

Colour harmony: from dualism to living perception

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INTRODUCTION

Only a few artists have ever aimed at totally harmonious art in the sense of the conventional theories of harmony. The function of art is to stir our emotions, intellect and imagination. To have this effect, it needs to deviate from the expected, from the 'normal'. Harmony is very much in the comfort zone of normality, whereas contemporary art and design aim at being mostly out of it. To have any useful meaning for artists and designers today, a theory of colour harmony needs to address at least the following issues:

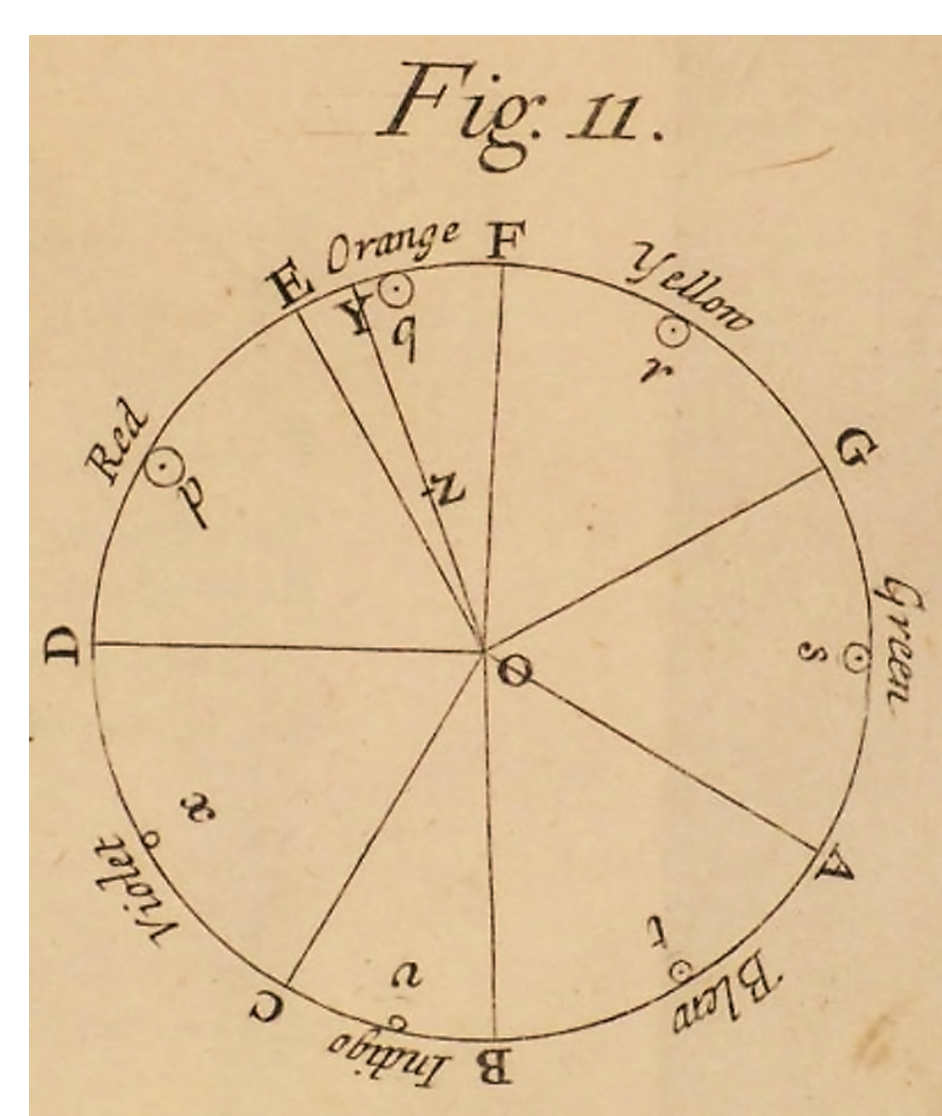
- 1) Harmony has lost its status as a universal concept in art and needs to be re-examined.
- 2) Art and design have become alienated from the formalistic ideas of visual coherence that dominated modernism.
- 3) Colour should not be regarded separately, but in relation to all the sensory, cultural and conceptual factors constituting an artwork.
- 4) Rather than being passive reception, colour perception is a matter of involvement, interaction with the world.
- 5) The history and intentions of the perceiving subject influences his/her colour experiences. This fact undermines the validity of rigid universal theories of colour harmony.



Bruce Nauman: *Life Death Love Hate Pleasure Pain*, neon light, 1983
Museum of Modern Art, New York (Photo: Robin Hogeslag)

COLOUR DUALISM

Classical theories of harmony in architecture, sculpture, music and poetry had their models in the extant works of ancient art, such as Classical Greek ruins, sculptures, utility objects, poetry and their Roman copies and reinterpretations. For theories of colour harmony in painting and the other plastic arts, there was very little to lean on. It had to be construed or inferred from the other, better known or preserved arts and sciences. Two concepts – that are interwoven in many colour theories – have dominated colour harmony from Antiquity to this day: the concept of a systematic ordering of colour relationships, and the concept of an analogy between colour relationships and musical consonance. There is a third, less direct, concept and tradition that continues to influence colour harmony; the Pythagorean idea of fixed mathematical proportions determining the movements and distances of the sun, the planets and the stars orbiting the earth; it was linked to musical consonance to form a Harmony of the Spheres. These traditions have contributed to the continuation of a metaphysical and dualistic model of colour harmony. This model presupposes the existence of an ideal and sublime harmony that is only indirectly sensed by mortals.



Left: Newton's colour wheel, illustrating the relationship between diatonic note intervals and colours as shown in *Opticks*. Each segment relates to one of the seven diatonic intervals.
Isaac Newton, *Opticks*, 1704
The Whipple Library,
University of Cambridge

Right: A 16th-century illustration of the celestial spheres.
Peter Apian, *Cosmographia*, 1524

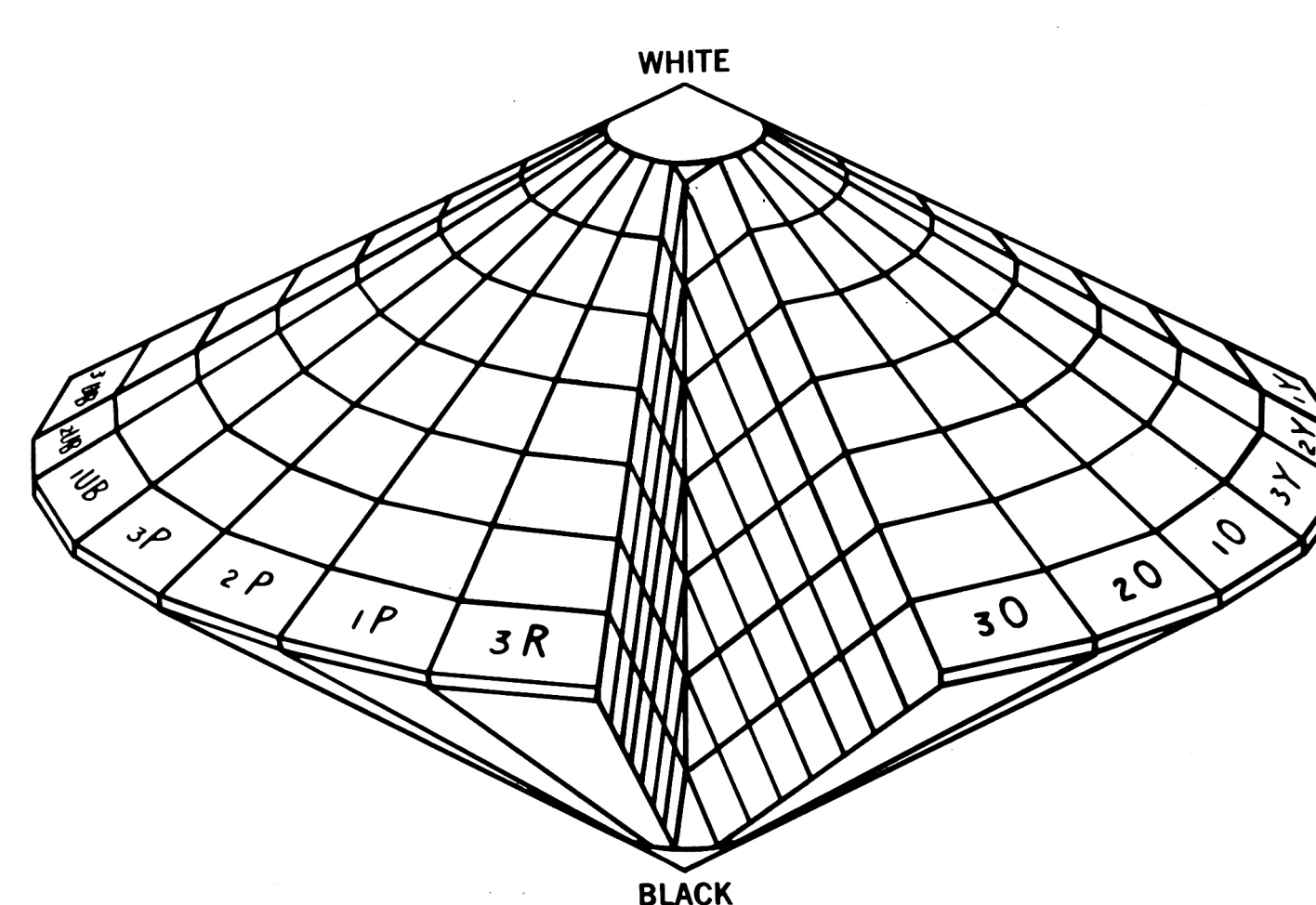
The Music analogy

The comparison of the wave theory of light with the vibration frequencies of sound became very popular in the latter part of the 19th century (von Maur 1999) and persists in recent ideas of colour harmony (Brougher et al. 2005). Some supporters of this idea have linked it with the phenomenon of synaesthesia. Among the most common forms of clinical synaesthesia is colour-hearing, the spontaneous firing of visual sensations by auditory stimuli or vice versa. Synaesthesia is a real experience, but at the same time entirely private and subjective. No two synaesthetes have been known to link colours and sounds in exactly the same way. (See Cytowic 2002). There are many and very interesting metaphorical and cultural parallels in, for example, the arts of painting and music, but so far there is no evidence, either physical or neurological, of an objective connection between auditory pitch and perceived colours.

The beguiling beauty of colour order

If colour harmony is regarded as a system of unity, coherence and continuity, then the rules are relatively simple: Linear samplings from any colour system that is based on a visually logical order will automatically yield smooth sequences of hue, saturation, lightness, whiteness, etc., as well as well-balanced complementaries. Harmony rules that are derived from perceptual colour systems will have strong predictive power when applied to applications of colour that are similar to the system: two-dimensional, with colour areas of uniform texture, size and shape. In this sense they are self-predicting and there is no need for mathematics to prove it. Such models are less successful when applied to colours in other modes of appearance.

If it is accepted that colours cannot exist as a metaphysical structure independent of a viewer, then colour relationships cannot exist in the world *a priori*, but are rather the outcome of the engagement of the human (or animal) with its environment and cultural condition. To understand the impact and meaning of colour combinations it is necessary to investigate this dynamic relationship. It may turn out that such investigation yields little or nothing in the way of universal rules of colour harmony, but rich rewards in the way of understanding the meaning and function of colour in our lives.



Illustrations of Wilhelm Ostwald's colour solid (above) from his colour system (1910) and colour harmonies (right), derived from horizontal sections of the solid.



LIVING PERCEPTION

The rapid globalization of the art market has exposed artists to an increasing diversity of artistic ideas and influences. Also the focus and role of art and design has shifted from questions of aesthetic sensibility, beauty and the sublime to conceptualism, gender, political, environmental and societal issues. Colour harmony based on abstract and formal ordering, unity, balance or pleasantness has to a large extent ceased to motivate artists. (See e.g. Gage 1999: 55-56, Westland et al. 2007). This alienation of artists from formalistic concepts of harmony has left the field to cognitive and computer scientists, psychologists and neuropsychologists, who express their ideas in the form of algorithms. As a result, artists and designers have lost touch with present thinking in colour harmony.

The fact that harmony has lost its status as a universal concept in art and design does not mean that apt colour combination has ceased to be relevant. On the contrary, in today's world of electronic, printed and mass-produced colour the issue of its impact is more urgent than ever: a redefinition of colour harmony is needed.

What matters in the choice of colours in art and design is the particular sensual impression, the mood and character conveyed by the colours and forms. These impressions presuppose a living viewer in *living perception*, relating the experience to his/her history, culture and situation. These experiences are not private (like synaesthesia), but shared more or less universally due to our common experience and fate as humans. It is here that we must begin our search for colour universals.

James Gibson (Gibson 1986), Semir Zeki (Zeki 1999) and Alva Noë (Noë 2004) have all independently emphasized the active role of the human or animal in the formation of visual experiences. They stress that our sense of sight developed primarily for gaining information about our physical surroundings, and they emphasize the filtering of sensory information for the purpose of appropriate and relevant actions. "The visual system hunts for comprehension and clarity. It does not rest until the invariants are extracted. Exploring and optimizing seem to be function of the system." (Gibson 1986: 219). Perceiving colours and their relations, then, is not a mere matter of judging their static "qualities", but of sensing their potentiality for actions.



Maurice Merleau-Ponty (1908–1961), the author of *Phénoménologie de la perception*, 1945

CONCLUSIONS

Colour has not only multiple layers of meaning, but is richly layered also on a perceptual level. In his principal work, *Phenomenology of Perception* Maurice Merleau-Ponty describes the multi-layered nature of visual perception:

We shall not succeed in understanding perception unless we take into account a colour function which may remain even when the qualitative appearance is modified. I say that my fountain pen is black, and I see it as black under the sun's rays. But this blackness is less the sensible quality of blackness than a sombre power which radiates from the object even when it is overlaid with reflected light, and it is visible only in the sense in which moral blackness is visible. (Merleau-Ponty 2002: 355–6).

It is this richness of experience – which cannot be quantified or measured – that a theory of "colour harmony" must try to embrace.