

HUMAN-NATURE (ENVIRONMENT)– DESIGN: A TRILATERAL RELATIONSHIP

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ABSTRACT

The aim of this paper is to identify and evaluate historical breaking points, based on a retrospective assessment in context of the trilateral relationship between human – nature – design as well as understanding and resolving its negative implications. This study takes into consideration factors that fabricate the behavioural characteristics of the human (society) in this relationship.

The paper addresses the following topics: the power of nature, who is human, how did the humanoid become human, ecology and ecological relationships, ecological cycles, environment and relationships, nature-human relationships, energy and the laws of thermodynamics followed by a retrospective assessment within the conceptual framework of sustainability and planning-using without destroying nature, an assessment of future concerns and potential solution suggestions.

Key Words: Human, Nature, Environment, Ecology, Design

1. Introduction

Humans are conscious and social creatures. Society is a group of people. Nature is everything that exists spontaneously other than consciousness. Everything in the universe, including the conscious human, is a product of nature. [1]

Knowing how humans evolved, understanding and recognising the relation between humans and nature in the evolution process will offer insight into planning and design of our environment and hence nature within a sustainable framework.

This paper essentially investigates and discusses the increase in negative implications in nature that have been triggered by the emergence and development of the human being. The different dimensions of the human - nature relationship and the mutual interaction between the two have been discussed and interpreted in this study. The paper also elaborates on the things that can be done to address concerns about the future by individuals, the society and designers (architects and planners).

The starting point of this paper is that design is for people and it is done by changing and usually destroying nature. Although the main objective of planning and architecture is to make human life more comfortable,

interfering with nature without considering the future can easily become life threatening to humans themselves. Constructive results can only be achieved by collectively examining topics (related to human-nature-design) that overlap in different scientific disciplines.

2 The power of nature

As oceans, continents, mountain ranges, lava, vast forests, coal deposits etc. were forming billions of years ago, each new formation became the cause of its successor. In other words these formations were accumulations within a specific sequence.

Life on planet earth began some 3.5 billion years ago. Early forms of microorganisms were eventually joined by multicellular life forms. In time, plants and animals of various shape and forms came into existence. Life in nature gradually became more complex due to the interaction between organisms.

At the beginning, humans behaved as a part of nature and did not assume important roles. But the human species stood out more as they gained awareness and attempted at harnessing nature for their own interests. Rule of nature had fallen into the hands of humans, at least partially. Initially, it was acknowledged that human beings were a part of nature just like a bug, grass or bird, sharing nature with other life forms. However the human race went a step further than sharing. It invaded the habitats of other organisms and used these places to create more space for its own kind.

3 What is the human being?

“There's a giant in the world. He has hands and feet that can travel thousands of miles in a single day. He has wings that can carry him up above the clouds, higher than a bird can fly. He has such fins that he can swim under the water better than any fish. He has eyes that can see the invisible, ears that can hear what people are saying on the other side of the world. He's so strong that he can go right through mountains and stop headlong waterfalls in midstream. He makes the world over to suit himself; plants forests, unites seas, waters deserts. Who is this giant? This giant is man. How did man get to be a giant? How did he become the master of the Earth?” [2]

Humans could not have developed if they were alone and they would have continued to behave like animals. What transformed animals into human is effort. If humans had lived alone, rather than in social groups they would have never become human beings and create culture. That is why it is not possible to think of early humans in the “plural sense”. Tool making, hunting, lighting fire, building shelters and working the soil... These are all skills that have been acquired by living together. “Culture and science is not the creation of a single person, rather it is the collective social power by the effort of millions.” [3]

“Any individual that has not been confined to live on a desert island from birth till death will come into existence and develop dependent on the millions of people in that environment and the many that have lived before, much more than his/her own means.” [4]

What evolved primitive humans into what they are today is their collective hunting and tool making efforts. Hunters would attack a mammoth in flocks, thrusting not one but dozens of spears. The mammoth was much larger and more powerful, but humans were smarter. In defeating the largest mammal on land, the human used his mind and collective strength with other people.

“It took billions of years before human beings reached the biological structure we are accustomed today. Compared to a period of billions of years, 10,000 years is almost irrelevant. That is why it would be accurate to say that the biological structure of human beings has changed only very insignificantly over the last 10,000 years. The difference between primitive society and the cultural and social order of modern society lies in the learning experiences of the two societies. Culture is the medium that allows the transfer of knowledge and manners from person to person and generation to generation. Culture is the memory of a

society. It is a tool for society to hand down knowledge on the lifestyles and lessons learned to future generations. The difference in society stems from know-how and culture is the medium for this know-how.” [5]

3.1. How did humans become humans?

“Praying to the skies, begging to or cursing it - this is the defining sign of human quality. Its most copious symbol: Humans have the power to make abstractions. Because shouting out to the skies requires an understanding of what the sky is. What broke the connection between animal and human? What evolved hominoids into human beings? It was the ability to create abstraction and concepts.” [6]

In the face of nature, humans started to think based on acquired knowledge. Words and concepts started to replace bodily expressions and gestures. And hominoids started to transform into humans. Humankind differed from all other species on the planet. “Verbal expression brought an end to direct involuntary communication amongst people.” [7]

“Humans had long surpassed the natural boundaries that confined animals and mankind alike. Tool making offered humans access to new food sources and somewhat forced nature to be more generous.” [8] Humans expanded their habitat after they started to hunt large animals.

One change was leading to another. People had to settle at certain locations for longer periods of time after food production began. It was not possible to carry their game around. Humans were no longer so intimidated by predatory animals. Having said that, they still needed a safe shelter to be protected from the cold (the climate) and snow storms.

Humans created a second nature. It is possible to predict natural phenomena like earthquakes, volcanoes, cyclones etc. and take necessary measures. However it is not possible to change the events that take place.

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From the early ages humans perceived nature as something to outdo, conquer and surpass. Humans confronted nature and fought it. Meanwhile nature continued to give generously to humans. Many irreversible unwanted mistakes were made, and this continues today.

Natural resources are being depleted and polluted, and little regard is paid to the issue. However, scientists are offering insight into what humans can expect in the future. But this has not been enough to curb mankind's uncontrolled depletion of natural resources. Forests are intentionally burnt to open space for settlements. Construction licenses can be acquired within the protection zones of fresh water basins. Sewerage is spewed out into rivers and seas. Officials continue to promise a cleaner environment. Lacking adequate green space, cities use air conditioners to tackle the heat, consequently harming the ozone layer. Mankind might be fooled to believe it has outdone nature with the help of technology, but it will be too late when the reality that the real loser is humans themselves. Nature is being consumed.

Humans now live longer and worldwide population is growing. It is reckoned that early humans left Africa for other continents in an attempt to find more food sources. However humans no longer have alternative places to go on the planet. It is also well established that life in outer space is very limited. Preoccupied with solving daily problems, the future for mankind will be governed by chaos, congestion and all types of pollution.

Maybe it is mankind that has alienated itself to the concept of nature. Because people are not interested in people they are unacquainted with, even a cry for help will (frequently) be ignored. The same could be said for nature. We live in a society where plastic bags and other waste are disposed in the seas and forests

without remorse. Rivers are polluted, waste is accumulating, and people are inhaling the soot spouting out from chimneystacks.

For once know-how and culture should be used to raise social awareness about future prospects. Media in particular has to use all its resources to assume a leading role in an awareness raising campaign. The topic should be emphasised adequately within the academic system.

4 Ecology, ecologic relations and ecologic cycles

Ecology is the scientific study of the relationships that humans and other living organisms have with each other and with their natural environment. The scope of ecology broadened to include human-nature relations after environmental problems gained significance.

“Organism cannot survive in nature alone. Living organisms exist in physical-chemical environments. Species that share the same space with organisms and have an affect on those organisms make up the living environment. The environment of the fish in the lake is the other plant and animal species within that lake. The non-living environment of the organism is the material environment like land and water. The physical-chemical state of climatic conditions, soil and water, daylight etc. make up to non-living environment. The non-living environment affects organisms and the existence of organisms affects the non-living environment itself. Undoubtedly, amongst all living organisms humans rank first in changing their environment. There is no other creature capable of removing vegetation of vast areas to build mass settlements and open agricultural land. Humans remove minerals from the non-living environment or introduce manmade chemical compounds to the environment. Consequently humans have assumed the responsibility of rapidly and uncontrollably changing the living – non-living environments.” [9] However, it is possible that future generations will not experience nature at all.

All living organisms exist on a very fine surface layer known as the “ecosphere”. There is a need to comprehend the value and significance of the ecosphere because it is under threat in many aspects. Increased forest fires, desertification, acid rain, chemical substance induced ozone layer depletion etc. are only a few examples.

“Like other living organisms, humans exist inside the ecosphere as well. The rules of ecology apply to humans, too. However the relation humans have with the environment and nature is quite different than of other creatures. Other than biological sciences, these relations involve disciplines of social sciences including economy, sociology and psychology. Actually, the fact that many scientists have fallen for the mistake of isolating a number of scientific disciplines from the environment has resulted in people gradually losing ties with nature, effectively yielding the imbalance we witness around us between nature and mankind.” [10]

Establishing harmony between nature and human societies is only possible with local governments’ awareness raising initiatives. Instead of opening agricultural land for development, turning a blind eye to illegal settlements and transforming green space into houses and offices for constituents’ votes municipalities have to endorse an attitude that encourages projects that are nature friendly.

5 Laws of energy and thermodynamics

“Ecologically significant substances are exchanged between living organisms and the non-living environment in nature. Matter within the living sphere known as the ecosphere or biosphere move in cycles to be reused by living organisms.” [11]

In the simplest definition energy is the power to do something. Energy is always related to a task or movement. The many different forms of the relation between matter and energy can be seen in every part of

nature. The movement of animals, evaporation etc. requires energy. Life can only be sustained with energy taken from an exterior source.

For example, for plants, energy is the sun. The source of energy for consumers is chemical energy contained in nutrients. "Energy in nature can be found in many different forms – mechanical, chemical, electrical, nuclear, thermal and illuminating energies. After different types of energy transform into each other, enabling various activities in the process, the final form of energy is heat. The functions of all living organisms involve energy transformation and finally heat emission." [12]

According to the law of conservation of energy, energy cannot be created from nothing, nor can it be destroyed.

- According to the law, the amount of energy that leaves the system is equal to the amount of energy entering the system regardless of the form of energy and how it enters by factors within an ecosystem.
- According to the law, the most important finding of thermodynamics is: at each energy transformation, a part of the energy becomes too dispersed and irregular to be effective.

According to the first law, energy does not disappear however; it will eventually become unusable by the system. It will spread out into the environment. In brief, the part of energy usable for tasks during its flow through the ecosystem gradually decreases. Looking from this perspective, we face a serious problem: when usable energy on the planet is completely depleted, it will be impossible to do anything and the world will no longer be a suitable habitat to live in.

Currently the positive aspects of certain environmental activities (paper recycling, wastewater treatment etc.) are on the agenda. However the rate of recovery is never 100%. Considering the energy spent on recycling/treatment the amount recovered does not add up to much.

6 Conclusion (sustainability + using nature without depletion = design)

The fundamental cause of environmental problems is the mentality and approach that isolates mankind from nature. Beginning with Industrialisation and even since the 17th century people, particularly westerners have sought ways of conquering nature. Mankind perceived nature as a machine that could be operated to produce the products he needed. Actually mankind's survival is dependent on the existence of other creatures.

Living natural resources are unsustainably and rapidly depleting. For instance, most of the demand for seafood is met by fishing, not from fish farms. Having said that fish farms are ruining the waterfront. Many timber products and various other natural resources are acquired from nature. Excessive uncontrolled picking of wild plants has left many endangered species in Turkey.

The problem lies in that people focus on themselves, the moment they live in and the near future, not that of the society, although they live in one. They are not the least concerned about the next generation. This is imposed by the rules, the practices or generally speaking governments. This system makes people selfish. "I come first. I may consider the society, but I needn't bother myself with nature. I will not be here tomorrow!" Recent discoveries and inventions will make people look into the future differently. Increased life expectancy in particular, will force people of today to think about the environment and the future.

On the other hand the balance of the planet is shifting due to the way we choose to use it. The average mean temperature of the North Pole continues to rise, ice caps are melting and as a consequence climates in other parts of the world are changing too. Fish, birds and many other animals are forced to migrate to habitats with more suitable climatic conditions. People remain apathetic to these developments.

The solution is to raise awareness through education. This is only possible if mankind can succeed in changing its out-dated status quo habits and mentality. We have to be more considerate and manage natural

assets optimally. Measures have to be taken to implement regulations that are ecologically sustainable. Future generations cannot be stripped of their right to meet their own needs.

There are things to be done in order to avoid such an ending. The emphasis should be on spiritual values not materialism, on the society not the individual. Plans should concentrate on increasing quality of life through clean air, water and green space, and not accumulating riches. The soil, water, air and living natural resources should be protected carefully with a sustainable approach. Local governments should have more weight and power in controlling the use of nature and living natural resources.

“He who is at peace with nature will be at peace with society and rest of the world.” [13]

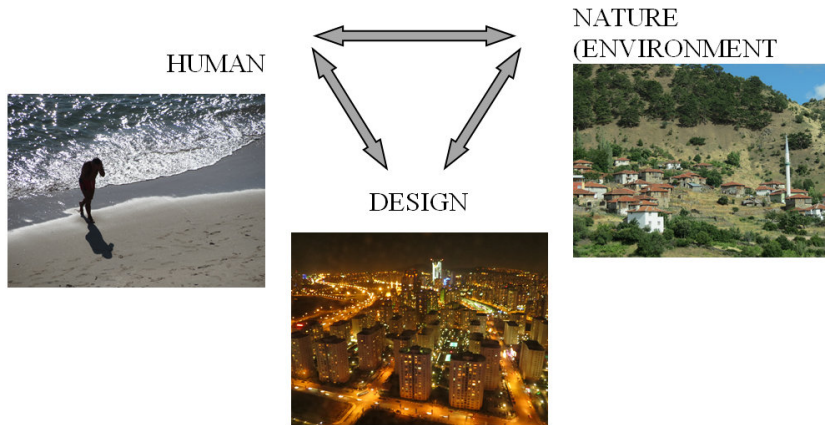


Figure 1: Interaction between human, nature and design (E. Aktan Archives)

This article has focused on the concepts of human, nature (environment) and the interaction between them. However, in this context, the article also explains the need to urgently focus on design (architecture and planning). It is imperative that a detailed assessment is performed to find answers to question like “for whom?”; “where?”; “in what framework?” and “is it necessary?”. Careful consideration has to be given to the positive and negative impacts on the space used for design, the piece of nature that will be covered by concrete and on environmental assets, for today and the future.

The priority is to design and plan our environment according to an economic development model that is ecologically sustainable, does not deplete natural assets and does not strip future generations of the right to meet their own needs.

The objective should be to use and design nature (environment) without depleting it.

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