

## Articles

From *Document R-GEN-A*; 364, Doxiadis Associates, 1965, 26 p.

### **The New World of Urban Man**

Thus we reach a first conclusion: In thoughts and conception, in will and action, the surface of the earth is our cosmos and defines the human content, order and scale from these points of view. With them we have dealt when speaking of order in our cosmos.

We have now to deal with the feeling man. His senses have certain limits which form the outer boundaries of the human scales. His body has certain dimensions and capabilities which define the human scale of his immediate surroundings; how far he can touch, see, hear, walk or jump are the basic criteria for the definition of the shells to be created around him. These dimensions, which are related to the senses of man, are a cause of confusion but also of primary importance for the formation of our urban world.

Thus we reach our second conclusion: for the feeling man, the major human scale of the surface of the earth is divided into minor units and scales directly related to his senses. We will be concerned with these from now on.

#### **THE NATURAL HUMAN SCALE**

Man is the unit through which we can define a series of shells in a completely human scale. The smallest of all- and perhaps the oldest- is his clothing. It has to fit his body and satisfy his senses of touch, sight, hearing, smell and taste, by being pleasant and by not hurting them at all.

The next shell is the room which man builds to his scale to accommodate one or more persons. It is longer and broader than it is high because man has eyes looking out on a horizontal plane and not on top of his head, and because he can move around more than he can jump vertically. How big the room is depends on the functions to be performed and the disposition of and the relationship between the "human bubbles" surrounding every man - as Dr. Edward Hall from Chicago so aptly named what could be defined as the minimum human space for a living being.

The combination of these human bubbles leads to certain densities which differ in accordance with the purpose and the art with which they are assembled. One person per square yard gives the feeling of ample space if the bubbles are in rows oriented towards a stage, otherwise this density is inhuman. This combination is also the key to many problems of social contacts. Bubbles on the same level of people living in houses in the same small street are naturally interconnected; when arranged vertically though, on different levels and floors, when head corresponds to feet and not head to head, they lose their

contact.

Similar considerations lead to a human scale in all sorts of enclosed or open public spaces. The width of a street is of human dimensions if the number of people moving in it justifies it. A local residential street for pedestrians only with no through traffic can be eight to twelve feet wide to allow two couples walking in different directions to pass. If it is a collector street then it has to accommodate six, eight, or more people, simultaneously. The length of the street is related to its width, but also to the ability of man to see certain buildings up to a certain distance.

The dimensions of squares are derived from the maximum distance at which people can hear or see events taking place in the square, which is seldom more than a hundred yards, in length or width, and in relation to the psychological angle of preferably 30 and no more than 60 degrees from which most buildings surrounding it can be seen.

The whole community has human dimensions if people do not need to walk more than ten minutes to reach its central functions. This has been proved in many occasions and more recently in a survey of desirable dimensions of university campuses.

These series of human scales, from room to community are completely natural and have allowed the creation of the visual arts by man who was sitting or standing or moving at a speed of up to three miles an hour. The artistic forms created by man from the whole shape of the space down to its finest details are human and based on a relatively static relationship between man and his container. The aesthetics of these are derived from the aestheses or the human senses.

## **THE TRADITIONAL HUMAN SCALE**

For thousands of years man built his settlements only on a human scale. He did not have any reason to deviate from it. His houses, buildings, roads and squares were always conceived in order to accommodate man and his senses, and they were always successful.

The total dimensions of villages were always human. The very size of the village community was limited by the maximum distance that man could afford to walk to his fields, work, and return before sunset, which usually did not exceed one hour's walk each way. This meant communities with no more than a thousand people, which meant a built up area for a village where walking distances were covered in much less than ten minutes. But even the cities did not cover areas larger than 2,000 yards, which meant maximum walking distance from the center of no more than 10 minutes. Very seldom, perhaps only once in classical Greece for example, were such dimensions

surpassed and then only for very short periods. Almost all the many thousands of cities of all civilizations up to the seventeenth century, with only some few exceptions like the capitals of empires - Rome, Constantinople and Peking - complied with this rule of ten minutes maximum distance from the center. This meant not only a short human walking distance, but also natural physical size and a city that could be easily seen as a whole from any high point.

The fact that these natural rules of human scale from room to city have been strictly observed for many thousands of years by all civilizations has strengthened the meaning of the human scale. Not only was it based on human dimensions, but it also became a tradition and man by his nature and his evolution became more and more connected with it.

Then, beginning with the eighteenth century, the cities, streets and squares, due to new pressures lost their human dimensions. In some cases, where the change took place slowly and was later intensified, people did not react. In other cities with longer traditions, where changes were proposed overnight, people reacted vigorously. Such was the case in Athens in 1830 - when two planners proposed a widening of a commercial street from twenty-five feet to more than sixty. The inhabitants protested that thus they could no longer talk to each other from the one side of the street to the other, meaning without saying it, that the width was losing its human dimensions. The town-planners who came from the West laughed at that, but people were stronger and thus they did not allow the remodelling of the old city which has kept its human dimensions.

Other cities were not so lucky, and many of their human values were gradually lost; and today we witness a complete lack of interest, disrespect and ignorance of the natural and traditional human scale and human order. That is something we suffer from, but we do not want to admit it.

## **THE EXPANDING HUMAN SCALE**

Let us try to understand what has happened. When the population explosion started, the cities grew larger, but the technology of transportation did not provide any corresponding solution. As a result, planners had to cut diagonal streets and avenues through the normal city structure in order to reduce distances to the minimum.

Then came the technology of new transportation with many machines of all types moving at increasing speeds. The relatively static character of the city changed, and is still changing, into a dynamic one. This created confusion in many respects of which I will mention only some.

First the micro-scale of the moving vehicles. We still are not aware that the new speeds, let us say of the subway,

are not human and therefore when we are being transported at such speeds we ought to lose aesthetic contact, contact through our senses, with the static space outside. Instead we leave windows in the subway cars to allow us to see tunnel walls and pipes speeding by our eyes and creating an inhuman, anti-aesthetic conflict. While our cars and planes opened new horizons for us we are gradually forgetting to walk.

In a similar way, being overwhelmed by the new opportunities of the expanding human scale - high-speed machines, telephone, radio, TV. etc. - we think that we have solved all our problems of human communications, while we have abandoned the most natural ways of contact, the ones not requiring any mechanical transportation of our body. What I mean is that in the process of expansion we abandoned the natural man-to-man contact, and the importance that it had for our city, and its local communities. While we have been building new communications in order to contact the other end of our country or the world in order to transmit our point of view and to sell our product - we have neglected the contact with our neighbors.

In the same way our new opportunities to live in the outskirts led us away from the central areas of our cities, and this led to their abandonment and decline.

We can now clearly see that the mechanically expanding human scale had, together with many beneficial results, one very detrimental: the complete disrespect for all solutions not based on mechanical means, which in turn meant the abandonment of many human values and the decline of the importance of the human scale.

## **NECESSITY OF HUMAN SCALE**

It is now time that we re-examine the question of human order and human scale so as to decide whether we should abandon it, as we are already in the process of doing, or re-establish it.

There are many arguments which speak for the necessity of human order and scale, while I do not know many against it. I will mention some of the important arguments in favor.

First we have the physiology of man. His own body, his own dimensions, movements and senses demand the corresponding formation of the space around him. Unless we change man, we have no justification for abandoning the human order and scale, which are derived from his own constitution and physiology. Today we are even forgetting how to move; Huxley is, therefore, right in calling us the "sitting addicts" (Ref 6 ).

We also have the long history of man, where everything was done on a human scale, except in few moments such as the pyramids in Egypt, where the human scale was exceeded. The greatness of man's art was based on human scale, if not always, on human prototypes.

In the social field, we desperately need the personal contact. I cannot see how parental love and affection can be substituted by mechanical extensions of our senses, or how we can avoid the direct man-to-woman contact corresponding to at least one half of all daily contacts. We have the proof that although the number of daily telephone communications in great cities increases continuously, the person-to-person contacts for business or other purposes do not decrease at all. We very badly need the natural physical contact between people and the benefits from it, just as we need to eat natural food and not only canned. As long as we do not prove that we can, without danger, substitute all person-to-person contact, we will continue to need it.

We then have to think of utopias. For twenty-four centuries at least man has dreamed of small human communities. Whether he is trying to idealize the ancient Greek city, or escape from the densely built Renaissance forts, or from the industrial megalopolis of the last two centuries, even when he is escaping from a beautiful California suburb, as Aldous Huxley does in his *Island*, man always designs a utopia of human dimensions, where people walk, connect with each other in a very natural human way, even if they are using the new conquests of science and technology. The utopias always tend to be small, static communities from one thousand people, as in Skinner's *Walden Two*, to a maximum of 25,000 as in Plato's *Laws* (Ref 8). The only exception of this basic rule for the rise of a human community that I know of, is the proposal of H.G. Wells in *Men Like Gods* (Ref 9), where he proposes a population of 250,000.

If we now think of our political institutions, we will find that the small human community is indispensable for the proper functioning of democracy. It is only in the lowest human units that we can obtain personal knowledge of situations and people, and can be trained to elect the best leaders and those who are by necessity in indirect contact with us, thus solving our local problems.

On the other hand, the small human community without the intrusion of machine is indispensable to the existence and development of the arts. Arts are related, whether we want it or not, to human senses. And, since science is going to rely more and more on great organizations, art is going to remain one of the very few fields of private initiative. In the merchandized society that we will be forming, we will need more and more art, for the sake of the artistic man but also for the survival of man as an agent expressing himself freely. However, more art means

the human dimensions of a community, a community where one can walk, sit and enjoy art as a part of his life and not as a protected treasure in a museum.

We badly need the human order and scale!

### **RE-ESTABLISHING THE HUMAN SCALE**

We have many reasons for re-establishing the lost natural human scale but we are moving towards avoiding it by our inertia and passive attitude. We must do it as it is of greatest importance, and in order to do it we have to re-establish the basic unit of the city which has been lost and forgotten under the impact of the new forces and machines. To the best of my knowledge, this basic unit is an area not larger than 2,000 by 2,000 yards and quite often smaller, and within it we can, while serving it by cars, re-establish the human scale completely.

This is relatively easy in new cities and new parts of existing cities; and my personal experience in all sorts of surroundings convinces me that all related practical problems can be dealt with, after the basic decision has been taken, so as to keep man in the middle of the synthesis and allow the cars to approach it from the outside without ever crossing it. In older areas of the city this principle can also be implemented; though it will require a greater effort and persistence, which are going to be worth it when we think how much we can save in this way, how much of cultural or economic value that otherwise would be lost.

In the first phase, the great movements of cars can be on the surface of the earth, as this is the easiest and simplest solution, but gradually in subsequent phases these arteries will go deeper into the earth and finally they will be covered as this is going to be the ultimate solution for our cosmos.

In both phases, the creation of such natural human communities means the subdivision of our settlements into equal units, corresponding to what man has always considered as his city for many centuries. I know that there are objections to this rational division of cities, but I have never been given any reasonable justification for them. The city, or the human community, is now in relation to the growing universal city of man, what the city "block" has been for thousands of years in relation to the city.

These natural human communities are very small in relation to our expanding settlements and scales. What are we going to do about them? What happens when we go beyond our own minor unit in order to find employment, education, entertainment, or friends? There are two courses of action to follow and both are related to the problem of transportation, which, let us not forget, has

caused the changes in our settlements.

The basic course of action is to try and keep the notion of human community valid not only in the natural scale but also in the expanding one. This may look absurd if we think of the dimensions of the natural community of 2,000 by 2,000 yards, though it is not so absurd if we remember that for man what is of value is not the scale of yards or feet, but that of time, and that the human dimensions of cities throughout the long history of man have been defined by a ten-minute-walking radius. If we consider this valid for the expanding scale, then we can decide to expand mechanically for as long as speed will allow. If we reach the speed of 2,100 miles an hour, by keeping the ratio of capillaries to aorta, then we can reckon that the average speed over large distances may be for at least about 70 miles in each direction, or a community 140 miles in diameter. We will thus have a series of human communities moving from the natural to the artificial ones.

As long as speeds are lower, the diameters are going to be smaller, but the important thing is to reduce the total traveling time; and this means a new conception of a circulatory system probably by small plastic bubbles in special tunnels, taking us from the basement of our home, to every other basement anywhere in our cosmos.

The second course of action is derived from the first. Once we decide to drive or fly at the highest speed, we must disconnect this action of movement from the outside static landscape. Our bubbles, whether they are personal, double, or multiple ones, should be completely isolated from the outside world and should create a completely static surrounding for us. Thus man is going to live in relatively static surroundings always without awareness of contrasting speeds such as is usually felt through windows, doors, air pressure and non-controlled acceleration. In this way man will remain constantly within his human scale.

## **A HUMAN COSMOS**

We can now see the solution to our challenge. We can indeed build the universal city of man to cover our cosmos and we can build it in a way which will not make man subservient to the machine but will set him free in a human cosmos.

The thinking man will study the new system of order in our cosmos, which will have to be based not on decentralization of existing settlements, but on a new centralization which will be built for the present and the future, in order to survive the colossal pressures to come at the same time preserve the values of the past.

The willing man can then build what the thinking man has conceived. This cannot be done overnight - there are no

magic solutions and our failures and disappointments are very often due to the fact that we believe magic solutions do exist. But it can be done in a way that not only our descendants but also the present generation can see tangible results.

There is one basic requirement for this realization: that instead of letting evolution "happen" by the multiple uncoordinated decision-making that builds our cosmos, we will guide it in its broad lines, as this will then give man the greatest freedom of choice and will free him to live, think and create. To achieve this we will have to write the specifications of the cosmos of man and let all the multiple forces create it. We will have to create the framework: it is actually given by nature and by the dimensions of the problem. We only have to specify it. Within it then all forces are going to fit and develop not in conflict over the use of space, but in competition over its quality.

However, the thinking and willing men will not achieve very much unless they make use of the feeling man, whose contribution has made art and civilization possible. Thinking, willing, and feeling, the complete man can create a new order in his cosmos.

When I make such statements I remember the dialogue of the French poet Paul Valery called *Eupalinos*, after the great master-builder of ancient Greece. Socrates and Phaedros talk about architecture and building, and Socrates, the philosopher, declares that he wants to turn into an anti-Socrates, an anti-philosopher. "And what would that be," asks Phaedros, "There are many anti-Socrates already." "Then I will be a builder," answers Socrates(Ref 10 ).

Valery was not the only one opposing the builder to the philosopher. When building around the world, we are always confronted by those who want to think more, to express greater doubts and think again, but these are not the philosophers, because if they were, they should have been guided on a path of a well-thought action. As things stand at present, humanity pays for this lack of conception and action by seeing nature destroyed and man suffering in an inhuman urban world.

I can only represent myself and my capacity as a bricklayer, a mason and builder. As such, I can only conclude in my way: by avoiding action we invite chaos! Let us act and build a human cosmos. We know enough to start - the remainder we can only learn on the building-site.

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