Philip Thiel 7/30/56

Notes on a method of recording and analyzing sequences of urban space and color

Then perception of the cityscape is a dynamic process involving the consumption of time. The basic spaces, surfaces and volumes which are associated in such infinite combinations and proportions to form the city cannot be seen simultaneously, but must be experienced in some temporal sequence. In this way the perception of the visual form of the city is related to the experiencing of music, the dance, and the cinema.

The major difference between the audience of these arts and the audience of the city is that in the latter case the audience's contact is not only irregular (due to distractions, interruptions and the preoccupations of daily life), but also subject to great variation in type of contact: each more or less at the volition of the inhabitant. For instance, he may choose to lounge on a park bench, stroll through a shopping street, crawl through a traffic jam, course along a freeway or boulevard, or fly over the city in an aircraft. Thus it is seen that there are three major variables operating in the perception of the city: the time scale of movement through the city, on which are super-imposed the perception modulators of emotional set and physical position.

These facts exist as basic considerations for those concerned with the visual ordering of the city. Whether they are conscious of it or not, all their designed work will be "used" at varied time scales, and with the interposition of varied individual filters.

This note is concerned with a prepared method of recording and analyzing sequences of space and color in the city, taking into account the foregoing basic considerations. The objectives of the method are: to promote an increased plastic or visual design sensitivity: to provide an effective means of comparison of different sequences, and to facilitate design studies. In addition, it is hoped that this note will stimulate the devising of new and effective techniques for the study of problems in spatial orientation, and in graphic communication.

The central problem lies in the method of dealing with the dynamic flux. Ideally the living, subjective interaction of an observer with his visual environment should be caught, objectified, and preserved in a form that will reproduce at will the original experience. Practically, it is perhaps sufficient if we replace the subjective observer with a “standard” observer, and corelate this objectified record with our own subjective experience. It is thought that enough corelative experience would permit the user to extrapolate from un-corelated records to a personal subjective equivalent. In effect what we are doing is eliminating the emotional set modulation from the record.

It is obvious that each record must be prepared in terms of a specific time scale and physical modulation. However, there is no reason why the time scale and physical modulation could not vary along the sequence; illustrating, for example, a change from the condition of motorist to that of pedestrian.

As for the existing means of accomplishing these objectives, the best example is the movie camera. When fitted with a lens covering a specific

field, and moved with its optical axis aligned along the given trajectory it becomes, in a sense, our “standard” observer. The resulting film may be repeatedly projected, or even enlarged frame-by-frame for static reference, at liesure.

But these methods suffer from certain limitations, in addition to those of the professional skill and cost involved. In the case of the projected film it is difficult to study the effect of design modifications. In the case of descrete frame enlargements, it is difficult to gain a sense of the whole in its dynamic sequence.

To transcend these limitations the following method is proposed. As herein described it deals with only the space and color of sequence. In essence it is a modified map-diagram, arranged lineally and covering as extensive a course as is desired. Once prepared, this record may be “read” in whole or in part merely by scanning it with the eye. And modifications to the sequence may be easily made and their effect studied.

Preparation of the record requires a decision as to the route, the direction, the speed, the mode of travel and the time of day.

An attempt has been made to establish a standard field of vision (measured in degrees of horizontal arc centered on the direction of travel). It seems logical to assume that the pedestrian has the maximum opportunity to scan the field, using both eye movement and head movement. It would appear that the auto driver is restricted to a greater degree, due to the necessity of concentrating on traffic hazards: this would have the effect of shrinking the field at the sides, as far as the perception of

the fixed cityscape is concerned; and, it seems logical that the field would decrease with increasing speed. For the passenger in the auto, or in the bus or train, the field of vision is restricted by the vehicle itself and by the presence of other passengers. Woodson*[*] gives the horizontal field of vision of the average man as 188°; and states that in the case of motion, perception 30° from the line of vision is 60% as effective as when the subject is stationary. In view of all the above, the following line or scale is proposed for the "standard" observer:

3 mph – pedestrian = 120° horizontal arc of vision
20 mph – motorist = 100° horizontal arc of vision
40 mph – motorist = 80° horizontal arc of vision
60 mph – motorist = 60° horizontal arc of vision

In case of the vehicle passenger the field must be determined from the particular situation.

The procedure then is to lay out, to a convenient scale, the trajectory of course assumed in its exact planimetric form. In the typical case this could be the centerline of the streets involved. Along this trajectory is next indicated the position of the boundaries of the major vertical surfaces defining the space, as projected onto the trajectory, in the horizontal plane. This can be done from a map.

The next step is to visit the route, and locate the base of the vertical defining surfaces the appropriate distance on either side of the trajectory. This can be readily done by eye, and although it admittedly involves subjective variations, this is considered immaterial as long as it is consistent along the entire route. In effect this reflects the proportion

[*] W.E. Woodson, "Human Engineering Guide", U.C. Press, 1954.

of the space defined by the vertical surfaces.

At discontinuities in vertical surfaces (such as occur at intersecting streets) the appropriate angle of the arc of vision is laid out to determine the extent of the vertical surface, oblique to the trajectory, that would appear in the field of vision.

The final step is to record the basic color occurring at each major color area on both sides of the trajectory. One simple means of doing this is with colored pencils, employing strokes perpendicular to the trajectory, starting at the base lines, established previously, and fading out at a distance which reflects the proportions of the space. These colored pencils, available in good assortments, offer a ready means of recording nuances of hue and value.

The final result is sort of spiney attenuated figure which is “read” by moving the eye along its length in the proper direction. The sense of being on the scene is helped by reading from the bottom upwards.

Conceivably, other information could be added to this record by means of a transparent overlay. This information might include such matters as an indication of sounds, the texture underfoot and changes in grade. At this time this proposal has not been studied.

Philip Thiel: July: 22, 1956.

backward looks?
time scale?
vertical enclosure?
apparent vs. time distance?

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