

Module 2: "Color Theory"

Lecture 3: "Color Theory"

The Lecture Contains:

☰ Introduction to Color Theory

☰ Color Wheel

☰ Color Harmony

☰ Color Harmony

☰ Color Context

I. Natural Color

II. Heraldic Color

III. Harmonic Color

IV. Pure Color

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Introduction to Color Theory

Color theory runs it to various aspects of design applications, definitions, concepts etc. However, 'color theory' needs to explain the science of color (color wheel), color harmony, and the way they are applied.

Color theories help to create a logical structure for color. While arranging color objects we create a mental mapping to develop a logical structure. The example bellow (plate1 A &B) illustrates such man-made arrangements that show the purpose and logical selection of color against one another. Interestingly nature does not organize color in term of such arrangement. Nature's arrangement depends upon the environment around for their survival.



Plate1. A. Color Context (interior)



Plate1.B. Interior Design

Source: http://www.google.co.in/search?hl=en&q=color%20in%20interior%20design&bav=on.2.or.r_gc.r_pw..cf.osb&biw=1272&bih=577&um=1&ie=UTF-8&tbn=isch&source=og&sa=N&tab=wi&ei=JYq8T-yMAYj3rQempa2rDQ ; May 23, 2012)

Color Wheel



Primary color



Secondary colors



Tertiary colors

There are three Primary Colors, corresponding Secondary Colors and Tertiary Colors. The above 'Color Wheel' was developed by Sir Isaac Newton in 1666. The selection of color is based on 'color pigment' not on light-color. Yellow, Red and Blue are the three primary colors that cannot be created by mixing any color. Yellow, Red and Blue are the three basic colors that would create all other colors. The above topic (color wheel) would be discussed in detail in the chapter on Color Principles.

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Color Harmony



Plate 2A. The Bauhaus Exercise



2B. Color Harmony



2C. Analogous Color Harmony

Source: [http://www.google.co.in/search?](http://www.google.co.in/search?hl=en&q=color%20harmony&bav=on.2.or.r_gc.r_pw..cf.osb&biw=1272&bih=577&um=1&ie=UTF-8&tbn=isch&source=og&sa=N&tab=wi&ei=Nly8T6HhF8TrrQeF3tysDQ)

[hl=en&q=color%20harmony&bav=on.2.or.r_gc.r_pw..cf.osb&biw=1272&bih=577&um=1&ie=UTF-8&tbn=isch&source=og&sa=N&tab=wi&ei=Nly8T6HhF8TrrQeF3tysDQ](http://www.google.co.in/search?hl=en&q=color%20harmony&bav=on.2.or.r_gc.r_pw..cf.osb&biw=1272&bih=577&um=1&ie=UTF-8&tbn=isch&source=og&sa=N&tab=wi&ei=Nly8T6HhF8TrrQeF3tysDQ) ; May 23, 2012

Harmony or a sense of rhythmic relationship can be defined as a pleasing arrangement of parts- it is applied in color, music, poetry, dance, choreography, etc. Harmony is part of our life that encompasses in everything that we do. Every human gesture involves some degree of harmony and rhythm. Color plays important role in visual harmony that surrounds us. Ultimately harmony and rhythm experience translates into aesthetic appreciation. It involves the viewer and it creates an inner sense of order, a balance through visual experience. Harmony is opposite to visual disorder. The above examples of 2D works illustrate the color harmony through combination of hues that create balance and rhythmic composition among multiple colors.

Harmony can be experienced with the help of visual sensory or through audio sensory. The rational arrangements of various components create an orderly composition. Human brains require mental stimulation. Under-stimulation or over-stimulation both is undesirable for the brain. The visual task requires that we present a logical structure. Color harmony delivers visual interest and a sense of order. Color harmony is created with the help of contemporary and analogous color. Nature has played important role in helping to create color harmony as well.

- Extreme unity leads to under-stimulation
- Extreme complexity leads to over stimulations

Harmony, expresses dynamic gesture and qualitative activity that embodies a dynamic equilibrium. Interestingly nature departs from the color harmony. Nature is not programmed to create harmony consciously.

Description of color scheme in art (painter's palette) must account for all three properties- hue, value and intensity.

Read more: <http://www.colormatters.com/color-and-design/basic-color-theory> ; May 23, 2012)

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Color Harmony



Plate3 Color Harmony in Nature

(Source: http://www.google.co.in/search?hl=hi&q=color%20harmony%20photography&bav=on.2.or.r_gc.r_pw..cf.osb&biw=1280&bih=585&um=1&ie=UTF-8&tbm=isch&source=og&sa=N&tab=wi&ei=XDDtT5-OGIjMrQfji52-DQ ; June 29, 2012)

Harmony or a sense of rhythmic relationship can be defined as a pleasing arrangement of parts- it is applied in color, music, poetry, dance, choreography, etc. In visual experience, harmony is something that is pleasing to the eye. It engages viewer and it creates an inner sense of order, a balance in the visual experience. The human brain will reject under-stimulating information. At the other extreme is a visual experience that is so overdone, so chaotic that the viewer cannot stand to look at it. The visual task requires that we present a logical structure. Color harmony delivers visual interest and a sense of order.



Plate4 A Extreme unity leads to under-stimulation



4 B Extreme complexity leads to over stimulations

(Source: 4A http://www.google.co.in/search?um=1&hl=hi&biw=1280&bih=585&tbm=isch&sa=1&q=balance+in+choreography&oq=balance+in+choreography&gs_l=img.3...128120.134533.0.135298.12.1.0.11.11.0.324.324.3-1.1.0...0.0.zc8PCafoC-U ; June 29, 2012

4B http://www.google.co.in/search?um=1&hl=hi&biw=1280&bih=585&tbm=isch&sa=1&q=poster+design+ideas&oq=Poster+design&gs_l=img.1.1.0i19l10.5580.8609.0.14193.13.11.0.2.2.0.347.1633.5j2j2j2.11.0...0.0.BcFcsh4vs08 ; June 29, 2012)

Extreme unity leads to under-stimulation because of calculated predictable expectation (plate 4 A).

Human beings love to expect unexpected surprises. On the other hand over stimulation and complexity may result in creating negative impression. Therefore, the balanced composition is the most challenging aspect in design which is the combination of multiple components. Harmony is a dynamic equilibrium. Interestingly nature does not create color harmony. It happens naturally. Human being tries to create harmony. Description of color scheme in art (painter's palette) must account for all three properties.

Color Context

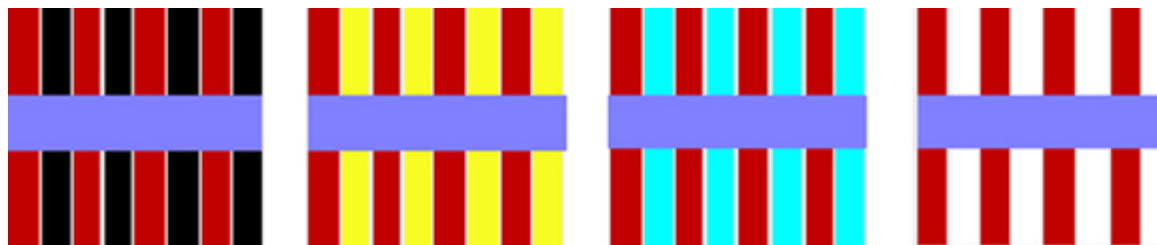


Plate3. Color Viewed in relation to another color

Color is viewed with the help of shape and their relationship with other colors. Naturally in design, consideration of color has to be in relation to other colors and shapes are a complex area of color theory. Color may be seen objectively based on its own merit. Red does not have to symbolize as fire, yellow does not represent sand. In the profession of design colors are applied with great care so that it justifies its presence. The purple strip in the plate (plate3) shows each time the same color (purple) appears differently due its association/contrast against other background colors. Therefore, each color has to be seen in the context of other colors.

The meaning or the semantics of color is based on multiple factors- social, cultural, objective, psychological, etc. Therefore, arrangement of colors could be from pure arrangement of colors to symbols and metaphors.

Color may be applied in various ways. In art and design color has direct or indirect relationship with human perception. Herbert Read, renowned art historian, scholar and philosopher has aimed to classify the application of color in four categories.

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According to Sir Herbert Read: four uses of color in a work of art -

I. Natural Color

in relation to the 'likeness' of a picture with the help of light and shade.



Plate4. Still Life

(Source: http://www.google.co.in/search?hl=en&q=realistic%20paintings&bav=on.2.or.r_gc.r_pw..cf.osb&biw=1272&bih=577&um=1&ie=UTF-8&tbm=isch&source=og&sa=N&tab=wi&ei=Vb29T6m2N4X4rQeaspTGDQ ; May 24, 2012)

The naturalist color and composition depends on light and shade. The hues of colors respect to light shade created near realist composition. Natural Colors concentrate with realistic depiction of the objects. The above paintings (plate4) have gone in to great details and chosen color as per natural colors. Light and shade plays the most important role in *Natural Color*.

II. Heraldic Color

The conventional use of color governed either by establishing rules, i.e. various religious or ritualistic norms, primitive symbolism - green tree, blue water, yellow sand, red sun etc. The conventional color application relates to child art and ritualistic art where color may denote separate meaning other than its actual visual appearance. The paintings bellow (plate 5 A, B, C & D) illustrates various art work that applies conventional colors governed by the perception of religious symbolism or established norms.



Plate5. A. composition



B. Religious Art



C. Child Art



D. Egyptian Mural

5. A Source: http://www.google.co.in/search?hl=en&tbm=isch&sa=X&ei=cQ6_T5ikBonXrQeGgQzhCQ&ved=0CAcQvwUoAQ&q=Conventional+landscape+painting&spell=1&biw=1272&bih=577 ; May 25, 2012

B. http://www.google.co.in/search?hl=en&q=color%20symbolism%20in%20art&bav=on.2.or.r_gc.r_pw..cf.osb&biw=1272&bih=577&um=1&ie=UTF-8&tbm=isch&source=og&sa=N&tab=wi&ei=iQ2_T4i4LsbrrQe_45zFCQ ; May 25, 2012

C. Source: http://www.google.co.in/#hl=en&site=&source=hp&q=child+art&oq=Child+art&aq=1&aql=g10&aql=&gs_l=hp.1.1.0l10.134552.140112.0.142705.9.8.0.1.1.0.227.1378.1j4j3.8.0...0.0.KwSSy7CKOOW&bav=on.2.or.r_gc.r_pw..cf.osb&fp=b9fc15024926eb66&biw=1272&bih=577 ; May 25, 2012

D. Source: http://www.google.co.in/search?hl=en&biw=1272&bih=577&tbm=isch&sa=1&q=harmonic+arts&oq=harmonic+art&aql=g10&aql=&gs_l=img.1.0.0i24l7.15153.15710.0.17907.3.3.0.0.0.228.583.0j2j1.3.0...0.0.gr6LQCGmOUo ; May 25, 2012

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III. Harmonic Color

The use of a scale of color in which each is considered in relationship to the rest. A dominant color in the painting is selected to which the others are scaled up or down within a restricted range.



Plate 6. A. Frank Stella, 1966



6. B



6.C

Source: 6A [http://www.google.co.in/search?](http://www.google.co.in/search?um=1&hl=en&biw=1272&bih=577&tbm=isch&sa=1&q=de+stella%27s+paintings&oq=de+stella%27s+paintings&aq=f&aqi=&aql=&gs_l=img.3...14193.16966.0.19438.12.3.0.9.0.0.165.363.1j2.3.0...0.0.jHoapKtPX2U)

[um=1&hl=en&biw=1272&bih=577&tbm=isch&sa=1&q=de+stella%27s+paintings&aq=f&aqi=&aql=&gs_l=img.3...14193.16966.0.19438.12.3.0.9.0.0.165.363.1j2.3.0...0.0.jHoapKtPX2U](http://www.google.co.in/search?um=1&hl=en&biw=1272&bih=577&tbm=isch&sa=1&q=Harmonic+color+in+Design&oq=Harmonic+color+in+Design&aq=f&aqi=&aql=&gs_l=img.3...9507.10674.0.11802.6.1.0.5.0.0.162.162.0j1.1.0...0.0.8gGJHJVn5DQ) ; May 25, 2012

C. [http://www.google.co.in/search?](http://www.google.co.in/search?um=1&hl=en&biw=1272&bih=577&tbm=isch&sa=1&q=Harmonic+color+in+Design&oq=Harmonic+color+in+Design&aq=f&aqi=&aql=&gs_l=img.3...9507.10674.0.11802.6.1.0.5.0.0.162.162.0j1.1.0...0.0.8gGJHJVn5DQ)

[um=1&hl=en&biw=1272&bih=577&tbm=isch&sa=1&q=Harmonic+color+in+Design&oq=Harmonic+color+in+Design&aq=f&aqi=&aql=&gs_l=img.3...9507.10674.0.11802.6.1.0.5.0.0.162.162.0j1.1.0...0.0.8gGJHJVn5DQ](http://www.google.co.in/search?um=1&hl=en&biw=1272&bih=577&tbm=isch&sa=1&q=Harmonic+color+in+Design&oq=Harmonic+color+in+Design&aq=f&aqi=&aql=&gs_l=img.3...9507.10674.0.11802.6.1.0.5.0.0.162.162.0j1.1.0...0.0.8gGJHJVn5DQ) ; May 25, 2012

The above examples shows that the selections of colors are applied based on relative color composition. In Frank Stella's painting (plate 6.A) is an excellent example of Harmonic color composition. Similarly the arrangement of the bedroom (plate 6.C) and the choice of color are based on the relative selection of linen and other fabric colors.

IV. Pure Color

Color used for its own sake. Taken in their purest intensity, colors are built up into patterns of contrasts. The main object being decorative, color is thus reduced to its most direct sensuous appeal. Hence, relationship between colors in its pure value is the basic aspect.

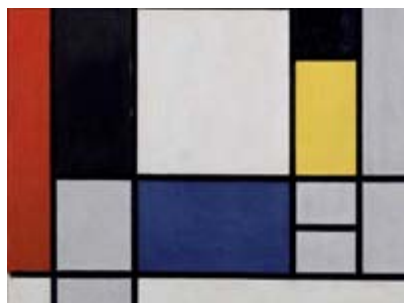
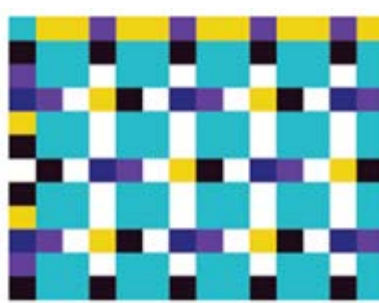


Plate 7.A. Piet Mondrian



7.B



7. C

Source: [http://www.google.co.in/search?](http://www.google.co.in/search?hl=en&q=Pure%20Color%20composition&bav=on.2.or.r_gc.r_pw..cf.osb&biw=1272&bih=577&um=1&ie=UTF-8&tbm=isch&source=og&sa=N&tab=wi&ei=sBy_T7mENlvprQedn5W5CQ)

[hl=en&q=Pure%20Color%20composition&bav=on.2.or.r_gc.r_pw..cf.osb&biw=1272&bih=577&um=1&ie=UTF-8&tbm=isch&source=og&sa=N&tab=wi&ei=sBy_T7mENlvprQedn5W5CQ](http://www.google.co.in/search?hl=en&q=Pure%20Color%20composition&bav=on.2.or.r_gc.r_pw..cf.osb&biw=1272&bih=577&um=1&ie=UTF-8&tbm=isch&source=og&sa=N&tab=wi&ei=sBy_T7mENlvprQedn5W5CQ) ; May 25, 2012

Piet Mondrian, in his paintings (Pure Plastic Art) created the compositions based on the pure colors- red, yellow, blue and black and white (plate 7 A). Mondrian's work introduced a new style of minimalist approach (plates 7A,B&C) to create balance through simplicity and minimal use of colors.