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Symposium 2: Color Design 21

The Role of Color in the 21st Century — Color Culture between Homogenization and Diversification —

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1. INTRODUCTION

In preparing this keynote lecture I have been mindful of the issues set out in the following introductory statement which was prepared by the organisers of this symposium:

> *In the 20th century, mankind experienced unprecedented drastic changes worldwide: repeated wars and conflicts, environmental disruption on a global scale, natural and man-made disasters, urbanization, a widening gap between the rich and the poor, expanding population, aging societies, traffic congestion in major cities, AIDS, and the unrestrained growth of an advanced information society. The 21st century is just around the corner and all the above issues remain unsolved. In order to make the world a better place to live in, and attempt to solve these issues, mankind must adopt a mission with deep insight and broad horizons.*
>
> *The field of color design should play a role in such a world. Confronting environmental issues, especially in the context of the contradictory influences of tradition and revolution is a difficult task, and often the question of which specific problems need to be tackled, remains unclear. What have we lost and what have we gained? Ultimately, what shall our goals for the 21st century be?*

2. BIOLOGICAL AND CULTURAL UNIVERSALITIES

To understand the role of color in the 21st century, we may have to look back as far as to the origins of space and time, matter and light. Evolution of life is to a large extent the result of the interrelation among organisms and between them and their environment. In the course of evolution, different organisms developed different ways and means of interacting with their environment and other organisms. In this context, the development of vision — and in particular color vision — was of great advantage, as it enables an organism to interact without the need of direct physical involvement. Both monochromatic and polychromatic vision provide us with a means of apprehending our environment from a distance. Color perception, however, affords an additional visual structure.

Organisms with color vision experience color as an integral part of their environment. Thus the colors in the environment determine to a large extent what is seen and what is not seen. The eye differentiates between surfaces of contrasting colour; but it can not readily distinguish between surfaces of identical or similar color.

Organisms make use of this fact in their interaction with each other. Camouflage colours, for example, make an organism almost invisible, as they resolve both form and contour. On the contrary, bright warning colors visually enhance form and contour. Warning colors often indicate that an organism is poisonous, or at least indigestible. However, strong colors are not always a warning signal, but often serve as sexual stimulus. For example, the male "magnificent man-o'-war bird" inflates his red throat pouch to attract female partners.

The specific function, effect and significance of color in the life of organisms is the result of interaction between members of the same or of different species and between them

In a special bathroom [5,6] which we designed in a nursing-home for the elderly, the design of the ceiling was of prime importance, since for the patient lying in the bath, the ceiling becomes the dominating horizon. This applies equally to hospital wards. In a children's hospital [5,7] we painted all the ceilings in a special glaze technique incorporating pictorial motifs. The (visual) ambiguity of the motifs on the one hand, and the unobtrusiveness of the color texture on the other, ensure that the observer does not get tired of it after only a short time. According to mood and receptivity, angle of vision and lighting, the ceiling offers stimuli of varying intensity, their interpretation being left to the imagination.

To summarize: Since in the design of rooms for public use there is on the one hand no way of catering for the various preferences of all users, but on the other hand we have to decide on a final solution, the best compromise would seem to be to create a choice of stimuli of varying intensity. As far as possible, the users should have the opportunity within the basic concept — whether traditional or modern — of deciding for themselves to what extent they are willing to expose themselves to this stimulation. Thus fundamentally, color design adapted to human needs should try to achieve a balance between a stimulating and a soothing effect, between order and variability, harmony and contrast. Color should on the one hand link, create order and convey information; on the other hand it should offer sufficient variety to encourage the observer to interact with the architectonic environment.

5. NEW CHALLENGES IN ARCHITECTURAL COLOR DESIGN

Nevertheless, I have to emphasize that these examples refer to a comparatively conventional style of architecture. New materials and technologies demand new solutions in design. Thus color design can no longer be understood exclusively as the design of surfaces; it embraces the overall effect of light, space and time, of movement and change, of fiction and reality. The increasing use of modern materials and artificial light makes it increasingly necessary for us to take into account, in both theory and practice, the resultant complex (color) impressions and their (psycholoical and social) effects. The concepts of cesia, tincture and total color appearance suggested by José Caivano [10,11], Paul Green-Armytage [12] and John Hutchings [13,14] are the first promising steps in this direction.

However, since in relation to the duration of our historical development, we have practically no experience with modern materials and artificial lighting, it is difficult even for the expert to make statements about the possible total color appearance and the resultant cognitive, emotional and behavioral reactions.

To facilitate the use of color in architectural design it is necessary to improve the methods and instruments for exploring and communicating color during the design process. The architectural design process mediates the translation of conceptual ideas into physical reality. It involves the anticipation and communication of physically non-existent structures, their form, function and impact. Different methods of project visualisation allow the creation of stand–ins for reality, which help to explore, assess and communicate the different design elements, their role, their impact on each other and on the entire physical structure, and how this could influence the observer's (cognitive, emotional, behavioural) responses [15].

Architectural design visualisation and simulation are therefor central instruments of the architectural design process. To determine their quality and applicability in architectural

explored and evaluated by the use of realistic simulation. However, what influence the interaction of environment-related, human and technical factors will have on the role of color in the 21st century — this is written in the stars ...

References:

[01] OBERASCHER, L. (1993) The language of colour. In: A. NEMCSIS and J. SCHANDA (Ed): AIC - COLOR 93, Proceeding of the 7th Congress of the International Colour Association, Volume A. Budapest: Technical University of Budapest,18/1-4

[02] OBERASCHER, L. (1994) Cyclic Recurrence of Collective Colour Preferences. In: LINTON, H.: Color Forecasting. A Survey of International Color Marketing. New York: Van Nostrand Reinhold

[03] OBERASCHER, L. (1997) Individual Colour Preferences - What do they really tell about a person? Colour Report F 40, Colour & Psychology. An Anthology edited by Lars Sivik. Göteborg

[04] LLLOYD, R. E. (1989) Color Sensations and the Realizations of Color on Exterior Architecture: An Archival and Experimental Study of Color Perception (Diss.), U-M-I, Ann.Arbor

[05] OBERASCHER, L. (1996) Farbe im Krankenhaus und Altenheim. Zwei Beispiele der Gestaltung therapeutischer Räume. Sonderdruck der DBZ 1/96. Gütersloh: Bertelsmann

[06] OBERASCHER, L. (1997) Behagliche Stimmung verbreiten mit dem Griff zu Pinsel und Farbtopf. In: Magazin für das Management in Alten- und Pflegenheimen. Kulmbach: Baumann GmbH + CoKG, 4/1997, 144-150

[07] OBERASCHER, L. (1997) Weiss bedeuted Sterilität, Einsamkeit und Leere. In: Krankenhaus Umschau. Das Hospital Management Magazin. Kulmbach: Baumann GmbH + CoKG, 4/1997, 488-494

[08] OBERASCHER, L. (1991) Die Sprache der Farbe. In: DBZ Deutsche Bauzeitschrift, Sondernummer Büro '91. Gütersloh: Bertelsmann. 88-97

[09] OBERASCHER, L. (1993) Adventurous furniture design through visual ecological surface design. In: Inprint Rotationsdruck GmbH & CoKG, Arnsberg

[10] CAIVANO, J. (1991) Cesia: A System of Visual Signs Complementing Color. Color research and application, 12, 258-268

[11] CAIVANO, J. (1994) Appearance (Cesia): Constructing of Scales by Means of Spinning Disks. Color research and application, 19, 351-362

[12] GREEN- ARMYTAGE, P. (1993) Beyond Colour. In: NEMCSIS, A. and SCHANDA, J. (Ed.): AIC - COLOR 93, Proceeding of the 7th Congress of the International Colour Association, Volume A. Budapest: Technical University of Budapest, 22/1-8

[13] HUTCHINGS, J. (1995) The Continuity of Colour, Design, Art, and Science. I. The Philosophy of the Total Appearance Concept and Image Measurement. Color research and application, 20, 296-306

[14] HUTCHINGS, J. (1995) The Continuity of Colour, Design, Art, and Science. II. Application of the Total Appearance Concept to Image Creation. Color research and application, 20, 307-312

[15] OBERASCHER, L. (1997) Environmental Colour Design - Simulation real-world complexity. Colour Report F 40, Colour & Psychology. An Anthology edited by Lars Sivik. Göteborg

[16] MOLNAR, M. (1997) Informationskrank? Immer mehr und immer schnellere Information. in: human ware News 1?97. Wien: human ware EDV-Technologie, pp 5

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