UNDERSTANDING THE VISUAL RESOURCE

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ABSTRACT. Understanding our visual resources involves a complex interweaving of motivation and cognitive processes; but, more important, it requires that we understand and can identify those characteristics of a landscape that influence the image formation process. From research conducted in Florida, three major variables were identified that appear to have significant effect upon visual preferences: (1) visual order, (2) visual complexity, and (3) edge relationships. The interaction of these variables produces spatial definition, which promotes or retards a sense of physical, visual, and psychological access. Without an understanding of the mechanisms and principles involved, landscape management to promote environmental integrity is strictly a hit-or-miss proposition.

IN A TIME when we are being almost overwhelmed with clichés about environment and ecology, we must recognize that man is truly a visual animal with respect to his environment. He learns more, reacts more, and appreciates more through his visual system than through any other sense. Concern for quality in our visual resources has assumed an urgency in the priorities of public issues.

In light of the developing urgency and rationalization of the significance of the visual environment to work, health, and enjoyment, it is amazing that so little has been known about how the environment is actually experienced. Almost as compensation, a proliferation of public and private programs has evolved to regulate, preserve, and enhance the appearance of elements in the visual environment. My research has been concerned with some of the factors that possibly contribute to the broader question of how man visualizes his environment.

Man's perception of his visual world must involve not only individualistic and transitory motivations but also those features of an environment that have potential to shape basic imagery. It is these features that challenge us to understand, to interpret, and to manipulate them as a means for satisfying basic psychological and social needs in a complex world society. Thus the challenge has become one of understanding the processes and mechanisms of perceptual experiences.

PERCEPTION OF THE VISUAL RESOURCE

Perceptual experience involves intricate relationships between what is seen and the individual doing the seeing. The standard cliché for these relationships is that "Beauty is in the eye of the beholder". There is little argument when dealing with superlative examples of visual landscapes, nor is there any great disparity when identifying what is chaotic and ugly.

The real problems exist within the ambiguous middle range of the natural beauty continuum. Within this range are found the majority of landscapes to which man is exposed throughout his life—landscapes that support or destroy the imagery of movement from here to there. These intervening landscapes have potential to enhance, detract from, or do nothing to the experience of man moving through an environment. If a landscape does in fact possess such potential, then perhaps beauty can be attributed to more than merely a set of preconceptions uniquely held by each individual.

Perception of a visual display is extensive and expansive. It radiates across scientific, philosophical, and artistic concept borders to the extent that virtually any science or art makes a contribution to the understanding of the perceptual process. Of particular importance is the interaction of the sciences with the traditional arts. Perceptual psychology and landscape-design theory are perhaps the more fruitful contributors to an understanding of this phenomenon.

With the explosive increases of driving-for-pleasure occasions, perception in motion is of particular concern to managers of potential resources as well as existing visual resources. In simple fact, the over-expanding transportation system is creating visual resources out of lands that were previously inviolate to John Q. Public. The hinterlands have been opened, and the public is incensed over both real and imagined destruction of landscape integrity. Expectations born out of the desensitizing mechanisms of urban living are not being realized, nor can they if we fail to understand the psychological and visual impacts of land manipulation.

An environment must be accessible, not only in physical terms, but also in psychological and visual terms. It must not deny but rather encourage participation, involvement, and choice. Without such attributes, an environmental display becomes nothing more than a reflection of everyday life space with its monotonous and nonmotivating character. This is a situation to be avoided.

A search for meaning within the visual world has been the natural product of man's experience with his environment. He creates his images based upon what he sees, and what he perceives is a function of the clarity of the information being presented. The mechanisms of visual information transmittal and the constraints of reception are the major problems. Why information reception differs between individuals is a major concern if predictive capabilities concerning the aesthetic response potential of various landscapes is to be developed.

PERCEPTUAL SCALE

Perceptual imagery is a dynamic manifestation conditioned by man's sensed relationship to his environment. This is a psychological variable that relates organized substance to interpersonal motivation and behavior. For instance, while walking, man senses the texture of the walking surface, the warmth or coolness of the surrounding air, the constrictions and releases of changing space, and the alternating patterns of light and shadow; he becomes immersed in the tactile qualities of his proximate surroundings.

The personnel or immediate space of the individual is drastically altered when he is involved in an automobile driving experience. Scale relationships are expanded and detailed perception is reduced. Mass, space, color, and movement interact as substitutes for the sensual intimacy experienced at pedestrian scale.

When you are driving, information is presented at a rate that is both stimulating and stressful. Patterns and relationships between visual components are more accessible, but perception of visual detail is negated because time and position do not encourage visual or psychological lingering. At automobile scale, vision can be expansive or enclosing in terms of what can be seen. At this scale the simple may be transformed into the complex, based purely on the rate of information presentation. The phenomenon of vision in motion acts to integrate and transmute single visual entities into understandable and coherent patterns of light, mass, and space.

The paradox of perceptual scale is that, as movement is accelerated, the relationships within and between visual elements become more apparent. If the apparency is hampered by discordant organizations, then positive imagery does not develop. Creation of mass or space, which is inappropriate for a particular movement scale, may result in adding nothing to a visual experience; or it may restrict image formation. Nonrelevant visual formation may produce visual stress or encourage monotony, both of which are undesirable from a land-manager's standpoint.

A roadside landscape's positive affective (emotional) response potential is a function of an observer's movement scale through or across it. Without an understanding of the relationship between an observer, his manner or mode of movement and the organization of a visual resource, anticipatory assessment of observer response to landscape alterations is strictly hit-or-miss, a luxury we cannot afford.

PARAMETERS OF VISUAL ORGANIZATION

The basic tenets of perception incorporate the interaction of man's senses into a system whereby he is able to adapt to a world of constantly changing environmental conditions. Man in motion must rely very heavily on the visual system to adapt to the rapidity and overabundance of information being presented to him. The steps that lead an observer to interpret a visual entity in a particular way involve a complex interweaving of affective and cognitive processes. If the organizational characteristics of his visual world are not readily apparent, he manufactures, selects, or rationalizes the materials of image formation, provided sufficient time and motivation are available.

A question arises about whether or not it is desirable to allow image formation to develop uncontrolled or on the whims of observers. In many instances, a positive response is the desired response and one that is deemed socially acceptable in terms of environmental involvement. If a visual display is difficult to organize perceptually, it provides less information for positive imagery than a display possessing organized and coherent relationships between parts. The parameters of organization thus become critical if the desired image is to be available at all levels of discriminating capability.

Visual Order as an Image Determinant

Order in the visual world refers to the existence of some similarity of physical characteristics among the parts or of some discernibly harmonious space relation among them *(Litton 1965)*. A landscape having positive visual value has it because a person of ordinary experience can see the compositional relationships of known and recognized things. Normally an individual will tend to seek for or try to locate a sense of rightness and continuity in his visual surroundings. Because of his tendency to order and organize virtually every aspect of cultural learning, man has come to expect a degree of established order within his visual world.

Visual order is recognized through perceptual establishment of relationships within and among the elements of a visual display. Actual organization requires that each element conform to its context or to an observer's expectations, which may or may not be realistic. People have a difficult time relating to the unfamiliar, and they become bored with too much of the familiar.

If the elements of the environment relate to each other, they exhibit a degree of order, and the intricacies of a visual display are more likely to allow an observer to perceive an image based on the intensity of that order. This is especially true when man is in motion. A visual display without some semblance of order requires excessive time to perceive, and the observer will seek out general forms rather than time-consuming detail. In essence, visual order encourages perceptual lingering, whereas visual chaos produces stress and alienation.

Visual Complexity as Opportunity or Constraint

Complexity relates to the intricacy of the relationships, which affect the rate with

which information can be perceived. Obviously, complexity increases with the number of elements that can be identified. These elements are space-defining components such as vegetation, topography, and water. How an individual processes the available information will be a function of his visual experience and the organizational legibility of the visual elements.

Each individual has his own level or degree of complexity tolerance, which is dynamic in the sense that it shifts upward as perceptual grasp is refined. Some familiarity must be present to retard stress; but a degree of the unusual, the unknown, or the unperceived must exist to prevent boredom. Accordingly, simplicity in an environment can be a deterrent to visual pleasure, particularly if flow experience or movement is restricted. If a movement system allows the observer to match his speed to his level of perceptual complexity, the potential for positive response is considerably enhanced. Increased rate of movement provides stimulus complexity in time to an inadequate or low stimulation complexity in space.

Apparently an optimal amount of complexity exists for each individual, which serves to maintain perceptual interest at a high level. Through the processes of selection, humans tend to demonstrate a preference for complex visual environments rather than simple obvious ones, particularly under conditions of increasing order or visual accessibility. My recent research in Florida gave definite support to the thesis that perception of complex visual stimuli depends as much or more upon the quantitative (complexity) and qualitative (order) characteristics of the stimuli as it does upon motivational and behavioral characteristics of the observer.

Edges as Visual Organizers

There is need to emphasize effective circulation in and around a given visual landscape so that its order and complexity may be revealed in a positive manner. Regardless of whether perception results from an observer's static or flow experience, landscape elements are organized and identifiable by virtue of what designers call "edges."

Edges refer to perceived or implied dividing lines between landscape elements: they are lines in which surfaces meet and individual identity becomes apparent; they are those critical positions depicting relationships between parts. But even more important, edges serve a variety of functions: they serve to simplify or complicate organization by virtue of their number and configuration; and they create order through their convergence into a perceptually viable array. Thus the degree of order and the level of visual complexity within a landscape are set by the edges found within the system.

The effect of edges upon image formation is dynamic and changes in response to perceptual need and movement scale. For the most part, edges are not used as movement systems; but they do, by virtue of their defining role, dictate how visual access can be accomplished for maximum contrast and variety of experience.

PERCEPTUAL ORGANIZATION IN RESOURCE MANAGEMENT

An individual has a propensity to see only those things that are consistent with his established frame of reference. In light of a growing awareness by the public and resource managers concerning our visual resources, it is vital that we understand the mechanisms of image formation. If a sensitivity for scenic amenities is developed, the important variables of visual organization can be modified or molded to preserve both the integrity of the resource and the experience an observer harvests from that resource.

Because the majority of landscapes are categorized from flow experiences on highways, the factors of order, complexity, and edge effect are integral to planning landscape alterations. The interactions of these variables produce spatial definition that encourages or discourages physical, visual, and psychological access. To understand these interactions, we must look to concepts from design, perceptual psychology, ecology, and the behavioral sciences. Such analysis can identify opportunities and constraints conditioned by the basic and social

needs of observers as well as the environmental integrity of the landscape.

At present there is no cookbook approach for understanding the visual resource, nor are there definitive procedures for insuring that scenic amenities become harvestable commodities. However, the fact that resource managers are becoming sensitive and responsive to environmental interactions opens new avenues for developing a positive approach to the assessment of the aesthetic response potential inherent in all visual resources *(Newby 1971)*.

Literature Cited

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