

Pools of Light

Pools of light define social space; when light is evenly distributed throughout a space its social character is lost.

In any given space, at a given moment, there are social groups of well established dimension and definite social groups. These groups may involve 1, 2, 3, 5, 10, or 100 persons—according to the occasion.

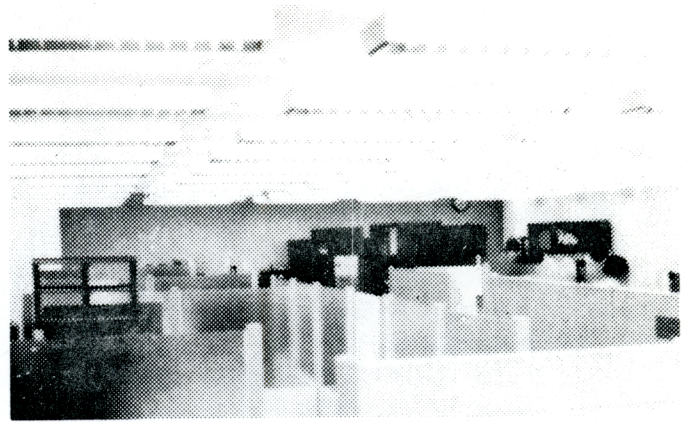
We conjecture the following:

1. If such a group is within a “pool” of light, whose size and boundaries correspond to those of the group, this will enhance the definition, cohesiveness, and even the phenomenological existence of the group.



2. If such a group is in an area of uniform illumination, so that there are no light gradients corresponding to the boundary of the group, then the definition, co-

Therefore: Vary light levels to create discernible pools; make the perceived diameter of any given pool about the same as the diameter of the social group it is going to “cover”; don’t let the brightness ratio of pools/background exceed 40:1; if possible place a dimmer control for the light pool within the area covered.



hesiveness, and “existence” of the group will be weakened.

We know of no experimental evidence which supports this conjecture directly. However, everyday experience bears it out in hundreds of ways.

One possible explanation is suggested by the experiments of Hopkinson and Longmore, who showed that small bright light sources distract the attention less than large areas which are less bright. These authors conclude that local lighting over a work table, allows the worker to pay more attention to his work than uniform background lighting does. It seems reasonable to infer that the high degree of person to person attention required to maintain the cohesiveness of a social group, is more likely to be sustained if the group has local lighting, than if it has uniform background lighting. (See R.G. Hopkinson and J. Longmore, “Attention and Distraction in the Lighting of Workplaces”, *Ergonomics*, 2, 1959, p. 321 ff. Also reprinted in R.G. Hopkinson, *Lighting*, London HMSO, 1963, pp. 261-268.) (continued over)



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Problem (continued)

Every good restaurant keeps each table as a separate pool of light, knowing that this contributes to its private and intimate ambience. In a house where family members live, a truly comfortable old chair, "yours", has its own light, in dimmer surroundings—so that you retreat from the bustle of the family to read the paper in peace. Again, house dining tables often have a single lamp, suspended over the table—the light seems almost to act like glue for all the people sitting round the table. In larger situations the same thing seems to be true. Think of the park bench, under a solitary light, and the privacy of the world which it creates for a pair of lovers. Or, in a trucking depot, the solidarity of the group of men sipping coffee around a brightly lit coffee stand.

One on-the-spot observation supports this conjecture: At the International House, University of California, Berkeley, there is a large, dark room which is a general waiting and sitting lounge for guests and residents. During winter, at a time when the room was half dark, just dark enough for the lamps to be lit, we counted the people who sat near lamps.

There are 42 seats in the room, 12 of them are next to lamps. At the two times of observation we counted a total of 21 people sitting in the room; 13 of them chose to sit next to lamps.

These figures show that people prefer sitting near lights ($\chi^2 = 11.4$, significant at the 0.1% level). Yet the overall light level in the room was high enough for reading. We conclude that people do seek "pools of light".

One component of this phenomenon is probably that uniform lighting tends to obscure texture gradients and other visual cues, and may in this way also act against group members efforts to communicate with one another. (See for instance, *Elektisk Lys I Klasserum, Kommission Hos Teknisk Forlag, Copenhagen, 1958*; H.L. Logan, *Lighting and Wellbeing, Holophane Company, 342 Madison Avenue, New York, 1961*; H.L. Logan and E. Berger, "Measurement of Visual Information Cues", *Illuminating Engineering, 56, 1961, pp. 393-403*.)

One word of caution. It might be possible to object to this pattern, on the ground that pools of light, and the consequent brightness gradients, will create glare. The subject of glare is complex; since glare depends on many factors, including not only the ratio of source brightness to background brightness, but also on their absolute brightnesses, the size of the source, the angle subtended at the perceivers eye, and the angle of viewing.

Detailed treatment of these subjects may be found in the series of papers by Hopkinson and others in Hopkinson, *op. cit.*, pp. 201-290, especially the first paper, R.G. Hopkinson and P. Petherbridge, "Discomfort Glare and the Lighting of Buildings", *Transactions of the Illuminating Engineering Society, 15, London, 1950, pp. 39 ff.*

For the time being, it is enough to note that brightness ratios as high as 40:1 or even 80:1 are perfectly acceptable. (W.H. Kahler, "Visual Comfort in the Plant", *Industrial Medicine and Surgery, 27, 1958, pp. 556-557*.) There is no reasonable basis for insistence on perfectly uniform lighting.

Context

Pools of Light applies to any area which requires artificial illumination, and in which people are to be fairly stationary—like sitting, working, talking, resting. . .

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July 1968 revised September 1970

This pattern is tentative. If you have any evidence to support or refute its current formulation, please send it to the Center for Environmental Structure, P.O. Box 5156, Berkeley, California 94705; we will add your comments to the next edition.