

Karolina M. Zielinska-Dabkowska

Why human beings and animals relate to white and coloured light?

The journey through Darwin's theory of evolution incorporating newest scientific research in perspective of the lighting designer.

Speakers Profile

With degrees in Architecture-Urban planning at Gdansk Technical University/Poland and Architectural Engineering at University of Hildesheim/Germany, Karolina pursued lighting as a career working for world-renowned firms such as: L-plan Lighting, Berlin/Germany; Fisher Marantz Stone, New York/USA; Speirs and Major Associates, and Light Bureau, London/UK.

As a lighting designer she was involved in projects ranging from transport, commercial headquarters, hospitality and leisure, retail, private residences to landscape and urban master-planning schemes in Europe, the US, Russia and the Middle East.

She is a professional member of PLDA, actively involved in lighting education at the university level. She has participated in a number of international conferences, and has written articles for national and international publications. Currently she is pursuing her PhD in architectural lighting at the Department of Architecture, University of Technology, Gdansk/Poland and also advises cities on strategic lighting solutions.

Abstract

With this presentation, it is my intention to start a discussion, using a relatively recent discovery of the 3rd eye receptor (Brainard 2001), and question the idea that evolution has embedded within all living organisms a natural sensitivity towards their native environment, in particular lighting.

Brainard's discovery highlighted the connection between human biochemical



processes, and our biological clock. The receptor enables an eye to distinguish between day & night even when concealed behind the eyelid.

Not only humans are affected subconsciously by light. Research in the biodiversity field has noted many examples of such instances within nature e.g. that bright colored light can confuse birds celestial clock during migration periods, and fish can be attracted to blue light, potentially altering breeding patterns etc.

With this in mind, increasing awareness should be provided when designing lighting in external environments. Currently designers do not factor, with enough significance, the importance of our artificially lit surroundings and how they influence our evolutionary dispositions, possibly with negative consequences.

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