stores large amounts of data that is organised through a hierarchi- cal vertical system. The valuable result of this are ratios, on which all the chain of knowledge and experience accumulation is based on, and regarding which all the simulation models for the critical decision making are executed.

However, with the possibility to collect and process in real-time huge quantities of information, new technologies are organising an alternative model. This mod- el is not based on the accumulation of knowledge, but on the horizontal circula- tion of data that is being instantly updated.
We move from the stage of data accumulation towards the stage of data replac- ing. The question now is not how do we move from one model to another, from the city of the nineteenth century based on the statistics towards the post-in- dustrial city model with computerised and digital mechanisms, but what is the systematic urban change that enables these social, technological and economic transformations.
What would the design be of a street from which we receive small amounts of binary data every three seconds?
How can we understand a city that no longer reacts through a discrete system of standardised responses but instead responds with a flow of hyper-specific up- dates?

Will we be able to design an urban habitat that no longer trusts in the preva- lence of the physical world as an informing and informed tool, but that relies on something that flows, producing new information that overlaps the previous one?
It is indeed an urban problem, but above all is a problem of design, whose an- swer should lead us towards new urban dynamics instead of producing a simple computerised covering of the old urban scheme.

Probably one of the most significant urban objects to illustrate this is the traffic light. Its emergence in the middle of the nineteenth century in the history of the railroad and its subsequent development and standardisation with the gener- alisation of the Ford T represented a deep change in the way of organising the city: in the first place, it enabled an organised circulation of vehicles, and in the second place it obliged the pedestrians to regulate again their urban behaviour. However, after more than a century brimming with transformations and discov- eries, the traffic light paradoxically remains as a fundamental element of the city regulation, symbolising the most characteristic attributes of the modern time: standardisation, mass character and repetition.
It represents the model of data accumulation already referred: the common traf- fic light does not consider the specific and random circumstances of a particular situation, but acts according to the major urban mobility patterns “accumulated”during the last years. These patterns are the result of huge stocks of collected information based on which we can identify statistical and operative patterns. Today this method seems to be threatened: for some years now, we have the capacity to produce in a massive and cheap way the necessary technology to organise urban mobility within a system of self- organisation. This is not an en- telechy: today we can dissolve the traffic light within the city through technolo- gies like GPS, Bluetooth, “NeverLost” o similar applications, applying the same logic as when we dissolve a sugar cube in a cup of coffee.

Indeed, rephrasing Neil Gershenfeld from the MIT Media Lab, the sugar cube would no longer be next to the cup of coffee, representing the model of intelligence concentration in an external element, but dissolved in the coffee itself in tiny quantities, repre- senting a distributed and internalised intelligence model. Information becomes synthetic and interconnected data.

In any case it is crucial for the urban design area to highlight the spatial con- sequences that these transformations could have in cities. We should ask our- selves: does it make sense to keep the traditional urban episode represented by the crossroads and the pedestrian walkway if there are no traffic lights?

For Cerdá it was crucial to understand how a tram moves in the city of 1850 in order to outline the urban morphology of the Eixample in Barcelona and pro- pose the Xamfrà.

Following his example, what would be the morphology of a city that operates without traffic lights and that process real time data?

Currently, there seems to be a consensus that we are moving towards a much more flexible city model. However, we have a technology that, despite being efficiently applied to some post-industrial disciplines, still hasn't been massive- ly applied to an urban environment. Paradoxically, it is no longer a matter of technological development - as it has been for many advanced proposals such as those of Archigram or those of the Japanese Metabolists. On the contrary, is a matter related to the field of urban design. We need to understand how the urban implementation of the market technology can be applied in order to produce a systemic change in the metropolitan functionality. So far, when this problem has been approached in a specific way, generally the choice has been towards the "generic" as a key concept: The urban space design would imply outlining a neutral space, flat and minimal, that would overlap all types of activities in one and the same place without disturbing each other's needs. It would be about planning generality to achieve flexibility.

However, the paradigmatic thinking would lead us towards the exact opposite thing: the constant flow of up-to-date information provided by the new informa- tional technologies permits us to release ourselves from all what is “generic”, uniform and imprecise, to get inside all what is extremely specific, nominal and temporalized. This is a much more sophisticated register, that allows two main actions. On the one hand, it permits us to optimise urban processes. On the other hand, it permits us to no longer comprehend the urban individual of the 21st century as a standardised citizen who lived in the post-industrial city in the end of the twentieth century, and to begin to treat him as the private and hyper-con- nected citizen who lives - at least on some level - in the intelligent city.

Smart Cities; this is an expression that is in a process of critical metamorphosis, and where of course much of the discussion consists in understanding which part is the “Smart” and which part is the “City”, that is, which part of this sys- tem is developed following the dispersed “bottom-up” logic and which part follows the centralised “top-down” logic.

Within the first logic, the citizens have the possibility to create self-organised collective dynamics, as in the case of Uber, Airbnb or similar. Within the second logic, there are public institutions that take control of the processes through enti-ties as the City Protocol Society.

On the other hand, the most disciplinary debate is focused on the understanding of how do we move from the notion of urbanism to the notion of urbiotics or urbanetics.

It seems logical that according to our ability to advance in the implementation of urbanetics in this new type of urban design this inevitably leads to other needs: smart materials, automatic building systems, prescriptive regulations, open software, etc. These are the inputs that will undoubtedly be transformed into driving forces for a new era in the advanced production industry. n fact, carefully observing the evolution of the application of production lines in the industry, we can see how they are using sensors with more frequency.

Sensors have a crucial role in this process: they produce measure of distances, colours and textures in order to be able to perform with precision. In some case, they can even take decisions on their own. Is very common to find this type of technology in production lines of any industry.
Moreover, it has been progressively exported to other spaces. One example of it is the case of the logistics transport in the port of Rotterdam, where advanced technology is used to control the position, displacement and stack of large containers.

For many years this technology can be found in the domestic sphere. In this sense, advanced packaging technology of small industries has been scaled to the size of large port containers, in the same way as the software used in the pit-stop of the Formula 1 has been scaled to the emergency strategies of the hospitals. The smart transportation of the freight containers is based on sensors and color readers that enable platforms to read bar codes This implies that these mecha- nisms have the capacity to read, measure and take decisions based on data. In restricted or controlled environments such as those of an industrial warehouse, a port, or an industry, the application of intelligent systems that operate in real time with a certain level of initiative is already a tangible reality. Everything is based on simple robotic mechanisms equipped with sensors. The challenge seems to be clear: how do we apply this knowledge to the urban scale in order to face complex and dynamic environments with human interaction?
Although it seems that one of the main limitations that we can find today is the speed of response of some of these mechanisms, we already begin to see some applications such as the Google driverless car that reacts in real time. Ultimate- ly, it is about implementing a series of technological capacities in our urban objects.
This is the world we face from the perspective of urban design in the context of real-time data: the internality, the specificity, the localisation.
Other disciplines, at other scales, have for a long time used all types of data transmission systems in real time and have completely transformed their way of work.

A very illustrative case, beside the productive system described above, is that of the sociology: it has included in its methodology of work the use and the analysis of all kinds of social networks for years, revolutionising the research systematics that has now been established as a discipline. Without a doubt, urban design stops cannot be executed in the same traditional manner when we incorporate real time data as a fundamental parameter for our project.

In this sense, one of the main points consists in understanding the city as an operating system. In the first place, it operates with a series of inputs that it re- ceives through several mechanisms: on the one hand, through sensors scattered throughout the urban territory and providing the system with data on traffic, temperature, CO2, noise, waste and much more. On the other hand, through mo- bile applications that provide relevant data on citizens' wishes, desires, concerns and expectations (Uber, MeetUp, Endomondo, etc.). In the second place, the operating system must classify, translate and interpret this whole amount of data in order to finally offer a series of outputs in real time.

At this point, a new scenario of citizens' urban behaviour seems to be necessary. Transformations such as those pointed out require not only a certain technology and a determination of the urban design to be implemented, but also a process of training, adjustment and legitimation from part of the citizens. In this sense, one of the aspects that turns the city into an entity that differs from the other mostlytechnical fields such as the above-mentioned production or distribution areas, has to do with the social and cultural inertia it generates.
It is about the inertia that is not only crystallised in the form of a very specific and deeply settled urban behaviours and habits, but also in the form of an imagi- nation that acts as a horizon of the urban comprehension for the citizen.

Thus, any approach that seeks to reduce the transformations that we work on to a problem of a technological type or of a simple urban design will fail in its implementation because it ignores the fundamental dimension of the citizen: the notion of the urban habit and the emotional, social and cultural link that it gen- erates with its space.

In this sense, it seems obvious that the urban changes that would imply the generalisation of the driverless car or the dissolution of such an element as a traffic light, cannot be carried out without a parallel process that handles the questions of the sociological nature: the changes will only occur if they are widely absorbed by the new urban culture.
In any case, this reflection underlines an issue that has to do with the economic model in which we are now. Nowadays a fundamental change is taking place in this aspect: Each time it is less a question of paying to have, but it is about pay- ing to use. In this sense, the informational generalisation in real time is basic, because it offers rather ephemeral services, hosted in the cloud and meant for a certain period, with the intermittent presence and the constant use instead of selling the products with the constant presence and the intermittent use.
Thus, it would be interesting to think that the type of business model that has accompanied the traditional urban development and that has played a key role in the rise of the real estate bubbles can also be altered with the emergence of the information city. The progress of the urbanetics as a discipline that combines urbanism and robotics could develop a new type of business model linked to the city, and that would not only research new products for a new market, but would also generate the urban welfare on the basis of providing the services and the expertise.
Clearly, the economic cycle of the market economy within the capi- talist system will need obvious adjustments: the job market that has maintained the welfare state is under the compulsory study - How do we imagine that this apparently innocuous and positive world of real-time data will affect the life of the millions of people in the terms of work, taxes, or retirement system?
The transition of a city model that intermittently accumulates knowledge to- wards a city model that continuously updates data has therefore two character- istics that make it especially interesting. On the one hand, it has the capacity to represent a qualitative or a structural change and not merely a quantitative or a rate-related one, and on the other hand, it is about a cross-sectional or a multi- disciplinary change and not purely a longitudinal or an isolated one. Therefore, a great opportunity in terms of urban design is now opened: we can design the city not only thorough physical dimensions but in the context of an open operating system.

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