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# RGB

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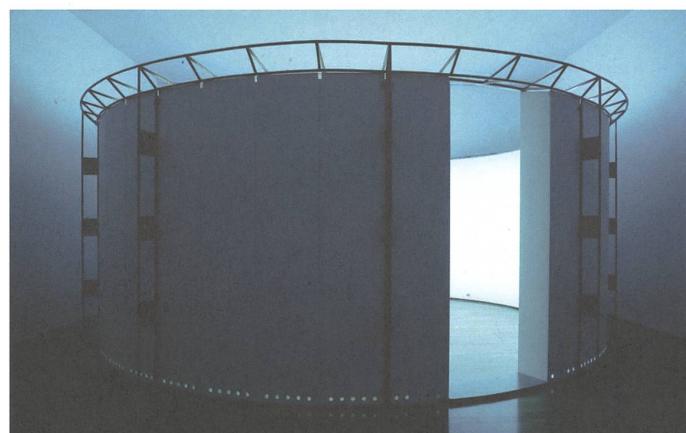
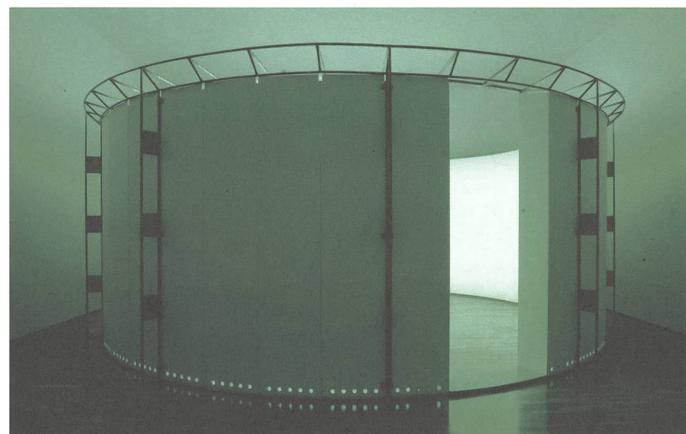


fig. a, b, c Olafur Eliasson, 360° Room for all colours, 2002, digital photography. Photography: Jens Ziehe, 2004

«Colour is „produced“ by the manipulation of visual phenomena within an environment. In this case, the set-up employs the additive colour model, adding combinations of red, green, and blue together in order to produce the full gamut of tints and hues. Viewers are reminded not only that our experience of colour is closely related to our experience of light, but also that it is influenced by cultural habitat and physical environment.»<sup>1</sup>

## Monochromatic Colour Perceptions

Olafur Eliasson's *«Room for all colours»* combines a unique device made of a frame containing a closed space with a small door for the viewer to enter and a projection screen surrounding the room with a matrix of red, green and blue filter foils. This piece generates a fully controlled visual spectrum, a total immersion in a specified colour, provoking feelings and capturing emotions. This installation questions the effect of the perception of colour through emotions. The artist's interest in manipulating monochromatic spectrums of light to stimulate our brain in different ways is the core of this article.

### *Colour perceptions*

«Colour harmony» has been a longstanding area of research, exploring the human reactions to colours. A conceptual model was proposed by Zena O'Connor, a design researcher, based on the following formula:

$$\text{Colour harmony} = f(\text{Col}1, 2, 3, \dots, n) \cdot (\text{ID} + \text{CE} + \text{CX} + \text{P} + \text{T})$$

«Wherein «colour harmony» is a function (f) of the interaction between colour/s (Col 1, 2, 3, ..., n) and the factors that influence a positive aesthetic response to colour: individual differences (ID) such as age, gender, personality and affective state; cultural experiences (CE), the prevailing context (CX) which includes setting and ambient lighting; intervening perceptual effects (P) and the effects of time (T) in terms of prevailing social trends.»<sup>2</sup>

This formula is not providing just one answer. One certainty is that internal stimuli respond to colour, both being affective and cognitive, involving emotional response and judgment. As such, this infinity of answers is a wide playground for many artists.

Donald Judd, for instance, specifies in 1993 how in the arts «the necessities of representation inhibited the use of colour.» Colour being «too particular and especially too important in organization to become minor, just secondary.» As a matter of fact, Judd continues his argumentation: «The development of space is within the last thirty years. For one hundred years the most powerful aspect has been colour. The one hundred years of the primacy of colour is still only a beginning.»<sup>3</sup> The relation between the art of cinema and architecture, of personal interest to us, is a way to explore space differently.

### *Sensorial manipulations*

The goal of our exploration is therefore to define specifically the effects of primary colours on the conception of space. This research on colour sensorial manipulation seems significant because of the input it has on spatial planning.<sup>4</sup> Colour association being an art in itself, the connotative meaning each specific colour has on our perception may be bounded to one specific culture. It is, however, considered that the three primary colours cross over the borders of contexts and circumstances to represent the following very banal symbolics:

Red denotes excitement, arousal, sensuality, romanticism and femininity. It is a symbol of good luck or even danger and power. It is all in all a strong colour.

Blue can be perceived as inner security and confidence, giving a sense of calm and peace. It also has a character of nostalgia and conservatism.

Green is claimed to represent harmony, birth and renewal, being mostly the main figure of a flourishing nature.

But how far is this true? We would like to explore the manipulative aspect of the symbolisms of these colours in the following six examples.

### *A triad of movies and architectures*

«Red, green, and blue» is defined as «a convenient colour model because the human visual system works in a way that is similar—though not quite identical—to an RGB colour space»<sup>5</sup>. An additive colour code, such as RGB, differentiates itself from the CMYK colour code, which mixes subtractively different inks to reach a convenient colour. The RGB colour code is based on the mixing of three monochromatic lights. To analyze the effects of these three primary colours on our perception of space enabled us to find out how they are subsequently anchored «in the differing responses to light by three types of colour receptors or cones in the retina (trichromacy)»<sup>6</sup>. This subtle innate capacity of the vision to differentiate colours, enacting the very way to feel, through the neurological processes, triggers different perceptions.

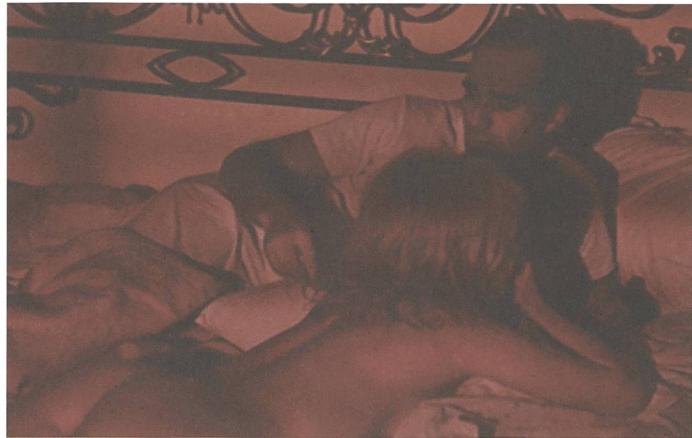


fig. d Scene from Jean Luc Godard (director), 'Le Mépris', 1963



fig. e Ricardo Bofill, Muralla Roja, Calpe, 1973. Photography: Costablanca digital, 2016



fig. f Scene from Lana Wachowski, Andy Wachowski (directors), 'Matrix', 1999



fig. g Adolf Loos, Villa Müller, 1930. Entrance hall, state in 2016. Photography: cargocollective, 2016



fig. h Scene from Luc Besson (director), 'The Big Blue', 1988



fig. i Stefan Vasic, Ana Sulkic and Igor Sjeverac, Serbian Pavilion, Venice Architecture Biennale, 2016. Interior of the pavilion. Photography: Luke Hayes, 2016

*Movie 1.* The dramatic intensity explored by J.L. Godard in the movie «Le Mépris» (fig. d) is brought out through the very conscious and precise presence of red along the whole production. As he states, «Le Mépris seems to me, beyond its psychological study of a woman who despises her husband, the story of castaways of the Western World. (...) I filmed a spiritual Odyssey.»<sup>7</sup> The figures of the woman, time, the past, the culture... all of these are making the movie red. The intense colour treatment, in the bedroom scene, covering every part of its surfaces with a monochrome filter, happens to be the most successful tool to transmit sensorial vibrancy. Love and confidence, nostalgia and intimacy.

*Architecture 1.* The «Muralla Roja» of Ricardo Bofill (fig. e), like a fortress impregnated with past mediterranean vernacular architecture, is conceived as an illusion of space. This labyrinthian construction using red as the main colour, embodies a metaphor. Located in front of the sea and oriented towards it, the elements are abstracted to represent a burning fire wanting to outdare the vast and infinite mass of water. It ultimately strengthens the human presence when directly confronted with the immensity of nature.

RED as a colour has the potential to arouse strong emotions, whilst remaining a totally abstract reality within its given context.

*Movie 2.* The main colour in «Matrix» (fig. f) is a constant representation of what Lana and Lilly Wachowski could understand as *bad* power. Green could represent nature, as it is the main colour spectrum liberated from chlorophyll, but nature doesn't exist anymore, humanity appears to be simply overcome by a power beyond its inner original nature. With technology taking control of everything, life becomes artificial.

*Architecture 2.* In the Villa Müller by Adolf Loos (fig. g), the interior surfaces are treated in an analogue way. The green ceramics could represent human superiority and control towards nature. Richness.

GREEN is perceived as a dignifying feature of the house interior. The space, manipulated chromatically, begins to be perceived as a room for sophistication, pride, self-regard and self-respect.

*Movie 3.* As to blue, the vastness itself: «The Big Blue» (fig. h) by L. Besson is a great visual experiment that repeatedly uses water as a natural filter for its shots. Even if the storyboard relates to an apparent past, the scenes of the movie immerse the spectator in a parallel world of dreams mixed with reality. Contemplation and submersion into the magnificence of the sea are blended. In the selected screenshot, anxiety is the main evoked feeling even if in the entire art work, blue can be synonymous of relaxation. This ambiguity expresses the power of colour in manipulating the viewer's emotions.

*Architecture 3.* At the Serbian Pavilion of the last Venice Architecture Biennale (fig. i), the representation of a contained sea through the limits of a blue boat shell depicts an actual condition: an «inhabitable emptiness». The power of water shaped in a shell, gives a feeling of eternity to time. In this very moment, architecture is shaping water, stopping it just before flooding the room. The visitor finds himself powerful but constrained at the same time. A subtle balance is created.

This equilibrium between dream and reality, in both cases, expresses BLUE as the colour of contemplation to express and submerge the audience into a not so distant parallel reality.

## Conclusion

Colour perception is affected by strongly manipulable strategies and tools. The choice of dealing with two specific mediums and a monochromatic code was a way of simplifying the field of study of the resulting sensations, produced by the effect of colour, abstracting ourselves from reality. The intensity of symbolism reached by designing monochromatic spaces, leads to a purified conception of space. These many personal impressions triggered by colours are the reason for an immense diversity of aesthetic representation.

The abstract concept of the RGB code responds to a wide range of different tones and diversity of spatial materialisation. Their use as monochromatic spectrums, in both mediums, cinema and architecture, still contain several and crucial discrepancies. However, the results can be considered as similar. In terms of space, which is the main idea behind choosing architectures and movies, the three steps of monochromatic based images teach the viewer complementary concepts, trying to construct an overall understanding. «While the precise optical and neurological processes involved in perception are still largely obscure, we know that «visual awareness» can be learnt. (...) The essential connection between colour and objects begins in our infancy.»<sup>8</sup>

- 1 <http://olafureliasson.net/archive/artwork/WEK101391/room-for-all-colours>. retrieved: 30.11.2016.
- 2 O'Connor, Zena, «Color harmony revisited», in: John Wiley & Sons Inc (Ed.), «Color Research and Application», Hoboken 2010, pp. 267–273.
- 3 [http://s3.amazonaws.com/juddfoundation.org/wp-content/uploads/2016/04/12120632/SomeAspectsOfColor\\_Writings\\_DonaldJudd.pdf](http://s3.amazonaws.com/juddfoundation.org/wp-content/uploads/2016/04/12120632/SomeAspectsOfColor_Writings_DonaldJudd.pdf), retrieved: 30.11.2016.
- 4 <http://www.cca.qc.ca/en/issues/16/the-rest-of-your-senses/34281/toward-a-sensorial-urbanism>, retrieved: 30.11.2016.
- 5 [https://en.wikipedia.org/wiki/RGB\\_color\\_model](https://en.wikipedia.org/wiki/RGB_color_model), retrieved: 08.01.2017.
- 6 <https://www.britannica.com/science/Young-Helmholtz-three-color-theory>, retrieved: 08.01.2017.
- 7 Tom Milne, «Godard on Godard», New York 1968, pp. 200–201.
- 8 Michael Lancaster, «Seeing Colour», in: «Architectural Design», 1996, 66, pp. 22–25.

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