

HUMAN SETTLEMENTS:
A THEORY, SOME STRATEGIES AND SOME PROPOSALS

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1. Introduction: a theoretical sketch.

There is much talk about the crisis in human settlements, and about the urban crisis in particular; just as there is talk about the crisis of the environment, the energy crisis, the population crisis etc. Like for the others there is a tendency to act and react as if the crisis is isolated in time and space, suddenly descending upon us, unrelated to other crises and to deeper, structural phenomena. Also like the others: the failure to see the phenomenon in its proper context leads to short-range, technical, even "cosmetic" measures that quickly prove to be inadequate, to the great disappointment of those who believe in them - simply because the "crisis" is generated by deeper lying phenomena.

For this reason some theory of human settlements is needed, and the following is a sketch of a structural theory of human settlements.

The point of departure is, of course, division of labor within and between countries as generated by capitalistic modes of production. The key point in capitalism, then, is not taken to be private ownership of the means of production, but the mobility of production factors,

- of raw labor
- of raw capital
- of raw materials

towards ever higher level of processing, whereby

- raw labor is processed into skilled and professional labor
- raw capital is processed into financial capital and capital goods
- raw materials are processed into manufactured goods.

Along this line of transportation of the raw via the semi-processed to the fully processed we find increasingly big and increasingly complicated cities. Thus, training in literacy may be given at the local village level, lower

secondary schooling in a small town, higher secondary schooling in bigger towns, and tertiary education in universities usually found in the biggest centers. Correspondingly with capital: it will accumulate first in smaller towns, and then be transported upwards to the big financial centers where the decisions concerning the use of the capital will be made. And the raw materials will be processed into semi-manufactured goods at the more local level, but decisions about the final assembly at the most sophisticated level of processing will be taken in the biggest centers.

From these centers, then, there will be a counterflow of capital goods and investment capital ("processed capital"), of professionals and of consumers' goods, altogether constituting an economic cycle: the raw flows from periphery to center, the processed from center to periphery; within countries, and between countries and in world cycles rather than in national cycles with the current integration of national capitalisms into world capitalism. There is only one, but highly important, exception to this general rule: food. The processing into foodstuffs takes place in the periphery, which means that there has to be sufficient labor, capital and raw materials (land, water, energy) available in the countryside to produce foodstuffs in the necessary quantities. Increasingly, however, this pattern is also changing so as to conform with the general structure: what used to be the final product (wheat, corn, vegetables, milk, raw meat, raw fish etc.) no longer is so but has become raw materials for a food processing industry run according to the same basic structure as any other industry.

This fundamental division of labor, then, is reflected in the structure of human settlements. In the periphery there will be a grid, in principle fine-meshed where the soil is abundant, and sub-soil and the waters are rich in exploitable content; less dense elsewhere, of settlements small enough to permit easy access with cheap means (on foot, on donkey) to the fields and the pits. Then there will be lines of transportation towards a grid of district towns, often for

sorting, packaging and administration more than for any processing (including a first sorting of children by means of primary schooling). And so on till ever higher levels of processing and complication and removal from any direct contact with nature. The settlements can now become denser and denser precisely because no contact with nature is needed: nature is received in highly concentrated form, as semi-manufactures, and the only problem is to bring it together with capital goods and skilled and professional labor so as to facilitate processing. The result here is a grid of cities, eventually also of metropolis and megalopolis; some specializing in the processing of raw materials (industrial centers), some in the processing of capital (financial centers), some in the processing of human beings (centers of higher studies, research, administration) - sometimes, even often, becoming general centers, covering all three and in addition basic power functions.

Thus, to the general theory of the structure of global capitalism in general, and global imperialism in particular there corresponds a structure of human settlements. Roughly speaking the periphery in the Periphery countries lives in villages and in the enormous slums of the metropolis and the cities in their countries. The center in the Periphery countries lives in these bigger cities, particularly in the capitals, with a control structure of outposts in the towns (the banking network, the schooling network, the local branches of the firms - not to mention the power machinery in the form of police and military). The periphery in the Center countries live in their countryside, in their towns and their cities; but generally (with the exception of important pockets) at a considerably higher level of living. And the center in the Center lives, or at least works, in the metropolis and the megalopolis, again with a control structure which differs from the corresponding structure in the Periphery by also being posted in the Periphery countries -- controlling the flow of capital, the flow of human beings

through schools at the higher levels (curricula export, teacher export, training of local elites in Center countries). Thus, there is an international division of labor and the grid of human settlements is its spatial expression, within and between countries.

This division of space, however, is replicated inside the cities. The basic idea is that this is the place where factors are brought together, in an increasingly processed form. The key to the cities is organization, and the three basic ones - in line with what has been said above - are educational organizations (schools of all kinds and at all levels), financial organizations (banks etc.), and industrial organizations (factories). They constitute the nucleus of the city, although not necessarily in the geographical sense. They are devoted to processing, to giving form, and constitute the working quarters of the city. They are surrounded by the living quarters where the human existence comes closer to nature, in at least four ways: feeding, sleep, sex and some other forms of togetherness. Direct contact with nature, in production is impossible or difficult, so these forms become extremely significant/ ^{with} increasing complexity and sophistication of food consumption, of sexual activity and of togetherness, the latter particularly in the form of romantic love (only sleep does not seem to have been given the attention by city culture it might deserve).

In addition to this city space is stratified according to position in the processing hierarchy. Universities are better placed, by and large, than elementary schools and university professors live, by and large, better than elementary school teachers - and so on. The pattern becomes complex, however, for the high are in need of the services of the low who for that reason cannot live or exercise their skills too far away - hence slum pockets in rich districts to have cheap (servant) labor easily available, and the small grocer next to the central institution of finance. In "modern" cities, however, this is being sorted out providing for more pure divisions of space; facilitated by often excellent means of transportation.

With higher and higher levels of processing the cities grow, constituting an urban grid, or a metropolitan grid, a kind of global field with vast areas of populated and unpopulated periphery in between. What does this structure do to human beings, to all of us?

This can be analyzed in material and in immaterial terms.

Materially, city wealth is based on exploitation of the countryside. How this has happened and happens is probably only insufficiently understood, and has many aspects. For one thing, the terms of trade seem to favor the city: they have been able to get much more for their products than the countryside has for theirs - as evidenced by the fact that the workers producing tractors seem to have higher standards of living than the farmers using them, at least in most countries. Also, the division of labor seems to be such that it generates much more diversified activities, having many more spin-off effects in the cities than in the countryside - by and large. This is not true at the level of the work operation itself: the farmer has much less routinized and much more autonomous work - but the city brings together many more occupations and hence constitute a much more diversified setting.

In a sense it is rather strange that the cities have been able to outdo the countryside in so many countries, and this can only be understood in power terms. Of course, the cities command the resource power that comes out of the barrel of guns, and the structural power that derives from the division of labor mentioned and the location in the center of communication and transportation networks. But there is also a power differential due to the organization of work in the two media. Thus, there is concentration in the city, and that also gives more opportunity for the low to organize and withdraw their labor - to form trade unions and to strike. In the countryside there is dispersion and considerable fragmentation; a general peasants' strike comes only in times of utter distress, whereas workers' strikes

are frequent. Moreover: in the countryside there is a high level of self-employment and production for subsistence which means that one cannot easily leave the site of production and march on the cities without destroying the basis of one's own existence (this would not be true in plantation economies).

Immaterially, the city offers dynamism, expansion; this is where things happen. They grow because they grow, they diversify and sophisticate further because they are already diversified and sophisticated. They offer services - clothes, housing, health and education, transportation/communication and recreation in considerable variety and stratified according to the purchasing power. They offer a curious combination of anonymous immersion in a collectivity on the one hand and privacy, individualism on the other. But above all they are the center where things happen, they are the cause and the periphery the consequence; they are the subject and the periphery the object.

Of course they attract people from the periphery in the frequently quoted largest migration in human history. But they have an absorption capacity limited by the center-periphery gradient itself: they are certainly not self-sufficient but depend on the precarious balance with a periphery which has to supply raw capital, labor and land (and foodstuffs) and ^{to} demand the city's products: capital for investment, technicians and professionals of various kinds (who also control the periphery) and consumers' goods. If a farmer wants a TV set he has to deliver foodstuffs, he cannot constitute a closed economic cycle together with some other farmers, growing what they consume and consuming what they grow - TV sets simply don't grow. But the city cannot buy unlimited quantities of food, nor is the supply unlimited, and it is limited how many unproductive people it can feed. Consequently slums are expanding with terrible misery, a sort of waiting-room for a vacancy in a factory, an office; meanwhile subsisting on begging and prostitution and theft, on kitchen gardens and some supplies from relatives in the countryside.

In a sense this is the revenge of the periphery over the center, of the countryside over the city, dragging them down, and the obvious city response is to relegate the slums into shanty-towns, out of sight and out of mind, occasionally destroying them and forcing the slum-dwellers back to the countryside.

Thus, the total situation can perhaps be described about as follows.

There is a vast periphery, mainly of villages and isolated farms, and of towns supplying all kinds of raw materials. Material life is not necessarily bad, but due to the terms of trade tends to be on the average below the city average, and in very many cases much below, down to subsistence, to hunger and misery. Immaterial life is very often characterized by the role of the spectator, of watching what happens one rung higher up on the urbanization ladder, of being the receiver of persons, goods and information flowing along the channels of transportation and communication.

There is a center consisting of megalopolis and metropolis, of cities big and small, and of the highly effective transportation/communication grid between them. For those who are organically rooted in the city, be they capitalists or workers, material life is not bad since they together exploit the periphery. For those living on its margins with no easy return back to the periphery, life is of the poorest in the world. For all of them, however, immaterial life is characterized by alienation from nature and alienation from others through fragmenting working and living patterns.

All this, then, is true for Center countries and for Periphery countries for they constitute a system of Chinese boxes; the cities in the Center countries exploiting their periphery; the Center country as a totality exploiting the Periphery country where the city-dwellers also become watchers, watching what goes on in the cities in the Center - all of this constituting a chain of exploitation ending with the poor peasant family and the poor slum-dweller family in a

Periphery country, where, in turn, the men may be exploiting their women, the husbands their wives and so on. And that, roughly speaking, is our point of departure.

2. The crisis in human settlements: a strategic view.

The underlying structure producing the tremendous inequities, the misery, the alienation and the general lack of satisfaction with human settlements - except for the very few - is strong, hence it is not to be expected that much will change unless relatively strong measures are vigorously pursued. Moreover, many of these measures will lie outside the field of "human settlements" narrowly defined. They are not a question of housing patterns and patterns of urban arrangements. To take an example: countries that invest large sums in "slum clearance" producing neatly organized small suburban towns for very adequate housing and urban services will wake up very soon only to see that a new slum has grown up over night outside the former slum district, and that the new "urban developments" have deteriorated. The root of the problem is deeper; a cancer is not healed by plastering the wound.

On the other hand, it is not very helpful to say that what is needed is a "revolution", and then sit down and wait for the consciousness of the proletariat to raise and accumulate sufficient revolutionary momentum. This would be in line with the old tradition of the intellectual who leaves the dirty work in society to lower classes, stepping aside himself and waiting for the tide to recede, eventually returning as a minister of planning. That something has to be done to the capitalist mode of production and the entire social formation that goes with it, nationally and internationally, is more than clear enough. But so much of this structure is embedded in the structure of human settlements that human settlements themselves may constitute a very important lever for basic change. In other words, we shall not assume that human settlements somehow belong to the "superstructure" and will change once the "basis" has changed -- in fact, we reject any such sharp epistemological distinction. Not all levers are equally important, but how important

they are cannot be decided on universally and a priori. It depends very much on historical factors and local circumstances, not to mention on how much momentum can be mobilized working on the lever.

At this point one particular argument in favor of seeing human settlements as politically crucial should be mentioned: we all live in one or another, all the time, whereas only some of us are industrial workers, and even they are engaged in industrial work only part of their time. If we narrow the view somewhat, from human settlements to housing, it still applies: almost all of us live and/or work in some kind of house, if not all the time at least a substantial fraction of the 168 hours of the week. This has an important immediate consequence: it makes all of us experts, only that we do not know it. And given sufficient consciousness-formation and mobilization social energy unleashed to change human settlements would constitute a tremendous social force. In fact, this is already seen when squatters occupy ground and put up their shanty-towns over night, or others occupy houses designated for destruction. But in general social theory seems insufficiently geared in this direction to generate the total momentum needed.

On the other hand, it should also be mentioned that the developing countries that seem to have solved problems of human settlements are the socialist countries - like Cuba and China. Some of their strategies will be alluded to shortly, it should only be pointed out that even though there was revolutionary take-over that constituted a necessary condition for these changes to take place they (1) did not take place automatically but required considerable political input at many levels and (2) came very early in the history of the revolutions of these countries - one did not wait for a total reorganization of the productive forces.

There seem to be three basic strategies to pursue in connection with human settlements, all flowing from the general theory outlined in the preceding section. One of

them pertains to the way division of labor has been translated into division of space, the other to the transportation/communication grid, and the third to conditions of misery.

First: less division of labor between different parts of space. In practice this would mean reduction of center-periphery gradients by making human settlements wherever they are more self-reliant, sometimes even self-sufficient. In practice this means that cities should grow more of their own food and produce more of their own raw materials, and that the villages should constitute their own centers with much of what today is known as urban institutions.

Second: a more symmetric transportation/communication grid. In practice this means that top priority should be given to better transportation and communication between villages and between towns, not only investing in excellent line of transportation/communication linking capitals with cities, cities with towns and towns with villages.

Third: the extreme misery related to settlements around the world, and the basic strategy must be to give priority to those most in need. One is reminded of the way in which Tokyo and Shanghai were rebuilt after the war - two major cities of about the same magnitude and about the same degree of destruction, although for different reasons. Tokyo was rebuilt according to capitalist principles making housing available to those who could pay, thus catering to the upper and middle classes. In Shanghai first priority was given to those in need, the houseless, on the assumption that the middle and upper classes would somehow find their own way through the crisis. Needless to say such policies in the field of human settlements are reflections of general social policy.

3. The Crisis in Human Settlement: Some practical proposals

Let us then try to derive from these general considerations some steps that could be taken, trying to spell out in more detail the strategic guidelines indicated above, and on purpose not classifying the steps into what should be done in rich countries and what should be done in poor countries. It may very well be that the problems are not that different in quality, only in degree - there is division of labor between city and countryside in either and inside the cities; and there is misery to be attacked in all parts of the world.

Hence, let us start with the "division of labor", a very rich term that brings to mind a number of possible steps that can be taken or have already been taken in several countries around the world.

First and foremost would be the idea of seeing town and countryside as habitats, as forms of human living both valid in their own right unless patterns of exploitation, fragmentation and alienation distort them into a miserable shadow of what they could be. To rectify that situation a high measure of self-reliance has to be brought into both; and this means to bring some of the positive sides of cities into the countryside and positive aspects of the countryside into the towns.

More concretely this would among other things have the following implications:

In the countryside: the creation of federations of villagers, as for instance is done in China in the form of people's communes. Such federations have centers where urban services in the fields of health and education are disbursed, and they would also within their domain have even a large number of small-scale industries. In the first phase those industries would probably process agricultural goods into food products, and minerals, etc. into semi-manufactured goods. Later on, however, there would be more unconventional procedures. Then, agriculture could increasingly be seen as one way of producing

raw materials for all kinds of industries, not only for foodstuffs and textiles. Cuba has taken an important lead here in conceiving of sugar cane as raw material for a vast variety of products out of which sugar is not necessarily any longer the most important final product. Thus, the basic point would be to get away from the monoculture perspective that has dominated the economic geography of the countryside into a richer variety of possibilities. That variety would, of course, also include other ways of producing food than via the tilling of fields and animal husbandry, such as aquaculture and the cultivation of trees.

In the towns: the monoculture perspective is even more valid for towns: they are the producers of manufactured goods, services and decisions. To become self-reliant they would in addition have to produce food, so a basic problem is how to make the cities more self-sufficient in terms of foodstuff and textiles. Take the city of Dubrovnik as an example: he who walks on the Placa will see it as a fundamentally urbanized habitat; he who walks on the city walls will see a surprisingly high number of kitchen gardens among the houses. In times of war such measures are obvious and accepted without any further discussion - for in that case the victims and the initiators are the same persons, the city dwellers. The moment we train ourselves to see the present situation as relatively similar only that the victims are by and large in the countryside more initiatives will have to be taken in the cities. They will obviously have to be coordinated with an "urbanization" of the countryside so as to avoid economic catastrophies in the countryside as cities become increasingly self-reliant.

Where the latter is concerned the measures would go far beyond kitchen gardens. Very important would be three-dimensional agriculture, possibly using high-rise buildings as support structures for high-rise plants. It may sound like science fiction, but ideally any elevated human dwelling should be capable of supporting a food structure in the same way as Mediterranean houses often are used to support vines, even making it possible to harvest from the windows. It

might even be argued that this would put the CO₂ rich atmosphere in cities to a productive use by providing a richer atmosphere for food yields.

It may also be argued that no new housing should be constructed in cities without adequate provisions for some way of growing food that at least would go a step towards self-reliance. This would, of course, also include facilities for animal husbandry. Above all it would include imagination, it is not a question of "turning the clock backwards" to the Middle Ages but of inventing new forms of human settlements, less distorted through excessive division of labor.

The second and almost equally fundamental division of labor, because it affects a rapidly growing portion of the total human population (after all, very soon half of the world's population will live in settlements with more than 20,000 inhabitants), is inside the cities. What can be done concretely to overcome the division of labor expressed in the division of space between working quarters and living quarters in our urban conglomerations?

The point of attack would probably have to be in the living quarters. Today's picture is a caricature of good utilization of space: people eat a hurried breakfast, rush away to the places of work and education, families are separated for most of the day and then come together again when they are tired, not when they are maximally alert for eating and some recreation and sleep. The key points here are fragmentation combined with irrational use of space and time, typically seeing maximum alertness as a resource to be invested into work rather than living.

The basic measure to be taken would be to reintroduce work into the places where persons and families live. After all, the two basic forms of human economic activity, farms and shops, have to a large extent been family run, which means that they would have been bankrupt if they had been run according to really capitalist principles (monetizing labor,

paying salaries to family members), but their strength derives exactly from the circumstance that they were not run according to capitalist principles. Already today it is very clear that very many intellectuals and other professionals could do their work at home provided they had good coordination with others a few times a week. But does not this also hold for other types of work?

Thus, imagine cities had a first-rate communication and transportation system so that the system is based on shuffling messages and goods rather than people. Why could not people in an insurance company, to take one example, get a substantial portion of work through some type of pipe system in the morning, have a briefing, conversations, discussions through videophones, sending the completed work back to a central point through the pipes after the working hours of one's own choice? Why should it not be possible for workers operating a lathe to have the lathe somewhere in the apartment block, receiving the pieces and turning them back through similar systems?

At this point it should be emphasized that the plea would not be for a 100% switch from doing all work in the office and the factory to doing all work at home. Rather, the idea would be a mixture, permitting many people to find their own equilibrium point, their own profile where allocation of time is concerned. Also, there is no doubt that this would put certain requirements on transportation and communication systems. Just to take one example: before the war in a city like Oslo the trams were used quite a lot for the transportation of goods: there were certain assembly points spread around the city and since the trams were much more frequent than they are today one could very quickly get things needed without any person having to change location. The condition, of course, is a dense public transportation network well saturated in time, and some minimum facilities for the storage of goods to be dispatched and fetched. And similarly for communication; the rapid developments in telephone systems recently (push-button, the possibility of having multilateral conversations, videophones) would enter the picture.

To repeat: the argument would be in favor of moving people less, messages and goods more. In so doing those who want to stay together can be permitted to stay much more together, whether it is in the living habitat or the working habitat. In the latter this would permit more togetherness, not less.

This brings up the total range of issues connected with transportation in cities, and the basic point would probably be relatively obvious: cars would have to be excluded from inner city zones. In the beginning monetary policies would probably be used such as very high parking fees, tow-away zones, or toll booths for those who enter the inner zone (as used in Singapore). Cars should be used for transportation between cities, and even there speed should probably be limited (for energy-saving reasons, but above all in order to save lives) and to obtain that there is only one absolutely effective technique: not to fine drivers for driving too fast, but to prohibit car factories from manufacturing cars capable of driving at greater speeds than a reasonable speed limit (e.g. 90 or 100 k.m.h.). In addition to making cars less quick they could of course also be made more safe, more like tivoli cars provided with rubber protection and more shaped like eggs - cars in which some collisions would not only be without danger, it might even be fun. A more relaxed attitude to cars, less anxiety in connection with dents and scratches would obviously have to go with it.

This raises the problem of alternative means and they are many, and it is probable that the debate and innovations now put into motion will produce even more. Dial-A-Bus systems could be one solution, small electric vehicles that can be picked up anywhere and left anywhere like the bicycles in Amsterdam in a certain period might be another. And bicycles could also be used in a more imaginative manner since they have not developed significantly in the last 100 years: they could be coupled together in parallels (like the Vietnamese did during the war), permitting people to talk to each other when bicycling; there could be better protection against rain and wind; there could be someplace to put some-

thing to eat and drink (as is done for those who engage in bicycling races); there could even be a little radio with a plug into the ear - in short, bicycles could become less individualistic, less puritan. One might even contemplate bicycle lifts (similar to ski lifts) in order to get up steeper hills.

Another point in this connection is what to do with city streets when the cars are gone. Needless to say, the middle-aged will use them for walking, children will play and the older people will be sitting and talking and watching life pass by and participate in it by being close, discussing with everybody. This would differ from today where traffic statistics seem to indicate that the middle-aged (drivers) kill off the very young and the very old. There would be libraries competing with the bookstores, making it possible for people simply to sit down, pick out a book, read it for an hour or two and put it back again. One important point of earlier ages might be reconquered: more of what people do could take place in the open, visible to passers-by. Instead of making houses into fortresses protecting against the noise and the fumes from the streets the ground floors could be open, windows easily pushed aside, rooms, pavements and streets constituting one unit. There would be artistic activity everywhere, people would design, draw, paint - children would participate in this; there would be free-forming discussion groups, Hyde Park corners at every second corner.

Much of this has, of course, a romantic tinge but it is important to see more clearly how much the cars have reduced our quality of life in the cities. From the situation of everlasting tension, nervous preparation for a car to come around the corner, mobilization of adrenelin due to noises and anxiety, one could envisage not only relaxed walks and window shopping, but a participatory city life where the broad streets made for increasing car traffic could be the public places of tomorrow. The surplus of society would then to a large extent go into making transportation and communication facilities free, taking them out of the

commodity market as we have already done - in very many countries - for health and education; thereby making what has been mentioned above accessible to all. A model in this connection is the Catholic church: ever-present, open for everybody so that anyone can walk in, constituting a part of the accessible environment. So are parks and - decreasingly - museums; so should be most of the city of tomorrow - even institutions, institutes, organizations, factories could be much more open to the public.

In this connection we must also mention another division of labor, between all of us, public, in general on the one hand and architects, urbanists or planners on the other. The argument would of course be in favor of de-professionalization of the latter. Somehow the type of knowledge architects etc. have developed should be made more publicly available. Again, experience from Cuba is useful: it seems to be the case that the microbrigadas whereby workers can build their own houses - society puts in the lots and the materials, workers the work - led to this type of deprofessionalization. Workers building for themselves rather than for others simply started questioning the designs made by urban-based, professional architects. Thus, it was pointed out that there was not adequate proviso made for collective rooms, that each apartment block of course should have a meeting room for adults, not only kindergartens for the young. And one might go on: they should also have adequate facilities for some way of producing food including, possibly, collective ovens for baking bread, weaving looms (and not only laundry machines that would support a strong division of labor between those who make and those who wear clothes). Above all houses should be made in such a way that the "deviants", the very old and the very young can easily move inside them. If staircases are difficult for them maybe some type of sliding "road" inside a house could be conceived of?

All this is mentioned here, however, not so much because

of their intrinsic value as examples of a type of initiative that might come out more clearly if people in general and special groups in particular had more to say in the construction of human settlements. An architect, an urbanist, a planner might have excellent training and a high level of sympathy and empathy developed through discussions and ideologies - nevertheless he (for it is usually "he") will tend to reflect professional, urban, male, middle-aged perspectives, however much he wants to avoid exactly this. Hence people should have the tools of design; not only of their own apartments or houses but for the whole living quarter, for the city, for the country for that matter. It is quite possible that this should be worked into school curricula not only teaching pupils the geography of their country and their towns but making them more aware of the type of thinking that might be underlying changes. An important step in that direction at the micro level of such planning is made by the highly imaginative French architect etc. Yona Friedman.

One might, however, go further: houses could be made in such a way that they are more easy for people to build and to rebuild. One is reminded of the way children go about this, searching the environment for suitable materials such as empty boxes, putting it together according to their inclinations, taking it apart, moving it, putting it up in a new way. The Danish toy system known as Lego is important here, and one could very well imagine society producing a very high number of building "blocks" that could be bought separately, put together, taken apart and put together again. They should be made in such a way that the combination possibilities are extremely high in number, and above all so that a house once made can be changed in order to be adapted to new circumstances. There is something very strange in today's patterns: apartments are constant in size whereas families expand and contract. As a net result there is much moving and shopping around, much speculation, very much profit to middlemen of all kinds including the government. Of course, it may be argued that changing one's habitat is also a way of

gaining a new life and there should certainly not be any rule against moving. The only point is that if houses were made in such a way that they could more easily be changed they could also better adapt to changing circumstances in the human life cycle.

There is also another point to this: it can probably generally be argued that buildings are too solid. No doubt much of this solidity is due to conditions in the temperate and cold zones in which building patterns have emerged that, due to the prevailing economic and political structure of the world, have become the models to imitate also where they are completely irrelevant. But there is also more to it than that. There has also been the idea of making buildings to last, of believing that the plan has a validity that outlasts the planners by many generations. In so doing planners, urbanists and architects have been permitted to create monuments of themselves, and one generation has been permitted to colonize space and time for future generations by building so solidly that even when the inadequacies become very evident it is physically hard to tear the buildings down and economically highly wasteful. Too much has been invested in them, and one does not have to be a puritan to suffer when such solid hardware is being destroyed.

Hence, it may be that we should consider the possibility of making houses more, not less solid, more, not less moveable, and more, not less designed by people themselves. It may well be that this will lead to aesthetic losses, but it might lead to considerable gains in participation and autonomy and flexibility. Probably people would also, when left to themselves, develop much more complicated housing patterns - much more like the "nesting in" villages one can find all over in, for instance, the Mediterranean area. A good example here, as a matter of fact, would be the famous Habitat displayed at the World Exposition in Montreal 1967: a highly "entropic" combination of apartments and common rooms in a setting that combined unpredictability with togetherness with privacy. Unpredictability is important:

today's human settlements are often mass fabricated on the drawing boards and in the factories in such a way that knowing 10m² of one house may be sufficient to predict how the rest of the total development looks. This makes for boredom, added to that, then, comes the knowledge that buildings are made to last.

One question, then, is whether the architect, the urbanist and the planner will be willing to submit to this type of requirement. Are they good at planning disorder?

To discuss that it should be pointed out that nobody would be arguing in favor of their dismissal or total abdication. There is a need for all of them but they should share their power more equally and make people less into clients, more into co-planners, co-urbanists and co-architects. As argued above human settlements affect us profoundly by the very fact that we live in them all the time, our houses almost equally much so that we all constitute an invisible college of housing experts, of professional dwellers, untapped. If present-day houses are made in such a way that they can only be conceived of by highly trained professionals and only be put together on a mass manufacture basis or by highly skilled workers then the argument would not be that we all should become architects, etc. but that new types of housing should be developed more compatible with less division of labor. Hence architects etc. (and the same could be argued for any other profession, perhaps particularly for teachers) should have what Danilo Dolci refers to as a maieutic (midwife) role: help people to become aware of their possibilities rather than imposing solutions upon them. It will certainly be argued that this may be irrational, that people may arrive at stupid solutions which is true - but that is the assumption on which democracy is built. The idea is that the process of decision making in a very real sense is more important than the quality of the decision, that the decision lies in the decision as to which process to make use of. Also, just as for democracy there is the possibility of rectifying errors by having new elections, for architecture and town planning

there should be the possibility of rectifying errors by tearing down what has been built and reconstruct it in some other manner. But for this to happen houses have to be less solid, cities ^{not} built for eternity. In general, that is: nobody would argue against the splendid city centers of the past and the possibility of creating more such places of splendor - only that they should be limited in numbers and size and not become like a contagious disease affecting all of city space.

Again, it may be objected that all the changes indicated here have a smack of the utopian. This may be true, but it should then be remembered that many of us live in the utopias of past generations if we look at the best cities mankind has produced, like the centers of Buenos Aires or Amsterdam - enormously rich in variation, full of opportunities and challenges. But most of mankind lives in distopias where human settlements are concerned, for all the reasons mentioned above. Further, as there have been changes in human settlement patterns in the past so there will also be in the future. Originally nature provided the settlement in the form of caves, trees that gave protection against the hazards of weather, etc. - the major revolution in housing consisted in creating artificial nature in the form of a house. But maybe mankind did not look sufficiently closely at nature in that connection: nature always changes, never permanent, to a large extent adapted. Nature adapts to cycles, so should houses and human settlements in general; if nature adapts to the annual cycle houses could adapt to the life cycle, and settlements to social cycles. And as a beginning it might help if we realize that there will be at least as many changes in the near future as there has been in the near past, and that over a longer time horizon human settlements will undergo changes as profound as those that took place when mankind stepped out of the cave and into houses.

Let us then turn to the second major strategy: changes in communication and transportation patterns. Here the point is more obvious although not necessarily enacted so easily.

A look at the road map of most countries or districts within countries will bring out the point very clearly: roads typically connect the capital with district capitals, these are in turn connected with towns, and then there are smaller roads to the villages. Roads are vertical rather than horizontal - what is missing in the general pattern are the connecting roads between the smallest human settlements. And what is true for roads also holds for other means of transportation and for telecommunication, only that the latter are less visible to the untrained eye. Equally significantly: the same holds true in general for patterns of energy distribution, the energy comes in the form of oil and gasoline, or cables carrying electric energy.

The net result of this is not only that the cities control the Periphery because they are in the center of the transportation/communication network but also that the potential for direct cooperation between villages is left underutilized or even unutilized. We mentioned above the necessity of creating federations of villages and one obvious condition for such a federation to work would be very good internal transportation and communication facilities. In fact, they should be as good as in the city: such a federation could be very much like a city, only that there would be vast green areas in between the agglomerations. What areas they should cover would vary from place to place - it is probably more in China than in, for instance, Bulgaria where the same principle also seems to be practiced and with considerable success. Thus, it should be possible to bring all the sick very quickly to the hospitals of the federation, in general combining elementary health care with easy access to more advanced hospitals (by helicopter transport if necessary).

But there is more to this idea than simply improving transportation/communication networks within and between federations. There is also the idea of increased self-reliance by making such federations centers of transportation and communication. More precisely, they should have their own energy base and also their own radio and television stations, and printing facilities for newspapers, etc.

Nation-wide energy cycles with energy being produced at one place, stored and distributed and then consumed the other end of the country are not only expensive because of the transportation costs involved: they also contribute to the vulnerability of the periphery when crises hit the center. Ideally a flexible grid of energy supplies based on solid energy, wind energy, biogas potentials and others should make such village federations self-sufficient, cut down on supply lines and contribute to autonomy. Of course, such short energy cycles are not seen as alternatives to nation-wide cycles (or global cycles) but as supplementing them, pushing the latter down in importance, towards 50%, 33%, 25%, 10%.

The basic point is to stop seeing the city as a center, a sender, and the village as a periphery, a receiver -- except for foodstuffs. Each part has to be a center, and in order to bring that about one point of departure would be to give much higher priority to roads and other links connecting today's periphery points, less priority to roads etc. that run from high to low or connect points at the top. A good example here is what happened in Cuba after the revolution: the road between Havana and Santiago de Cuba was narrow but was not improved upon; resources were used to improve roads between points in the mountains. In doing so the total metabolism of the society improves, there is new circulation, new mobilization, new creativity.

Then, there is the third major strategy: to give priority to those most in need. What does that mean? Obviously, it is a question of priorities not in a global sense but for each single factor that enters into the production of housing in particular and human settlements in general. And these factors are here, as elsewhere, work, land and capital. Let us look at them one by one.

To start with the architects: although the importance of this should not be exaggerated it is obvious that they should dedicate much more of their time, talent and energy to housing for those who today are most in need, and less to housing for the rich and privileged and office buildings

for corporations etc. That type of housing is compatible with the structure of professions in our society, strongly emphasizing originality, individualism and competition, because they can serve as monuments over the architect. The monumental aspect is then epitomized in glossy magazines reporting on such achievements. And it is precisely at this point that the architect would have to exercise self-censorship and self-restraint (before society does so) and turn much more of their attention in a new direction. The same applies to urbanists and planners - but in all cases there is the important caution: it is not a question of accepting the existing patterns and providing for lower class housing within that pattern - that is the strategy that has been used, and it will never work. It is a question of combining priority to those most in need with the two preceding strategies - and this no doubt requires new skills and cannot be done without the active participation of those involved.

As to construction workers: we have argued above that these should also be deprofessionalized. People should be more enabled to make their own housing, for instance along the Cuban lines. But to the extent that construction work requires special skills these skills should be given to those most in need with top priority. Concretely, this would mean that trade unions of construction workers should put power behind the urge to dedicate more of this scarce resource to the bottom than to the top of society and increasingly so. This is difficult since construction work in capitalist societies often is used as a residual category, to absorb general or seasonal unemployment and for that reason is in a poor bargaining position. Moreover, if literacy classes are held during working hours (Iran) - why not also house-building?

As to land: obviously land should not be a commodity. It is literally speaking the basis for human existence, and enters the picture of human settlements both in the form of space and as a source of construction materials. Like for health services and schooling in civilized countries it should not be available on a buying and selling basis; not only because this leads to speculation but also because of its fundamental nature in connection with human needs. Only

when land becomes publicly owned and those most in need play a decisive role as public owners will there be some guarantee that this resource is put at the disposal of the type of development envisaged above. One possible approach here would simply be to say: any new building activities for housing should be under public control and made so as to fit the requirements of lower income groups, leaving to the rich and privileged the possibility of reshuffling and exchanging already existing housing.

However, as mentioned there is one more aspect to land: as a source of building material. Much more research and imagination must be put into the conversion of existing materials, much of it possibly waste products from agricultural and industrial processes, into building materials. The reasoning must definitely not be: how are houses built in developed countries, what materials do they use, how can we get those materials and if we cannot produce them locally how can we import them? This line of reasoning is fatal for obvious reasons: the country becomes dependent on export for unnecessary import, settlements become dominated by patterns that may be adequate elsewhere but not locally. Hence, the question must be how, for instance, material that will increasingly be made available from the seabeds and from the ocean itself can be processed in the direction of building materials, rather than, for instance, in the direction of military hardware. One may even go so far as to say that it might be useful to study whether houses can be made with a higher mineral content in order to deprive the arms industry of raw materials! - but the general approach will always be to make use of locally (meaning within a relatively limited circle) available materials.

As to capital: To the extent that housing is made available on a market or semi-market basis the market should be biased in favor of housing for those most in need and housing that is economic in terms of space and resources in general. The political instruments here are obvious: soft loans for housing with a limited number of square meters

per inhabitant, hard loans for others. This opens for a wide range of possibilities: on the softer end the loan could practically speaking take the form of a grant, on the harder end the loan might be strictly speaking prohibitive.

At this point one might also introduce the idea of minimum and maximum floor space. Obviously there can be no universal standards for this, climatic and cultural conditions varying as much as they do. To mention only one factor: in some countries uncovered living space would be as important as covered space - in Norway for all practical purposes only covered space would count except for, say, a couple of months a year. Nevertheless the discussion is meaningful. The Chinese minimum norm is clear, 4.5 square meters per person and as a family typically has five members this adds up to apartments in the size of 22.5 square meters. For Western European countries this would be considered rather limited. The minimum would perhaps more be in the range of 10 to 15, even 20 m². And as to the maximum: some experience the present author has had with various groups discussing the maximum tends to indicate that (1) the question is meaningful (2) there is considerable dissent about the concrete figure ranging from 15 to 50 and (3) that there is a tendency for many groups to arrive at a mean or a median around 25. These are relatively modest maxima at least compared to some of the more extravagant houses of today, and might serve as a pointer in the direction of considerable self-restraint in this field. Maybe it is like family planning: norm is emerging through public discussion (the 2-3 children family) and the discussion itself is the process serving a control function - not a bureaucracy. Given the scarcity of resources there obviously has to be some upper limit if everybody should ask himself the Kantian question "If everybody built a house like this that I am trying to get for myself would there be enough space and material for all families in the world?" But it is also interesting to see that many people when asked how they arrived at the figure for maximum floor space say that they want the family to be together, not to disappear away from each other

in different corners of the house, and they want the house to be small enough for the family itself to take care of it, not exploiting anybody outside or inside the family.

If we look around the world today there are many encouraging signs in the direction outlined above. What we have particularly in mind is the tendency of the dispossessed to occupy unused and abused land and empty or mismanaged houses, and turn it into human settlements. In a very real sense squatters and the house occupiers are heroes and pioneers. If they break laws it is in general because the laws are reflections of a wrong society. These people should be seen as entrepreneurs, as people who try to reconquer the right to have more of a say over your own housing condition, not to be manipulated by invisible social forces. It is highly likely that there will be many more of them in the years to come till some more fundamental structural change takes place in the whole area of human settlements.

4. Conclusion.

As mentioned in the introduction: the whole field of human settlements is one big reflection of global and domestic structures; they cannot be taken out of context. Efforts to ameliorate the condition of misery so clearly expressed in housing conditions around the world will tend to be cosmetic and of short duration only unless some more fundamental change is undertaken. That fundamental change does not belong to the field of settlements alone but essentially has to do with the nature of the division of labor between countries, within countries and within cities - also reflected in the patterns of communication and transportation within and between countries. Nevertheless the problems particularly in the Third World are of such a kind that immediate measures also have to be taken, often on an emergency basis, often as catastrophe help.

Housing is among the fundamental needs of mankind. But it differs from other fundamental needs such as food, health, and education in how it is reflected in the administrative

and political superstructure within and between nations. Whereas most countries have ministries responsible for food production, for health services and for schooling, and whereas there are U.N. specialized agencies taking care of all of these three (FAO, WHO, UNESCO) ministries of housing are not commonly found and there is no UN specialized agency in this field. Without in any sense expecting too much from such administrative measures - that would run against the whole tenor of this paper - they are obvious necessary conditions even if they are not sufficient conditions.

Hence, one important concrete step would be for the governments of the world to create ministries in this field, and not referred to as ministries of housing but precisely using the broader term, Ministries of Human Settlements. And correspondingly to this, coordinating them and providing them with a forum and an intergovernmental political instrument: a UN Specialized Agency (possibly starting with a "program" somewhat similar to UNEP) in the field of human settlements.

Appendix: On the Measurement of Human Settlements.

One important consequence to be derived from this paper lies in the field of indicators. Obviously, given the perspective developed it is evident that an indicator of "housing" measuring only square meters of covered space per inhabitant in no way reflects the richness of the concept expressed through the term "habitat". To the contrary, it should perhaps be said that housing relates to habitat much like schooling to education, medication to health, feeding to food, parliamentarism to politics, jobs to creative work and so on: like stones to bread a meagre substitute to the real thing.

How, then, would one measure "the real thing"? Probably by combining a measure of the micro habitat situation and the macro habitat situation of a person or a family. The micro situation would refer to what is ordinarily called "housing", the unit of privacy - the apartment, the house, the shelter. The macro situation would refer to the context of that unit, public and private.

Measures at the micro level would include square meters per person, but also a minimum of facilities such as access to energy for heating and lighting purposes, access to air and water, and to toilet and garbage facilities. This is certainly minimum because it says nothing about a sense of well-being, it is directed toward very objective conditions.

Then there is the macro level and here the approach would be the following: to what extent are there structures fulfilling basic social functions within a reasonable distance. These functions would include the production for feeding and clothing, production of energy, health and education services, adequate transportation and communication, recreation facilities, opportunities to have a job and do creative work. It may be asked what one means by "reasonable distance", and one possible definition would be that they should be available the same day, counting from the time of leaving the shelter, having a minimum of the services dispensed or consumed or enjoyed, and including return to the micro habitat.

It will be seen that this type of approach is in line with the general idea of local self-sufficiency, both by making the cities more self-sufficient in terms of food production and the countryside more self-sufficient as to services etc.

In evaluating the habitat situation of a country one would then try to find, possibly on the basis of specially designed surveys, what percentage of the population would have at their disposal a habitat above minimum conditions. These minimum conditions would have to be established through popular discussion and dialogue rather than through expert judgement. Since such dialogue by and large has been absent the process leading to such minimum conditions would also be a process leading to increased consciousness, and consequently a process belonging to the social forces that eventually may lead to changes in human settlements.