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The Sense of Place in Architecture

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ABSTRACT

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Introduction

The "sense of place" in this study is the name given to the confidence and well being which is the result of a generally accepted concept of space within which man can relate himself, his environment, and the cosmos as a whole.

When a sense of place has existed, so has a clearly structured, visually coherent environment.

Contemporary man has no sense of place, and his environment lacks visual coherence and clear physical structure.

This thesis will propose a tool to help give visual coherence to our environment in spite of the lack of a sense of place.

Historical Survey

A sense of place existed in the Gothic and Baroque periods as the result of all inclusive concepts of space.

In the Gothic world, Aristotle's doctrine of "place" (defined as the inner boundary of what contains) was dominant, while in the Baroque world, the Newtonian theory of infinite, continuous space was generally accepted. In both cases, the space concept of the age made direct
impacts on the architecture and urban design of the time.

Contemporary man has no sense of place, and as a result he has been hindered in building a visually coherent environment.

Proposal

In order to overcome the lack of a sense of place so that a visually coherent environment might be built, we must set a simple, generally acceptable criterion which will be the idea that can begin to bind together our individual work into a coherent whole.

The proposal is that the scale of individually designed works be directly related to the velocity of the viewer. High speed seeing requires large scale structures and spaces, while slower speeds require smaller scales.

This criterion springs from the basic aspect of our time: change and motion; and it recognizes the way in which motion affects vision.

Although other factors which affect building and planning must be considered (land costs, functional and programatic requirements, etc.), the principle can be a useful tool in giving coherence to our visual environment.

Demonstration

The area around a typical freeway and connected major thoroughfare system is developed generally and a specific building is projected in accordance with the speed/scale criterion.
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THE SENSE OF PLACE IN ARCHITECTURE

INTRODUCTION

The expression "sense of place" is used in a variety of contexts. In architecture it usually has something to do with being able to visually identify one's location, or with the sensation of arriving into a well defined space, or with being able to relate one's location with the location of something else. But this consciousness of where one is carries with it a broader implication which has a direct relation to the visual coherence of architecture and of the urban environment which architecture comprises.

It is concern for finding some basis for visual coherence in today's city which has stimulated this study.

This study will show that what will be called a "sense of place" is intimately tied up with concepts of space; and it will show how "space," "sense of place," and urban visual coherence are related.

In examining the historical development of concepts of space, we will see periods in which clearly defined concepts took possession of men in all fields to the extent that they were sure of where they were, not only at a relatively small scale, but at the scale of the cosmos as a whole. In those moments the concept of space was so all embracing that men felt more complete and more confident; they possessed the
basis granted by confidence which gave direction to their creative energy to the shaping of a coherent environment.

It is this liberating certainty, generated by confidence in a concept of space and in one's place in that concept which is called here the "sense of place." It is a psychological need of man. Without it he feels to a certain degree lost and ill at ease, somehow incomplete. Without it he has shown himself to be hindered in the construction of a visually coherent environment.

It will be shown here that contemporary man's incoherent environment parallels his lack of a sense of place. He does not have an all embracing certainty about his position in the cosmos.

Now the architect can in no way impose a sense of place on an era. However, when he finds himself living in an era which has no sense of place, he can seek a way to step around this lack and work toward a visually coherent environment in spite of the situation.

This thesis proposes a means which can help in the step around our lack of a sense of place and which can be of use in working toward a visually coherent environment.
HISTORICAL SURVEY

Classical Antiquity

Throughout classical antiquity, especially in Greece, serious concern was directed to the concepts of "space" and "place" in scientific and philosophic thought. Although Democritus (c. 470-c. 400 B.C.) and the atomists conceptualized space as a void "superior in a certain sense to material things," the dominant view was to reject the existence of space per se. Only the existence of matter was admitted.

Pythagoreas (c. 530 B.C.) conceived of space as the limiting agent between bodies. Air and space were considered to be the same thing. Likewise, Archytas (428-348 B.C.) ascribed to space some curiously atmospheric qualities which limited the expansion and contraction of bodies. Plato (429-348 B.C.) began to speak of space as void, but his concept was an obscurely presented blend of void and matter, in which space was a special kind of matter.

The most important Greek, speaking in terms of his influence on later eras, was Aristotle (348-322 B.C.), who clearly denied the independent existence of space and developed a system based on a definition of "place." The Aristotelian system, not a theory of space, but rather a theory of the positions of bodies, was to have a supreme influence on later periods; and it must therefore be examined closely.

Aristotle, noting that everything must be somewhere, that is, in a place, defines "place" as the "innermost motionless boundary of what
contains. In the *Physica* we find listed the basic assumptions leading to that definition:

"1. Place is what contains that of which it is the place.

"2. Place is no part of the thing.

"3. The immediate place of a thing is neither less nor greater than the thing.

"4. Place can be left behind by the thing, and is separable.

"5. All place admits of the distinction of up and down, and each of the bodies is naturally carried to its appropriate place and rests there, and this makes the place either up or down."

By way of description, Aristotle provides the following example:

"Just, in fact, as the vessel is transportable place, so place is non-transportable vessel. So when what is within a thing which is moved, is moved and changes its place, as a boat on a river, what contains plays the part of a vessel rather than that of place. Place on the other hand is rather what is motionless; so it is rather the whole river that is place, because as a whole it is motionless."

Space, or rather "place", to Aristotle was an accident of matter, and it was finite, even as matter was finite.

The doctrine of "place" and of "natural places" (see assumption 5. above) led him to describe a finite universe of spherical
symmetry, with the earth at its center. Encircling the earth the moving spheres of the heavenly bodies all neatly surrounded by the sphere of heaven comprised the universe.

In Greece the dominance of concern for matter is clearly seen in the development of Greek architecture. Buildings were conceived of as things rather than in terms of spaces, and these bodies were disposed into their appropriate places. The sculptural development of mass and the relationships between building masses were the interests of the architect.

In Rome the development of space concepts did not progress beyond the Aristotelian system.\(^5\) The introduction of hollowed out spaces within Roman architecture is apparently the result of assimilation of the Aristotelian doctrine of place as the "innermost motionless boundary of what contains."

**Medieval Period**

The opening years of the Middle Ages, like the Roman era saw little development in the concept of space. The significant contributions were made during the rise of Scholasticism. During this period the influence of Aristotelian thought and categories about "place" was supreme. The definition of "place" as the limiting surface of the surrounding body was accepted, as well as the doctrine of natural places.
The doctrine of natural places led to a spatial hierarchy of values which assigned noble values to "higher" places and less noble values to "lower" places (God was up and Satan was down).

Introduced alongside Aristotelian thought, was the influence of the traditional Judaic identification of space and light with God, or at least with attributes of God. The name substituted often for the name of God was "Makom" or "place!" This usage became God's name without any suggestion of God's being spatially limited. God was in fact actively acknowledged to be omnipresent. The psalmist for example is unable to answer his own question: "Whither shall I go from thy spirit, or whither shall I flee from they presence?" Likewise, Paul, in the epistles, refers to God as that in which we "live and move and have our being." God is the place of the world and of life.

As for the identification of God and light, God is said to have made himself known through the light of the burning bush in Egypt and by a finger of fire on the mountainside in the wilderness. Also, in the New Testament God says: "I am the Light of the world."

The identification of God and light, and space, fused with Aristotelian doctrine in the Scholasticism of the Middle Ages, so that the place of God and light was above, of Satan and darkness, below; and of man, in the middle. It was concern for God's light from above which gave rise to the cathedral churches of the Gothic period. Light, not space per se (remember that space did not exist) was the concern of the
scholastic architects; and their structures were designed to make the light know—to clearly demonstrate to man the Light of the world.

The medieval town in its closed Aristotelian container was grouped around the descending rays of light captured by the cathedral.

Spatial and cultural certainty prevailed, and man's place was clearly defined at all scales. The creative energy of the time was free because of this certainty to concentrate on developing certain environmental forms thoroughly, rather than being expended on trying to decide which forms to develop.

Renaissance and Baroque

The cultural certainty of the flourishing Middle Ages began to fade during the half century following the deaths of St. Louis, St. Bonaventure, and St. Thomas in the 1270's. The medieval synthesis of reason and faith, intellect and emotion, began to disintegrate in the face of critical nominalism. However, the authority of the Aristotelian doctrine of place was too strong to pass away easily with the other dying aspects of Scholasticism.

Finally, however, the reluctance of the age to free itself from the nearly dogmatic authority of Aristotle declined with the growing pressure caused by internal contradictions in the old system.

The credit for the foundations of a new space theory must go to a series of Italian natural philosophers dating from the fifteenth to the seventeenth centuries.
Beginning with Scaligero (1484-1558) the change in conceptions of space proceeded step-by-step away from the Aristotelian doctrine of "place" as the concave surface of the limiting body to a doctrine of the reality of an infinite, incorporeal, immobile void as the basis of all existence.

Little by little the existence of void was affirmed and Aristotelian notions fell away one by one. By the mid-sixteenth century, space became to be considered the basis for existence and for the knowledge of existence.

Climaxing the work of the Italians was that of Gassendi (1592-1655) who in a moment of ecstasy announced that although God had created matter, space was uncreated and independent.

These Italian natural philosophers provided the ground for the development of the new physics of Newton and the atomistic concepts of the seventeenth century.

During the breakup of the late Gothic period there occurred the visual revolution of the early fourteenth century: the emergence of perspective. Panofsky notes that this occurrence was "the most characteristic expression of the subjectivism of that nominalist era." He remarks as well that perspective lent "visual expression to the concept of the infinite; for the perspective vanishing point can be defined only as the "projection of the point in which parallels intersect."
It is interesting to note that the Renaissance use of perspective, which contained the potential for the expression of infinite space, was used to design finite views and to control the locations of bodies in their places. (see Masaccio's fresco of the Trinity, Florence, c.1425). The artist reflected contemporary interest in finite rather than in infinite space. The architecture of the Renaissance shows the design of individual unconnected, Aristotelian "places"--individual plazas and individual buildings. (see Vigevano: Piazza del Duomo, 1493)

Neither the scientist nor the artist had been able to break away from Aristotelianism. They were concerned with perception of the world from a static point.

As the frame of mind changes toward concern for infinite, continuous spaces, architecture shows the design of spatial connecting links such as Vasari's Ufizzi Gallery (1560) and still more extensive proposals such as the scheme of Sixtus V for Rome (1589).

After many years of the agonizingly tedious shedding of Aristotelianism, the late Baroque found through the person of Isaac Newton (1642-1747) a concept of infinite, continuous, incorporeal space. In Newton was achieved a synthesis of the space concepts of the Renaissance natural philosophers Camponella and Gassendi, and the traditional Judaic notion of space as an attribute of God.¹¹

The synthesis achieved by Newton was so all encompassing that not only the scientific world, but the worlds of art, theology, and philosophy found in and through it a channel for further growth.
That the Newtonian concepts spoke directly to the needs of the period is clearly seen in the range of its acceptance and in the enthusiasm it stimulated. It has been noted on this point that "it may be rightly claimed that absolute space and absolute time have always had a strong appeal to human emotions. Through their presence, clarity and rigor, certainty and definiteness seem to be guaranteed."\textsuperscript{12}

This is not to say that the Newtonian scheme was not subject to serious criticism. On the contrary, it was severely attacked by Liebniz and Huygens. But whether or not the criticisms were justified, Newtonian ideas became absorbed into the general mentality of the day.

It must not be said that the burst of creative energy released during this period was the direct result of Newton's theories; the spirit of universality which was operative in Newton was operative in the artist who expressed the same kind of space visually as Newton expressed conceptually.

In Italy, for example, this urge to express infinite, continuous space is seen in the work of Boromini (St. Ivo, Rome; San Carlo alle Quattro Fontane, Rome). Interior spaces burst out of themselves into the space beyond.

In the south of Germany in Balthasar Neumann's Vierzenheiligen church, painting, sculpture, architecture, and light all work together for the dematerialization of the immediate container so that the church
participates in infinite, continuous space, which Newton, following Sir Thomas More, called the Sensorium of God. Art, science, and religion were at one with each other as they had been in the Scholastic period.

The spirit of universality and the concept of continuous space, which in the early baroque moved Sixtus V to propose his plan for Rome, led men to design their cities with a network of connected and connecting spaces. The city dweller is led from point to point, at each being given a new group of radiating vistas. This pattern is seen not only in the Roman plan, but in Wren's plan for London after the Great Fire (1666) and in l'Enfant's plan for Washington (1789) to mention two other examples.

The linking of spaces was a symptom of concern for continuous, unconfined space, and for the perception of space while moving from point to point.

"No longer was...a plaza framed with buildings like Place Vendome. The tremendous Place de la Concorde was rather a campus between other open spaces, the Tuileries gardens, the Champs Elysees, and the River Seine. The plazas in Nancy were linked with a broad avenue of trees which was itself a plaza. Piazza del Popolo exhibited the same characteristics in three dimensions. A series of garden terraces continued the open space up the Pincio Hill on one side, and open space extended the vista on the other."14

Likewise, the spirit of universality penetrated the political field and Louis XIV had his new capital at Versailles spread out around him network-like, so that he and his bed became the center of the continuous space of the French state.
In spite of the forces working to decay the Baroque world, there was a spatial certainty as noticeable as that in the Gothic period, and an environmental structure as coherent and expressive.

**Contemporary Period**

The assurance provided by Newtonian doctrine was not destined to endure. Absolute space was called into question in spite of its triumph.

The first source was the English empiricist Berkeley (1685-1753) who denied Newton's absolute space on the grounds that it was an abstraction formed by the mind from sense perceptions relating to bodies. The second source was Kant (1724-1804). After trying to reconcile Newton and his critics, Kant decided that Newton was wrong.

"The idea of space now appears to Kant in a new light. It ceases to be a problem of physics, and becomes an integral part of transcendental philosophy. To Kant from now on, space is the condition of the very possibility of experience... The concepts of absolute space and absolute time are considered to be merely conceptual fictions, a mental scheme of constructed relations of coexistence and sequence among sense particulars. Not arising itself out of sensations, the concept of space is a pure intuition, neither objective nor real, but subjective and ideal."\(^\text{15}\)

The movement denying absolute space has grown as inevitably as did the movement denying Aristotelian categories at the end of the
Gothic period. This relativist movement has continued into the present. Often statements made by its leaders have a curiously Aristotelian ring. Clerk Maxwell (1831-1879) for example declared "there is nothing to distinguish one part of space from another except its relation to the place of material bodies. We cannot describe...the place of a body except by reference to some other body."^16

It is the development of Field Theory which has been decisive in clarifying the relativistic concept of space. Einstein notes in 1953:

"Under the ideas of Faraday and Maxwell the notion developed that the whole of reality could perhaps be represented as a field whose components depend on four space-time parameters. If the laws of this field...are not dependent on a particular choice of coordinate systems, then the introduction of an independent space is no longer necessary. That which constitutes the spatial character of reality is then simply the four-dimensionality of the field. There is then no empty space; that is, there is no space without a field."^17

The situation then is this: space has meaning only because of the presence of perceptible bodies. Because of the limitations of our tools of perception--our senses--we do not know where we are at any scale greater than the range of our perception. We have no place as did the Scholastics in the light of God. Neither do we have a place in the Baroque period's absolute, infinite, immovable space. We are not permeated with the sense of place which has stimulated men in other periods to set their environment in order, and which gave visual
coherence to the physical framework of the city. There are no criteria which give us confidence and direction for our work—at least there are no generally accepted criteria. It is generally accepted criteria which have given a sense of place to men of past periods, and which has knit their environment into a visually coherent whole.

PROPOSAL

If there is to be any visual coherence in our environment it must be achieved in spite of our lack of a sense of place. We must develop a set of generally accepted criteria for the direction of individual work.

These principles must be simple so that they will not tend to be easily misinterpreted, and so that they will not stifle the design of the visual variety which the eye needs. Most important, they must spring from some basic characteristic of our epoch. Otherwise the chosen "principle" would be arbitrary, lacking general validity.

In history it is possible to trace the growth of the ideas capable of visually organizing the environment from seeds already present in the spirit of the time. Our problem is to find some aspect of our own time which carries the seed which can give rise to a body of ideas which will be capable of visually organizing our own environment.

There are many aspects of life in our era, but the one which seems to permeate every field of endeavor is that of change. The static situa-
tion is no longer relevant. Furthermore, the specific kind of change called motion appears to be one of the most striking parts of our life. Movement is all around us. We all take part in it. We walk, ride, fly. We can take possession of enormous quantities of space by moving. We support a gigantic transportation system to do so.

Because motion is basic to the way we conduct our lives, and because motion directly conditions the way we see (as will be shown below) this thesis proposes that the effect of motion on vision and the perception of space be taken as a guide for the design of the visual aspects of our environment.

**Velocity, Dimensions, and Scale**

Space is perceived by a man whose speeds range from stop to several times the speed of sound. His perception is conditioned by this movement in two ways. First, dimensions take on time values. Apparent dimensions are reduced as speed increases, so that the rapidly moving man perceives a much more condensed space than does the pedestrian. Because the time value of dimensions come into play, a dimension of, say, 600 ft. when perceived at pedestrian speed, three miles per hour, is valued at 137 seconds; at thirty miles per hour, 13.7 seconds; and at sixty miles per hour, 6.9 seconds.

Second, the eye tends to fixate on a point at a distance from the beholder, this distance increasing with the speed of the beholder. The
faster one goes, the farther away the fixation point and the smaller the image of the dimensions the eye perceives. This means that the eye can take in much larger spaces as speed increases.

With respect to the viewer, these changes in the values of dimensions are read as a change of scale. A space appears much larger to the pedestrian than to the viewer seeing it at twenty times the speed and in one twentieth of the time. The meaning of the space is completely changed. Small spaces blur when seen at high speeds and do not contribute to the visual structure. They make a contribution only when they are perceived at slower speeds.

The basic criterion then is that scale must be adjusted to the speed of the beholding eye. High speeds impose large scales. Likewise, low speeds and smaller scales are compatible.

The implication of this is that the architect must design structures and spaces so that they will "read" at each speed at which they are seen. Structures must have clarity at high speeds and must reveal their smaller parts as the speed of the viewer decreases.

This criterion, if generally ascribed to, carries in it the potential to contribute to the clarity of the structure of the city as a whole. If the city is to have a visually perceptible structure and visual coherence the other aspects which influence building design and planning must not override this criterion. Land cost, functional requirements, expression of materials, etc., must all work together with the scale
requirement. The degree to which conflicts between various aspects of building are resolved is a measure of the building's success.

No matter what kind of spaces develop in time as a city grows, the general acceptance of the scale criterion provides a tie which can prevent visual coherence from being lost.
SUMMARY

It has been shown that in periods when urban visual structure has been strikingly coherent, there has existed a concept of space which was generally accepted and which was so all inclusive that it took in the cosmos as a whole as well as the earthly space of daily existence. Within these concepts of space men were able to locate themselves and to relate themselves to the largest and smallest scales they could imagine. They were possessed by an all-pervasive confidence in their place in the spatial structure of their world. This feeling of confidence and well being is called here the "sense of place."

The concepts which gave rise to a sense of place gave direction to the architecture and city design of those periods.

In our time, we do not have a sense of place because of the lack of a concept of space in which we can confidently locate ourselves at all scales. There is no concept of space which ties our individual work together into a coherent urban structure.

This thesis has proposed a means to step around the lack of a body of ideas which gave men in the past a sense of place. It asserts that some basic aspect of our time must provide the basis for a set of criteria which can give visual coherence to our environment in spite of our lack of a sense of place and of an all inclusive conceptual structure. That aspect is change, and specifically, motion.
In order to create coherent relationships between individual architectural works, it proposes that building scale be directly related to the speed of the beholder--high speeds requiring large scales and low speeds, smaller scales.

This criterion is not the only measure of architecture. There are other factors which must be resolved in planning and design. However, this criterion does provide a tool for relating architecture to the conditions under which it is actually seen, and can begin to relate individual works which spring from a variety of needs and concepts.
DEMONSTRATION

To demonstrate the application of the speed/scale criterion the area around a typical freeway and major throughfare system has been chosen.

The photographs of the model show the development of the area with largest scale spaces relating to the highest speed road. Likewise, slower roads are given views of smaller spaces.

The drawings show the development of one of the large, low buildings seen in the model. The building is a commercial exhibition hall and consists of a steel space frame supported by four composite steel columns. The internal division of the space places the largest space in the view of freeway travelers. Smaller spaces are given to slower speed beholders. The pedestrian enters into a smaller subdivision of the interior space and proceeds into the larger where he encounters detail in the items displayed and in the complex form of the structural columns.

The building reads at the scale of the Freeway traveler as well as at that of the 30 mph. viewer and of the pedestrian.
Photographs of Mass Model
NOTES


4. Ibid, ch. 4, 212a, 14-19.

5. Jammer, Max: Concepts of Space, the History of Theories-of Space in Physics, p. 68.


8. Ibid., p. 92.


10. Ibid., p. 16.


12. Ibid., p. 100.


16. Ibid., p. 140.

17. Einstein: op. cit., p. xvi.


