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Architecture in Transition Era toward Network Society[1]

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ABSTRACT: Technology affected human life in many ways in different eras of mankind history. Today, the information and telecommunication technology has revolutionized basic structures of human life. Changes are from the whole to the parts and vice versa, which include family and society too. Family lost its former structure in the information age and differentiated from patriarchy family. Societies have been formed based on logic of networking and new network societies are predominant form of our societies with their advantages and flaws comparing with the traditional societies. Basic concepts of the life i.e. space and time also have been transformed and living in space of flows and concurrency of functions require a special structure or body. Architecture constitutes the body of our societies which must meet physical and mental needs of humankind. In a transforming world, architecture is connecting ring between society and surrounding environment, previous traditions and future world, which its borders between reality and virtuality are very close. Architecture with a global-local approach can assist human who is wondering in the virtual world to redefine its own identity and finds its position in labyrinth of global networks and also safeguards his survival via respecting nature and paying attention to sense of place as one of the principles of vernacular and traditional architecture. Technology has affected on the architectural design, leading to creation of new shapes and distinct erections. Architectural design by employing networks and collective intelligence, overcome temporal and spatial limits and became a collective activity. Architecture by creating spaces according to global, regional and local considerations and emphasis on principles of design supported by collective intelligence and strengthening bonds among the human, nature and technology, will act as a panacea which will heal crisis of identity and cultural multitude; the crisis that storm out human body and soul in our present stressful world.

Key words: *Information technology, Network society, Transition era, Space of flows, Collective intelligence.*

INTRODUCTION

By the end of 2nd millennium a number of significant events deriving from science and technology advances have been occurred that revolutionized human life. The industrial revolution transformed our environment and beholden to production of automobiles, train, airplane and etc. Spatial distances were conquered and places got closer to each other and therefore relations increased. Instead of classic age in which the world changes presumed to be linear, regular and predictable, the new theories such as string theory, chaos, quantum and special relativity depicted a non linear and dynamic picture of the world changing process in which widespread relations between parts make them closer to each other. The concepts of space and time have been revolutionized in network societies and nowadays human life is formed based on the flows of information and capitalism. The new world is a multidisciplinary and diverse world which confused contemporary human, thereby he failed to find his position in network society. Globalization, crisis of identity, attempt for survival and sustainable development are the concepts which humankind are challenging with. Architecture can help contemporary human to establish effective tie with surrounding environment, transforming future world, past and tradition. Some of the information age particulars and the position and characteristics of architecture in the changing world are studied below.

New era and information revolution

The advances of modern industries caused widespread alterations at global level, the changes was so great that called industrial revolution. The industrial revolution not only transformed the human lifestyle but also changed its worldview and following to the change in basic concepts, art and architecture were experienced huge transformation. It is evident that technology always plays a principal role in human life and currently information and telecommunication technology have created

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another revolution in humankind history.The information and telecommunication technology have been spread throughout the world in a short time and transformed all sections thereby call that information revolution (because of the inherent nature of a revolution is great alteration in a relatively short period of time). During this information revolution, technology affects information, transfers it all over the world, processes information, emphasize collective intelligence and rhizome like connection among all nodes (diagram 1). In the information age, logic of networking is predominant and flexibility and reversibility of the processes are considered as the main traditional societies. According to this characteristic, the global economy networks have been established that indebted their existence to the information and communication technology. In such networks of economical operations multinational companies and financial institutes with global connections are flourished and new jobs are created while many jobs are eliminated. In information age, the concepts of distant working, part time job, and self employment are the principal concepts, thereby the concerns over the perspective of employment is an easily perceptible problem. Even, culture is affected by transfer of icons by the electronic mediators and comprehensive mass

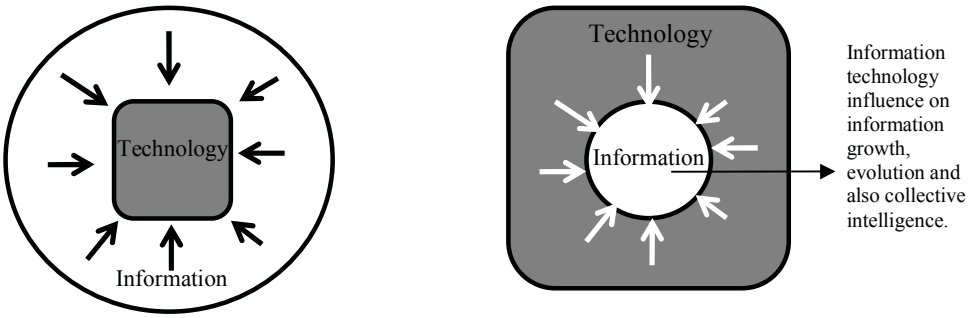


Diagram 1: The influence of information on technology in process of transition to modern society and the influence of technology on information in information technology revolution. (Source: Authors)

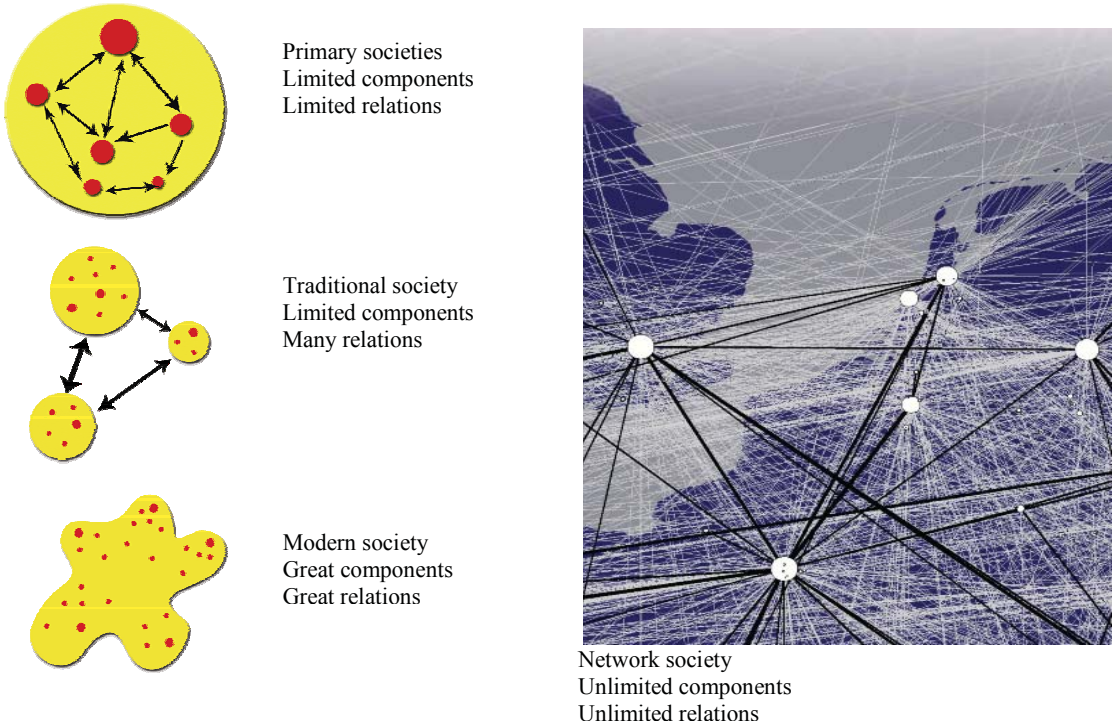
particulars. (castells,2001a) The information revolution gives our world a global identity according to technologies such as microelectronic, telecommunication, optical fiber, and computer. Therefore, paving the way of globalization and establishing global culture, identity crisis and domestic cultures arises. Also, the networks have transformed the concepts of time and place in the modern society that has been built up.

Establishment of Network Societies

The networks have been transformed many basic concepts of human life and revolutionized form of relations in human communities. Since difference in various bonds among components acts as a parameter distinguishing the societies from each other (diagram 2), the networks have established another form of societies which called by Castells the **network societies,** the societies underpinned by the logic of networking and with a network structure. (castells,2001a) According to Castells, the network is a series of connection points or connected nodes. On the other hand, networks are open structures that spread without any limit. Deleuze, French philosopher (1925-1995), focuses on communication and hierarchy related structures which are eliminated in the networks and the rhizome like flexible structures which their aim is multiplication and growth in surface. The networks are rhizome like entities in the society. They connect all parts of the society regardless of the conventional hierarchy and challenge the structure of the media which are trying to create a global culture. Beholden to creation of virtual space, contemporary human is facing with a dilemma of virtuality and reality thereby distinguishing virtuality from reality in some cases becomes very difficult. The network society has revolutionized all structures of the traditional society. Accordingly, the structures of all of our cities, homes and even families, as the smallest element of every society, have been changed too. In the new age, the family is dealing with a crisis in terms of structure and the foundations of patriarchy families are destructing. Following the crisis in the family, the society faces with the identity crisis which is particularly stronger in developing countries due to occurrence of constitutional changes without equipping with the necessary cultural infrastructures. In network societies, the movements such as feminism, religious fundamentalism, nationalism, etc all try to find a way for redefining identity of contemporary human (Ebrahimi, 2004).

Structural changes in network societies

As described earlier, the information technology has transformed smallest component of the society i.e. family and put the conventional family at the eve of demolition. Homes as the human accommodation structure will be faced with a great revolution. Homes are filled with electronic and telecommunication tools pacing forward in a evolutionary road of creating electronic cottage (Fig. 1,2). In future homes, telecommunication tools



Digaram 2: classification of societies according to their components relations. (Source: Authors)

will provide facilities to live, work, educate, buy, sell, etc for inhabitants. On the other hand, home will be a complete cell in which all inhabitants can carry out their jobs. Traditional work offices, education and trade systems will not find any room in the future world. Distant working, distant buying, distant learning, distant banking operations, etc are approaches that will save human being from super traffic jams in global mega cities (castells,2001b). People will work, live, educate, buy and sell in their electronic houses and connect in a widespread network with the whole world and exchange their views. The structure of future cities will be different from today cities. According to a futuristic view, the perspective of the future cities could be depicted (Fig. 3,4). In information age, cities with global importance are established imposing impacts on global level on various aspects of human life. Such cities are the significant nodes in global economy. If the future houses can satisfy all of human needs for communication, work, living and education and provide complete and flawless cell for human life in such a way that habitation can be substituted by movement and mobility in the speed age, the necessity of establishing cities will be vanished.

Revolution in the concepts of space and time

Space and time are two main issues with great impact on architectural creation. In network society, concepts of time and space are transformed and consequently architecture in these societies will be different from traditional and modern societies. The traditional and modern architecture that have been established given the governing soul of their age and can not meet the needs of the contemporary human, who passing time and space riding the waves and experiencing a very dynamic space. The information and telecommunication technology have shorten the temporal distances (As the science has shorten the places distance in industry age). thereby information, data and capital are transferred in a very short time. The network society challenges the mechanical world and its concepts and tries to establish infrastructures for the future world. The future societies (network societies) will experience another form of the space that called by Castells as space of flows. Castells described the concept of space and its affectability from society structure as follows: Space is not reflection of society, but its embodiment of that. Space is not copy of society, but is society itself. Given that the network society has been formed around the flows, the space also established in this society around the flows. The place is a material base that supports such process. Castells designated this as space of flows and supposed three layers for it as follows:

1-Orbit of electronic stimulus;

2-Nodes (points that connect the points of a network);

3-Axes and placement of the elites that control and guide the flows.

Time will be transformed in new societies. Time as a linear, irreversible, assessable and predictable clock has transformed

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Fig. 1: Future houses.
http://www.foxnews.com/photoessay

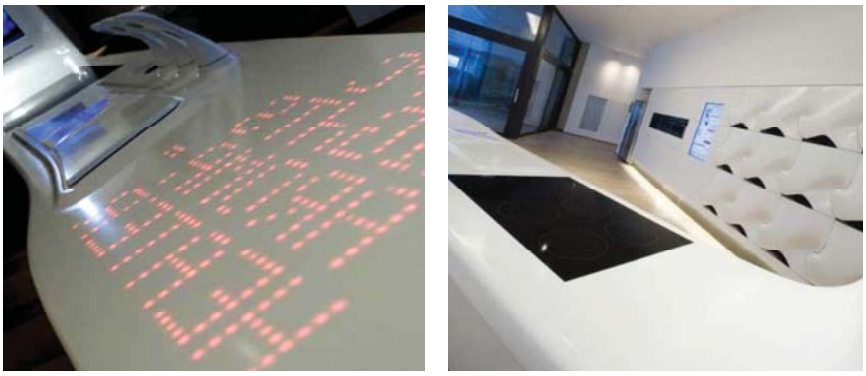

Fig. 2: Future houses.
http://www.foxnews.com/photoessay

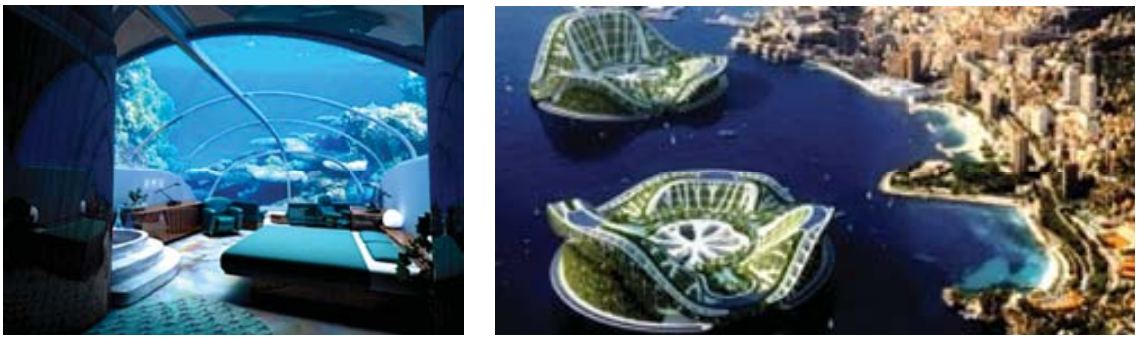

Fig. 3: Future cities.
http://www.gaj-it.com/wp-content/uploads/city-2.jpg

Fig. 4: Future cities.
http://www.gaj-it.com/wp-content/uploads/city-2.jpg

in the network society. On the other hand, the biologic rhythm is eliminated. Communications have created possibility of concurrency and if one can converge all times together, will be close to timelessness and eternity thereby sequences of all phenomena in society will be changed and consequently space will be transformed.

Architecture during the transition into the network society

Modernity is a movement that revolutionized the whole world in a short time beholden to the industrial advances and various societies have been affected by this movement in different ways. Societies are dealing with information and telecommunication advances and huge wave of globalization, formation of network society and space of flows in near future. Change in human life basic concepts such as space and time will affect the traditional, modern and network societies and therefore architecture will find its own required particularities in every society. In the following table you can find the features of space, time and structure in traditional, modern and network societies.Today during transition into the network society, numerous tastes and different views in architecture have been emerged. Some of architects employ elements from ancient time architecture showing historical viewpoint and tried to redefine the society's identity against wave of globalization and others are inspired by technology and nature, natural forms and vernacular structure. Style free architecture and signs of pluralism during transition to network society are observable. According to Charles Jencks, architecture has seven supreme orientations in telecommunication era: Complexity, Ecothech, inspiration from structures and data of artificial environment and mega cities (Datascape), employing Blobs (Fig. 5), land form Architecture, employing cosmogony architecture and creation of vague figures that can be interpreted in different ways or enigmatic signifier.(AkhtarKavan,2007) In countries like Iran who has not been modernized completely, chaos derived from transition period that led to anomaly is observed. The norms of the traditional society that bring discipline into these societies have been eliminated. According to Durkheim, anomaly is the feature of societies during transition period. (Limen,2006) In the same time, the information technology has been penetrated into society and people life, thoughts and sensations. The specifications of network and modern society in the process of growth have been formed as the extraneous factors in third world and developing countries such as Iran

Table1: Comparison of modern, traditional and network structures.(Source: Authers)

	Traditional structure	Modern structure	Network structure
Society	Organic correlation, Simple structure, Social integration, Priority of mass interests over personal interests, Strength of worldview & religious belief, traditional education (from person to person), Attention to religious affairs, Non- diversity in jobs, Bartering, Local economy…	Mechanical correlation, Complex structure, Differentiation and components' diversity, Attention to personality, Strength of Law, Modern education(Schools & universities), Ever increasing thoughtfulness, Religion crisis, Allocation of work according to the specialty, Monetary trade, Local-regional economy...	Organic correlation, Complex structure, Differentiation and components' diversity, Person as a part of global network, Strength of global culture, Distant learning, Cultures' negotiation, Identity crisis, Distant working, Electronic trade, Global economy…
Space	Static Diverse	Dynamic monotonous	Dynamic Diverse
Time	chonological	Concurrency of events	Concurrency of events timelessness(eternity)
Structure (architecture)	-A building suitable for climate changing, tradition, culture and nature, -Vernacular architecture, Traditional architecture,- -Architecture appropriate for climate and local needs. Local	-Structure appropriate for needs and functions, -repeatability in every part of the world, -Place independency, -Separated from past, tradition and employing technology, -Constructivism movement Modern architecture- -International style Global	-Style free architecture, -Personal ideas, diversity& differentiation- -Attention to climate & environment - imitation from nature, -mass intelligence,.., -employing advanced technologies of construction and intelligent materials Global+ Local= Glocal

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although in developed countries, network society has been formed as an internal and tradition-oriented development process or endogenous development. Therefore, in these societies a kind of transformation is underway inside the heart of the society while the traditional and modern infrastructures are maintained intact (Diagram 3). Many societies have been dealing with transition toward a network society and paying attention to endogenous development will help society to prevent increasing anomaly in the society and architecture. This type of development is obtainable only by creation of cultural, social and art infrastructures(Islami 1998). Understanding the status that we are tackled with can assist us in policy making, planning and architecture design for a network society. The society elites will support, guide and supervise our cities

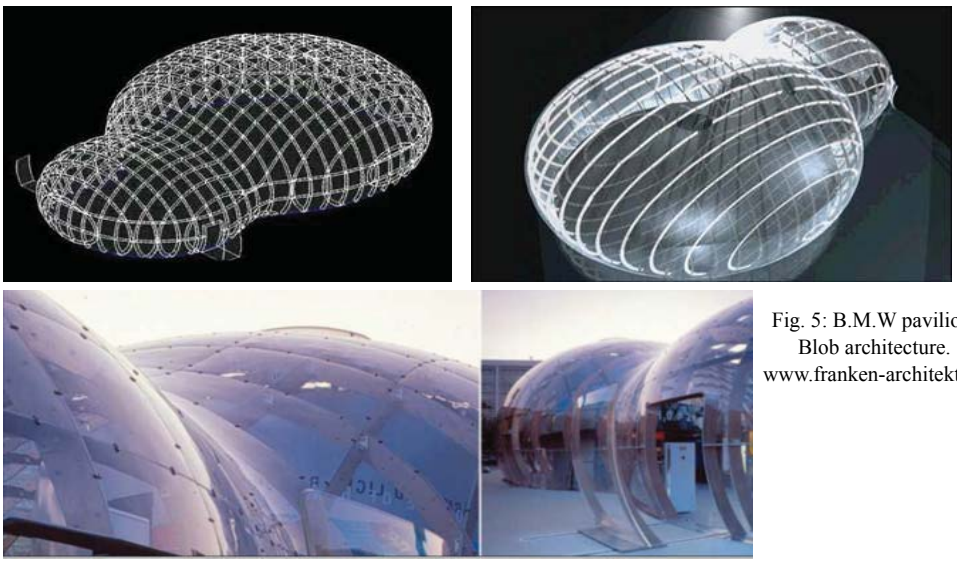
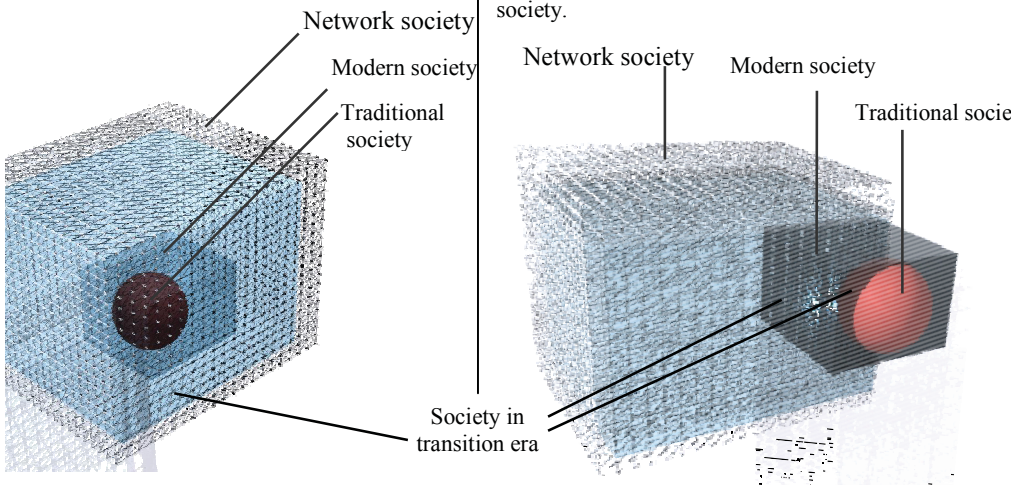


Fig. 5: B.M.W pavilion.
Blob architecture.
www.franken-architekt.de

opment process in developed societies.
lopment process every layer of society will be
ed and live together by peace.

- Growth process in third world societies.
In growth process every layer of society structure has
part of previous layers. New layers have a dis
inclination and also may be harmful for the integ
society.



Diag 3: Development process in developed societies and
Growth process in third world societies.(Source: Auethors)

structure, in compliance with governing soul of the age, via studying future status and adopting appropriate planning. They will assist society in transition era to redefine its identity in space of flows, if they can't do their function truly, structural chaos will be the main feature of our cities. How architecture could play its main role in the network society? Can architecture heal the identity crisis that modern societies are grappling with? What is the role of architecture in a transforming world? These are the questions that societies' elites are trying to find their answers but these answers are numerous and different as the created architectural orientations would be.

Role of networks in transforming the architectural design methods

Information technology has overarching impact over the various aspects of the human life and profession of architecture is affected by the wave of globalization. The information technology has created the possibility to design and create special forms that could not be tenable in usual ways and entered the virtual space into the filed of architecture design. Design by small office has been replaced by collective design approach. The multinational companies are working at global level and connected to other companies in different parts of the world. In many significant projects through out the world many architects put forward their ideas and discuss about them emphasizing on the collective intelligence and holding contests. Through the networks the specialists' services are now available all over the world and the architects cannot survive any longer inside their small offices without effective connections with other parts of the world. They need to achieve new skills to fix their position in the network society, a new global society that has been underpinned by meritocracy, decentralization and attention to human collective intelligence. In the future world, the conventional methods of design cannot guaranty the growth and survival of an architect in his or her profession. (Hightet al.,2006) The collective intelligence is not just a technique but it should cover all social, political and cultural aspects and even all professions. According to Douglas Ingelbert (2006) "collective intelligence is not just a "object" but in lexical point of view , the collective means the sense of joining together and in this way not only the ideas but also the people join together and constitute the society.

Information viruses as a replacement for patterns

The intelligence help human to discover the relation among the elements and components thereby some of these repetitive relations among different elements can become pattern in human memory and fixed via rehearsal. These relations are registered and coded in human mind and can be expressed in the form of scientific results forming part of humankind science as artificial products are coding part of humankind collective culture. Knowing the governing and repetitive patterns among elements of the material world helps human to have better interaction with surrounding environment because human instinctively tends to be harmonized with (imitate) the patterns and paradigms and in social point of view tries to be harmonized with the group that he or she is connecting with thereby reduces the differences and achieves a common sense and language with other members. In the world of information, there are much junk and even detrimental information, in addition to useful reproductive patterns that are multiplied due to their special properties which substitute the appropriate patterns in human memory. These junk or detrimental information pieces can be called as information viruses although Richard Dawkins described them as Meme. Dawkins used this new term in his book "The Selfish Gene" (Fig. 6) exploiting from the pronunciation similarity between Gene and Meme to induce this meaning that Memes like Genes contain information codes with extreme multiplication capabilities with only difference that sometimes they seem to be very useless or detrimental items. According to Dawkins, Meme includes every idea or behavior bearing non-material condition and can be transferred from one person to the other via learning or imitation and some of the Particulars of Memes are:

- Immaterial;
- Extreme power of multiplication;
- Sometimes are useless and even detrimental;
- Multiplication in cultural-social (network society);
- Includes thoughts, ideas and theories; and
- Includes modes, moods and attitudes, dance, songs, etc. (Salingaros,2002 a).

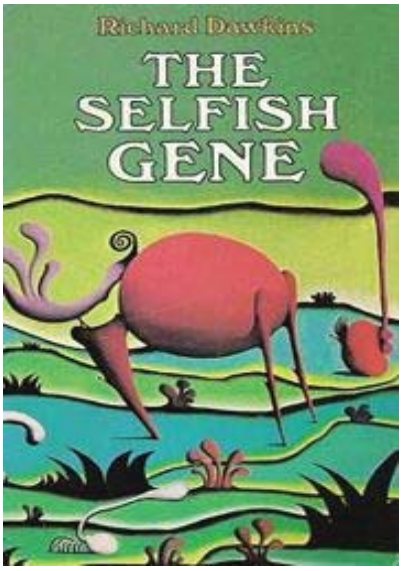


Fig. 6: http://en.wikipedia.org/wiki/Meme

The simple virus structures distinguish them from other living creatures and help them to enjoy from significant multiplication

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capability. The information viruses achieve their reproduction capabilities due to their extreme communication capabilities and the secret lies in their simplicity that assist them to spread like contagious viruses in the information world and sometimes even replace the effective paradigms.(For example void ideas and modes substitute the proper paradigms). A detrimental information virus can be covered by a beautiful cover or capsule thereby with deceptive appearance and strands inside a person mind and transfers from one person to the other. Sometimes the relation between an idea and its expression is astonishing. An idea can be connected to things that have no relation with them but help it to spread and transfer (Diagram 4). The information viruses tend to destruct useful files in human mind and replace them with other things. They spread rudely and detach human from its spiritual aspect and void him or her from spirituality and thinking day by day. The spread of viruses depends on the degree of their impacts on human mind. In wide information networks the information can multiplied although the world with light speed and infect the people minds who suffer from an effective protection system. In this case, the host person or society somehow help multiplication of detrimental and wrong information and a detrimental circle starts for which the consequences will be reflected in the physical world, society and personal relations.

Architecture and information viruses

The networks entail all kinds of information and transfer them without any distinction. Emphasis on the information value needs some criteria to judge the information. In architecture, the information includes pictures from an building or its construction plans or a plan that created by the computer. The rendered pictures are fixed in the mind and made an evolution and reproduced, but it dose not mean that all information that distributed by the networks are useful and beneficial. Some of this information is offered covered by an attractive sheath free from any significant value. Sometimes, an architectural virus lives in a physical and information world simultaneously. The information world includes human memory, mass media, computer data, saving terminals (computer, network, book, etc). In modern architecture, computer aided design plays an important role and acts as a laboratory in which useful or detrimental pieces of information are produced before entering into the physical world. Sometime, architects presumed the computer produced pictures more complete rather than their

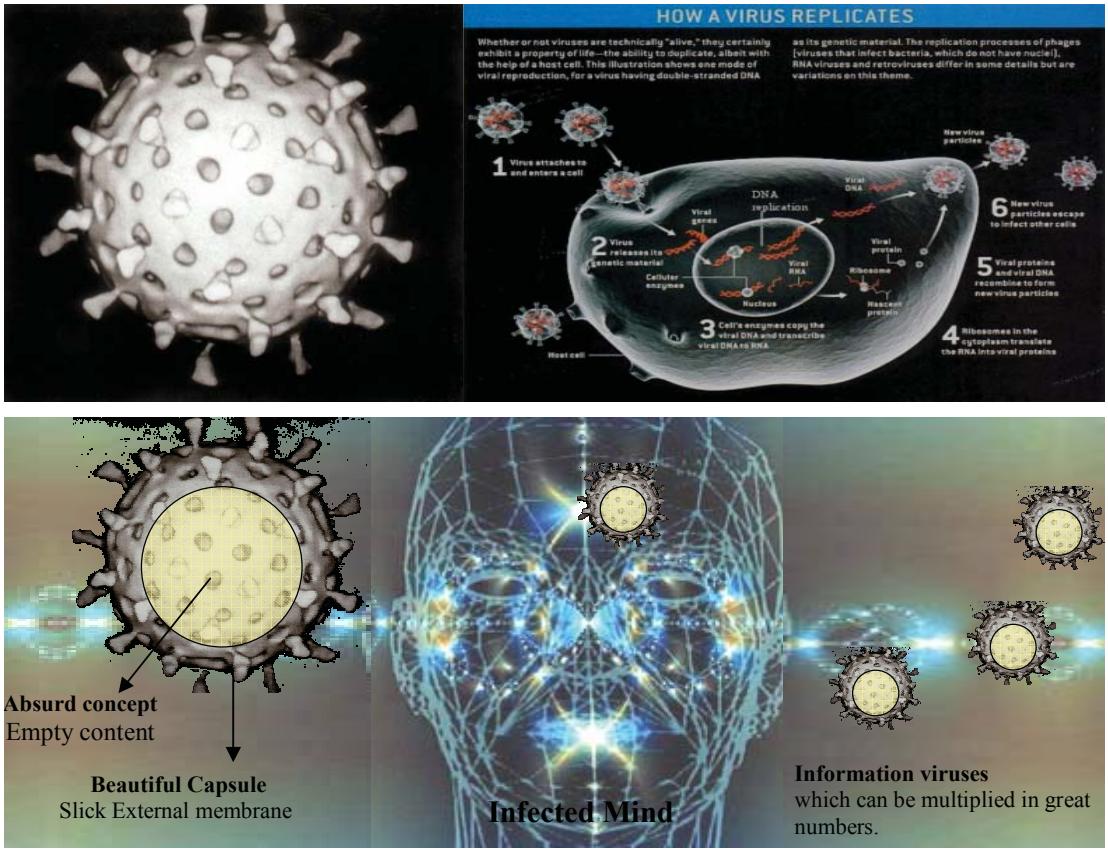

Diagram 4: Information viruses tend to distruct useful files in human mind.(source: Authors)

real counterparts and commits noticeable mistakes for this reason. The virtual figures can produce a positive attraction inside the reader but cannot say a word about sense of place and real physical property of the erection (Salingaros, 2002 b).The virtual space is a good opportunity for simulation of the external realities but it happens a lot that virtual space is so deceptive that guide the user to a wrong direction (computer plays in which massacre and man slaughter carried out which are the wrong actions in the real world). If one goes through the architecture books and magazines, we will see a world full of strange pictures completely different from the real world that we are living in it. In this virtual world, all things degraded into two or three dimension pictures (reduction) and this kind of brevity helps information multiplication as in modern movement the ideas like simplicity and elimination of decorations in architecture, created these capabilities in the forms that transferred and multiplied all over the world (Many of modernization problems particularly in developing countries are derived from their imitative nature). Nowadays, architecture education tends to replace main part of this virtual world with real world. And the major flaw in art skills and understanding spatial realities are perceptible among new generation of architects.

Society and immune system against information viruses

As viruses employ package or cover to transfer in to the host band change their appearance to mislead the body immune system, the information viruses also oppressed the mankind immune system through ideologies with beautiful concepts. For example, the initial attraction of modernity movement was attributed to slogans such as boring dominance of conventional architecture, decoration a kind of crimes and captured all over the world. The modern architecture, leads people to cheap, simple and senseless apartments with low ceiling, distorted windows, small kitchen and eliminated many valuable traditional spaces. In many cases improper imitation from modern architecture leads to construction of buildings with no harmony with local and domestic traditions and in contrast with users' needs. Therefore, every society must have its own powerful defense system to accept or deny information in any possible fields. The architects are trying to prepare new definitions for architecture in the future world using try and error practice thereby help the human to benefit from an appropriate relation between physical world and information world and free him from wondering in the flows of space.The Iranian architects must put the research about the future as their paradigm with emphasis on the collective way of thinking and establishing an thinking base that not remain oblivious to the past, in this way they release themselves from stationary manner and act as effective and not simply as affecting member of the world community because many of the problems in current Iranian community derive from absence of future planning and inappropriate imitation in all fields including architecture and urban development (Ebrahimi, 2009).

CONCLUSION

The architecture in the space of flows and timelessness must be redefined. In the new millennium, a noticeable and global architecture has not been formed and architecture tends to be oriented toward pluralism (In contrast to modern architecture that suddenly revolutionized all countries of the world). The multitude of the ideas and views in relation to architecture might be found appropriate for this period of time as a search for finding the best possible approach of architecture in network societies. The most significant question for architects in new millennium is to find a proper structure for network societies faced with ever increasing development and to fix its existence. In Iran, structures of network societies are underpinned by development of telecommunications and transform our not so advanced society by another hidden movement that penetrates into all of its elements. The transition period is a very sensitive era in our society and architecture needs to be prepared and compiled in such a way that forms the society structure and helps to redefine its real identity. Therefore, knowing the society in transition period and preparation of appropriate architecture in compliance with governing time soul is the most significant challenge that the architects are dealing with. The study of roots of this issue and paying attention to grant intraneous property to the development operations can lead to policy makings and plans that establish appropriate structure and spiritual ,dynamic, smooth and flexible space. Appropriate structure is a panacea that heals many of mental and psychological disorders in the transforming society. Architecture can be seen as the assistant for acquiring a worldview and releasing from identity crisis. A kind of architecture that connects human and nature (As domestic and conventional architecture did) can bond the past, the present and the future. Architecture as a part of artificial environment must connect human with the nature, the past and the future world. On the other hand, a kind of architecture with domestic-global approach can heal the modern human problems and safeguard its appropriate space for living. The greatest human preoccupation in the near future will be the communication method between physical world and world of information. Mankind spatial limits reduces the human to perform many of its operations that formerly done in physical form in the virtual world and employ terms such as "rooms, lobbies and cafés" and verbs such as "enter" in the virtual space. These metaphors potentiate the sense of place in the virtual space and grant more deepness and familiarity to the sense of space.If the information viruses multiplied with the same speed as they do today, in the near future we will see that information and telecommunication technology will control the humankind mind and soul and capture the human existence and revolutionize the concepts of life. Those humans that connect with world of information will act like intelligent robots and their mind will be filled with information viruses produced with considering the industrial goals. These people have no concern about the destruction of the environment and saving what had been produced by the earlier generation.

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The modern human has continued his active role in changing the world since he is the product of concurrent evolution of human kind and information and cultural viruses. If the balance between information world and physical world is not achieved, we will be faced with mono dimensional generation with no capability to communicate and understand the physical world.

Under this condition, the architecture acts like a middleperson who connects the human with its real environment and its biological virtual world. If architecture performs its job in a proper way in a network society, it will minimize the identity crises and can grant meaning and conceptuality to the human life in the near future.

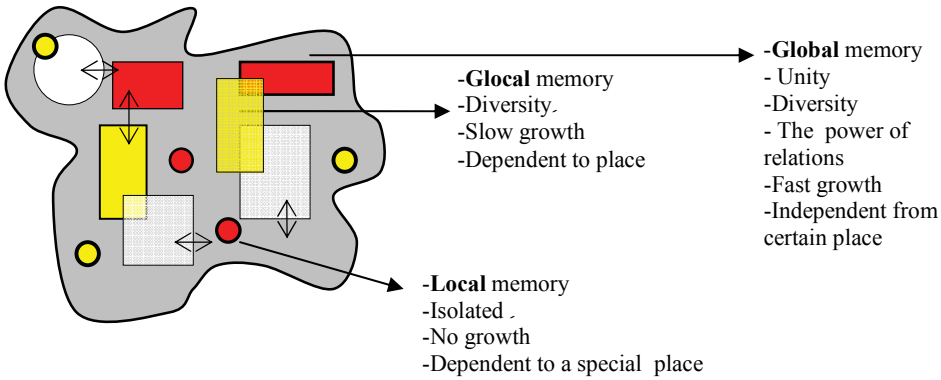

Diagram 5: Relation between global and local memory will reduce their faults and therefore will make Mankind more aware to create a desired space which bring happiness for all of the residents of the world.(Source: Authors)

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