



From chaos to self-organization in architecture

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ABSTRACT

Self-organization in architecture, designing a space in harmony between order and chaos is necessary for the growth of the new paradigm since it forms a new perspective for a better understanding of chaos and complex processes. An architecture in movement adds complexity to fractal images, generating complex shapes from simple codes. If the complexity in architecture is not well executed, and if it remains alienated in the distraction of appearances, it can confront other fundamentals of an architectural nature, lose quality and be prematurely fleeting, if this complex symbolic architecture is not supported by a set of properties that guarantee a more global quality, then in the message that it wants to transmit, once assimilated, it is often replaced or forgotten.

INTRODUCTION

Chaos reaffirms the processes of self-organization of Architecture towards the infinite possibilities that transform us from our inner ethics as living beings that belong to the whole and the whole is us too. Unexpected changes and experiences disrupt us to create a universe of new and different possibilities, which open up different paths and options from which to

learn modestly, being clear that we have not reached the final goal because everything is cyclical, everything is coming and going.

Changing the mechanistic paradigm to the turbulent thought of chaos that unifies the whole and complements it is a process that we must experience to achieve self-organization and positively influence the world. In ancient times the great civilizations that deepened the knowledge of the whole in their lives with holistic principles looked at the world as a living system, open to any possibility, now humanity is locked in its limited world, which does not allow to go beyond what it considers its truth and objectivity.

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Creativity is inherent in all the transcendent processes of life. Contemporary territoriality handles dimensions of scale and concepts that transcend traditional ideas about the city and urbanism. The expansion of the urban phenomenon, the concentration of large amounts of the population in some places, led to the formulation of the concept of Metropolis to mean a wider and more complex territorial scale than that of the city, and lately to the notion of the generic city that refers to a degree of urbanization that encompasses the territories in which no boundaries can be established. Titles such as center or periphery are no longer suitable nor is it possible to project based on planned ideas about the order or shape of the city.

There are phenomena of complexity and indeterminacy in contemporary territorial areas linked to Chaos Theory, grouping studies on complex and indeterminate phenomena. Traditional science studies phenomena determined by causal chains, simple and linear. Territorial changes and increasing globalization interrelate numerous previously autonomous areas, reaching that the methods of chaos theory are used in the study of these complex phenomena. There are phenomena of complexity and indeterminacy in contemporary territorial areas, writings from before the First World War has affirmed Sant' Elia (1914): "let's make the new city as a tumultuous and changing shipyard and the building as a gigantic machine", the first vestige of the complexity of the contemporary city is visualized.

Within the complexity of dynamic systems, there is an element that is the attractor, which can be linked to the complex territorialities of contemporary architecture expressed in buildings or groups of buildings that can adapt to changing situations. Betting on novelty and diversity, which is ultimately linked to contemporary complexity, where the amplification of errors that can appear in the behavior of a complex and chaotic system makes it impossible to make predictions beyond a certain point.

Chaos, which emerges in the essence of every ordering of the planet, must not be entangled with the disorder, because it can only be conceived from order and chaos is a state

before any idea of order as of disorder. The ancient idea of chaos defined it as the source of everything, that is, the germ and condition of the order. From this point of view, chaos can be understood as order inactivity, a creative phenomenon from which order emerges.

The process of transformation towards the new Architecture that is self-organizing, must raise the idea of order that we commonly known, as a specific and very concrete state of chaos, see chaos as a complex order, which we do not assume or understand with the naked eye. Breaking the paradigms of classical architectural composition, closer to the recipe book than to formal reflection, the new compositional notions of contemporary architecture and creative processes can once again be reflected in the way nature behaves, in its apparent whims and evident states of complex order.

It is very difficult for the morphologies of chaos to represent monumentality. Their reasoning is anti-representative, they owe more to the disorder, improvisation, uniqueness, brevity, and fluidity of the usual life than to the constancy of perfection, regulation, representation, and power. Fractals, folds, and rhizomes allow us to see, interpret and project Architecture within the complexity of the contemporary world. Transforming the creative process in an organic, dynamic, and evolutionary way about human consciousness and social needs, of its own time and space.

We can find fractal forms, in nature or in the works that the human being has created inspired by it, such as the cyclopean stone walls of Inca Architecture in Sacsahuaman or Machupicchu, Peru, they always present the same intertwined structure of stones and planes, whether we look at them on a large scale or small scale. In Modernist Architecture as the proposals of Louis I. Kahn, to remodel the center of Philadelphia, starting from the lines of pedestrian traffic. Also in authentic works of art, for example, in the doodles of Jean Dbufett or the mobiles of Alexander Calder, which externalize in their forms an implicit manifestation of fractal logic.

Architectural projects were inspired by the use of nature, landscape organisms, and the geometric matrix, the internal structure of living systems, cut and stratified forms. They manage to design an expansive architecture, without any classical formality, combining all kinds of forms, abstract and organic. An Architecture that flows with the natural movement of the universe that surrounds it, with its different simplicities and complexities, with the creativity of the artist who immerses himself in the different creative processes as points of bifurcation that detonate the path towards self-organization.

To design an architectural space, the balance between order and chaos is necessary. The development of the new paradigm creates a new perspective for a better understanding of chaos

and complex processes in Architecture. A moving architecture adds complexity to fractal images by generating complex shapes from simple codes:

Oh, Zarathustra, said the animals, for those who think like us it is the same things that dance: everything comes and reaches out, and laughs and flees..., and returns. Everything goes, everything returns, the wheel of existence turns eternally. Everything dies, everything blooms again, and the cycle of existence is eternally pursued. This is how Zarathustra spoke. (Nietzsche, 1883)

The design is inspired by ideas that can be represented spatially. However, Architecture is not only formed of geometric proportions, a circle is not a circle, it is a form of concept, and it is a new way of seeing historical transformations. The circle is a signifier that is signified in the righteous in which it relates to others, relationships as complex as non-human nature. Coherence is not in the form, its proportionality, or beauty, but in the creativity of the architectural process. Where the Geometric order represents the ideal mathematical forms and relationships, and the Chaos represents forms and relationships that are complex and difficult to write with the language of classical mathematics.

According to “order without diversity can result in monotony and boredom; diversity without order can result in chaos.” With the theory of the new paradigm, from this chaos arises the creativity that will trigger the process of self-organization of Architecture, as part of that organic and creative transcendence of all the processes that result from the very creation of the human being who is integrated as an indivisible part of the whole. (Ching, F., 2007)

How to know and appreciate the civilization in which we live? We can climb the great temples, buildings, cathedrals, and mountains that decorate the urban and rural landscape of our countries. “Climb the village bell tower or the towers of Notre Dame.” He saw the “disorder” in the beautiful city of Paris of his time and baptized it as Architectural Chaos. The contrasting constructions, the complexity of slopes on the roofs, the different heights between the walls, the dispute over the territory that is created between one building and another, that “beautiful harmony”.(Recital, 1808–1893)

To design, we must observe, feel, analyze, consult and integrate all the parts that are and will be part of that project. When we disassociate all these elements, the problem of overpopulation does not allow a man to feel lodged, houses without light or air bring only misery, deterioration, and misery. With these ethical principles, we can design an orderly city that generates creation and evolution, with spaces for social activity, simple spaces where people adapt to their taste and need, based on the collectivization of goods, vast green areas as milestones of reference in the urban fabric and a better environmental organization.



CONCLUSIONS

The law of chaos invites us to continue incessantly asking questions that lead to others, where the answers lead to new questions and open new knowledge that will continue to be fed back with the universal consciousness that unites us all with the whole. Life is art, it is creation itself and as creation, it must be evolutionary, contemplative, malleable, volatile, expansive, and in perpetual motion.

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