

Complex mapping of the urban landscape: new methods and complex maps

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The contemporary city is a place of complexity and contradiction, of instability and dispersion (Bauman, 2000; Secchi, 2000). Indeed, as it appears nowadays the territory, it is extremely difficult to interpret and represent it through traditional analytical methods and cartography.

The condition of nomadism in which we live stems not only from evolutionary changes but also from continuous rapid change in cultural environments, consumption sites and scientific, technical, economic and mental landscapes (Koolhaas et al., 2001; Landrove, 1997). Researchers have therefore imported from other disciplines ways to see, research, explain and represent the city and the natural, mental, virtual places in which we live, constructing proper methods of transversal, multilevel decodification and analysis. In order to give suitable terms and explain such new sites, several academics have tested maps, words and multimedia images, hypertext, software, able to render this complexity and to permit readability, which have created in most cases new interpretations of urban features (Gausa et al., 2003).

Starting from such premises, the aim of this work is to investigate new methods and tools to analyse the urban area and landscape as well as identify new elements of contemporary urban identity which may lead to cultural change.

Four main categories of approach, the virtual, multiscale, lateral and nomadic, were identified, involving mapping (Careri, 2002; Boeri, 2003; Mitchell, 1996; MVRDV, 2002). These categories of approach are not separate entities but intersect at several points, through which the main elements characterising contemporary urban identity can be identified. The new urban facts of the territory are the networks, the empty spaces and infrastructures, the new containers (urban attractors/shopping centres/malls) and the urban perceptions. They are not easily identifiable neither can be represented through a traditional planimetric relief; however, they have an extraordinary ability of penetration into the different parts of the city.

A subsequent investigation should aim to compare the various methodological approaches, to find other elements and try to construct the scenes of transformation of the future metropolis focusing on the different conceptual and disciplinary implications.

1 INTRODUCTION

New technologies have invaded our daily lives, contributing to a gradual change in habits, places and objects; the present-day world is held together by a series of networks, places with a flux free from spatial and temporal constraints. The resulting disgregation process of the social community causes the fragmentation and breakdown of the life of each constituent unit into a series of episodes, each isolated and independent ((Bauman, 2003; Viganò, 1999). The new urban features are not easily identifiable nor can they be represented through traditional cartography. However, they have an extraordinary ability to penetrate the various parts of the city.

Most urban construction was not executed with the addition of new homogeneous parts, but rather as a result of a multitude of small building events often without any sort of combinatorial logic (Boeri, 2003; Koolhaas, 2001) (1). Thus, the contemporary city becomes a site of complexity and simultaneity, which leads to situations of transience and change.

Starting from this premise, the aim of this work is to search for an approach to analysing the urban landscape that ranges from that of urban sociology to that of global planning. Four categories of approach (virtual, multiscale, lateral and nomadic) were identified, which are not separate entities but intersect at several points.

2 METHODOLOGIES

2.1 The virtual approach

The virtual approach to analysing the urban landscape is an approach that finds its expression in the myriads of places created through the use of the network. These are spaces, squares, architecture, platforms and gateways which, despite borrowing terms from the constructed world, are not physical places, but are able to influence movement, behaviour and habits. The resulting map is a sort of virtual architecture whose concrete meaning lies in the virtual paths that we habitually take (Cassatella, 2001; Gregory, 2003).

"City of bits" by W. J. Mitchell is a comprehensive introduction to a new type of city, an increasingly important system of virtual spaces interconnected by the information superhighway (Mitchell, 1996). Mitchell makes extensive use of practical examples and illustrations in a technically well-grounded accessible examination of architecture and urbanism in the context of the digital telecommunications revolution, the ongoing miniaturization of electronics, the commodification of bits, and the growing domination of software over materialized form. With his "City of bits" W. J. Mitchell analyses the single components of the system of new virtual spaces, the superhighway of information, of social, work, cultural places, Internet meeting and of the various virtual communities that is being created, each with different attitudes, uses and needs, but joined by the virtual distance that divides them at the same time. The acute and sometimes ironic analysis proposed by Mitchell represents a sociological and cultural example of a reality dominated by the Net that we have experienced in the last few decades and which is now ready to change profoundly and as yet uncontrollably people's lives and the space in which they circulate. The analysis is studied in positive and propositional terms, relying on the sensitivity of experts working in urban organization to note what is happening and reconsider the area as a "bitsphere", taking account not only of just spaces and people, but also of mental places and categories and new mindsets (legal, economic, etc.). Mitchell identifies the various type of spaces and people, analyzing the "electronic agorà", the "cyborg citizens", the "soft City", the "business of the bits", the "web site" in a two-fold and contrasting meaning of a

physical, tangible place and a virtual, intangible place (2). Architecture and urban planning are here inserted within a context suggested by the digital telecommunications revolution so as to describe an invisible reality, namely that of the city of the 21st century, and imagine new environments mediated by digital technology in the target lifestyle and the community to which there is a desire to belong. The possibility of a revolution in the organization of physical spaces in relation to the temporal acceleration caused by the digital era is glimpsed. The result is a picture of the change in architectural and urban space and its users/inhabitants due to the technological innovations introduced by the Net today and in the future: a sort of underlying platform, constructed by reference to films, cities, famous people, monuments, museums, libraries, theatres, hospitals, banks, professional people, types of business on which to build the future of the city.

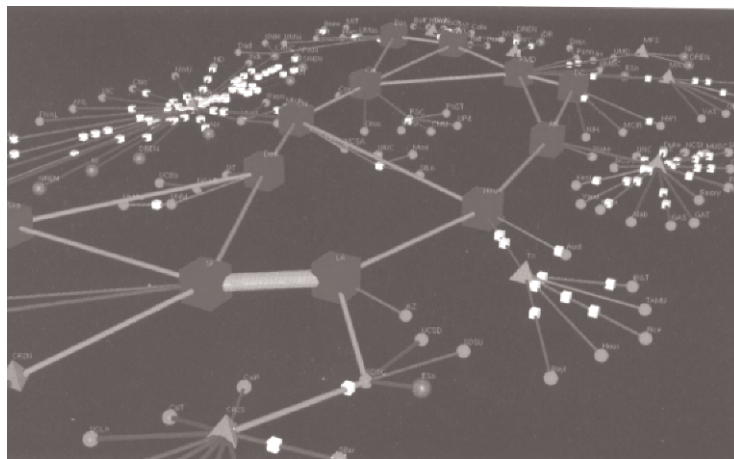


Illustration 1 – Jeff Brown, screen shot of a 3D model of the vBNS network which connect universities and laboratories in the USA. (Image from: GAUSA, M. et al. (2003) *The metapolis dictionary of advanced architecture*, Barcelona: Actar)

2.2 The multiscale approach

The multiscale approach is a complex approach that presupposes knowledge and attainment of a very large body of data from different sources able to interact and supply the answers required to interpret an area (Iaac Metápolis, 2003; Hall, 1988; Virilio, 2003). It is a type of approach that from some points of view may be described as the completion and extension of a GIS into a more dynamic and flexible form.

The analysis elaborated by the MVRDV group for the RhineRuhrCity research project is based on the idea that cities are complex organisms rich in inner connections (MVRDV, 2002). Moreover, cities must be able to ensure the coexistence of a set of diversified functions and facilities, that entail enormous economic advantages. Smaller urban areas cannot offer the same complexity of facilities with respect to cities, which have the edge in terms of supply. In order to make the former competitive, the solution of the MVRDV lies in networks, in the creation of complex systems of towns, cities and regions. Combining hard and soft resources intelligently, multicentre cities can be competitive because they combine the variety of resources of large centres with better quality of life.

By hard resources we mean the resources which comprise nature, commercial structures, cultural attractions, architecture, museums, monuments, while by soft resources we mean the population, culture, the heritage of traditions. In order to successfully network the multicentre urban areas and the cities, the two types of resources must be connected by a combination of physical and IT networks. The body of information that may be available in relation to a region is extremely large and constantly changing; integration between hard and soft features is very complex, and it is very difficult to represent the networks of interdependence for all the regions. The main issue that MVRDV analysis has addressed is how to connect and communicate all such information and give value and significance to the data, how to visually represent the data to make them become work tools, and especially how to make such instruments more accessible to non-specialists in the field and to citizens at large.

The MVRDV have produced a set of software called "The regionmaker" to study the region of the Ruhr, that combines the functions of a search engine, a graphic interface and a browser. These tools are able to collect demographic data and values supplied by the GIS and it is possible to consult maps, diagrams, access data banks, export satellite images, log on to the Internet, and use CAD planning. The development of the program is related to the additional representation of the movement of people, goods and information, such as the question of residential flats. The software program could develop new scenarios in order to optimize the planning of residential buildings.

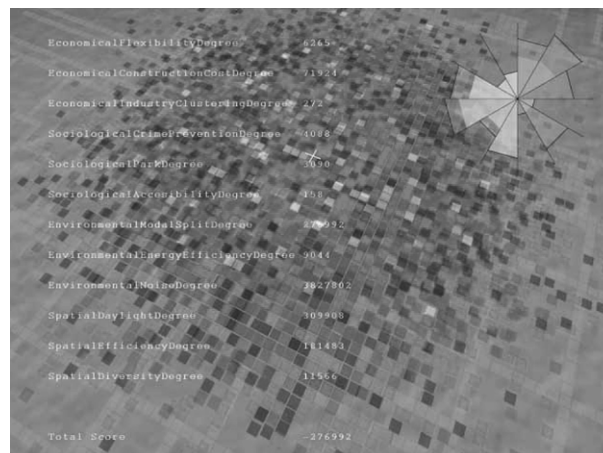


Illustration 2 – MVRDV, OptiMixer, 2002 (Image from: www.cthrough.nl/OptiMixer/OptiMixer.html)

2.3 The lateral approach

The lateral approach is an approach to interpreting the urban landscape that presupposes a cross-sectional analytical approach to studying an area from different points of view and at different scales of interpretation. Such an approach is also based on the perceptual, sociological or anthropological aspects or on all three together. It is an analytical method whose foundations lie in the urban studies of Lynch and Cullen, and results in maps, eclectic atlases, artworks and any tool deemed useful for representing the elements observed (Banerjee et al, 1990; Cullen, 1976; Groupe E2, 2002; Harvey, 1989; Lassus, 1977; Lynch, 1964; Park et al, 1938; Sepe, 2002).

Stefano Boeri with the USE - Uncertain States of Europe, a research program on contemporary Europe, studies the change in real time of contemporary space and investigates elements testifying to changes in people's behaviour and the flows of goods and ideas in contemporary Europe (Boeri, 2003). The aim is to construct a network consisting of people with various skills applied to observing the contemporary urban condition.

The European urban space that is investigated is meant more in an anthropological than architectural sense, as an intersection of levels of truth, rather than a simple summary of elements. European cities are analyzed horizontally, vertically and cross-sectionally in order to comprehend the dynamics, desires and idiosyncrasies of the inhabitants, and the economic and cultural energies that run through them.

The USE proposes to interpret the changes in society starting from indications which do not appear significant, observing places, people and cultures from the standpoint of the sociologist, artist and architect, and with the attitude of an investigator. The aim is to convert into comprehensible language the complexity of contemporary changes, offering new interpretational keys for surveying the urban landscape. The city derives not only from an urban stratification of levels of truth, but also as a collective way of conceiving space, that requires a proper form of representation. The USE has produced eclectic atlases, which propose new ways to study the correspondence between space and society. Eclectic atlases consist of heterogeneous texts with photos, geographic descriptions, classifications, reports, which all share the same visual approach.

Eclectic atlases produce temporary maps which represent places laterally, moving at the same time between physical and mental space. These maps are produced using several angles simultaneously in order to view the territory: from high up, within, replacing the eyes of those who "live" the space, or from a new experimental perspective. Eclectic atlases test lateral ways of viewing and representing urban areas, producing local maps and biographies of sites; they narrate of an individual path in space, representing them in order to establish contact with the area.



Illustration 3 – Use, 2003, particular of a map (Image from: BOERI, S. (2003). *Use*, Milano: Skira.)

2.4 The nomadic approach

The last type of approach is nomadic. It has its roots in the deambulations of Costant and the paths of the Situazionist and is founded on the study of an area based on knowledge gained through direct experience (Andreotti et al, 1996; Careri, 2001; Debord, 1997)

The survey method created by the Stalker group (Careri, 2002) is to identify new operating categories for architecture through the action of walking; to wander in the city without control and unpredictably: a sort of archipelago of mobile geometries found in urban structures, whose map is also “mobile” like the area crossed and the tool used to cover it.

The Stalker studies the area, paying attention to areas of rejection and abandonment, to voids and urban spaces undergoing change. Such surveys are developed on various levels and with different representations of the spaces that they call Actual Territories. These are marginal areas, places of memory, space of the comparison between nature and artifice, which are difficult to define, represent and project. They can only be known by direct experience, through the use of testimony rather than representation. The Stalker crosses areas on foot so as not to have no support from mediating tools and in order to participate in their dynamics: it is a type of nomadic search for knowledge, without necessarily having to define the quest of knowledge, because the action of crossing is for the Stalker already a creative action. Intensifying one’s perception and willingness to listen are necessary conditions for the areas to reveal themselves, and the empty spaces encountered are the background against which to interpret the form of the city that otherwise would appear homogeneous, devoid of complex evolutionary dynamics.

They experience the agglomerated city as a large cognitive map that is updated with continuous crossing; grasping this truth means relating to it dynamically, being able to dissect the complex design of the urban landscape.

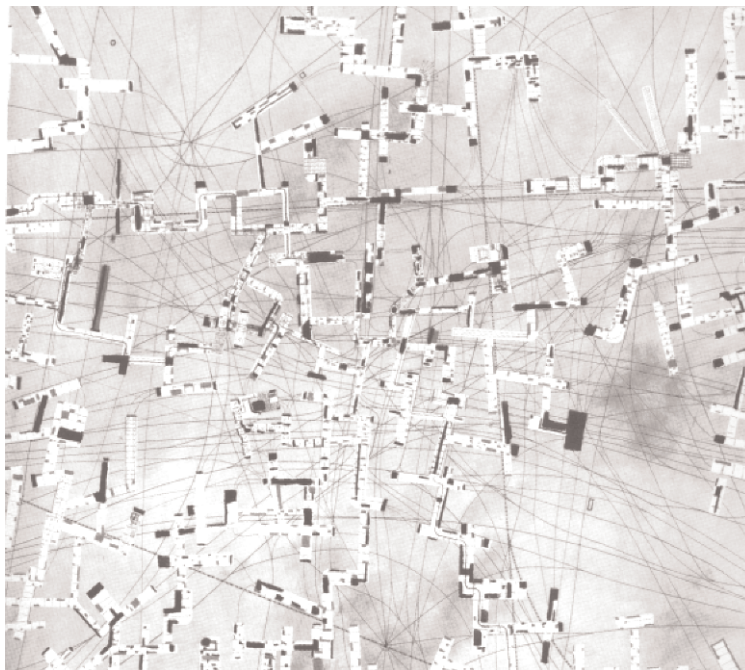


Illustration 4 - New Babylon, 1958 (Image from: CARERI, F. (2001). *Costant. New Babylon, una città nomade*, Torino: Testo e immagine.)

3 THE SYMPTOMS OF CONTEMPORARY URBAN IDENTITY

The categories of approach we observed regard new methods and tools to analyse the urban area and landscape. The main elements characterising contemporary urban identity that can be identified are: the networks, the empty spaces and infrastructures, the new containers (urban attractors/shopping centres/malls), and the urban perceptions. Those elements which constitute the territory are fundamental for places recognition, and are able to cause transformation, also cultural.

3.1 The network

It is no longer necessary to be in clearly defined places to perform communicative, productive and organizational actions. It is the world which is changing and moving around us: moving does not mean moving from one point of the world to another, but crossing the universe of problems and landscapes of sense (Sacchi et al, 2003). The network, in its current evolution, is not just a technology for communication, but a real informative and economic ecosystem. The beginnings of digital reproducibility of objects, signs, messages, and also of voices and images are a prelude to the breakdown of space; the nomadism of the information technology era we are living in is caused not by anthropological change but mainly the continuous rapid change in scientific, technical, economic and mental landscapes.

The increasing use of the Internet, mobile phones, and new technological tools, has created mistaken ideas about distances and time. A standard Internet user finds it more natural to communicate with his/her e-mail friends living in other parts of the world, than with a desk colleague. New technologies, by creating an artificial nearness and simultaneity between people, objects and events, have destroyed the idea of proximity and have produced a constant search for stability and the right distance. Consequently, new cultural problems have arisen: tolerance, compatibility and incompatibility between people, their habits, activities, sounds and smells (Secchi, 2000).

3.2 Empty spaces and infrastructures

The system of empty spaces and infrastructures supplied by the contemporary metropolis appears to counterbalance changes in the constructed environment, a sort of amniotic bubble that differs from the transformable empty space on which the modern city was based. An emptiness that seems to resist any kind of planning or transfiguration (Desideri, 2001). A system of empty spaces conceived as a place of conflict, or a network of empty places in which city and architecture live together: a network generated by the city changing into a metropolis. In this scenario on the one hand the apparently imperceptible virtual network may be observed, and on the other the physical network, resulting from new path flows due to infrastructures, new spaces for socialization, etc...

This seeming contrast of the contemporary metropolis leads to an idea of space able to integrate old infrastructural cables with empty spaces, to transform the network into physical and conceptual structures able to connect metropolitan areas and form the thread of the complex warp and weft of city infrastructures. The contemporary infrastructure has to be able to give physical and conceptual simultaneity to the whole network system: a part of urban space where the various networks and their different concepts coexist, comprising the metropolitan areas. The new infrastructural edifice is not a simple summation of many concurrent cables: its final form is also defined by the empty spaces (Ricci, 1996). The resulting space is a place where the specific forms used for the connections no longer appear as

opposing, incomplete realities, but as complete entities which overlap, sharing common functions and parts of areas.

3.3 New containers

The change in habits has led to performing outdoors a lot of actions that were previously performed indoors, increasing the need for new containers, the new urban attractors. Common daily activities became actions mostly directed outside the traditional sphere and diluted in a wider system: they are beginning to be everywhere and in every moment. We no longer feel contained within our homes and we seek other places able to satisfy our demands, able to receive us. It is a matter of moving from one container to another (Choay, 1965; Claxton, 1994).

We spend more and more time inside the shopping malls of our towns and cities: large artificial and air-conditioned environments, where we move together with other people making similar actions. The feature of such large containers is that they are able to expand the time devoted to their use and connect different places through the distracted perception of the world around, relegating the city to a background scene to be consumed quickly like all other images offered by the communication culture. We live in the contemporary world travelling through a few landscape sequences, absorbing increasingly large parts of our time (Boeri, 2003; Zardini, 1996); and our identity as citizens depends on the frequency and order with which these sequences recur in daily life. Within the contemporary urban context, places of traditional sociality have been replaced by places such as shopping malls, mega-cinemas, airports and amusement parks. These urban structures were generally built outside the city and were enriched by functions that simulate urban values suited to the pace of fast traffic. No urban character spreads outside these buildings, no fragments of city is drawn on the territory and on the background of the relationships between people. They are not physical spaces where people go to build their social identity; in each of these places people go to buy their undeniable right to anonymity. A multiple ego participating at the same time in several types of person fills these spaces; each of these societies, to which we cannot but belong, is rigorously atopic and able to occupy the space of its localisation, without necessarily having to achieve any identification of it (Bachelard, 1969; Castells, 1997) .

Moreover, the strong recognizability characterising such non-places allows us to identify them even without knowing them, because it is not related to a particular type of architecture (Augè, 1990). These are the new areas of public space, where the constraints of customs and rules are lost and the most extreme freedom triumphs: in the shopping centre or in the service station there is no public anymore but only the triumph of the individual and autonomous self (3).

3.4 Urban perceptions

Perceptual elements have a strong relationship with the town and the sites and are often the expression of local, religious and political identity (Cullen, 1976). Despite a general flatness of sensitive perceptions within contemporary cities, it is still possible to identify its roots.

Each town possesses a typical sound. In going around to record urban sounds, it is possible to discover that the background sounds of many metropolises are similar and could bring Milan near to New York or Paris to Tokyo. It is not matter of geometrical but typological proximity, which does not make them similar nor homogeneous. It just lets them intersect at some urban points: shopping malls, transport, infrastructural nodes, etc. Nowadays, however, the flatness of environmental sounds makes it difficult to recognise the sound quality of one site compared to another. One of the reasons is noise pollution, mostly produced by motorised vehicles: transport noise dominates the acoustics of many districts. There are also cultural motivations that,

imposing new behaviours and tastes, affect the overall sound quality of the environment, where human voices are one of the main components. Mobile phones, for instance, have contributed much to the acoustic changes in the city. Background sound, already full of noise, has been enriched by a new range of sounds: the ringing of mobile phones and phone conversations (Pergola, 1997).

Recognizability of places is strongly entrusted also to visual images: colours, architectural traits, natural elements. In the modern city, the new landscapes of visual perception are defined by the contemporary presence of different categories of elements (Lassus, 1977), mostly with non-homogeneous characteristics. In the contemporary city, the elements that are most clearly perceived seem to be those of advertising. There is no street, no building, no road sign where in some way there are no traces of advertising. And the image of the city and its elements has changed, advertising itself becoming a characterising element, which leads at the same time to a change in personal behaviour in the paths, shopping habits, etc. Monuments, architectural creations and buildings also inform pedestrians and visitors; this information, producing particular aesthetic impressions, contributes to forming their mental status. The current trend is to embed more and more of these elements within the shapes of buildings and urban fittings, often transforming sites into continuous advertising hoardings.

The sense of smell is the sensorial channel that has a more direct and almost subconscious relationship with people's emotional make-up and the "smell quality" of an environment also reflects the quality of life. The smell of food, for instance, is what most characterises a site, even in a metropolitan area. The sense of smell holds great importance for the human psyche and for human behaviour, and influences the city's construction and development; cultural diversity of smells becomes an environmental component of the differences between places. The absence of a smell politics and of concrete action to protect perfumed activities causes a smell flatness of the city with consequences similar to those of acoustic flatness. The sole areas of the city where typical smells may be identified are historical sites where traditions last over time (Barbara, 2000).

The sense of taste represents a contact connected to our very survival (it is impossible to live without eating), but also to pleasure and disgust and, like the sense of smell, has a very close relationship with the subconscious. Food is connected to local tradition but also to habits, and it is able to remind us of places, situations and people. Current market trend are producing two kinds of reactions: the first and prevalent one is the proliferation of supermarkets and fast-food chains offering standard products, the second is the start-up of small restaurants in typical places characterized by refinement in product quality. In terms of relationship with the city, the dominant trend has led to changes in every perceptual aspect: images of shops, background noise, smells and taste of food, increasingly frequent tactile contact with cardboard or aluminium food containers.

Neither does the sense of touch have an actual connection to the spatial dimension of the city, but brings to a close perception so as to recognise the material qualities of objects. Virtual reality, through machines able to create artificial environmental sensations, is one of the first elements that testifies to the current attention to experience of the sense of touch. The great innovation in these machines relies on the capacity to affect such kinds of sensations. The industrial production of everyday objects has also begun to be interested in the touch quality of product; significant attention is given to the touch message proposed by many electronic objects and by the proliferation of new materials for floors, partitions, furniture, etc. Regarding the surface quality of streets and of squares in some cities, if, for instance, a floor with stone blocks was attractive in appearance, sound and atmosphere, it was because walking on this floor offered a variety of information and sensations about the historical period, about the physical path. Nowadays, walking on an asphalted street this diversity of information is lost.

4 CONCLUSION

The new structure of the contemporary city is unpredictable and complex, especially given the continuous mix of cultures which brings new elements to the already multiple landscapes, breaking, mixing and recomposing the complexity of urban life.

The aim of this work was to investigate new methods for analysing the urban landscape and new tools to represent it in order to identify the new elements of the present-day urban identity, which are also able to cause cultural changes.

Four categories of approach, the virtual, multiscale, lateral and nomadic, were defined and regarding maps, which allowed the main elements symptom of contemporary urban identity to be identified: the net, the empty spaces and infrastructures, the new containers, the urban perceptions. The choice of the methods had the aim of illustrating an initial result of a subject overview, with the aim of sharing a reflection about those new elements of the urban landscape and new tools of representation rather than to supply an overview of the question.

One matter remains open-ended: the dialogue of these tools with the common users of the place, the inhabitants and the person not professional of those sectors, because of the difficulties finding a single shared model of representation.

Subsequent in-depth investigation should aim to find other elements, to compare the various methodological approaches and try to construct the scenes of transformation of the future metropolis focusing on the different cultural, ethnic and environmental cohabitations, the different disciplinary and the conceptual implications.

Notes

- (1) In addition to this type of phenomenon, there are others where identifiability is entrusted only to sensitive perception, which however contains in se all the potential to become an analytical tool and a reference point for planning.
- (2) One interesting case is the “electronic agorà”, where some opposite characteristics are represented, including spatial/antispacial, corporally/anticorporally, concentrated/fragmented, synchronized/non synchronized, contrasting antispaciality, anticorporality, fragmentation, asynchrony of the city of bits with spatiality, corporality, concentration, synchrony of the physical city.
- (3) At the same time the stressful pace imposed by our current life is accelerating faster than our body and mind can handle, and the constant search for adaptation is probably one of the reasons which produces the demand for anaesthetized places. Arising with the function of urban attractors, there are also the myriad of fast-food outlets (chain restaurants or street-vendors) which have created new habits, new smells and new changes to the city’s image. Street-food covers a space which is similar to the container represented by the shopping mall, but with one difference: those huge buildings contain the individual, while in the case of food the individual becomes the container. People’s search for anaesthetized places has led to the proliferation of those places that have transformed streets into restaurants and people into day-trippers. Citizens and tourists have conformed their habits, joined in a continuous run, a meal standing up, a journey on the metro and a break in the internet cafe.

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