



The Architect of Today on The Edge of Chaos; An Approach Through Chaos Theory

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Abstract

Today, in the frame of the transformation of the city and the social dynamics, there can be seen a congestion and repetition in the context of the city/citizen/architecture. It is possible to examine the spatial consequences of the social transformations that modern individuals experience, but only by comprehending the importance of the strong relationship between the space and the identity of individual. It seems difficult to produce 'the new' in architecture as long as the new ways of seeing not produced in this complex situation. Today, since the Chaos Theory gives us hope concerning the social sciences that include architecture and sociology, it can be used as a tool to investigate the current situation of architecture.

Metropolitan cities can now be assumed as the most complex scene of architectural experience in the context of nonlinear natural atmosphere and linear orders created by society. There is a direct relationship between design process and the views of today's architect in the face of chaos and order. Through the Chaos Theory, this paper will discuss the views of the today's individual on the line of complexity in daily life and the role of today's architect on the edge of chaos. This role is evolving within the framework of the attitude and potential of the architect in today's metropolitan cities, in the face of complex problems. Therefore, this research focuses on which attitude of today's architect can be an intervention tool to initiate the transformation of city/society.

1. INTRODUCTION

It is known that major changes in the economical, technological, sociological and cultural fields in the transition from the feudal system to the capitalist system produced serious urban consequences within the newborn social structures and social classifications. The most significant of these results can be observed in metropolitan cities, the most concentrated environment of social dynamics. Hence, it is thought that it is possible to go beyond this urban / spatial / architectural bottleneck, but only by generating new ways of looking.

Due to the desire of humankind to understand unknown, many theories have appeared throughout history. The last quarter of the 20th century is an era in which significant scientific developments occurred. The hypothesis of chaos which has existed since the ancient times became particularly popular in this era. Although the theory first appeared in human sciences, it currently seeks to give clarity concerning the future of social sciences. The mathematical model of chaos theory provides insight for physics; in addition, more recently academics argue that this theory may also support many sciences that include architecture and sociology in terms of breakthroughs.

According to James Gleick, the social sciences which embrace theoretical principles of the theory may have the chance of abandoning the mechanical perception and seeing the world from a wider perspective. Chaos has become not just a theory but also a method, not just a belief but also way of doing science. (Gleick, 1987). In this respect, the philosophy of the theory may be regarded as an instrument which is used in order to comprehend the dynamics and complexity of systems and the metropolitan city shows itself as the most obvious architectural platform where chaotic relations can be observed in daily life. The city atmosphere is the place where chaoticity and complexity can be observed most intensely in terms of sociality and formality in our daily lives.

“In an artificially conceived environment, calculated to secure anonymity and functional specialization of space, city dwellers faced an almost insoluble identity problem. The faceless monotony and clinical purity of the artificially construed space deprived them of the opportunity for meaning-negotiating and thus of the know-how needed to come to grips with that problem and to resolve it.” (Bauman, 1998, p. 46)

As Bauman emphasizes, in the frame of the transformation of the city and the socio-cultural and socio-psychological dynamics that lead to this transformation, it can be said that there is a congestion and repetition in the axis of the city/citizen/architecture. The problem of "identity" created on individuals and groups in everyday life with globalization has been and will be influential in the forming of the metropolitan scene. In this context, it is possible to identify the troubles of today's urban space only by comprehending the importance of the strong relationship between space and identity of today's architect.

The metropolitan city can be seen as a stratified structure that contains all the stages of complexity from the chaotic atmosphere of nature to the order in that society creates. On this line of complexity, the individual of today positions himself / herself according to many social, economic, political, cultural, religious, and other parameters. The relationship established with the city represents a moment of encounter; this moment appears as a living reality and is a layered and a reflective representation that replaces each other in the relation of the city and citizen, not as the attitude of an observer who is distant from the city (Aydınlı, 2012). As Aydınlı states, individual faces with the all stages of complexity in his/her daily life. Today's architect, like every individual, has to define his/her existence between the chaos and the order. At this point, the architect has a role in the mental and physical tools of the city's formal structure. This role is evolving within the framework of the attitude and potential of the architect in today's metropolitan cities, in the face of complex problems. Therefore, this research focuses on which attitude of today's architect can be intervention tools to initiate the transformation of city/society.

2. FROM CHAOS TO ORDER

‘Before everything, there was chaos.’ - Hesiod (Hesiod, 2006)

Chaos (Khaos) is a Greek word and is thought to have first appeared in “Theogony” meaning “The Birth of the Gods” by Hesiod in sources dealing with Ancient Greek philosophy (Hesiod, 2006). However, findings in respect of the Chaos Theory had not been systematised until the last quarter of the 20th century and also it had not been qualified as a “theory” by the world of science during that time period. It was in the 1970s that the doctrine was systematised and resumed its name.

In the past, scientists generally avoided investigating complex systems. Contrary to the Newton science which sees the world as a machine with regular, predictable and certain justice, the theory takes irregularity, unpredictability and uncertainty into consideration and acts as a bridge between the simplification of Newton science and randomness of quantum physics. In addition, the theory brings harmony and togetherness, not contradiction between order and disorder. It is important to note this as a spectacular distinction which will further be discussed below and is likely to be confronted while comprehending the city entirely.

The city needs order to restrain the density that it involves (or a part of it). Under the non-linear structure of the city, there are considered to be some solid and linear structures which ensure that the city is in order by the society. It is only possible that the control and continuity of a non-linear system relies on that there exists a linear system in it.

The metropolitan cities can be seen as an order in irregularity. The actor generating the order of the city is ‘society’. Nature is chaotic. The society needs simplicity and avoids irregularity. Hence, the city is a scene where all diversity gathers and the continuum is always provided. This complex system is the cooperation of nature and society; however, it can be added that this complex system is prevented by society.

The city is one of the orders of human beings that they simplified for the purposes of controlling its complexity, and that they set up through association by establishing similarities and differences. The city harbours systems and sub-systems supported by a certain world view. Just like what is seen after looking at the fractals from different distances, there are intertwined systems of different scales in the cities as well.

It can be said that the cities have the characteristics of complex systems in order through the Chaos Theory. The number of variables in complexities in disorder is very high. It is hard to foresee the behaviour of a system. However, complexity in order bears variables to a quantifiable degree within itself and it is possible to be controlled. The same holds for cities. As their level of chaotic aspects increase, the cities are transformed into metropolitan cities. However, even the metropolitan cities have a balance within themselves.

Order means establishing social reconciliation spaces. In other words, this means that an individual living with other individuals becomes possible when an agreement on certain conditions has been made or when certain will is adopted. In this context, the continuation of the order does not become possible by the power influencing the city alone. The individual appears to be the stakeholder who is most affected by this use and who provides the order. Because order does not consist of urban or social order alone, order is the structured state of conscious.

3. THE ATTITUDES OF TODAY ON THE LINE OF COMPLEXITY

3.1. Under The Domination of Order: The Blasé

A metropolitan resident hesitates to think during actions within the contexts of an institutionalized living environment. Because, the life style of a metropolis directly affects the daily life of residents and sets its own routine. According to the paper; 'Metropolis and Mental Life' of Simmel, humans resist the mechanism of socio-technologic decomposition and fatigue (Simmel, 1976). The density of stimulant on nerves constitutes the spiritual basics of a metropolitan type personality. This is because of the fast and continuous change on stimulants. Mentality is stimulated by the differences between the consecutive impressions. Permanent impressions need less awareness, which have minor differences and stays in a common order.

In the feudal world, "free man" is thought to be a man who is dependent upon and protected by the law of the country. The person who is not free was seen as the one who received his rights from a narrow feudal unity and who had been alienated from the larger social frame-work. Simmel defined today's city residents as "free" in the meaning of having a more developed sense of spirituality and taste as opposed to the residents of townships who had been limited by narrow patterns and prejudices (Simmel, 1976). However, the aspect that has to be carefully considered at this point is that while the boundaries of such freedom are extending during the modern age, the spaces of the orders are also widening. The individual makes choices in order to cope with the complexity of the metropolis and gives up some of his freedom in order to gain his personal freedom. The establishment of political groups, societies, networks of relatives and congregations arise out of the necessity felt by human beings that they have to protect themselves within rigid boundaries and a central unity and achieve a sense of belonging. It is very difficult for an individual who has been raised with order to cope with the dominant system neither mentally nor practically and to get out of that frame-work.

The individual is put into a certain frame by the system and the system automatically undertakes the production of the individual in conformity with the required model. This set up is not normally consciously realized. The individual can come across this set up right at the heart of daily life, in newspapers, in books, in magazines, in films, in lectures, at wedding ceremonies, during shopping, at celebrations and at various vital practicalities. Order is an indivisible part of these practices and continues to exist alongside such practices. The individual structures his communications with the other individuals and his existence within the society and the city in accordance with these provisions. Such provisions create the basis for the urban behaviors -learned behaviors- of the person. This whole set of judges convicted in society is defined as *Doxa* in the sociology of Bourdieu. Bourdieu claims that the origin of the social actions of the person in every field from daily life to politics, from cultural tastes to the manner of speech is governed by the society inside the body of the individual (Bourdieu, 1982). It is an observable truth that the individuals go on living the life styles that have been imposed upon them by the society, go on living without questioning the behavioral patterns and give in to the domination without utilizing their mechanisms for questioning and criticism.

3.2. Neither Inside nor Outside; the Stranger

‘‘There are friends and enemies. And there are strangers.’’ (Bauman, 2010, p. 53)

The need of mankind shows itself when the society put things on the ground that the individual perceives and systematizes them. However, the society is constructing an artificial order by labeling objects and distinguishing between things with and without a real sense of what they are. The ‘‘stranger’’ is a concept that emerges in order to be able to define the different things in this moment. The stranger is the phenomenon created and excluded by us. The stranger is both near and far at the same time. The existence of the stranger does not change. The effort to bring a limit to the uncertainty of strangeness manifests itself in urban planning. The city has a function that narrows its boundaries and the society generally try to avoid focusing on the ambiguities, uncertainties and insecurities of the liquid world. This situation reflects our daily lives directly on the urban level.

It can be said that fearing and escaping from the stranger leads the city to the formats that a city does not really have. It adds different equipment/roles to the city and as Baudrillard says, 'the truth itself becomes the simulacra' (Baudrillard, 1994). The space of 'the stranger/other' is being produced in a foreseen way and the city is assumed as an environment in which the stranger is controlled under the desired manner. As long as an individual who is far away from the intellectuality does not question the situation imposed on him, he makes it his own reality. According to Bauman, in fact the real freedom and liberation is only possible through the acceptance of differences and the rejection of complacency (Bauman, 1991). The individual cannot catch the feeling of freedom when she/he is in a worrying mood created by the stranger. As a matter of fact, despite the argument of Bauman which states that modernity aims to and should destruct ambiguity and create a static order, this effort actually increased the ambiguity in the city. The source of increasing ambiguity is seen as the stranger. Along with the growing crowd in the city, the lifestyles generated by different layers and cultures have increased the tension in the city such that the metropolitan city has now become a place where strangers "stand and move around each other". (Bauman, 2010)

According to Sennett, the stranger is synonymous with the outsider, and appears in a landscape where people have enough sense of their own identities to form rules of who belongs and who does not. (Sennett, 1977) Thus, the stranger who does not belong to the city and the citizen who defines himself, his boundaries and his surroundings against the stranger pushes the architect of today to a totally different plane on the line of complexity.

3.3. In The Shadow of the Chaos: the Idle

This attitude that emerges as an opposing attitude on the other side of the line can be thought of as the mental state of the individual who has no sense of continuity or sense of obligation and who rejects all social ties. In this respect, is seen as a deviation from ‘normal’. This is a period of deterioration in which internal life in the form of isolation, loneliness, lack of communication, lack of purpose, worthlessness, void, hopelessness, and futurism are experienced intensely and violently. This attitude, who is in a passive revolt, is standing against all the values of society, institutions and lifestyle.

Even though it has the possibility to observe the blasé attitude under domination from the outside, this attitude is at least as violent as the uncomfortable. This violence is too far from the ability to produce the new, since the uncontrollability, unpredictability, remains under coincidence and creative thinking can not be achieved in authoritarian, restrictive, over-structured environments. As the leaders of the cultural elite group, architects are founders of order. Therefore it can be said that the role of the architect profile in the axis of the city and society is directly related to creativity. In the context of these types of identity, which dominate the modern man, today's architect needs a different plane to reinforce his creativity.

3.4. On The Edge of Chaos

‘‘Chaos is rejecting all you have learned, chaos is being yourself.’’ (Cioran, 1975, p. 29-30) According to mathematical theory, the edge of chaos is the most critical region on the line of complexity. In this region, a small change can either drag the system into a chaotic behavior or lock it into a constant behavior. Additionally, systems are not clearly defined and are subject to change in this region. The general feature of these systems is the unpredictability of certain behavior within a predictable behavioral structure.

On this edge, the system makes the most complex calculations using the greatest potential. In other words, this border represents the easiest situation of change.

‘Creativity is balanced at the knife-edge between predictability and randomness. A completely ordered or completely chaotic system is not very valuable because it cannot evolve very far; it cannot improve or progress. By contrast, a system pushed far-from equilibrium to the boundary between order and chaos.’ (Jencks, 1995, p. 85)

According to the theory, with this quote, Jencks underlines that chaotic systems have more possibility of creativity than linear systems. Because, it is hard to create the ‘new’ under domination, sometimes even it’s impossible. Whenever a structure needs to be formed, some percentage of irregularity is necessary for change. This relation brings a dialectic connection between order and change. In chaotic systems, while order wants to maintain itself, irregularity provokes it by holding an anarchistic attitude.

Although order seems solid in the context of time-space at first sight, actually it is not. In contrast, it requires motion including a certain energy. Conversion of energy is needed even for the maintaining order. With this reason, daily life contains a hidden dynamism. As stated before, order cannot be generated randomly without an authority or power and also cannot be maintained without any support. Since it is not natural, it is only continued by the intervention of humankind. In other words, unless it is imposed by external influences, its energy decreases and it evolves to irregularity. Because of the fact that the chaos theory defends that every order tends to be destroyed; if an order keeps its existence, it can be said that there are some authorities resisting and interrupting the tendency of destruction.

4. CONCLUSION

It can be said that the inferences obtained in the research are directed at the debate on the relation between the city/architect and order-chaos. Even if it cannot be pinpoint certain results, it is assumed that the architecture is moving towards a darker urban table. In this context, this debate is based on the search of utterly different approaches of city/architecture. It gives us hope that even the determination of how the architect is directed to the present situation will come, without revealing the social and spatial constraints of the metropolitan city and thus the architect of today, or without offering convincing solutions.

The final piece of Deleuze and Guattari’s, ‘What is Philosophy?’ begins with the following sentence: ‘We require just a little order to protect us from chaos.’ (Gilles Deleuze, 1991, p. 200) With this point of view, it is seen that the nonlinearity of nature is tried to be restrained by an artificial order produced by mankind. This order refers to a secure spatial unity established by certain forms, means and laws. To put it differently, as Deleuze and Guattari states, the chaos dominating to nature occurs as utterly different from nature in an approach of order with the society at city scale. Chaos cooperates with man-made order so that society survives and keeps its daily life the same.

Christopher Alexander explains that the living structure is generated from the centers as a whole. Primarily it is necessary to explain the center and a whole in order to be able to understand how life originates from them (Petruševski, 2012). As Alexander argues, if it is assumed that city is a living organism, it can be imagined that the horizontal and vertical strata move in unison with each other.

“Artists struggle less against chaos (that, in a certain manner, all their wishes summon forth) than against the "cliches" of opinion.” (Gilles Deleuze, 199, p. 204)

In the scope of the study, although the individual views have been handled very carefully, it is difficult to argue at this point in the study that is easier to answer question, ‘Where will the evolution of the views of today’s architect go?’ But within the derived conclusions, striking results can be achieved today. The task of dominating the earth, where human beings are part of it to the most micro places today is very clearly confronted on the urban level. According to Deleuze, who criticizes the thought that excludes randomness and chaos on behalf of order, this system of thinking is trustworthy for individual. In this sense, as Deleuze and Guattari point out, being in certain, definite, rigid and static mental frameworks are almost like an umbrella protecting us (Gilles Deleuze, 1991). Along with the assumption that the domination/order is an attitude toward chaos, the free space perception of the city/citizen is becoming questionable. Today, the reality of the spatial organizations presents a tragic debate.

“Thus, lacking the real, it is there that we must aim at order.” (Baudrillard, 1994, p. 16) Within the scope of the study, it seems that the search for order of the society has come from the intolerance to the other. It is thought that the society is preventing ambiguity by organizing itself in oppositions. According to Bauman, this attitude can only come to an end when tolerance for differences begins. In this context, the state of being on the edge of chaos represents the ability to produce a new order between irregularity and strict order. New products, new behaviours, policies, strategic positions can be developed with this way of seeing. It is observed that the Chaos Theory brings us to a key concept with the interaction of the concepts that has been encountered. This new concept is “to construct to destruct”. In order for the metropolitan life to discover novelties and to produce positive values, the architect should be able to take a look at the metropolises from outside. It could also be argued that this is only going to be possible through metropolitan cities with this approach. This is a kind of key that could put the experiences together; it gains through the residents of the metropolis and turns them into a production activity. Awareness of this approach against the consuming and monotonic system of the metropolis could be a tool to bring in colour and energy to the daily life of the exasperated metropolis resident description of Simmel. Such awareness bears the potential of realising transformation not on individual scale, but also on social scale.

After the analysis and the proposed ideas, it can be imagined that the probability of today's architecture to turn into more disturbing geographies in the near future is quite high. But within the scope of the processes and situations that have been achieved, thanks to the butterfly effect approach, which is the basic metaphor of the Chaos theory, the transformation of the chaotic structure of the city in its historical process allows us to make promising conclusions about the architect and architecture today.

It is seen in the context of Jencks' discourse that creativity exists at the boundary between chaos and order, the edge of chaos is the moment/region that existing order can be destructed and new notions can be constructed by taking advantage of the unpredictable and random structure of chaos. Hence, today's architect can reach this limit at which he can remove the system of order from its dominance and bring a new expression or definition of use against the problem. Today's architect can help you to fall into chaos by taking the risk of confrontation with chaos and can make new productions towards the future independent of dogmatic, static and linear phenomena. Consequently, all the inquiries and analyzes made in this context can be expressed by Deleuze and Guattari.; “Art indeed struggles with chaos, but it does so in order to bring forth a vision that illuminates it for an instant, a sensation.” (Gilles Deleuze, 1991, p. 204).

CONFLICT OF INTEREST

No conflict of interest was declared by the authors

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