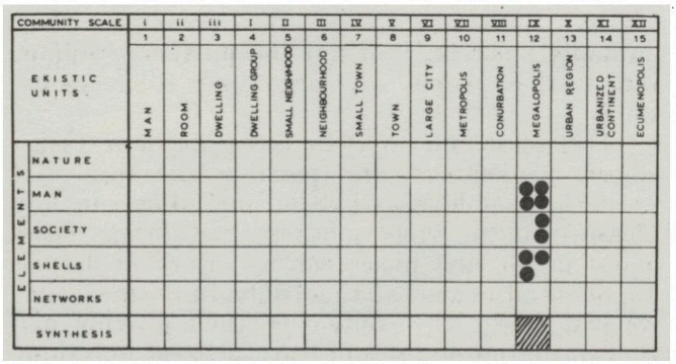

MAJOR CHANGES IN ENVIRONMENTAL FORM REQUIRED BY SOCIAL AND PSYCHOLOGICAL DEMANDS

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I

There is a strange dichotomy between the present architecture and planning professions. On the one hand, the architects are in the habit of creating completely mad idealistic utopias. These utopias often have little meaning, they are unlikely to be implemented; often no one in his right mind would want to implement them. They are personal dreams, not anchored in reality. Archigram's city on legs is an extreme example.

On the other hand, the current generation of city and regional planners—and the regional scientists are included—have established a tradition of boring attention to detailed facts, and extrapolation from these facts. The future, as seen by planners, is merely a tidier version of the present. While architects dream of utterly unimaginable futures, the planners talk about piecemeal incremental planning. The visionary architecture is imaginative, daring, but completely mad. The planners' plans are utterly and boringly sane; though based on facts, they offer no comprehensive vision of a better future.

We may strengthen these statements. It is no exaggeration to say that many of the most imaginative utopian architects actually dislike facts, and have a kind of supercilious disregard for them. And it is no exaggeration either to say that the kind of data gathering which planners most often do, since it is based on data about the status quo, tends to reinforce the status quo; and that planners—perhaps because of their concern with this kind of data–tend to have a rather conservative attitude.

This split is more serious than it seems. It is more than a mere difference of philosophy between the two professions. What it amounts to is this. We have not found a way of making a coherent, criticisable and empirically founded statement about the kind of future we want for the living of life in cities. So long as the split between utopians and data gatherers persists, it will not be possible to make such a statement. The reason is obvious. A statement of this kind will require vital imagination about man's future, based on empirical insights about the really deep forces in a man's life.

The possibility of constructing serious utopians in this sense is being set back, at present, by two beliefs—widely held by planners in the United States.

1. The first of these beliefs says that the physical form of the environment has very little effect on behavior—hence, that the physical form of the environment is not very important socially. According to this view we can tolerate architecture as a kind of amusement which has do to with beauty—the sugar on the cake—but we are supposed to recognise that it really has very little to do with the problem of making cities better to live in. Since most of the "comprehensive" urban utopians have been physical ones, designed by architects, this belief functions as a kind of backhand attack on utopian thinking.

2. The second belief—not so explicity stated as the first—says that psychological insights, while no doubt interesting, are as yet too vaguely formulated to have any serious bearing on urban form. According to this view concern with the nature of life cannot have any serious bearing on the day

to day work of the urban and regional planner.

As we shall see, both of these beliefs, though clothed in scientific reasonableness, are in fact merely offshoots of the more general refusal of city planners today to make a concrete statement of what life is all about. Let me say a few more words about each of these beliefs.

What about the first belief, that the physical environment has little effect on behavior. This belief has only come into play during the last few years when planners and architects have been claiming that they can influence people's well-being by manipulating the physical environment. A typical statement was Neutra's: "Let me design a house for a happily married couple, and I can have them divorced within six months." This sort of arrogance naturally invited suspicion. People have begun to quote the famous Hawthorne experiment—where it was shown that the crucial variable, responsible for increased production and worker well-being in an electric plant, was the attitude of management, not the pleasantness of the physical environment. Another famous study of workers in northern California, examined their life style while living in a high density slum in Richmond, and then three years later, their life style living in a low density suburban area of single family houses; their life styles had not changed in any significant respect.

The recent statements by Webber and others, which show that social groupings are not based on spatial proximity, but rather on communality of interest, have been widely received. The planners who take this idea to its most extreme form, say: let the urban sprawl go on any way it wants to—what really matters are the economic and social organizations, not the spatial. This general attitude has gone so far now in the United States that many intelligent students and young professionals have become convinced that the spatial organization of cities does not really matter much—and have gone into other, more obviously social, fields.

What about the second belief; that psychological problems are too subtle to be taken seriously. I have never actually seen this belief expressed in print. But it is reasonable to infer it, from the subjects which planners most often deal with. In urban planning and regional science, two closely associated disciplines predominate: Economics of location, and transportation theory. It is not unfair to say that 90% of the literature on regional science deals with one of these two topics. Even in the architectural literature, where there are occasional references to psychological questions, they are almost never seriously studied.

It is perhaps helpful to ask *why* the regional science literature is so heavily weighted towards the problems of economics and transportation. The answer is very simple. Since these are two disciplines where reasonable models can be made with the help of arithmetic and elementary mathematics, and since the people who started out to develop regional science were enthusiastic "model builders", wanted to be scientific and precise, and loved playing with numbers, the field of urban planning got slanted in this direction. If you press a regional scientist, and ask him why he does not take social and psychological problems more seriously, he will say that he would like to, but unfortunately these subjects are not yet sufficiently precise, and nothing sensible can be done with them.

II

I shall now give a series of examples, to show that these two beliefs are mistaken; and to show that, in a modest way, careful consideration of psychological problems will lead to major revisions of environmental form.

To begin with, we must face squarely, just what the task of city planning is: it is, in short, the design of culture. A culture is a system of standard situations. Each of these situations specifies certain roles, certain allowed limits of behavior for the persons in these roles, and the requisite spatial setting for this behavior. Each situation thus specifies a certain physical pattern—and each pattern recurs many thousands of times in a given city. The form of the city is generated by the combination of these patterns. In this sense, the city, viewed as a purely physical system, is a direct concrete manifestation of the culture. Any attempt to change the physical organization is an indirect attempt to change the culture. That is why I say that city planning is the design of culture.

Now, each person in a culture lives his life by moving from situation to situation–he builds his life up as a kind of necklace–by stringing together those situations which are available to him in his culture. In a successful culture, the set of situations which is available to him is sufficient to allow all the inner forces which develop in him, free play. In order to criticise a culture, we must find in the lives of its members recurrent situations which expose the members to conflicts which they cannot resolve within the framework of the cultural institutions and situations that the culture normally makes available to them. We may then try to invent new institutions, or institutionalized situations, compatible with the rest of the culture, but capable of letting people resolve this conflict for themselves.

In order to make such a criticism, we need to know something rather concrete about the inner forces which a person is typically exposed to during the course of his life: otherwise, we cannot say what kinds of conflict he will experience. Recent

work in psychology and social psychology has done much to help us here. It will perhaps help to make this clear, if I first mention a very early view of human needs, presented by Bronislaw Malinowski. Malinowski said that a culture is a system of institutions designed to satisfy seven basic needs: metabolism, reproduction, bodily comfort, safety, growth and health.

This view does not help us to criticise the culture of a metropolitan United States at all. At this level of analysis, we have every right to be satisfied with our culture. We do have food supply, housing, transportation, schools, parks and hospitals. All we need is more of them, perhaps. But these seven basic needs give an extremely mechanistic view of man's nature. More recent study of needs has shown us a rather more complex picture. Consider, for example, the work of Alexander Leighton, Abraham Maslow, and Erik Erikson.

Leighton identifies 10 basic strivings in man: physical security; sexual satisfaction; the expression of hostility; the securing of love; the securing of recognition; the expression of spontaneity; orientation in terms of one's place in society; the securing and maintenance of membership in a definite human group; and the sense of belonging to a moral order and being right in what one does.

If we assume that these 10 strivings are at work in adults, then it already becomes rather clearer that our present culture does not always provide an adequate system of institutions for the expression of these strivings. And, as Leighton says, frustration of these strivings leads not to physical death, but to psychiatric disorder and to spiritual death.

Maslow has described a hierarchical system of evolutionary needs. According to his view, once the basic system of food and drink needs has been met, the system of security and safety needs comes into play. Once these safety needs are being met, a system of need for affection comes into play; and once this system of affection needs is being met, the individual experiences a need for self actualisation—development of the self. In advanced economies the earlier systems are usually met, and the later systems are the most important. The last of all, the effort towards self actualisation is a system which is very inadequately met by people in modern western culture, and the culture does little to support it.

Erikson takes a developmental view. According to this view, each person goes through eight major stages during the course of his life. At each stage the person is fighting a particular spiritual battle: Erikson calls them crises. A healthy person must win each of these battles in order to be able to go on to the next; if any one of the crises is met unsuccessfully, development cannot go on to the next stage: the person gets stuck. The eight stages are:

Basic trust—mistrust	Infant
Autonomy—shame/doubt....	Infant
Initiative—guilt	Child
Industry—inferiority	Child
Identity—role confusion ...	Teenager
Intimacy—isolation	Young adult
Generativity—stagnation ...	Adult
Ego integrity—despair	Old age.

Again, there is abundant clinical evidence to show that the system of institutions which our culture provides does not give each person a reasonable chance of meeting each of these crises successfully.

With the help of these notions, I shall now state a number of typical recurrent problems, which cannot be solved within the framework of our existing culture. In each case I shall propose a pattern which may help to solve the problem. (Many of these patterns were developed at the Center for Environmental Structure, Berkeley.) I define a pattern as a new cultural institution, together with the physical and spatial changes needed to provide a setting for this new institution. These patterns are intended for the present culture of the metropolitan United States.

In each case, I have tried to put each of these proposals on an empirical basis. I do not claim that any one of these patterns is correct as stated. I am merely trying to show the order of magnitude of the changes which careful consideration of psychological issues will lead to. However, to make this point, it is important to show that these patterns are not merely products of idle dreaming, and are not merely "utopian" in the bad old architectural sense. I shall therefore propose one or more experiments which could be carried out in connection with each of these patterns, to test its validity.

Each pattern is stated in three parts:

a. A brief summary of the pattern itself.
b. A brief summary of the problem which the pattern solves (with notes showing the relevant concepts in Leighton, Erikson and Maslow).
c. A collection of short refutable hypotheses which, when made more precise, could be used to test the validity of the pattern.

The statements are very sketchy—no more than shorthand. After the statements of the individual patterns, I describe a city where all 20 patterns are present together.

III

1. Cells. Many small residential areas (diameter 200'-2000'), each one a different subculture—the total variety of subcultures far greater than

today, and also the variety of subcultures per square mile greater than today. (Hendricks, Alexander)

People seek their own kind. Character formation. Self-actualization. Require support of "same kind of people." This requires great variety of people. Also requires exposure to many types of people. Requires safety affection all OK. (Maslow, self actualization. Leighton, Orientation).

Hypotheses

a. Physical barrier helps formation of more distinct subculture. Homogeneous continuous development prevents formation of subcultures.
b. Support of differentiated subculture helps character formation.
c. Exposure to variety of different subcultures allows fuller choice, and therefore leads to self actualization.
d. Subcultures latent in modern city are very numerous.
e. Provision of appropriate facilities will induce formation of subculture.

2. Roads. Cellular network of one-way high-speed arteries (parallel, cellular, hexagonal doesn't matter). (Walkey, Hershdorfer, Alexander). People seek greater average speeds, and will stick to private vehicles as far as possible. Contact. Spontaneity. (Leighton, Expression of love, Securing of love, Spontaneity.)

Hypotheses.

a. For a given arrangement of origin destinations a network of largely one-way arteries optimizes flow *(i.e.* average speed). (Hershdorfer)
b. Capacity of such arterial loops is very large–can clear as many as 8,000 cars per hour (Walkey)
c. Friendship satisfaction varies with the number of acquaintances who can be reached in five minutes.
d. Average number of planned versus unplanned encounters correlates with disorders of spontaneity. (Clinical)

3. Small group work. Scattered semi-autonomous employment–each large organization consisting of many smaller units–loosely connected by phone, etc. Each one largely autonomous.

Efficiency of work. Understanding of the purpose of work. Autonomy, self determination. Self respect. Split work/play. (Erikson, Generativity. Maslow, Self actualization. Leighton, Membership in definite human group.)

Hypotheses.

a. Work efficiency improves under small work conditions.
b. Small work groups report better satisfaction on the part of workers.
c. Work quality, quantity, and worker satisfaction decrease as number of levels of administrative hierarchy increases.
d. Number of cases of mental illness in individual or his family correlated with number of levels of hierarchy above him.
e. Spatial centralization of work effort not correlated with overall efficiency of output.
f. Split in work/play has an effect on mental picture of the world. Test by Osgoods method.
g. Test resentment of wives, children, on not knowing the purpose or details of husbands' work.
h. Under present circumstances few real friends at work. Depth of friendships at work correlated with size of autonomous group.
i. Work efficiency and involvement go up when work/play cycle is freed to each individual's own rhythm. (Schnelle).

4. Windows. Every workplace has windows overlooking areas of life. This has huge implications either for building shape (exterior windows) or for mixed land use (interior windows). (Alexander, Ishikawa, Silverstein)

People need refreshment–the opportunity to break out of the immediate social world. Can't keep getting up and going somewhere.

Hypotheses.

a. In windowless rooms, projective tests show bad state of mind.
b. Rooms with windows, if only of sky or other buildings, would show similar results, less acute.
c. Window significant to worker as a source of "change" not daylight (Markus).

5. Old age islands. Each one holds about 75 people (50-100). Scattered as widely as possible, so that they occur in every type of neighbourhood–*i.e.* every type of cell. (Falor).

On the one hand, economies of scale–shared facilities, etc. On the other hand, need for interaction with rest of society–both for old and for young. At present old people forced into large relatively isolated aggregations by cost, and by old age cities. (Erikson, Ego integrity–despair. Leighton, Human group.)

Hypotheses.

a. Disease incidence higher among adults who are separated from the young. (Liverpool)
b. Fear of death higher among young people with little contact with old people.
c. Old age trauma (retirement) worse for people who have not had contact with the old.
d. Old people want to live where other old people are: how large must colony be before this want dies out.

e. Retirement trauma improved if people can go on living in the same general type of neighbourhood. (Falor)

6. Cruising strip. (Context: rich, low density) Every metropolitan area has cruising strips–a strip, many lanes, no through traffic, hotdogs, etc., sidewalks, between lanes, lights, special parking, many stops possible. Strips spaced at about 20 mile intervals. (Goldberg)

Teenagers need a place to meet. Houses not suitable. Schools closed. Large crowds come together by car. Police a problem today. Boys' clubs etc.,won't work.(Erikson, Identity–role confusion.)

Hypotheses.

a. Increase in the number of persons taking part in this activity.
b. Where such strips exist, thousands of persons take part.
c. Teenagers will mention express need to meet in public, unhindered by adults, in interview, etc.
d. Negative correlation between teenage crime and attendance at such gatherings.

7. Public discussion places. Frequently spaced: on the sidewalk circular rooms about 10 feet in diameter–discussion only. Sidewalk adapted to hold it. (Mc Coy)

Loneliness. No avenues for meeting. Open talk. (Leighton, Moral order – right in what one does. Maslow, Self actualization.)

Hypotheses.

a. If a place clearly designated as talking place, people will go there.
b. People have a need to talk to people – but don't know how to enter into serious talk with them.
c. High attendance at T-group type meetings. (Synanon, etc.)

8. Schools open to the city, connected with other functions, not closed. Integrated with work-study in commercial institutions. (Hoare and Silverstein)

Adolescent feels disconnected from society. Compare with village culture. Hence no possibility of identity formation; and disenchantment. (Leighton, Recognition. Erikson, Identity.)

Hypotheses.

a. Feeling of teenage alienation inversely correlated with degree of work–study.
b. Gradual mastery of real tasks correlated with strong identity formation (cf. East African example). (Clinical)
c. Correlation of learning speed with relevance of material. (Bruner)
d. Negative correlation between teenage alienation and effective participation in social institutions during childhood.

9. University. Loose aggregation of small centers. Mainly small group work. Use of all members of society in this process. Especially women, old people. No closed campus.

All people involved in the process of education. Adult education. Learning–teaching. Handing on insights to next generation (anthropology). Women's university in Los Angeles. Chinese commune. Life a process, going in and out of university continuously. Budget will not permit seminar type s/f ratio under present circumstances. Giving courses as common as taking them. (Leighton, Orientation. Erikson, Generativity.)

Hypotheses.

a. Research shifting more and more to small centers and institutes.
b. Increase in adult education.
c. More learned by teacher than by student.
d. Greatest influence on education had in small group study. (Midwest)
e. Satisfaction of adults (note specially women and old) related to the extent to which they see themselves as handing on information, culture, etc., to next generation.

10. Group houses. Dwellings where group of people, married and/or single, live in commune.

Family too small. Tensions. Huxley Island. Need for more mixed, less intense, contact–balancing out tensions; close contact with more people. (Erikson, Intimacy. Leighton, Hostility.)

Hypotheses.

a. Increasing tendency for people to seek such arrangements today: (music groups, spread of Kibbutzim, *Telluride*, summer houses).
b. Correlation of mental health with average size of household. (Indirect evidence of this in high mental health of Italian and Hong Kong areas).

11. See through living room; porch; direct contact between every dwelling and public thorough fare. More private pavilions. (Alexander)

Need to be in touch with the community. Contact. Possibility of dropping in. Privacy a matter of choice. (Erikson, Intimacy – isolation. Leighton, Spontaneity.)

Hypotheses.

a. Distance from street correlates with incidence of nervous disorders and upper respiratory disorders. (Medical Journal)
b. Reports of loneliness correlated with distance from street. (Confirmed by British studies).
c. Correlation of isolation and indices of mental trouble. (Faris, etc.)

12. Thick walls. Every lived in room has walls of materials which are easy to mould and

adapt and form, permanently to individual and habits. Hence owned dwellings: condominium. (Alexander)

People seek feeling of relation to environment; they need the possibility of local adaptation. Present building types make it hard.

Hypotheses.

a. People modify their dwellings as much as they are able to.
b. The personal character of a room, as perceived by inhabitants, resides mainly in the walls.
c. Depressed results of impersonal room character. Rate of turnover in personnel. Projective tests. (Maslow-Mintz)
d. Self esteem greater in a place which one has influenced. (Correlation of self-esteem with other indices of well being). Ego-strength.

13. The teenage room /cottage /studio. Teenage a period of exploration and identity seeking – new in industrial society, since choice of adult life not automatic. Requires possibility of exploration while at home. (Silverstein)

Hypotheses.

a. Relation between parents and teenage children better if children have place of their own, private access. (Clinical subjective reports)
b. Where room close to parents children report constrained feeling.
c. Incidence of run-aways higher in homes where this relation does not exist; lower in homes where it does.

14. Child care. In areas where families with small children live, each house opens off a common area which is entirely enclosed – connected to nursery supervision.

Small children need each other in play.

Danger to them on streets.

Parents want to go out.

Hypotheses.

a. Greater incidence of mental illness among children who have no playmates in first five years.
b. Correlation between mental trouble for child, and non-activity of mother. (When mother is educated.) (Mead)
c. Even where there are efficient nurseries, away from home, amount of use is considerably reduced. (Denmark)
d. Incidence of child trouble caused by conflict by keeping child in, against wishes, cf. reports of how wonderfully manageable children are, when they can play together, in unlimited amounts.

15. Density of residences at different distances from local community facilities and centers: as nearly as possible: 50% within two blocks, 25% within six blocks, 25% more than six blocks. (Loetterle)

Expressed preferences. Close ones still want gardens, etc. Deeper significance not clear. Guess introvert dimension.

Hypotheses.

a. Distribution statistics of vacancies and houses for sale conforms to pattern.
b. More disorders among people whose introvert–extrovert rating is mismatched their dwelling location.

16. City hall small (max. population, 40,000), and highly accessible place for discussion, complaint, political action. cf. Multi-service centers. (Alexander, Ishikawa, Silverstein)

Political effectiveness. Small units. Culture of poverty. (Erikson, Generativity. Leighton, Moral order, Spontaneity, Orientation.)

Hypotheses.

a. Need for political action exists; compare well being of those with involvement with those without it. (Check across cultures.)
b. Hopelessness is correlated with non-effectiveness.
c. Effectiveness of citizens a function of the size of community.
d. Involvement correlated with ease of access to city hall, and possibility of starting programs there.
e. Maximum size of institution still capable retaining informal atmosphere, freedom from red-tape, is about 20 persons.

17. Religious center extended displays where picture of desired urban life can evolve, and be discussed and criticised freely.

All cultures have religion. One function is to provide a communal world view, with community participation which connects each man's picture of his own life to that of the community.

Hypothesis.

Correlation between mental health and ability of person to state a connection between his own life and the structure of the larger world.

18. Trees. Special fixed inviolable locations very frequently spaced throughout the city.

The need for a relationship with trees. Contemplation. Specially old trees. Length of time for trees to grow versus rate of demolition and construction in urban areas. Contemplating existence and permanence as opposed to action.

Hypotheses.

a. House price correlated with presence of trees in neighbourhood.
b. Reverence for trees correlated with age of the trees.

c. Ill effects of long term isolation from nature.
d. Part played by trees in convalescent process. (Medical evidence)
e. Person able to lose himself more completely in the presence of a tree, than without tree (may also apply to rivers, ocean, etc. –but these are rare and far apart).

19. Peckham Health Center. Place which makes much of birth process. Pre-post-natal clinic, swimming, etc.

Birth. Surround it with importance. Effect on the mother, hence on the child, if this is not done. (Erikson, Basic trust-mistrust)

Hypotheses.

a. Correlation between attitude of mother to birth, before birth, and mental well-being of child afterwards.
b. Correlation between importance given to birth as an event, pre and post, and the well-being of the child.

20. Death. Funerals, cemeteries, etc. More respect for dead.

Longer and more complicated process of burial.

Need to absorb the death of those you love. Death rites. Virtual absence of death rites in our own culture.

Hypotheses.

a. If death not "lived through" psychologically, trouble likely. (Clinical evidence). (Lindemann)
b. Negative correlation between clinical problems traceable to death of loved ones; and relative importance of death rites in different cultures.

IV

These patterns are only a few of hundreds of similar large scale patterns which must be combined to create the full form of an urban environment. Nor have I mentioned the literally thousands of patterns at smaller scales, which will combine to give the detailed form of buildings. And I have not described the combinatory rules which allow us to put these few patterns together. However, few as they are, they already begin to define a radically different city from the cities we live in today.

There is no CBD. The city consists of hundreds of small residential islands, each with a different subculture. Density is high at the edge of these islands, and falls off towards the center of each one. The islands are widely separated, and surrounded, by a sea of employment and communal facilities. Also winding around the islands there are nets of high speed one way arteries. All employment is radically decentralised – even when a corporation is large, it consists of many small autonomous group-run workshops. The university and schools are woven in and out of the entire fabric of the city. They do not exist as distinct entities. The process of education is going on all the time, and involves all members of the culture. Houses and households have a much greater variety of size and type than they do today. Some are group houses, in which many individuals live together. At the other extreme there are individual cottages for teenagers and old people. Some houses, for families with small children, surround inaccessible shared gardens which touch all the houses but cannot be reached directly from outside. In some cases, as for teenagers, the one room cottages are attached to larger houses. Thus we shall find many dwelling units grouped hierarchically around slightly larger ones, and these larger ones in turn again grouped hierarchically in larger groups. None of these dwellings will be high-rise in the modern sense – all houses will have at least some part where they come into open, visible contact with the outside. All dwellings are owned. The city is dotted with many tiny knots of trees, undisturbed by demolition or construction. Many of the cells contain colonies of old people – these colonies smaller than the basic cells themselves – where life runs a little more slowly. There are many kinds of highly specialised places devoted to public meeting – the teenage cruising strip, the covered discussion seats, and the new kind of highly accessible city hall which I described are merely examples. The detailed structure of all these buildings, especially the dwellings, is such that the final details are personal. The walls and materials are capable of remembering the touch of the inhabitants who live there– they are rich with detailed individual adaptations. The sterile thin panels of today will be unknown.

Even without making drawings, or models, or filling in the details, I think it is clear that this is a kind of city utterly different from the one in which we live today.

I do not expect you to agree with the particular patterns which I have presented – on the basis of the scant evidence I have given. That was not my purpose in this paper. What is clear is that physical conceptions as radical as the one which I have sketched out, can be reached on the basis of common sense discussion of the issues concerning human nature, as they are known to anthropologists and psychologists today. Everyone of the patterns which I have described can be discussed, tested, and improved, on the basis of simple, feasible experiments. Yet the overall picture thus presented is as radical, as utopian as the visions of classical artist-architects.

Let us review the two detailed questions which I began with: Are psychological matters too subtle to handle; does the physical form of the

environment have any effect on behavior.

First of all, these examples will hardly allow us to accept the view of regional scientists and planners who claim that economic location and transportation – because they can be quantified – are the only problems which can be competently handled. Even the material which I have presented is enough, I think, to discredit the idea that social psychology is too vague to play a useful part in city planning, or too subtle to take seriously. The issues which I have mentioned are, indeed, so unsubtle, so massive, that we tend to pass them by in our everyday lives, as being hopelessly unamenable to change. They are not subtle. We are all aware of them. In order to take these issues seriously, we need only have the courage to take them seriously. Although the scientific evidence which shows that these demands are critical is admittedly weak, this is only, I believe, because we have not so far tried to find evidence of this kind. The idea that we should consciously try to design our own culture, seems crazy at the first sight – and so much so that people simply haven't been trying to gather the right kind of evidence.

Secondly, we come to the question: "Does the environment influence behavior?" This is a curiously mechanistic and behavioristic question. Of course the physical environment, *alone*, has little effect on human behavior or welfare. Can we seriously expect that the position of a wall is going to make us happy, rather than unhappy. We are not rats in a conditioning experiment. But the conclusion which planners have been drawing from this obvious point – namely, that therefore the organization of the physical environment does not matter much – is false. I have given a number of examples of psychological demands which occur in metropolitan United States. The examples show that if we take these demands seriously, and try to invent cultural institutions which deal with these demands, we shall then have to make major physical changes in the environment. In every case, the argument which connects the psychological demands with the change in spatial pattern is simple and common sense. What does this prove? It does not prove that the environment has an effect upon behavior. I have not claimed, in any one of the examples, that the form of buildings *alone* will have an influence on people's lives, on their behavior, or their needs. In every case, the pattern of walls or doors or buildings that I have specified, is specified along with some kind of social change. The environmental change, without the social, would accomplish nothing. But the reverse is also true. These social changes cannot be made unless the physical changes are made with them. There is no more point in trying to make the social change without the physical, than vice versa.

Let me finally stress, once again, the extremely tentative nature of the patterns which I have proposed, and the empirical results which I have based them on. Experiments in social psychology are notoriously difficult, and always subject to interpretation. However, even the scant evidence which I have presented has clear implications. And, I believe, once it is made clear that new patterns may be derived from these empirical insights, this will greatly sharpen our ability to find evidence. The evidence which I have cited so far has accumulated more or less randomly. If patterns of the type I have described are defined first, and empirical studies made second, with the process of empirical observation specifically designed to refute, or support, hypotheses connected with individual patterns, the whole process will be greatly sharpened.

But I do not apologise for the tentative nature of the patterns. Indeed, in a way it expresses rather clearly their most important feature: the fact that they are set up to be criticised. They are deliberately open to criticism. They invite it.

Each one is stated in such a way that it can be criticized by experiment and observation. This gives each person the chance to disagree with the patterns on the basis of public, empirical findings – there is therefore every prospect that we shall one day be able to define patterns which we agree on. These patterns therefore have an enormous advantage over the private visions of an architect. However vulnerable they may seem today, they raise the prospect of finding form for the environment that is so firmly based on the demands of human nature, that planners and architects will all be able to agree on it. This is a prospect which current methods of architecture and planning cannot look forward to.