

# A THEORY OF COLOUR PSYCHOLOGY AND COLOUR HARMONY

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## 1. Introduction

This paper presents a unified theory of colour harmony and colour psychology. It posits the existence of patterns within the visual spectrum that are reflected in patterns of human behaviour. The theory resulted from exploration of the following questions:

- *How does colour influence mood and behaviour?*
- *Why do individuals have different aesthetic responses to the same colour?*
- *What affective differences are there between different versions of the same spectral hue?*
- *Are there any universally attractive colours?*

Brought up in a hotel in the English Lake District, the author noticed from an early age that guests' behaviour was clearly influenced by the colour schemes. For example, with two bedrooms identical in every detail but the colour schemes, regular guests all wanted this one and none of them wanted to occupy that one. When questioned about it, they said that, whilst the 'other one' was very nice, they just felt more comfortable in 'this one'.

In the UK at the time (and indeed, still), a three-year degree course in psychology included only about four days dedicated to colour – and then only in terms of how it is processed by the eye and the brain, rather than the way it influences mood and behaviour. The received wisdom generally remains that response to colour is determined by culture, age and gender.

The answers to the above questions lay in a study of unconscious thought processes – Freudian psychology – as well as an understanding of colour science. In 1984, the Wright Theory was formed, and Colour Affects was set up in London – a colour consultancy specifically dedicated to testing the theory empirically. Results were extremely encouraging, and it became clear that:

- a) Response to colour is virtually universal, and, whilst subjective, can be predicted – cultural response is conditioned, and varies; it is more accurately described as colour symbolism, as distinct from the common human reactions of colour psychology. The two often coincide, but if they do not, the unconscious response will prevail.
- b) True response to colour, and indeed all aesthetic influences, is largely unconscious. According to the late Professor Hans Eysenck, in conversation with the author, the conscious reaction is only 20%.
- c) Objective colour harmony is a reality.**

## 2. The Wright Theory

Combining the two disciplines of psychology and colour science resulted in the theory that follows:

1. There are four colour families, within which every colour harmonises – colours from different families do not.
2. There are four personality types.
3. Each personality type has a natural affinity with one colour family.
4. Each colour family expresses a personality.

The colours are classified into four tonal groups. Firstly, they are either cool or warm, (blue-based or yellow-based) - **Hue**. Secondly, they subdivide in terms of saturation – **Chroma**, and the addition, or not, of black - **Value**. Each of the four groups contains versions of all the main colours – red, blue, yellow etc. - so this colour harmony theory is a departure from traditional colour theories based on the colour wheel.

“Perhaps the central innovation of Angela’s theory is that it does not emphasize the difference between colours for which we have words – red, blue, yellow etc. – but the differences between the many forms of each of those colours – the slightly greenish blue which is a little darker and a little less saturated than the other one. This is relatively unexplored territory.”

Chris McManus, MA, MD, PhD.  
Professor of Psychology,  
University College London

(Foreword to ‘The Beginner’s Guide to Colour Psychology’ Kyle Cathie, 1995)

Human characteristics can also be divided into four classifications, as many theories have shown in the past - from Galen in ancient Rome to Jung in 20<sup>th</sup> century Switzerland. There are as many variations within each personality type as there are people, but the underlying patterns are absolute.

Each personality type is expressed by a specific tonal family of colours. Conversely, a specific tonal family of colours expresses a collection of characteristics – a personality. Every colour in one tonal family will harmonise with every other colour in the same family, but not with a colour from a different family, and each colour family communicates specific characteristics.

Colour Affects developed the Colour Affects System, the practical application of the Wright Theory. Once the algorithms were established, the Colour & Imaging Institute, in Derby, was able to computerise the Colour Affects System, and produce a piece of software (called Ultracolour) that would enable anyone with a computer to put colours together effectively.

It should be noted that the system is not a colour defining system, or a colour matching system; rather it works with all colour systems – Pantone, CMYK, NCS etc...

Furthermore, the Colour Affects System is in no way a contradiction of classic colour theory it is an evolution.

### **3. Research**

In early, informal tests, Professor M. Ronnier Luo (now Professor of Colour Science at the University of Leeds) confirmed the mathematical correlations between colours in each group, as classified within the terms of the system: all the colours in one family clustered in the same computer space, suggesting the possibility of objective colour harmony.

Professor McManus also conducted informal research into the psychology: he asked 60 psychology students to look at groups of colours and groups of words to describe characteristics (provided by Angela Wright). The observers were asked to put them together – i.e. decide which group of colours best captured and expressed a group of adjectives. The second part of the experiment was vice versa – which group of adjectives was best expressed by a group of colours?

The level of agreement with the theory was over 80%.

#### **The OKI Project**

In 2003 – 2004, OKI Printing Solutions – manufacturers of colour printers and other business communication machines – sponsored a major pan European project to subject Ultracolour to stringent scientific research. The OKI project virtually recreated the earlier experiments conducted by Professor McManus and Professor Luo – but with the benefit of modern technology and display.

Professor Ronnier Luo and his team conducted the research, together with five Universities across Europe; observers were: British, French, Spanish, German, Swedish and Chinese (resident in Britain).

### **4. Results.**

Although the results for the part of the project testing relationships between adjectives and colours were not as good as the earlier work, done by Professor McManus (probably due to difficulties of translation – more work needs to be done on that) levels of agreement across all cultures about colour harmony reached over 91% in parts. Overall agreement with the theory was 76.8%.

### **5. Application**

The first licensee of the Ultracolour technology – Color Savvy Systems Limited, in Ohio, USA - has produced a new colour measuring device, called the Color Helper; this handheld product is designed for the home décor market, and is currently being launched in the USA. Paint companies across the world are currently evaluating it for their own use.

### **6. References**

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