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Comments on Plan View Visual Assessment

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A COMMENT ON PLANVIEW VISUAL ASSESSMENTS

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Introduction

Lack of concern with scale in aesthetic assessment leads researchers to measure landscape structure simplistically on maps of one set scale and apply them as broad brush strokes across the countryside. Attempts have been made to qualify and locate visual structure on maps (Daniel and Boster 1976, Dearden 1980, Hull and Buhyoff 1983, Nassauer 1988, Schauman 1988a, 1988b, Kaplan et al. 1989, Bishop and Hull 1991, Bishop and Hulse 1994, Crawford 1994), but with no consideration of multi-scalar human visual processes. Although such endeavors are relatively easy to perform, their lack of connection with the humanly perceived aspects of structure *in situ* make them poor representations and of questionable validity even when used by experts.

Sideview or Planview?

James J. Gibson (1979, p. 34) notes that there is a proper range of scale in both time and space in which humans are perceptive of landscape features, thus supporting the notion of a "human scale". Gibson's example nests humans in a hierarchy of places in which

> ". . . a *place* is a location in the environment as contrasted with a point in space; [it is] more or less an extended surface, or layout. Whereas a point must be located with reference to a coordinate system, a place can [also] be located by its inclusion in a larger place ."

This conception of space is quite different from the Cartesian, or geometric, coordinate system such as that in most maps, each entity or attribute depicted (e.g., field, woodlot, windbreak, stream, road, and so on) is at the same spatial scale. Those entities are the physical attributes of landscape structure that form part of the basis for visual structure and lend themselves to measurement. Because it is directly measurable, the abstracted view on maps and aerial photos is thought to be more objective than that from the ground looking horizontally across the surface of the landscape.

Potential problems arise, however, in using only such plan-view sources to characterize the landscape as seen by the viewer in perspective on the ground. Advanced techniques and equipment for efficiently gathering, storing, displaying, and manipulating spatial and ecological information

have been largely from what geographer Yi-Fu Tuan (1979, p. 90) described as the plan or vertical view:

> "Landscape is an ordering of reality from different angles. It is both a vertical view and a side view. The vertical view sees landscape as domain, a work unit, or a natural system necessary to human livelihood in particular and to organic life in general; the side view sees landscape as space in which people act, or as scenery for people to contemplate. The vertical view is, as it were, objective and calculating. The farmer has to know how much land he has under each crop and how many head of cattle the pasture will support. The geographer studies the rural landscape in a similar way—that is to say from above; likewise the ecologist when he looks at the landscape as a natural system. The side view, in contrast , is personal, moral and aesthetic. A person is *in* the landscape working in the field, or he is looking out of a tenement window, from a particular spot and not from an abstract point in space. If the essential character of landscape is that it combines these two views (objective and subjective), it is clear that the combination can only take place in the mind's eye. Landscape appears to us through an effort of the imagination exercised over a highly selected array of sense data. It is an achievement of the mature mind."

William Whyte (1965), a keen observer of the common, rural landscape, has said something similar:

> "[B]y and large when it comes to the landscape these organizations [planning or recreation commissions] have an operational defect. They don't look at it. I mean this in the literal sense of the word. There are plenty of studies, soil classification and slope maps, open space projects of one kind or another, and these are all very necessary. But the view is bird's eye. It is from way up there looking down. It is the view of an aerial mosaic, and it is once or twice removed from reality. The ultimate reality is what we see -hear and smell- at ground level as we walk or drive."

A growing body of research recognizes the limits of analyzing landscape solely from vertical view (Mitchell 1991). Any cartographic feature seen on an aerial photograph or map is different from what the stationary viewer sees on the ground. "The map is not the territory" (Korzybski 1979). This is because a plan or planimetric (i.e., directly overhead) view is shown over a spatial continuum at one scale (i.e., it is uni-scalar). What the viewer sees on the ground covers not only a fixed and bounded portion of the environment, but it is seen at a continuum of spatial scales (i.e., it is multi-scalar) (Kosslyn 1994). Thus, the viewer's perspective image, even a stationary one, can expand over several different spatial scales where the landscape's structure does not limit visibility.

How does this happen? Because the viewer is literally in the system being viewed, the situation calls for interpretation. To do so, the viewer must decide upon which spatial scale to focus. The viewer is, however, guided by structural cues and clues that suggest a grain where at its boundary one space ends and the next one begins. The viewer interacts with the landscape structure to select a visual structure. This interactive, grounded perspective is the essence of "place" as defined previously by Gibson (1979) in which continuous levels or spatial scales would tend to become discretely nested as the human scale of the observer interacts with the visible landscape structure. This grounded view is also the essence of visual quality assessments that include human ratings of sites or photographic representations of sites.

Aesthetic preference maps, isolines of scenic beauty estimates, or 100 m^2 raster cells of high landscape quality proposed for management tools do not take into account the variation in scale critical for detecting preference for landscape scenes as found in this study. Looking over the same area from a horizontal view is fundamentally different from looking down at a map. Humans do not see at one scale as might be indicated by the planimetric map's scale . We vary our responses by drawing on both grain and extent. Changing scale is at the very heart of aesthetic experience (Carlson 1979).

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