CHAPTER I

INTRODUCTION

This thesis has two central concerns: the city, and man's perception of the city. Both of these phenomena have been with us as humans for a long time. The history of the city itself has a huge body of literature written about it. On the other hand, the history of man's perception of the city has been less discussed and is of critical importance to this thesis. For this reason, this chapter will be devoted to providing a succinct overview of the history of man's perception of the city. In this overview it will be shown that this history is characterized by two main thrusts: 1) the city as the home of men and the breeding ground of their institutions; 2) and the city as a purely physical existential entity. It will be further shown that these two historical traditions have been developed individually, exclusively, of one another. Then it will be suggested that the work of Kevin Lynch provides a key to the integration of these three historical traditions and his work, and that of his followers will be discussed. A mechanism, which will be shown to integrate in at least one case, the reality that underlies the historical perceptions of the city will then be introduced. Finally, the hypothesis, which the bulk of this thesis will endeavor to support, will be presented and related to the rest of this chapter.

The Three Traditions of Urban Perception

A city as we all know is many things. It is streets and houses, stores and cars, neon signs and traffic lights. It is movie theaters and
concerts and symphony halls. It is opening nights at art galleries and operas. It is 3:00 a.m. in a police station. It is slums and grand homes, ghettos of poverty and Park Avenues. It is industry and unemployment, subways and buses, taxis and walking. A city is smog and smoke and dark and light and the sun touching the West Side across Central Park early in the morning. A city is smells, sounds, kinesthetics and sights; events, catastrophes and grandeur. And above all else, it is people...Above all else, it is people.

The City as civitas

Of the two traditions of city perception, it is the tradition of the city as civitas that has been best articulated. This tradition looked at the city, and in overlooking the streets and buildings that were its physical manifestation, saw only social order. The social order they saw had essentially four modes of being, which were: social, religious, political and recreational, all of which were often subsumed by the simple expression: social. This tradition's tendency to view the city in its social aspects resulted from the condition of the Greek cities in which it was nurtured. These were more than cities, for they were also states. In fact, they were what has come to be called City States. It was the state aspect that most fascinated Greek writers, both because it was this aspect of the city organization that was novel with Greece and because it was this aspect of city organization that had the greatest potential for organizing men in general. Those two indomitable foundations of Western civilization Plato and Aristotle both devoted themselves to this question (Russell, 1964).

Plato's Republic and Aristotle's Politics, then, laid the base for this approach to the city. Perhaps unfortunately, this base was built on
a form of city organization already obsolete by Aristotle's time and on purely Hellenic models. Bertrand Russell points out that while Aristotle did allude to Egypt, Carthage, Persia and Babylon, the allusions were somewhat perfunctory (Russell, 1964, 184). I say unfortunately because at least fifteen hundred years of city building and perceiving were to pass before the City State (this time in Medieval Italy) would exist again and yet throughout this period social perceptions of city life were still based on the City State models of Plato and Aristotle.

This unduly persistent Hellenic influence in Western urban civilization, is very evident in literature. Cicero, particularly in the orations Against Catiline and For Caelius, talks about the city, but invariably only about its socio-political nature. This is likewise true even of historians like Plutarch, whether writing about Lycurgus or Caesar, even though in Caesar's case many non-social aspects of Rome the city were critical for his career, e.g. large spaces where crowds could gather, narrow streets and the like. Medieval writers, looking back to the Greeks and Romans as the font of all knowledge, naturally wrote about their cities as though they were merely imperfect Greco-Roman City States, except in the case of St. Augustine who even denounced Rome. The same is generally true of the Renaissance members of this tradition such as Sir Thomas More. Although he describes the physical layout of his Utopia, Utopia essentially concerns itself with the social and political ordering of human life, and for the most part is a carbon copy of Plato's Republic, although misinterpretations on More's part of some of what Plato was saying made Utopia somewhat more liberal in its outlook than Plato's Republic.

In 1864 a French historian named Fustel de Coulanges wrote a book
that summed this tradition up through the 19th Century. The Ancient City is four hundred pages long and is devoted to an extensive discussion of the Greco-Roman city. Although de Coulanges is well aware of the urbs-civitas duality (de Coulanges, 1864, 134), he spends no more than four pages in toto detailing the urbs portion of his beloved cities. His distinction is well worth quoting nonetheless:

"Civitas and Urbs, either of which we translate by the word city, were not synonymous words among the ancients. Civitas was the religious and political association of families and tribes; Urbs was the place of assembly, the dwelling-place, and, above all, the sanctuary of this association" (de Coulanges, 1864, 134).

The things he does discuss are revealing of the directions in which this civitas tradition was heading. Eighty-three pages detail the organization of the family in ancient life; one hundred and seven pages are devoted to the civitas (religious, social and political) aspects of city life; one hundred and twenty-eight pages discuss the revolts of the plebs against the aristocracy of the City States; and thirty-seven pages outline the rise of the Roman Empire and the end of the ancient city. At the same time that de Coulanges was writing the Ancient City, individual academic disciplines were being created to deal with each of his subject headings exclusively. Anthropology and sociology would both come to study the urban family; sociology would come to study the social structuring of urban life generally; political science would come to study social turmoil and its political manifestations; all three would study the birth and death of cities and "city states."

There is no room in a study of this scope to detail the massive body of literature that this civitas tradition has produced so far this century. Suffice it to say that it is indeed staggering. There is, then,
a well-developed tradition of urban commentary that concerns itself almost exclusively with the civitas aspect of city life.

The City as Urbs

Running parallel to the civitas tradition is an urbs tradition. While this tradition is as ancient as the civitas tradition, it has been neither as cohesive nor as well articulated. Here we are obviously speaking of a written tradition only, for as Douglas Fraser (Fraser, 1968, 8-10) points out, city planning is far older than written language, in which contention he is supported by Jorge Hardoy (Hardoy, 1968, 8-10) and Paul Lampl (Lampl, 1968, 8-10). This tradition has its roots in Greek soil as well. Hippodamos of Miletus, a Greek living in the 5th Century B.C., had, on the basis of a statement by Aristotle, been supposed to have invented the gridiron street plan. While this is unlikely, it is clear that he did theorize on the subject and thus may be considered the founder of the urbs tradition (Rasmussen, 1949, 10). But from this hazy beginning, articulated perceptions of the physical nature of the city have been most lamentably divided into three distinct channels. The first of these channels consists of observations of the physical nature of the city made by artists, writers, and composers. The second channel is the "great tradition" of urban planning and theorizing. The third is a body of literature concerned with the "fold" aspect of city design. These three sub-traditions deserve a somewhat detailed exposition.

1) The most general of the sub-traditions is the school of commentary made for the most part by artists and writers. Taken separately, they appear a disparate and motley crowd, but seen together they comprise an engrossing and remarkable body of commentary. It is not meet that this sub-tradition receive a chronologically exhaustive treatment.
Instead, some stimulating highlights will be presented. One of these highlights might be Marco Polo's descriptions of Peking made during the years 1275 to 1292. No discussion of the physical layout of Peking can afford to omit them, incisive as they are. Another such highlight could be the ayre of Orlando Gibbons (1583-1625) entitled "London Street Cries" which is a catalogue not only of what was being hawked in the streets of Elizabethan London, but also an aural description of the sounds of London streets of the time:

"Salt, fine white salt. Will ye buy my dish of eels.

Of course sung in five voices with an accompaniment of five viols, it gives a far more vivid picture of 16th Century urban life. Becoming increasingly well-known to urban specialists is John Gay's 1716 poem entitled Trivia: or, The Art of Walking the Streets of London. Kevin Lynch refers to him, but he is worth quoting:

"O bear me to the paths of fair Pal Mall;
Safe are thy pavements, grateful is thy smell!
At a distance rolls along the gilded coach,
Nor sturdy carmen on thy walks encroach;
Shops breathe perfume, through sashes ribbons glow,
The mutual arms of ladies and the beau:
Yet still ev'n here, when rains the passage hides,
Oft the loose stone spirits up a muddy tide."
(Book II, lines 257-265)

In this short passage Gay is able to comment on the crunch of traffic in the streets, their odious smell, and the contrast afforded to this by Pall Mall; he describes the shops there, their wares, their patrons; and even the conditions of the pavement when it rains. The entire poem provides an unrivaled description of early 18th Century London in graphic and mappable detail.
In 1869 Tobias Smollett in the character of Matthew Bramble gave us some highly specific comments on urban planning in Bath in the Expedition of Humphrey Clinker:

"...I was impatient to see the boasted improvements in architecture...and t'other day I made a circuit of all the new buildings. The Square, though irregular, is, on the whole, pretty well laid out, spacious, open and airy; and, in my opinion, by far the most wholesome and agreeable situation in Bath, especially the upper side of it; but the avenues to it are mean, dirty, dangerous, and indirect...The Circus is a pretty bauble, contrived for shew, and looks like Vespasian's amphitheatre turned outside in. If we consider it in point of magnificence...the areas projecting into the street, surrounded by iron rails, destroy a good part of the effect upon the eye; and, perhaps, we shall find it still more defective, if we view it in the light of convenience" (Smollett, 36).

And he goes on in great detail to disparage all that we find so entrancing about Bath today. But what is perhaps most amazing is to find in this description such cleared and detailed thoughts about city design, even to the weighing of appearance against convenience, or, in Bauhaus terminology, form against function. These three Englishmen, one a composer, one a poet, and one a novelist, make clear the general character of this first substream of the urbs tradition. When the number of writer-travelers (Stendhl with his Roman Journal, Dumas with his Adventures in Spain, Adventures in Caucasia, etc., Twain with his Innocents Abroad, his Following the Equator, T.H. White's America at Last, ad infinitum) are included, it becomes apparent just how extensive, how impressive, and how important this body of commentary on the physical aspect of the city really is.

2) The second channel into which the urbs tradition split is the great tradition of urban planning. As distinct from architecture, this substream is not much older than the Renaissance. It must once again be emphasized that urban planning as such is not what we are discussing, for
entirely planned cities are much more ancient than this. Rather, we are concerned with the articulated perceptions of people about cities. This substream is comprised of a body of feeling and opinion put forth for the most part, but not exclusively, by the planners themselves; a body of systematized observations about the natures and potentials of cities, and the implementation of these observations.

It was during the Renaissance, that the city as symbol was being used as "the greatest artefact of man." Urged on by this prevalent and pervasive feeling, kings and Popes were moved to exhibit their power and influence by turning symbol into reality. To this end, they hired the brightest minds around and set them the task of turning Medieval messes into earthly paradises. The men that they commissioned were intelligent and before they moved, they thought and wrote, thus establishing an articulated planning tradition for the first time. (Bacon, 1967, 94 et seq.; Rasmussen, 1949, 20 et seq.; Rasmussen, 1959, passim; Gilmore, 1952, 229 et seq.; Friedrich, 1952, 66 et seq.; Huizinga, 1954, 323 et seq.) The names of these theoreticians and planners include: Michelozzo, Brunelleschi, Antonio da Sangallo, Michelangelo, da Vinci, Pisanello, Bramante, Peruzzi and Bernini. As time went on and the Renaissance moved north Eigtved and Inigo Jones wrote about cities (Rasmussen, 1949, 34-149). Later, under similar impetus, though for different reasons, John Wood, Andre Le Notre, John Nash, and Pierre L'Enfant thought about and designed cities (Bacon, 1967, 149-203). In our time the names of Howard, Wright, Saarinen and Kiesler (Alexandrian, 1969, 186-189) are preeminent. While it is true that nearly all of these men (with the partial exceptions of da Vinci, Le Notre, and Howard) were architects by trade, by circumstance and necessity they were also city planners. And for one reason or another,
they uniformly were given the chance to design on the grand scale, by patronage in the case of the Italians, by commission in the case the Englishmen, Saarinen and Le Corbusier, and by the force of inner necessity in the case of Howard, Wright and Kiesler. In addition to creating a body of theory on which to draw, they have given us, more importantly, living examples of the concrete implementation of their theories. The significance of the real thing cannot be too strongly stressed.

Edmund Bacon, in his *Design of Cities* (1967) gives a striking illustration of this. In looking at Niemeyer's plans for Brasilia, in reading Niemeyer's writings, Bacon felt that the plan of Brasilia was somewhat of a failure. This was the opinion he included in the body of his book. Later, he had an opportunity to go and visit the city itself, and there he discovered, to his great joy, that Niemeyer had in fact designed a gorgeous city. This opinion he included in the appendix to his book. His point was that theory aside, the best articulated statements of the potentials for urban life lie, not in the designs and the writing of the great planners, but in the cities themselves. (Bacon, by the way, belongs to this tradition himself as a city planner in Philadelphia.)

Other members of this substream include men who designed cities and who theorized about cities, without having any of their work realized. Here would go such men as Giorgio Martini, or Buonaiuto Lorini (Rasmussen, 1949, 23-27) or the visions of such as Boulee, Ledoux and Lequeu (Lemaguy, 1968). Today, this idealistic tradition is continued in the work of writers such as Doxiadis, Crosby, Rykwert, Whyte, Alexander, Chermayeff, Hbersheimer, Cullen, de Wolfe, Ritter, Woodrow and many others. This entire substream of the urbs tradition well deserves to be called The Grand Tradition.
3) The third substream of the urbs tradition it must be admitted is somewhat of a catchall. It was described earlier as dealing with the "folk" aspect of urban design, i.e. it is concerned with the more or less unconscious ordering of urban life. It thus includes the greater part of the greater part of the world's cities. That is, most cities present a physical reality that is the result, not of a plan, but rather of a lot of individual dreams. Everyone is familiar with Le Corbusier's famous diagram of the suburban dream, multiplied by two million. Each of the two million suburbanites has a dream, a plan, which is put into affect. The result, unconscious and unintended, is nobody's plan and nobody's dream (Crosby, 1965, 65). It is this organization that characterizes large portions of most urban areas. The people who have studied this reality have not been planners, but geographers.

Although geographers have spent much discussion stressing the importance of relating civitas with urbs, both as such, but particularly under the guise of a well-articulated man-environment dichotomy; that although the issue has received serious attention as an issue, sub-geographic specialization has hindered any serious study of the inter-relationships of urbs with civitas. Thus, although it is obvious to geographers that there must exist a critical interface between the urban environment and urban man, geographers have failed to study this interface as a result of subject fragmentation, and certain other quintessentially historical problems. The field of geography has not come all that far from the Salisbury and Alden study "The Geography of Chicago and its Environ" (Platt, 1959, 38-56). To be sure, other phenomena than the geology underlying urban regions have been studied, but not in radically different ways. As Alden and Salisbury studied the geology of Chicago, so
geographers have studied urban populations, urban land use, urban residential patterns, and so on. Geographers have mapped and tried to understand the principles underlying their maps. Raymond Murphy's *The American City* documents this history in an admirably complete fashion. What North American geographers have not attempted is a grand synthesis of all that they know about cities. A multiplicity of individual studies in all of these areas does not integrate them. Some extra-geographical theme is needed to enable us to integrate all these geographic phenomena, perhaps something from the civitas tradition of study. Who would cross the line? Who would try to bring them together, urbs and civitas? Who would try to put the city back together again?

**Putting the City Together Again: Urban Image Analysis**

The gigantic task of putting the city back together again conceptually has turned out to be a much bigger job than it at first appeared to be. The door, however, has been opened and it has been opened by a new behavioral orientation in geography which has not only welded together many sub-geographic disciplines, but which has also in the process brought several hitherto unrelated disciplines together, especially geography, anthropology, sociology, psychology and planning.

Within the field of geography two major thrusts have inexorably led to a behavioral orientation. The first of these thrusts, which also ironically impeded study of the integrated city for several decades, was environmental determinism and the reactions against it. At first the stance of the environmental determinists was applauded, but reaction was swift and in many cases violent (Wright, 1966, 188 et seq.). Some reactionaries took the form of possibilitists (Sauer, 1956; Sprout and Sprout, 1956). Another part of this thrust is the opposite point of view,
that of cultural determinism, first strongly articulated by Marsh in 1864. If the determinists saw man being shaped by nature, to one degree or another, the Marshists (Wright, 202) saw the earth being shaped by man, to one degree or another. Whatever their differences, both these points of view share a behavioral focus. Amusingly, the proponents of these points of view proceeded to study anything but behavior. Thus the study of behavior itself as a legitimate geographic concern lay dormant.

The second of these thrusts hinges on the question of disciplinary perspective, of point of view. More clearly to understand this question of point of view than any geographer before or since, or very likely ever, was gentle-hearted J. K. Wright. Consistently through a long career, Wright insisted that the geographic point of view is the birthright of all men, not merely geographers. His doctoral dissertation, begun in 1919, was concerned with the geographic lore of the Middle Ages. In 1925 this came out as a book. Here was a man studying perceptions. In 1946 Wright's interest in perceptions became stunningly clear in his beautiful essay entitled "Terrae Incognitae," where in defining geosophy he embraces not only the points of view of geographers, but also of "farmers and fishermen, business executives and poets, novelists and painters, Bedouins and Hottentots" (Wright, 1966, 83). Geosophy has subsequently found support from David Lowenthal (1961), H.C. Darby (1962), W. Kirk (1963) and C.J. Glacken (1967), and has been put into practice by a host of others including Kates (1966) and Bowden (1968). The bulk of this Introduction is geosophical and indeed the bulk of this thesis is geosophical, depending as it does on the geographic lore of Mexican school children.

However much it may be true that these thrusts prepared a fertile ground for an approach to the integrated city, they did not provide
the actual impetus for study. What the behavioral and geosophical interests
did, was to open geography up, so that geographers were forced afield to
garner crops in apparently greener pastures. They began to look to
psychology and anthropology at the very same time that these fields were
looking towards geography for help. The behaviorist tradition in
psychology was beginning to get interested in large scale environments
(Stea, 1969, 64-75), while anthropology was beginning to get interested
in genuinely geographic questions. Michael Coe even says that new
anthropologic models of behavior "are going to stem less from what
anthropologists have been talking about in the past and more from the
'new geography'" (Coe, 1969). Things were coming together.

They all came together in 1960 in a slim volume called The Image
of the City written by an urban designer named Kevin Lynch. His subject
was at once the actual physical city (urbs) and the perceptions of that
city held in the minds of its inhabitants (a geosophical concern) as
well their behavior in the urbs environment as free moving animals. He
supported all this by elaborate references to anthropology. Yet his work
cannot by any means be considered as an outgrowth of these fields. He was
not even aware of J. K. Wright or geosophy. He was none too clear about
the behaviorist tradition in psychology or at all aware of it in geography.
He entered these domains out of his inner necessity as an urban designer.
And so somehow it all came together in his book which gave great assurance
to everyone else poking about in these fertile inter-disciplinary soils.

The Image of the City rapidly gained wide recognition as a
pioneering attempt at establishing a new type of planning. What Lynch
suggested was that the physical reality of a city was ultimately not as
significant as the image of that city held in the minds of the people that
lived in that city. As he was able to illustrate, this mental image was often at variance with the physical reality, so that streets that crossed one another were perceived as not crossing, or that squares of five sides were perceived as having only four sides. He went on to suggest that a city could be designed so that the physical reality of that city would find an exact correspondence in the mental pictures of that city in the minds of its inhabitants. Such a city he called "legible," that is, its reality could be "read," much as you are reading this page. He also created a methodology for getting at the mental images in the minds of a city's inhabitants, so that particularly chaotic sections of existing cities could be discovered and where possible "corrected" so as to be more "legible." He then used this methodology in pilot studies of three American cities, obtaining evidence that amply documented his point. The Image of the City is shot through with flaws. Some of these are the natural result of the pioneering nature of his work. But others are the result of his failure to adequately articulate his basic assumptions.

The impulses out of which Lynch's work arose are, of course, many and complex. Nonetheless, I feel that I have been able to isolate at lease four of the most basic assumptions. First is the realization that men come to the conclusions and act on a selection of data that is severely limited by their perceptual mechanisms and organized into highly personal and systematically distorted images of the real world. This realization is hardly new with Lynch. It is undoubtedly as old as man's critical conscious awareness of himself. It is certainly as old as Plato. Since that time it has formed the basis of action for most serious artists, writers and philosophers. The invention of visual perspective and the advent of Cubism are only two glaring examples of this realization. The
common cant phrase "ways of seeing" adequately sums up the entire question. There is your way of seeing, my way of seeing, their way of seeing - and then there is the "real" world. The Western world, seeing through the eyes of perspective, has, since its invention during the Renaissance, ordered its world in one way; the Chinese, without perspective, have ordered it in another (Rasmussen, 1949, 28-38). This realization of man's distorted view of the world, underlies the entire idea of "images."

The second impulse informing Lynch's work is the idea of systematically studying these distorted images. This may not at first sight appear to be that different from the first assumption I discussed above, but the qualitative distance between the realization of these distortions, and their systematic study, being in a way the distance between art and science, must be sufficient justification for the distinction. It was this second impulse that resulted in his work being vastly different from that of other writers in the field of urban design. Numerous others had been interested in the problems of designing cities of clarity and order. Lynch, however, was the first to go to the inhabitants of the city in an attempt to discover what they, the public, found disturbing and unintelligible, as opposed to what designers found disturbing and unintelligible. Aware of this, he sought two images in his study: that of the public, which he called the public image, and that of trained specialists. Interestingly, the two images turned out to be very close to one another. This fact should have raised some interesting questions about the necessity of seeking a public image to begin with, particularly since the methodology which he invented to elicit the public image has found wide application in other attempts to describe a general "mental geography."

The third assumption underlying The Image of the City is an
assumption about the nature of cities in general. Lynch fails to make explicit the fact that his idea of the city is part of a tradition as ancient and as meaningful as the city itself, and one very out of vogue with our current cabal of liberal thinkers on the subject of city design.

Lynch does not have the same set of assumptions about the nature of cities as does Peter Blake who speaks of Manhattan in the following manner: "I think of the wonderful cacaphony, the uninhibited madness of my city - the brutality, the coarseness, but also the tremendous excitement. Bob Rauschenberg said that Times Square was the greatest modern Work of Art produced in the United States - and I agree" (Blake, 1969, 13). Lynch would find Times Square frighteningly - not exhilaratingly - chaotic. He would also question the positive valuation placed on cacaphony, madness, brutality and coarseness. The very currency placed on admiring the chaos and horror of the world demands that Lynch's assumption of a possible city of Clarity, Light and Order be given clear affirmative articulation.

This idea of the city gains a great deal of force from Lynch's fourth and almost unconscious assumption: that it is bad, indeed horrifying, to be or feel lost. Lynch's feelings about this become evident in his references to 'disorienting urban features,' 'streets that curve and change direction unnoticeably' or 'landmarks that vanish up close,' and when he speaks in the Appendix to his book of the positive values of 'constant orientation' and 'a feeling of belonging.'

These four assumptions or impulses can be reordered in the following manner: 1) There is something horrible about being lost and disoriented; 2) To avoid this situation the environment must be ordered in a "legible" manner, particularly environments on the urban scale. Cities must be clear, ordered and intelligible; 3) Men do not see the
world as it is because they are hampered by perceptual mechanisms of one sort or another; 4) Therefore it is important to discover the ways in which reality must be organized so as to appear legible. This can only be done by discovering the pictures in the minds of the public so that we can learn the "systems" behind the distortions and design intelligible cities that will keep people from being lost.

The methodology introduced in Lynch's study has been largely responsible for generating numerous similar studies. These include studies of the proposed site of Ciudad Guayana, Venezuela (Rodwin, 1965; Appleyard, 1969), cities in Lebanon (Gulick, 1963), Holland (De Jonge, 1962), Italy (Carr, 1965), Mexico (Wood, 1969; Stea and Wood, 1971) and the United States (Rand, 1968), and also neighborhoods (Shelton, 1967). The methodology has been applied in the study of non-urban phenomena as well, including comparisons of images drawn by American and Nepalese children (Dart and Pradham, 1967), images of New England (Dowd and Faido, 1968), the United States (Eaton and Lawrence, 1963; Lennon, 1968), of a small city park (Girside and Soergel, 1969), and of many varied phenomena (Stea, 1969a). These interests have called attention to some of the relevant psychological literature (Stea, 1969a) and have attracted some psychologists toward the arena of large scale environmental perception (Gitkin, 1968).

The connection between urbs and civitas in all these studies has remained essentially dormant in the methodology itself. What has been investigated has been the image of urbs held by the civitas or individuals within the civitas. Lynch makes this more or less explicit when he says that he is after the "public image." This so-called public image would contain "areas of agreement which might be expected to appear in the interaction of a single physical entity, a common culture, and a basic
psychological nature” (Lynch, 1960, 7). In other words, Lynch was not interested in the psychological problems of the cerebral character of this image, nor in the exact methods by which it is developed and constructed, although some of the other literature cited above does attempt to deal with these questions. Nor was Lynch interested in elucidating questions of culture. His interest was specifically centered on the city and on the public’s mental picture of that city.

Unfortunately for the city (but not for image studies), Lynch, as a student of Gyorgy Kepes, was not actually interested in the city as a geographic entity, but rather in the articulation of visual space in general, which is why his methodology has found such wide-ranging application in geography in general. It is also why his regard of the city is so narrowly restricted to its visual aspects. He failed to consider non-visual modes of perception. He failed to bring to his study of the city a political, an economic, a social or a geographic sensibility. He was interested solely in the arrangement of the visual surface of the city. Two of the studies cited above have attempted to flesh out, as it were, the Lynchian image of the city. In “The Image of San Cristobal” (Wood, 1969) the attempt was made to investigate images generated by non-visual modes of perception, particularly sound and small, and to involve social, pseudo-political and religious orderings of space with the Lynchian image. Furthermore, an attempt was made to unite urbs and civitas, so that the city could be wholly seen as the home (urbs) of man (civitas). In the conclusion to this study, I stated that:

"Image analysis is valuable, but no matter how legible a living space is, that alone is not enough. Legibility, clarity, without communality is nothing more nor less than sterile sanity. Spatial replication may well be one avenue leading towards a communal, social, if you will, living space—a living space, that is, that is
not only articulate but human. It is just not enough to walk out of your house onto a street and know where that street goes. It is not even enough to walk onto that street and know that in some way that that street is your's. And it will not be enough until you can no longer walk out of your home at all, but simply into larger and larger homes filled with more and more family" (Wood, 1969, 45).

This idea is reiterated in the conclusion to A Cognitive Atlas (Stea and Wood, 1971), where, after noting that:

"We have introduced the concept of 'replication;' enlarged the 'visual image'...to include inputs from other semimodalities; expanded the notion of 'opportunity surfaces;' differentiated...between point and areal images; and attempted a new technique for assessing the variability of boundaries" (Stea and Wood, 1971, 72).

Stea plunges to the heart of the matter by concluding:

"Temporal changes without social dislocation and provision for a variety of sensory experiences - some traditional - are part of the essence of both cities and people. When we know more about them we will have discovered many of the themes upon which 'urban life' is based" (Stea and Wood, 1971, 73).

The true concern of the urban image analyst is quintessentially humane. He is interested in how man creates a city, but even more so, in how the city recreates man. He is a behaviorist, an environmental determinist of one shade or another, and a geosopher.

Keeping the City Together: The Process of Replication

The focus of the last section was on the humane concerns of image analysis, from Lynch's concern about the disorienting nature of urban areas, to my concern for a communal as well as legible city, to Stea's concern for temporal change without social dislocation. Although these were the focus of the last section it must also have been apparent that in this last section, too, Lynch's originally narrow visual view was being expanded to encompass a truly geographic point of view. By the time
we reach the Cognitive Atlas, the civitas tradition is no longer represented solely by the methods of investigation, but now forms part of the subject of investigation along with urbs. This resulted from the understanding that a city is a place as well as its people and that any "image" that failed to take this dual aspect into account was apodictively an incomplete image. But it is not sufficient to simply study both aspects. This has been done all along; nor is it sufficient to merely study both aspects in a single work. This is because urbs and civitas do not simply coexist side by side. They are closely wedded together and each is dependent on each for its character and development.

In "The Image of San Cristobal" I suggested a device that, in at least the case of San Cristobal, might have great heuristic power in getting at the relationships between urbs and civitas. This device I called "replication" and it was defined as follows:

"Replication in this sense is simply the recreation of similar forms on varying scales. Thus if the town as a whole has a principle node consisting of a square, a neighborhood will also have a principal node consisting of a square. If the city as a whole has a particular character that sets it apart from other cities, a barrio will also have such a character. If a city as a whole satisfies a variety of functions, a neighborhood will do so as well. What is critical from an orientation, or wayfinding point of view, is that the forms of organization be similar" (Wood, 1969, 40).

This general definition was further amplified in the following passages:

"The concept of replication makes most sense working from the micro- to the macro-level. In Las Casas the typical house has the rooms of the home ranged around a rectangular court-yard or patio. The rooms themselves are divided along two lines, a functional and a personal line. Functionally, certain rooms are for certain tasks; the kitchen for cooking, the sala for formal entertaining, the bedrooms for sleeping and the patio for non-articulated functions like, 'Oh, go out and play in the patio,' or for washing clothes, or for informal entertaining, or for talking to salesmen and
so forth. The rooms are also divided personally; this is the parents' bedroom, and that is Jose's room and the kitchen is Maria's territory. Optimally each room will have its own character, a character that will reflect both its functional and its personal aspects. The kitchen is clearly demarcated as a kitchen, but it will hopefully reflect Maria's character as well since Maria very likely has her own preferences for organization of the work space. Jose's bedroom will be as clearly demarcated as a bedroom as will his parents' room. When one leaves his room, he does not step into a hostile world, nor into someone else's room, but rather into a neutral patio that at the same time that it belongs to Jose, it belongs to all the inhabitants of the home as well. And from the courtyard leads the door to the outside world.

If replication is indeed in operation, all the characteristics of the home will be in operation in the next level. Thus all that is necessary is to learn the rules operational on one level to be perfectly familiar with the rules operational on all levels. In fact the barrio, or neighborhood, does replicate the home. It consists of a number of homes clustered around, or at least focused on, a rectangular square. The homes throughout the barrio are divided along two lines: functional and personal. Thus some of the buildings function as shops, others as workshops and still others only as residences. At the same time the homes are distinguished by the character of the families inhabiting them. If both Rosa and America operate tiendas, the tiendas will not only be distinguished from Felipe's shoe shop functionally, but from each other personally. Thus Rosa will have her hours and her range of goods and her ways and America will have hers. Once again formal entertainment will take place within the homes but Rosita and Juselito will flirt in the plaza. Their younger sibling will have been told numerous times, 'if you want to play soccer, play it in the plaza, not in the patio while I'm trimming the bushes!' When one leaves his home, he does not walk out the door into a hostile environment nor into someone else's home, but rather into a barrio that is neutral and at the same time his very own. And the roads that leave the barrio for the Zocalo (the city's central plaza) leave from the barrio plaza.

This form is again replicated on a higher level. The town as a whole consists of a number of barrios clustered around or focused upon the Zocalo. Barrios, like homes and rooms can be distinguished functionally and personally. In Las Casas each barrio specializes in a particular function or craft. Thus there is the iron-mongers' barrio, the carpenters' barrio, a
commercial barrio, and so forth. Likewise each barrio has a unique personality. It can be distinguished from other barrios on the basis of color, sound, smell and morphology. Barrios even tend to name their streets thematically. Thus the streets in Barrio El Cerrillo are named after towns in Chiapas, while those in Barrio Mexicanos are named after South American countries. Street patterns vary as well. In Barrio el Cerrillo the blocks are very small and the street network is dense. In Barrio Santa Lucia the opposite is true. The physiography further demarcates barrio from barrio. The barrios cluster around the Zocalo just as the homes cluster around the plaza or the rooms cluster around the patio. Barrio entertaining is done in the barrio, but other sorts transpire in the Zocalo. If there is no or hanging around in one’s plaza, one goes down to the Zocalo. This way one leaves one’s barrio and enters not a hostile world, nor necessarily another barrio, but rather a neutral ground. And in Las Casas the roads leaving the city all run from the Zocalo.

Various non-spatial activities are replicated as well. Thus each home has its own altar, even if it is only a votive candle. Each barrio has its own church. And the town has its cathedral associated with no particular barrio. A family will hold a party in its own household patio. The barrios have barrio fiestas held in the barrio’s plaza. So the town of San Cristobal has fiestas that are held in no barrio, but in the Zocalo or on the hill of San Cristobal. Education, recreation, work, what have you—they all follow the pattern. The point must be made that these are not simply neighborhoods as in the U.S. In the U.S. there is no replication of spatial organization from the home to the city. There neighborhood fiestas are rare and city fiestas neither universal nor frequent. To stretch the point, one could say that the Zocalo in Mexico City is the square around which the states cluster. In the U.S. such a point could never be even vaguely considered. That is the important and basic difference” (Wood, 1969, 40-41).

At the same time that this replicative process was being articulated for San Cristobal, six miles away in the Indian village of Zinacantan, work, under the guiding hand of Dr. Evon Z. Vogt of the School of Anthropology of Harvard University, was underway (Vogt, 1964) to illustrate that this same process of replication, in slightly different ways, was operative there as well. Vogt had written on this question extensively as early as 1965 in an article entitled "Structural and
Conceptual Replication in Zinacantan Center" (Vogt, 1965), and had used the term in this way as early as 1960 (Vogt, 1965, 342). I wish to quote extensively from Vogt's 1965 paper because his work is so very relevant to the work in hand:

"After seven seasons (1957-1963) of field work in Zinacantan, I believe I am beginning to understand something of the patterns of the culture. One of its patterned aspects that now strikes me forcibly is the systematic manner in which certain ritual behaviors are replicated at various structural levels in the society, and certain concepts, expressed quite explicitly in Tzotzil, are replicated in various domains of the culture. It is as if the Zinacantecos have constructed a model for ritual behavior and for conceptualization of the natural and cultural world which functions like a kind of computer that prints out rules for appropriate behavior at each organizational level of the society and for the appropriate conceptualizing of phenomena in the different domains of the culture (Vogt, 1965, 342).

He illustrates his understanding of this process in several specific ways:

"Just as the settlement pattern of Zinacantan appears to take the form of an aggregate of agregtages ranging from the domestic family house up to the ceremonial center, so also the social structure and ceremonial organization appears to manifest an orderly replication of increasing structural scale (Vogt, 1962).

The social structure of the outlying hamlets is based upon the following residential units: the patrilocal extended family occupying a house compound; the sna composed of one or more localized patrilineages; the waterhole groups composed of two or more snas; and the paraje.

Just as there exists a social order of ascending scale from the patrilocal extended family in its house compound, through the sna, the waterhole group, and up to the paraje, so there is also a ceremonial order of ascending scale that exactly parallels and expresses the social order both in terms of ritual paraphernalia and in terms of ceremonies of increasing size and complexity. Each of the social structural units I have described is symbolized by shrines composed of crosses that are conceptualized by the Zinacantecos as 'doorways,' or in other words, as means of communication with the totilme liletic (the ancestral dieties living in the mountains) and with yahual balamil (the earth god) (Vogt, 1960) (Vogt, 1965, 344-345).
He then provides detailed analysis of an example of what he terms "structural replication," in this case a ritual meal concluding:

"But whether the ve?el ta mesha involves only one family in a small domestic ritual with a handful of people sitting at a ridiculously tiny table, or, at the other end of the scale, involves the entire religious hierarchy seated in full regalia at the enormous table and consuming entire chickens, the rules of behavior are precisely the same. What is done in the small thatched house of individual families is replicated in ever increasing scale for the lineage, for the waterhole group, for the paraje, and for the whole municipio in the ceremonial center" (Vogt, 1965, 348).

He further notes that this sort of analysis can be carried out for many other aspects of life in Zinacantan. He then goes on to define "conceptual replication:"

"I now turn to what I have chosen to call conceptual replication. By this I mean that the world of the Zinacantecos is segmented conceptually in systematic ways that are replicated in different domains of Zinacanteco culture" (Vogt, 1965, 349).

And in this instance he takes as his example the concept of "embracing:"

"The concept of "embracing" occurs in at least the following domains of Zinacanteco life: the socialization process in the family, the baptismal ceremonies, the wedding ceremonies, the curing ceremonies, and the activities of ancestral gods inside the mountains" (Vogt, 1965, 349).

His discussion of conceptual embracing requires too detailed a knowledge of Mayan ethnology to describe here but his conclusion is vital to our understanding of replication in general:

"I suggest that these data have implications not only for our understanding of the integration of contemporary Zinacanteco culture, but also for the study of one of the probable processes of Maya cultural development over time. One can imagine how Maya ritual behavior and belief might have developed in complexity by gradual elaboration of the basic elements of domestic ceremonies that were originally performed by small household and hamlet units and were replicated on an increasing scale as the
population expanded and the size of the social units increased to encompass the magnificent ceremonial centers with their large sustaining areas containing thousands of households and dozens of small hamlets” (Vogt, 1965, 351-352).

In Vogt’s definitive and monumental opus on Zinacantan (Vogt, 1969), this ordering concept of replication is given exhaustive treatment and is used, with its brother concept of “encapsulation” to sum up and order Vogt’s understanding of Zinacanteco existence. Myriad examples are given but his final ones are instructive as indicative of how far he has taken the idea:

"I have also recently discovered that names for parts of the human body are replicated in the names for parts of houses and for parts of mountains. The walls of a Zinacanteco house are called its 'stomach,' the corners are 'ears,' and the roof the 'head.' The purpose of the newhouse-dedication ceremony is to provide a soul for the house just as the human body is provided a soul by the ancestral gods. The same concepts are applied to mountains: the peak is a 'head,' the base are 'feet,' and the sides are called the 'stomach.' Some of the same terms are applied to fields and tables: the corners of a field are the 'ears,' as are the corners of a table; the top of a table is a 'head' and its legs are 'feet.'

In more general terms, a mountain, a field, a house, a table and a human body are envisioned as having directional and spatial symbolism that replicate a single model. I have argued that pyramids and mountains may have been conceptual equivalents for the Ancient Maya; it would be fascinating to know if the ancient pyramids were conceived as having 'heads,' 'feet,' 'ears,' and 'stomachs,' and if they acquired 'souls' at their dedication ceremonies...If so, the pyramids probably also replicated the quadrilateral cosmos in which the Ancient Maya dwelled and the modern Maya live" (Vogt, 1969, 580-581).

The implications of Vogt's rich understanding of replication will not go long unnoticed by those involved in this complex field concerned with the interface between man and the environment. While the application of this concept in regard to the city has been briefly discussed,
it is one of the main burdens of this thesis to provide detailed field evidence to support what was in my earlier work merely a suggestion. This field work leans heavily in the directions pointed out in "The Image of San Cristobal" and in the Cognitive Atlas and draws heavily upon the work of Vogt and his co-workers in the Harvard Chiapas Project. At this point a brief allusion should be made to the barrio and its role in the replication process in San Cristobal which comprises the central thrust of this thesis. The barrio in San Cristobal is in actuality the sole significant level of order between individual homes and the city at large. In Zinacantan, Vogt notes the existence of six hierarchial levels of social organization as follows: 1) the individual home; 2) the patrilocal house compound; 3) the "sna;" 4) the waterhole group; 5) the paraje (a small subcounty-like unit); 6) the all-embracing municipio (equivalent to our county). In San Cristobal, a simpler hierarchy of three levels is observed: the individual houses, the barrio and the town itself. The barrio in this scheme subsums the congruent parroquia, or parish. The barrio is a unit having at least the following characteristics: 1) physical (including physical geographic, visual, and non-visual attributes); 2) social; 3) religious; 4) political or pseudo-political; 5) economic; and 6) temporal. It may well have more distinguishing characteristics than these, but these will suffice for our study. This leads directly to the statement of our hypothesis.

The City is Alive and Well: The Hypothesis

It is here hypothesized that the barrio attributes enumerated just above are replicated from level to level in San Cristobal, that, in effect: 1) The replication process does operate in San Cristobal; and 2) That the barrio is the significant level of mediation between that of
the individual homes and the city at large.