BOOK REVIEW

Title	: COLOR: THE PROFESSIONAL'S GUIDE Understanding, appreciating, and mastering color in art and design
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Color is one of design elements which plays a significant role and influences people's daily cultural and personal experiences. It is a subject that should be studied from multidisciplinary perspectives; not only art and design perspective, but also chemistry, physics, psychological, sociological and cultural perspectives. Color: The Professional's Guide is a book dedicated to discussing different color topics by providing strong foundation in a holistic approach. The author is a designer and educator in color design and visual merchandising at Rhode Island School of Design Certificate Programs. She has written for many design magazines and newspapers on color and design topic. The book contains 19 chapters and is organized into six parts. Color: The Professional's Guide is, therefore, a complete guide to understand, appreciate, and master color in art and design.

Part one, the Science of Color, comprising five chapters, begins by acknowledging and engaging "natural color" in the rich environmental and cultural diversity biometric life. In Nature, however, color is crucial to animals and plants as a source of energy, species regeneration, drive behavior and nurture personal safety. Moreover, color

is an asset in space and microscopic research. Technology development has allowed scientists to use colorization techniques to discover solar system and underwater life as well as medical diagnostic purpose. (see chapter one Color in Nature).

It then examines the relationship between a light source, people's perception and the perceived object. From Isaac Newton's work, white is considered as the total of the visible light spectrum mixed together. Color temperature refers to how cool or warm the quality of light is. The cooler the color of the light, the higher the temperature, however, the warmer the color of the light, the lower the temperature. Therefore, there are many variables related to light when perceiving an object's color, one of which is color vision. There are two grand theories of color vision: the trichromatic theory and the opponentprocess theory. The trichromatic system relates to color created by the retina using three types of cones from the combination of three basic colors: red, green and blue, whereas the opponentprocess theory suggested that there are four elementary color sensations: red and green, and yellow and blue which oppose each other. However, not only the light,

its intensity and placement will affect the color of an object, but also an object's surface reflectance and texture itself. (see chapter two Color and Light Perception).

Just like other text books on color topic, chapter three, Theoretical Color, describes in detail about color mixing, color variable (hue, value, and intensity), color interaction and relativity, color balance and color proportion, extension and weight. Color balance talks about color harmony and the balanced harmonies concept based on theory of Johannes Itten (Itten, 1970). The chapter is added by illustration of color balance schemes (complementary, split-complementary, tetradic, triadic, analogous and monochromatic color wheel) including the application of those schemes on interior design images. Moreover, there are illustrations and interior design pictures which support Frank Mahnke's thoughts on color placement that relates to environment and human response.

Anyone who has worked with color in any way will agree that there is unlimited choice of color. Therefore, it is necessary to create color system to describe color by using words or numerical notation. In chapter four Color Organization, theoretical color systems by several prominent artistphilosophers including Johann Wolfgang von Goethe, Faber Birren and Philipp Otto Runge are described and illustrated. Color system theorists were also affected by the perceptual psychological perspective based on human perception developed by Wilhelm von Bezold and also Ewald Hering whose works lead to the development of the "opponent process theory". Furthermore, color system is also created by relying on math and science including the work of Isaac Newton, Herman von Helmholtz, and John Maxwell. Nowadays, there are many color system widely used

today for communication and color standardization, such as Munsell system, Natural Color System, and Pantone System.

When it comes to non-digital, the choices of color used involve pigments and dyes. It is important to understand the physical qualities of those substances. Chapter five Pigments and Dyes: Chemistry discusses about pigments (organic, inorganic, natural, and synthetic); dyes and recipes to make paint materials and dyestuffs.

Part two, the Psychological and Cultural Context of Color, consisting four chapters, explores further the concept of color perception and response researched by scientists, anthropologists, psychologists, artists and designers as well. McLeod (2016) points out that color psychology reveals how each color evokes a collective physical, mental and emotional response in people. In short, colors can have both positive and negative connotations, whereas color preference is due to combination of environmental and personal factors. Furthermore, it is crucial to examine if color can create emotion as the color itself obtain the response (see chapter one Color Awareness and Response).

It then discusses geographical and regional color as well as socio-political color in chapter two Cultural Response, Symbolism, and Meaning. Cultures, however, may differ in their use of color symbolism and psychology (McLeod, 2016). Thus, it is important to research local culture to identify the color palette of one geographical area. Chapter three Color, a Historical Perspective discusses about color in a historical context. Period color refers to color that makes an identifiable statement regarding material culture and design of a certain time.

It has been understood how the socio-political and historical environment can influence popular color choice. Thus,

chapter four Trends in Color explores the color palettes of several period of decade from 1940s to the twenty-first century. However, period color palettes involve several colors from the previous decade.

Part three, Appreciating Color, comprising three chapters, discusses the history of color in painting (chapter one). It explores artists' works capturing color and light such as J.M.W. Turner, Claude Monet, Georges Seurat and other Impressionist painters. Then the discussion moves on to the works of the colorist such as Vincent van Gogh, Paul Gauguin, Edvard Munch who created a link between the Post Impressionists and the German Expressionists.

It then discusses color in photography (chapter two) in which the first color photographic image was produced in collaborative effort between photographer Thomas Sutton and physicist James Maxwell in 1861. This book also discusses color in fine-art photography, surrealism, post-surrealism and conceptual photography. The bright, flattened and unrealistic color gives a sensibility which is impersonal and dehumanized to the photograph.

However, colors and words has a relationship which has been reflected in cultural development throughout history. Chapter three discusses about color and the written word: roots and origins. Color and poetry can elicit feelings and create a synesthetic experience that enhances emotive response. In addition, color words have power and meaning. Prior to language development, infants can distinguish and respond to color (Brenner, 1982). Young children within 3-4 years old can detect a relationship between color and emotional expression, and therefore color in words depens upon associations with objects.

Part four, Color as a Dynamic Force in Design, comprising three chapters, begins by examining design

elements and principles (chapter one). There's a subconscious relationship between colors and design elements. Colors work best in combination with design elements (point, line, shape, texture, etc.) and guided by the design principles of balance and symmetry; scale, proportion and space; movement and flow; as well as emphasis and focus.

This part also discusses the application of color in printed graphic design including cover story, type, image, catalogs and annual report (see Color in Print in chapter two). It is pointed out that designers should understands the theoretical, psychological, and contextual aspects of color – its meanings, moods and associations - to be able to use the communicative qualities of color to deliver and develop their message.

It then discusses the apllication of color in branding and identity including logos, identity, and packaging (see chapter three). Color, however, is used by every organization in its identity and branding. It takes a strong combination of color and design to create a lasting brand (McLeod, 2016). Color is crucial to package design since people sense color prior to any other element and might persuade people to purchase the product.

Part five, the Color Experience, comprising three chapters, begins by discussing color in three-dimentional design (chapter one) including vertex, edge, mass and face and design principles. In the three dimentional terms, color is more powerful since it can be experienced. Therefore, chapter two discusses the experiental design including displaying with color, store window, environmental graphics and way-finding. The discussion is provided with photographs that illustrate the color which can be used creatively when creating retail environment such as display and store window. Moreover,

it must also be sensitive to color of the environment in which it is placed. Thus, when creating signage and way-finding system, it's important to take brand color into consideration. Color can be the focus in a way-finding system by using color coding that might improve user experience.

It then discusses color consulting the process including residential interior color consulting and other color design spaces (see chapter three). Essentially, harmonic color schemes and basic color palettes knowledge is critical for the palette development. Color consultants utilize their knowledge color palette development to draw together interior furnishing, floor and wall covering into a harmonious scheme and consider the proportionate quantities with respect to the material. Response to color is the result of relationship between individuals and their environments which should be studied with a holistic approach (Lechner, A. And Harrington, 2006)

Finally, part six, Color on the Move, consisting one chapter which discusses Color in Film and Animation. Basically, film and animation are similar to an experiental design that utilizes a combination of lighting, sets and costumes to create the ambience and support the characters. This chapter includes color in horror, fantasy and reality, fiction, and anime film and movie. It's pointed that color can create a mood or feeling to the type of movie. At the end of the chapter, it discusses about Disney color culture from hand-coloring to using digital ink. Glossary of color terms are described at the end of the book part so lay readers can easily understand the terms in a short time.

Overall, the explanation of this book is very interesting and useful for reader to better understand about color from art, design and scientific perspectives. This book contains grand

theories of color from experts from all disciplines. This book is also completed by theories and case studies derived from current research cited from academic journals as the discussion. This book is illustrated with over 300 full-color images that explain the text visually. The illustrations are found in almost every single page of the book. In addition, at the beginning of each chapter, the author inserts an interview with an expert in the field to share about his or her work and explains the opportunity for elaboration and development with regard to the origin of the color field and where it can bring us in the future.

But unfortunately, this book has not yet discussed about color in craft, textiles and fashion design as well as color in architecture. Therefore, these discussions should be added to the next edition. In addition, an in-depth discussion about colors palettes and philosophy of exotic local culture is interested to be put forward in the next edition.

To sum up, this book, Color: the Professional's Guide, is worth reading by color enthusiasts from all disciplines, not only fine artist and designers, but also chemists, physicists, computer psychologists, scientists, marketers, trend forecaster and other experts whose job is often related to color.

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