

## THE IMPOSSIBILITY OF CENTRAL URBAN PLANNING

AN APPROACH BETWEEN F. A. HAYEK'S DISPERSED KNOWLEDGE THEORY AND C. ALEXANDER'S PARTICIPATORY, GRADUALIST AND URBAN-ARCHITECTURAL PROPOSAL.

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### ABSTRACT

*The functioning of cities demands a complex network, which is typical of emerging systems and consists of knowledge and human relations and interactions. Said spontaneous structure is seriously affected when the interventions distinctive of centralized urban planning create, void and reorganize existing connections, which sustain the city's functioning, disregarding the citizen's local knowledge and the spaces they formed in buildings and other areas.*

**Key words:** - Hayek –Alexander –urban planning –city –planning–spontaneous order -

### INTRODUCTION

In this paper, we propose that cities necessarily shape a complex human network that is out of reach of a centralized planner. Thus, we will argue that for cities to function as such, being the creative, productive and social centers that differentiate them from any other inhabited territory, they require the highest possible degree of freedom in their natural conformation and structure. This complex human network consists of a series of relations, interactions and «*particular knowledge of the circumstances of time and place*» (Hayek, 1948: 80) that we will call «*local knowledge*» (Ikeda, 2004: 2-6).

This type of knowledge, as indicated by Nobel Prize-winning economist (1974) Fredrich August von Hayek (1899-1992), is dispersed among the different members of a society. This situation presents several difficulties to the attempts to centralize activities that are usually controlled by individuals scattered throughout society. This knowledge it is both subjective and dynamic<sup>1</sup>, making more complex and difficult the centralization of such knowledge in society.

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<sup>1</sup>The term "dynamic" refers to the variable and mutable nature of this information, which is modified, created and constantly annulled in society.

In a very similar line to the established by Hayek, we find architect Christopher Alexander (1936 -), who argued that all urban and architectural designs necessarily handle a number of varied and specific human activities that required an specific knowledge hard to be properly processed by a centralized planner.

**The aim of this paper is to establish an approach between the problem of the dispersion of knowledge proposed by F. A. Hayek and the urban-architectural proposal of C. Alexander as a reflection on the impossibility of central urban planning, with emphasis on the physical and structural design of the city.**

### THE CITY AND URBANISM

*«Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody.» (Jacobs, 1961: 238)*

Cities are, first and foremost, human constructed structures of high density. What differentiates them from any other human settlement is not only its high population density, but also the density of connections and human relations that gradually give physical form to what we call “city”. The relations established in a city that characterized it as a productive, creative hub of innovation and development that has great appeal to human life, are those of free and spontaneous nature, which allow everyone to model their aspirations in life as far as possible, while they discover the social framework shaped by the interaction of thousands, if not millions, of human beings. It is exactly this quality that separates a city from an old feudal castle, a military barrack or a religious monument of antiquity.

Generally urban conglomerates possessed only some general rules that could define free-passage heights, road’s widths, and other norms that applied on the urban fabric. But on the late nineteenth century, after the expansion of capitalism and the industrial revolution, the population growth of the cities and the raising quality of life of the urban population began to press on the desires of comfort, forming a movement led by a hygienist intellectual elite whose aspirations and attempts to improve the lives of the neediest was encouraged by the visibility of the poor masses that had been hidden for years in rural poverty and were now readily observable in the industrial city. (Benevolo, 1981: 161-170)The twentieth century deepens this tradition, producing from isolated interventions in urban projects, to reforms and new-from-scratch cities across the globe. The spirit of the time is summarized in a simple phrase: *«The city is a working tool (...) Chaos multiplied in them is offensive (...)»*. (LeCorbusier, 1924: 15) Urbanism was born as a

theoretical construct that quickly spread intellectual circles of Architecture and Politics on the **pre-assumption that such a thing as a "central urban planning" was possible to apply over cities with positive results.**

From Baron Haussmann's interventions in Paris in the 1860s, through the "Garden City" of Ebenezer Howard, to the "Radiant City" of Le Corbusier, and including contemporary and more specific New Urbanism interventions, almost all proposed urban models revolve around a "General Plan" defined and applied either on the existing city, or as a guide to a new city. A General Plan is formed by a group of "experts" and takes the form of a specified drawing plane defined by a manual or complemented by an urban code, defining functions, areas, use, prohibitions, taxes and all kinds of definitions. They range from those that specify the particular design and building of the city to some others - less radical - limited to reorder urban settings without being so specific, leaving the details to private action. In any case, **urbanism has always been known for trying to coordinate and control the millions of variables that make up the complex order of a city in order to improve and enhance the quality of life and productivity of human cities.**

Perhaps the example *par excellence* of this central planning vision was embraced by who is regarded as the most influential architect in the world for western urbanism and architecture: **Le Corbusier**. In 1924, the Swiss architect and town planner of profound and continued influence outlined one of the first modern urban plans. His interpretation of urban planning had a strong anti-spontaneity and authoritarian connotation. Inspired by the positivist spirit of the late nineteenth and early twentieth centuries, believing that everything could be scientifically calculated and designed, including human life, Le Corbusier wrote an urban theory materialized in the "Ville Radieuse" (or The City of the Future) proposing an "infinite" carefully shaped orthogonal park geometrically divided in precise areas, serving as a support for tall machine-buildings and transport routes that would solve all of livability, congestion and urban poverty problems. Le Corbusier conception strengthened the belief that the lack of structure and planning was the root of urban problems.

Current town planners continue to profess the religion founded by the Swiss architect. Even after the spectacular failures of the "complete" designs and "from-scratch cities" like Brasilia or Chandigarh, created under the precepts of Le Corbusier, contemporary planners believe that simply changing the shape of the failed tested models, adding some curves to designs, diversifying the types and aesthetics of buildings and neighbors, they can overcome the *fatal* mistakes made during planning.

## THE DISPERSION OF KNOWLEDGE IN SOCIETY

*«(...) a combination of dispersed knowledge (...) produces such a result that, if it had to be deliberately produced by a single directing mind, it would require a knowledge that no single person can possess.» (Zanotti, 1993: 53)*

**In “Economic calculus in a socialist economy” (1920) Ludwig von Mises discusses some concepts about subjective value and the economic activity, previously developed by Carl Menger in “Principles of Economics” (1871) and other authors, such as Eugen Böhm-Bawerk and Friedrich von Wieser, so as to develop a theory that exposes the main problems of central planning.**

Ludwig von Mises’s theoretical development is highly important for the analysis of all centralized planning activity. Around the beginning of the 20<sup>th</sup> century, Mises realized that **society was a net of individuals which formed a complex system that tended to organize spontaneously, due not to a flaw or fate, but to the very human nature, where we are different from each other and our assessments are subjective, where our skills are different and we tend to act according to our interests, constantly modifying the ordering of society. For this phenomenon he coined the term “economic calculation”** and he explained that it is through exchanges and the use of money that these calculations can be seen in economy and in the society. **As Professor Jesus Huerta de Soto states,** *«(...) any system that is based on the exercise of violent coercion against free human action (...) prevent the emergence of the information necessary to coordinate society. Mises realized that economic calculation (...) required to have first-hand information becoming impossible in a system (...) based on coercion and prevents, in greater or lesser extent, free voluntary exchange (in which are reflected, discovered and created individual assessments) (...) Therefore, Mises concludes, where there is no free market, free market money prices and / or money, it is not possible that economic calculation is made "rationally", meaning with "rational" calculus done providing the necessary (not arbitrary) information to perform it.» (Huerta de Soto, 1994: 29-30)*

**F. A. Hayek delved into these studies clarifying that, beyond economic analysis in terms of exchange, the root of the argument lies in the fact that each individual possess a share of first-hand knowledge of the environment, this knowledge, thus, being dispersed among the entire society. This singularity constitutes the problem of central planning, since this mutable and subjective knowledge is dispersed among millions of individuals who constantly examine their environment processing the information and acting accordingly, which modifies the conditions and continuously restarts the process, thus making it impossible to transfer such spontaneous**

**capacity of the society to a central authority that can control individuals' lives and activities:** «(...) *the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess.*» (Hayek, 1945: 158)

**We must remember that it is the assessment's subjective nature what causes the decision-making centralization to be complex, for when imposing orders, individuals see their subjective information expressions inhibited.** The consequences brought about by intervention are lack of coordination between individuals and slow system immobilization. The challenge persists even if the authority had a great speed of calculation. The core of Hayekian theory lies in the fact that, most of the times, the information needed has not been generated yet and it will only emerge from the individuals as a response to specific situations. **The problem lingers because as coercive authority performs its duty, it inhibits the individuals' actions, which are the expression of their subjective assessments, annulling or distorting the information precisely needed to perform its duty, expressed in the price mechanism<sup>2</sup>.** The importance of this thought is that, as state intervention is not strictly related to the economic activity but it usually involves all aspects of human life, it also affects other activities, in which there is no price mechanism that easily evidences the process of human action. **The most significant and powerful conclusion consists in understanding that the world and, particularly, the human society, formed a complex system whose spontaneous order emerged from the system itself as a result of the interaction between the millions of parts and individuals that it comprises, hence remaining beyond the reach of all central authority or planner.**

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<sup>2</sup>Understanding that in a modern society, the task of allocating resources and planning the economy through a system of direct management of resources without prices would result impracticable.

## THE PROBLEM OF URBAN-ARCHITECTURAL DESIGN

*«The skyline of New York is a monument of a splendor that no pyramids or palaces will ever equal or approach. But America's skyscrapers were not built by public funds nor for a public purpose: they were built by the energy, initiative and wealth of private individuals for personal profit.» (Rand, 1961: 101)*

In the 1960's, Christopher Alexander, a Vienna-born architect (1936), started to develop a series of architectural studies, whose implications have not been given the attention they deserve. The Viennese architect, trained in Great Britain, developed an architectural theory that stated that buildings formed complex human structures, which are beyond the reach of those designers who pretend to centralize the building process excluding the future inhabitants of such constructions.

In his first published book, Alexander states: *«Most people today find pleasure and satisfaction in contact with the ancient cities [its] elements constitute a unique and personal expression of the activity and life that develop in such cities. (...) These cities have physical clarity because their forms arose in direct response to limited and relatively simple pressures. Cultural continuity and slow technological change combined to establish a method of planning and construction based on the adjustment and refinement that allows the method of trial and error. Just was necessary to feel a pressure for it to materialize in a form, any inadequate formal appearance was destined to disappear with time.» (Alexander & Chermayeff, 1984: 49-50)*

Alexander's stance revolves around the idea that the significant volume of specific information needed to design a building is only to be found in the users themselves. Alexander refers to the detailed, functional and coherent order that arises from the users' own work as "organic order": *«Only people themselves part of a community are able to lead a process of organic growth. They know their needs better than anyone and know exactly whether the buildings, the links between buildings and public spaces, serve or not serve (...)» (Alexander, 1978: 30)*

It is essential to compare Alexander's interpretation of local knowledge with Hayek's analysis on each person's knowledge: *«(...) there is beyond question a body of very important but unorganized knowledge which cannot possibly be called scientific in the sense of knowledge of general rules: the knowledge of the particular circumstances of time and place. It is with respect to this that practically every individual has some advantage over all others because he possesses unique information of which beneficial use might be made, but of which use can be made only if the*

*decisions depending on it are left to him or are made with his active cooperation. (...)*» (Hayek, 1945: 160)

Clearly, both authors share the same viewpoint, but they apply it to two different fields: one of them refers to economy and society in general, whereas the other focuses on architecture and urbanism. Therefore, the arrangement of spaces would be a result of the design carried out by the future users of the building according to their particular situations, and not a result of abstract ideas and preconceptions that any external designer might have: *«Architects and planners, no matter how much they are trained for their work, are not able to create an environment that prevails in the kind of variety and order which we seek. An organic balance can be achieved only through the action of a community in which each one shapes the parts of the environment he knows best.»* (Alexander, 1978: 30)

At the same time, Alexander questions the extent to which professionals' abilities can gather the information needed. These notions' theoretical implications reach deeper levels when analyzed and result in significant conclusions regarding private and public spaces planning and central design: *«The accurate [organic] emerging order of the accumulation of thousands of individual constructional acts through a growth in small doses cannot be known in advance. It can only be gradually generated within a community that shares patterns and diagnostic process and take responsibility for their own designs and projects. An exact plan of what it will be (...) cannot be performed. If you want it to work organically and openly, we should let it grow from the community of users itself.»* (Alexander, 1978: 117) In Hayek's own words, *«[It is] the sort of knowledge (...) of the kind which by its nature cannot enter into statistics and therefore cannot be conveyed to any central authority in statistical form. The statistics which such a central authority would have to use would have to be arrived at precisely by abstracting from minor differences between the things, by lumping together, as resources of one kind, items which differ as regards location, quality, and other particulars, in a way which may be very significant for the specific decision.»* (Hayek, 1945: 163)

Continuing with these approaches, Alexander proposes a thorough criticism of "general plans," a concept that encompasses the idea of central planning particularly applied to urban planning. His proposal against general plans derives from the type of order Alexander considers to be positive. This way, "organic order" is defined as the "balance" between the needs of individuals and the needs of the whole, an order that was not planned beforehand, where the combination of culturally defined tacit agreements and the early use of traditional approaches to already known problems enabled individuals who worked separately to coordinate their actions. Consequently,

general plans would constitute a wall obstructing the organic process that is urban, constructive, common growth.

With no half-measures, Alexander decides to use his entire theoretical repertoire to argue that *«a general plan as currently conceived cannot create a whole (...) You can create a totalitarian order but not an organic order (...) the general plan - based on a map of the future - cannot carry it out (...) a plan usually cannot solve the basic problem because it is too rigid to get it and because it creates a new set of problems far more devastating in human terms than the chaos it tried to manage.»* (Alexander, 1978: 15)

The problem suggested stems from general plans features, as they attempt to determine rules to ensure the coherence of the environment as a whole, and they also provide freedom to adapt to local needs in all buildings and public spaces. In Alexander's opinion, plans are *«(...) excessively rigid, (...) cannot easily adapt to natural and unpredictable changes that inevitably occur in the life of a community. To the extent that these changes occur (...) the general plan stop being useful and is abandoned and, to the extent that plans are used, they no longer allowed each of the buildings to produce the human quality that relates them with all other surrounding parts.»* (Alexander, 1978: 20)

According to Alexander, any general plan does too much and too little. The general plan fails because *«each part is secured in a totality that cannot respond to the inevitable and temporary changes while maintaining its own order»* (Alexander, 1978: 22-23). This way, the plan fails because, as a consequence of said rigidity, it cannot guide the details surrounding the buildings, which are extremely important, but then again if it did guide them, it would become something enormously detailed and rigid, where *«people live through the general plan under a "frozen" future that may only be modified in its most trivial details.»* (Alexander, 1978: 23)

The main problem of planning, according to Hayek, lies in the fact that individual events depend on plentiful specific circumstances but we will never be able to identify their entirety; not only does the ideal of controlling and predicting them remain beyond our reach, but also discovering regular connections between individual events by mere observation seems illusory. As Hayek asserts, *«(...) that almost any event in the course of man's life may have some effect on almost any of his future actions, makes it impossible that we translate our theoretical knowledge into predictions of specific event. (...) we should not be able to state the full set of particular facts which brought it about that the individual did a particular thing at a particular time. The individual personality would remain for us as much a unique and uncontrollable phenomenon (...) whose*



*specific actions we could generally not predict or control, because we could not obtain the information on all the particular facts which determined it.» (Hayek, 1964: 120)*

It would also be convenient to highlight some of the architect's words, where he decisively specifies the problems of centralized general plans applied to architectural and urban designs: *«(...) It is totally impossible to know today what the environment is going to be in twenty years thus guiding the growth in small doses to a development process determined by a fixed, imaginary world. (...) Only a totalitarian fantasy is able to make us look like possible a type of planning as described. The mere attempt to follow this path is like trying to fill a children's coloring book where the outlines are already drawn in black and each color has its written number on each of drawing's parts. At best, the resulting order will be pure triviality.» (Alexander, 1978: 20)*

Based on what has been explained above, what can we say about the relation between Alexander and Hayek? We can say that **Christopher Alexander's theoretical development is a casual reinterpretation of Friedrich August von Hayek's principles applied to urban-architectural design.** This way, both authors propose parallel notions and arrive at very similar conclusions. What's more, both authors share similar stances on the impossibility of covering all the information needed to understand the complex systems formed by different individuals, both in economy or in architecture and urbanism. Hence, both Alexander and Hayek conclude that, clearly, all efforts to plan society in a centralized manner seem to be unachievable. Hayek represents to economic and political thought what Alexander embodies for urban-architectural design.

## THE KIND OF PROBLEM A CITY IS

*«An invisible-hand explanation explains what looks to be the product of someone's intentional desing, as not being brought about by anyone's intentions.» (Nozick, 1974: 19)*

Alexander deepened his architectural studies, which slowly approached the urban problem, and he criticized the main problem of urbanism in his article "A City is not a Tree" (Architectural Forum, 1965).

Throughout the text, Alexander develops two specific concepts which will later constitute the core of the theoretical argument he uses to criticize contemporary urban proposals. This way, he states that "natural" cities are organized as a "semi-lattice," whereas "artificial" cities structures resemble a "tree." He explains that the tree and the semi-lattice are two different ways of understanding how a vast, complex system consists of a great collection of multiple smaller systems. Said system would form a set structure, which he defines as a collection of elements that, for some reason, we understand as creating a group. Alexander asserts that *«When the elements of a set belonging to it, compose it because cooperate or work together somehow, we call this system a set of elements.»* (Alexander, 1968: 20)

**The axiom he uses to define the systems which create a semi-lattice describes that:** *«A collection of sets forms a semi-lattice if and only if, when two sets belonging to the collection overlap and the set of elements common to both also belongs to the collection.»* (Alexander, 1968: 22)

**He defines the tree-type systems as:** *«A collection of sets forms a tree, if and only if, for any pair of sets belonging to the collection, one is completely contained in the other or they are disjoint.»* (Alexander, 1968: 22)

The difference lies not only in the **overlapping** *per se* but also in the fact that **the semi-lattice is a much more complex and subtle structure than the tree**. We can appreciate the difference in complexity between both structures as follows: a tree based on 20 elements can contain, at the most, 19 subsets, whereas a semi-lattice based on the same amount of elements can contain over one million different subsets. In one case, the tree structure restricts the amount of subsets to the amount of elements, while in the other case the amount of subsets depends on the combination and overlapping of the elements in the system, thus allowing a greater level of complexity. According to Alexander, it is tree structures and their lack of structural complexity, typical of trees, what hinders our understanding of the city. In other words, when the relations

between the elements of a system (such as a city) have a unidirectional structure (tree structure), the system is too simple, whereas when the relations between the elements are multi-directional combinations (semi-lattice), the system becomes more complex.

After classifying a significant number of cities designed by architects and town planners as tree structures, Alexander affirms that there are thousands, and even millions, of systems functioning in a city, whose physical relations and complex urban life cannot be included and channeled in “tree” city structures. He concludes that all urban life emerges from the fact that the city is not a “tree” structure. The complexity of a “semi-lattice” structure creates a more complex and thicker order than the one than can be achieved by an artificial “tree” structure.

Alexander believes that the designers’ minds are set to intuitively create accessible structures, thus being unable to reach the complexity of a semi-lattice, which is the reason why tree structures are being proposed and built as cities. Therefore, the impossibility of central urban planning is almost utterly demonstrated. According to the architect, *«The tree is mentally accessible and easy to deal with. The semi-lattice is difficult to visualize with the mind and is therefore difficult to handle.»* (Alexander, 1968: 28) The complexity of the semi-lattice is replaced by the easier and effortlessly addressed “tree” structure.

Hence, we can clearly see how Alexander’s theory can be identified with Friedrich A. von Hayek’s deeply developed notions of spontaneous orders. A spontaneous order consists of an arrangement resulting from the self-organization of the parts of a set, the elements of a complex system, whose interaction generates a stable situation (sustainable) without the need for planning or superior managing. Spontaneous orders essential feature is their emerging nature. Frequently, we mention *«the arising of novel and coherent structures, patterns, and properties during the process of self-organization in complex systems.»* (Goldstein, 1999: 49-72)

Hayek claims that *«Spontaneous orders are not necessarily complex, but unlike deliberate human arrangements, they may achieve any degree of complexity. One of our main contentions will be that very complex orders, comprising more particular facts than any brain could ascertain or manipulate, can be brought about only through forces inducing the formation of spontaneous orders.»* (Hayek, 1973: 38)

Consequently, we could affirm that, in terms of Alexander, and in line with Hayek, a city would be an emerging spontaneous order of properties, since its complexity results from the interaction of its elements through “semi-lattice” structures and said complexity cannot be *designed* but it has to *emerge*.

Christopher Alexander closes his article dreadfully criticizing town planners: *«When we think in terms of trees we are trafficking with the humanity and richness of the living city in exchange for a conceptual simplicity that benefits only designers, planners, administrators and developers. Whenever a part of the city is destroyed and a tree structure is built to replace the semi-lattice that was there before, the city takes another step towards decoupling. In any organized object, extreme compartmentalization and dissociation of internal elements are the first signs of a coming destruction. (...) A city is not, cannot and should not be a tree. The city is a receptacle for life [otherwise] will be like a bowl full of razor blades placed on edge, ready to chop whatever it is placed on the container. If we make cities which are trees, we will break our life into pieces (...)»* (Alexander, 1968: 30)

If we combine the conclusions about the problem posed by collecting the information needed for urban-architectural designed that resides in each individual and we add the idea that refutes the possibility to plan a centralized urban structure, we can assume that all urban planning created by a centralized authority (coercively applied) without individuals' active participation will result to be an complete and utter failure. Unreserved, the architect explains that it is *«tempting to make plans in which overlap is introduced for no other reason than the overlaying itself without criteria. This is essentially what the plans of cities of "high density full of life" in recent years show. But overlapping alone does not provide a structure. (...) Must first have the correct overlay...»* (Alexander, 1968: 29)

**Unquestionably, Alexander's conclusions lead to a blunt and determined position against central urban planning, especially the planning carried out by state and coercive authorities who impose their plans on the individuals.**

## A GRADUALIST AND CONSULTATIVE URBANISM

*«It is tradition which gives the persons (who come and go) that background and that certainty of purpose which resist corruption. A tradition is, as it were, capable of extending something of the personal attitude of its founder far beyond his personal life.» (Popper, 1963: 171)*

The conclusions stated above constituted a new challenge for urban-architectural design that Christopher Alexander was determined to face. According to the architect, a positive quality of buildings and towns cannot be made but only created, indirectly, by people's ordinary actions. This way, he explains how the complex order of a city can emerge from thousands of creative acts that, slowly, generate a greater and more complex "whole" than the one that could develop from only one act. However, Alexander declares that this phenomenon occurs in a common language context, where millions of individual constructive acts can create a "living" town. (Alexander, 1979: 525) Nonetheless, he does not leave the urban-architectural design problem to chance, but he considers that *«(...)the gradual accumulation of small doses constructive acts would create thousands of organizational errors (...) a lack of coordination between the parties and chaos in the whole»* (Alexander, 1978: 18)

So as to overcome this necessity, considering that any coordination mechanism must exist, Alexander formulated a proposal that helps avoid the repetition of centralized general plans errors. Like Hayek, Alexander notices the remaining difficulty of *«communicating [to the individual] such further information as he needs to fit his decisions into the whole pattern of changes of the larger economic system.»* (Hayek, 1945: 163) For Alexander *«(...) towns and buildings will not be able to become alive, unless they are made by all the people in society, and unless these people share a common pattern language (...)»* (Alexander, 1977: 10)

This way, Christopher Alexander decides to elaborate a set of Design Principles which would allow the creation of an urban and architectural design that avoids committing the mistakes previously mentioned and, at the same time, allows the development of a coherent system, an organic order among the different elements. His proposal is based on the elaboration of a common language, a "pattern language."

The design principle that is vital for our study utters that *«the construction and design must be guided through a collection of planning principles, adopted by a community, called patterns.»* (Alexander, 1978: 12) Alexander believes we can describe a **pattern as a general design and planning principle through which a concrete problem, likely to occur repeatedly in any design**

**problem, can be formulated.** Also, he limits the type of contexts in which such problem can arise and shows the fundamental characteristics any building must possess. We could state that a **pattern is an assumption that formulates the minimal conditions necessary to ensure individual and collective health in a community, and its key characteristic is being shared by the entire community.** (Alexander, 1977: 16)

Here, the architect approaches, again, to F. A. Hayek's theories. We should remember that Hayek had already faced the problem of understanding what kind of social mechanisms were used by individuals to achieve a spontaneous emerging order that prevented the system from becoming unstable and self-destructive. Therefore, Hayek explains that *«We need decentralization because only thus can we insure that the knowledge of the particular circumstances of time and place will be promptly used. But (...) There still remains the problem of communicating [to the individual] such further information as he needs to fit his decisions into the whole pattern of changes of the larger economic system.»* (Hayek, 1945: 163)

With those words Hayek was trying to explain that individuals created spontaneous social coordination mechanisms. Although his studies focused on society's economic coordination, Hayek managed to create principles that regulated all successful social interactions: *«Fundamentally, in a system in which the knowledge of the relevant facts is dispersed among many people, prices can act to coordinate the separate actions of different people in the same way as subjective values help the individual to coordinate the parts of his plan. [However] The problem which we meet here is by no means peculiar to economics but arises in connection with nearly all truly social phenomena, with language and with most of our cultural inheritance, and constitutes really the central theoretical problem of all social science.»* (Hayek, 1945: 166)

Like Hayek, Alexander faces the social coordination problem by studying patterns. As Hayek indicated, *«Society can survive only if for some selection process reaches norms able to induce individuals to behave according to schemes compatible with social life.»* (Hayek, 1973: 76) Patterns, then, constitute these schemes that Hayek describes as necessary.

For Alexander, a pattern implies information can be compress with no need for individuals to hold mentally all social knowledge. These patterns provide several solutions to similar problems, created by members of society, each one using their personal knowledge. Thus, patterns represent an assumption that only handles with a part of the complex system, progressively dealing with each element and not attempting to deal with the entirety in a centralized manner. Patterns are created based on trial and error by individuals, throughout time, avoiding untested situations and abstract

“utopias.” This tests show what kind of patterns are successful in different times and situations, thus allowing, through imitation, individuals to help each other and learn. As Gabriel Zanotti states, societies present a significant tendency to imitate successful institutions rather than unsuccessful ones, which demonstrates the learning ability to imitate without the need for a central planner. (Zanotti, 2003: 75-95)

We could affirm that Alexander’s “patterns” have the same role in building that “norms” have in social coexistence or “prices” have in economics for Hayek. The three terms encompass significant social information that allows the individual to coordinate their actions in a larger scheme, provide a context for interaction and evolve in time as they create an emerging “organic” order. Said spontaneous order seems to be vital for the functioning of society: *«We make constant use of formulas, symbols, and rules whose meaning we do not understand and through the use of which we avail ourselves of the assistance of knowledge which individually we do not possess. We have developed these practices and institutions by building upon habits and institutions which have proved successful in their own sphere and which have in turn become the foundation of the civilization we have built up.»* (Hayek, 1945: 167)

Therefore, the fact that patterns require specific knowledge of time and place, a trial-and-error process, accumulation of experience throughout time and interaction among different individuals makes it impossible for an external professional to implement them. Patterns can only be implemented and, according to Alexander, such implementation will be successful if the users of buildings are involved in the process.

Both viewpoints, Hayek’s and Alexander’s, blend to demonstrate that social order, either economical, legal or urban, can only emerge if freedom prevails over any planning attempt, while some “patterns” or basic “norms” that allow peaceful and coherent human interaction are retained: *«To understand our civilization, one must appreciate that the extended order resulted not from human design or intention but spontaneously: it arose from unintentionally conforming to certain traditional and largely moral practices...»* (Hayek, 1992: 6)

Consequently, the searched order will arise from the interaction among thousands of building acts, on a small and medium scale, that, in time, shape and reshape the urban-architectural environment when responding to specific conditions of time and space. For Alexander, a successful and coherent order *«it is unpredictable, in detail, because each small step is shaped by the interaction of this language with external forces and conditions (...)The fine details cannot be known ahead of time. (...) it is impossible to predict its detailed plan: and it is not possible*

*to make it grow according to some plan. It must be unpredictable, so that the individual acts of building can be free to fit themselves to all the local forces which they meet. (...)It creates order, not by forcing it, nor by imposing it upon the world (through plans or drawings or components): but because it is a process which draws order from its surroundings—it allows it to come together. But of course, by this means far more order can come into being, than could possibly come into being through an invented act. It is vastly more complex than any other kind of order. It cannot be created by decision. It cannot be designed. It cannot be predicted in a plan. It is the living testament of hundreds and thousands of people, making their own lives and all their inner forces manifest.»*  
(Alexander, 1979: 510)

These words, together with all previous criteria, constitute the most convincing assumptions in defense of individual freedom as urbanity promoter. We could affirm that Alexander **develops a proposal that attempts to maintain the vitality of a free individuals society through the implementation of certain “norms” (patterns) that allow thousands of individual constituent acts to create a global order.** In the architect’s own words: *«(...)the centralizing mechanism will inevitably entail some authoritarianism (...) an organic order emerges only when individual building acts take place in an atmosphere of freedom, coordinating among themselves for mutual responsibility and never by control or repression (...) a real organic order only can be found through a responsible anarchy, in which people feel free to build what they please and at the same time, feel animated individually to act in the interests of a community that exceeds them, without being forced to do so by a higher authority.»* (Alexander, 1978: 102)



## THE IMPOSSIBILITY OF CENTRALIZATION

*«Statistics are the Pegasus of the town planner(...) give us an exact picture of our present state and also of former states; connecting them with a line so expressive that the past speaks clearly to us, so that by following the development of the curve we are enabled to penetrate into the future and make those truths our own which otherwise we could only have guessed at.» (LeCorbusier, 1924:*

81)

When the planning impulse transmutes into an urban plan, the consequences become socially serious. As the 18<sup>th</sup>-century- economist Adam Smith highlighted, *«The man of system... seems to imagine that he can arrange the different members of a great society with as much ease as the hand arranges the different pieces upon a chess-board. He does not consider that the pieces upon the chess-board have no other principle of motion besides that which the hand impresses upon them; but that, in the great chess-board of human society, every single piece has a principle of motion of its own, altogether different from that which the legislature might choose to impress upon it. If those two principles coincide and act in the same direction, the game of human society will go on easily and harmoniously, and is very likely to be happy and successful. If they are opposite or different, the game will go on miserably, and the society must be at all times in the highest degree of disorder.» (Smith, 1759: 233-234)*

This attitude both Hayek and Alexander noticed, the defense of individual freedom, the fight against central planning, is not a political whim but a practical and moral stance. Urban planners consider themselves essentially necessary. In this context, Alexander's notions become direct criticism to the methods established in the architectural academy. He diminished the importance of the professional as a central figure: *«(...)if we consider the last 2000 or 3000 years ... almost all buildings have been built and designed by non-specialists. The most beautiful places today avidly photographed by architects, were not designed by architects but by non-specialists.» (Alexander, 1978: 34)*The ordering of all modern societies, especially those whose individuals pretend to live in better conditions than primitive communities, necessarily gains significant levels of complexity: *«The problem arises from the complex social order, is it that makes impossible to know to any authority and therefore act on that order (...)a simple theory of phenomena which are in their nature complex (...) is probably merely of necessity false...» (Hayek, 1964: 108-109)*

Central planning is, as we have previously explained, a theoretical impossibility. Even though any community is a barrier against central planning, the growing complexity and diversification of

modern societies turns centralization attempts into clear, resounding failures. As Christopher Alexander pointed out, «*Today functional problems are becoming less simple all the time. But designers rarely confess their inability to solve them. Instead, when a designer does not understand a problem clearly enough to find the order it really calls for, he falls back on some arbitrarily chosen formal order. The problem, because of its complexity, remains unsolved.*» (Alexander, 1973: 1)

We can observe how –like Hayek– Alexander sustains that «*(...) is the quantity of information itself by now beyond the reach of single designers...*» (Alexander, 1973: 4) Hence, in Alexander’s opinion, designers take any information they find and presents it, at random, in “dreams shaped in their minds.” The architect explains, in a very precise statement, that «*The technical difficulties of grasping all the information needed for the construction of such a form are out of hand - and well beyond the fingers of a single individual. At the same time that the problems increase in quantity, complexity, and difficulty, they also change faster than before.*» (Alexander, 1973: 4)

For both of them, the complexity levels achieved by human societies, due to all individuals, actions, relations and possessions, are so imperative that the task of understanding and being able to intervene becomes impossible for an authority. Any attempt at information gathering, data processing or theoretical simplification will be vastly incomplete and, therefore, useless for any study or prediction. However, regarding how helpful tools like statistic can be for planning, we can recall that Hayek believed that «*(...)The multiplicity of even the minimum of distinct elements required to produce (and therefore also the minimum number of data required to explain) a complex phenomenon of certain kind creates problems which dominate the disciplines concerned with such phenomena and gives them an appearance very different from that of those concerned with simpler phenomena. The chief difficulty in the former becomes one of in fact ascertaining all the data...*» (Hayek, 1964: 108)

The problem we are dealing with consists of appropriately handling a system complexity for its suitable modeling, so as to achieve a prediction to comprehend how it works, in pursuit of social planning. In the face of the difficulty previously described, it is said, many times, that statistics and information technology may help solve such impediment, since they work with high volume of data. The problem lies in that necessary data gathering would always be highly incomplete, whereas, on the other side, the nature of statistics leads to data grouping and simplification so as to study their amount and frequency, which is why statistics cannot tackle a proper structure and ordering data analysis. This way, for Hayek «*(...)Statistics (...) deals with the problem of large numbers essentially*

*by eliminating complexity and deliberately treating the individual elements which it counts as if they were not systematically connected. It avoids the problem of complexity by substituting for the information on the individual elements information on the frequency with which their different properties occur in classes of such elements in a structure may matter. In other words, it proceeds on the assumption that information on the numerical frequencies of the different elements of a collective is enough to explain the phenomena and that no information is required on the manner in which the elements are related. (...) It is (...) for this reason irrelevant to the solution of problems in which it is the relations between individual elements with different attributes which matters.»*  
(Hayek, 1964: 110-111)

Central planning is, actually, an intellectual horizon where each approach only distances our target. **Considering all previous arguments, from the dispersion of knowledge, the problem that gathering the information needed constitutes for a central authority, the distortions and lack of coordination produced by intervention, to the challenge that complex orders pose, we can affirm that central planning seems to be a failure. As we have discussed, central planning constitutes an impossibility when its objective is something other than the lack of coordination and to impoverish society. All types of coercive planning intervention, as long as they are effective, only achieve negative results, even when it appears to have improved a situation; somewhere, costs will always arise. These planning vanities are only the result of pretension of knowledge, knowledge that is not possessed or even likely to be possessed. It is an arrogant pretension with disastrous consequences for humanity throughout history. And it is this “fatal arrogance” what has damaged our societies, economies and cities.**

## CONCLUSIONS OF AN EMERGING URBANISM

### TOWARDS THE OPEN CITY

The goal of this essay constituted to analyze the limitations of central urban planning through the academic work of Viennese authors Christopher Alexander and Friedrich August von Hayek. Through its understanding, we can conclude that, without falling into the temptation to override the theoretical possibility of any governmental authority, planning and, particularly, urban planning have a series of fundamental limitations that preclude its general implementation. While it is acceptable setting *close-to-individuals* governmental units, decentralized and limited deep into their coercive faculties, restricted to an arbitral function where they try to preserve individuals from the friction of cohabitation in cities, we must desist from the temptation to build utopias that only lead us down the winding road that the urbanity of the past two centuries has been touring.

The task will not be easy because the challenges of urban liberalization stem from the difficulty to adapt a “bespoke suit” made for the state to freedom, causing externalities, “free-riders” and public goods problems, among others.

Perhaps new physical forms of cohabitation could be compiled. For that, the market has always managed to provide different and ingenious responses. As Alexander said, *a draw of what it would be cannot be drawn*, but we can be sure of something: the options will be varied and ingenious.

An emerging urbanism, an urbanism that emerge from the daily building acts of every citizen in a framework of coexistence secured by a limited authority, is the challenge of the coming years. This city is the city that we propose, the Open City, the city of all, and not only of the rulers or government’s lobbyist and friends.

“ *This is not a dispute about whether planning is to be done or not.  
It is a dispute as to whether planning is to be done centrally,  
by one authority for the whole economic system,  
or is to be divided among many individuals.* ”

(Hayek, 1945: 159)

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