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COLOR AND ITS APPLICATION TO DRESS

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THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

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Color and Its Application to Dress

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Color is a quality belonging to everything we can see. It contributes largely to the beauty or ugliness of an object, and thereby helps to determine whether or not one likes it. A color which is interesting or pretty in itself may be combined with other colors in such a way as to produce a displeasing effect. The colors of our clothing and house furnishings usually are those of our choice, and speak for or against our good taste in such matters. We should, therefore, endeavor to use colors so as to secure pleasing and harmonious effects.

The costume designer recognizes *five principal colors*: Yellow, green, blue, purple and red. If these are arranged in a circle in the order in which they appear in the rainbow, we have what is called a color circle.

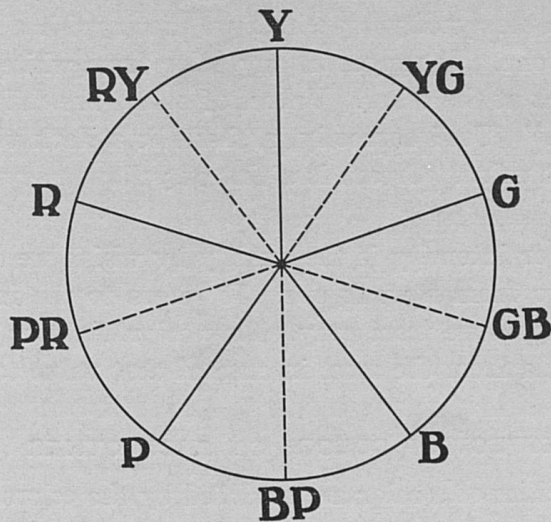


Fig. 1. Color Circle.

COLOR CIRCLE

A complete color circle is a continuous ring of color in which each principal color blends evenly into the colors which are next to it. Colors at any two points directly opposite on this circle are called complementary colors.

Half way between the principal colors on the circle are colors which are made by blending equal amounts of two principal colors. These are called secondary colors. They are: Yellow-green, green-blue, blue-purple, purple-red, and red-yellow. Each principal color has for its complement one of these secondary colors. The five pairs of complements thus formed are:

Yellow and Blue-purple
Green and Purple-red
Blue and Red-yellow
Purple and Yellow-green
Red and Green-blue

COLOR QUALITIES

A color has three qualities, called dimensions, by which it is distinguished from other colors. These qualities are, Hue, Value and Chroma.

Hue is the quality described by the name of the color, as blue, red, yellow, and so on.

Value is the quality by which we distinguish a light color from a dark one. It ranges in any color from white at one extreme to black at the other. Values of colors are called "tints" and "shades." Used correctly, a shade is a dark value and a tint is a light value. Cream is a tint of yellow, navy is a shade of blue.

Chroma or intensity is the quality by which we distinguish a strong color from a weak one. It refers to the intensity of the hue or departure from gray. Any color, light or dark, may vary in chroma from the most intense of that value to a neutral gray.

EFFECT OF COLORS ON EACH OTHER

The qualities of a color are modified by the colors which are near it. For example, when green is placed by the side of purple

the green will appear more yellow and the purple more red. Complementary colors appear stronger, or more intense, when placed side by side.

When complementary colors are mixed or blended, as with paints or by the overlapping of thin materials, they neutralize each other, producing gray or gray color, the chroma depending upon the proportions used.

A color placed near or on black will appear, clearer and brighter.

A color used with white will appear darker and duller.

PSYCHOLOGY OF COLORS

Colors in which red and yellow predominate give a feeling of warmth; the more brilliant the color the warmer it appears to be.

Colors in which blue predominates give the impression of coolness.

All brilliant colors are stimulating and seem to thrust themselves forward. This is especially true of the warm colors. For this reason they are called advancing colors.

The dark or neutral shades of a color, especially of the cool colors, are called receding colors because they make an object so colored appear to be farther away.

COLOR HARMONY

When colors are combined in a way that produces pleasing and harmonious effects the combination is called a color harmony. Six simple color harmonies are:

Monochromatic or one-color harmony, in which different values and chromas of one hue are combined, as navy and light blue which are a shade and tint of blue.

Analogous or neighboring harmony, in which two or more colors adjacent on the color circle, which have a hue in common are combined, as green and yellow-green.

Simple complementary harmony, in which colors which are directly opposite each other on the color circle are combined, as red-yellow (orange) and blue.

A split complementary harmony differs from a simple complementary harmony in that several colors, or at least two colors, complement one color. Red-yellow and yellow-red or a combination of colors between these on the color wheel complement blue. This is an example of a split complementary harmony.

A triad harmony in which three colors which are equidistant on the color circle are combined together. An example of a triad harmony is red-purple, green-blue and yellow.

Combination of color harmonies. In printed dress materials, cretonnes or chintzes one does not find a one-color harmony, a neighboring harmony or a complementary always used *alone*. Pleasing results may be obtained by combining two or three of these harmonies together.

Color balance and proportion. A color harmony should have variety, contrast, accent and balance. These may be attained by the use of different colors, values, chromas and areas.

FACTS TO REMEMBER WHEN COMBINING COLORS

Some contrast in value should always be present.

A small area of a bright color will balance a large area of a dull or neutral color and give accent.

A small area of a light color will balance a large area of a dark color, or a small area of a dark color will balance a large area of light color.

Equal areas of two colors differing greatly in value and chroma produce a displeasing effect because they lack balance.

The more nearly two colors approach each other in value and chroma the more nearly their areas may be the same.

When three or more colors are used together their areas should decrease relatively; that is, there should be a large amount of one, a much smaller amount of another, and a very small amount of another.

The brightest colors in a costume should be confined to the smaller areas.

PERSONAL COLORING

The skin is the first consideration in the selection of becoming colors. Both its color and texture must be studied and colors selected that emphasize or subdue its qualities, according to the need.

The color of the skin includes, on the color circle, yellow of the sallow complexion, red-orange or red of the florid brunette, and pink of the blonde. There is always, too, a foreground coloring which consists of rosy tints of the lips and cheeks and the brown or tan of freckles. Skin shadows are found about the nostrils, eyes and mouth. They may be brownish, grayish or purplish, depending upon the general skin tone of the individual. All these qualities must be considered if one would select the most becoming colors.

Color qualities of the skin may be emphasized in two ways; by repetition and by contrast. The complement of a color offers the extreme of contrast and emphasis that color in the skin, desirable or undesirable. Yellow-green and drab colors are similar in quality to a sallow complexion and emphasize it by repetition, while purple and blue-purple are the complements of these colors and emphasize by contrast. Blue-green is the complement of red and emphasizes the red or pink of the skin, while green, especially of a yellowish tinge, emphasizes the purplish complexion.

Types of Coloring. It is impossible to classify individuals with reference to particular types and then give a definite list of colors that may or may not be worn by each, because of the wide variation of colors found in the complexion, hair and eyes and their combination in different individuals. The safest way to determine which colors are becoming and which are not is to try various colors next to the face. Certain generalizations may be made, however, which will be helpful to the average individual in selecting colors for her clothing.

Four general types are: The blonde, the brunette, the red-haired and the white-haired woman.

Within each of these four types there is a wide variation in skin coloring. Some may have a very clear complexion, others may have a very sallow complexion, and still others may have a great deal of red in their skin coloring which may make the complexion appear florid. Those in any of the four types who have a clear complexion will find they have a wider choice of colors than those whose skin coloring is definitely sallow or florid.

Persons whose skin is definitely sallow or those who have more yellow than red in their skin coloring will find that colors which emphasize the yellow in their skin tones are unbecoming. Thus yellow, yellow-green and blue-purple are generally conceded to be poor color choices for these people. Red-yellow, because it is apt to bring out red rather than yellow tones in the skin coloring usually is becoming, as are blue, green-blue and green. Black is generally a poor color choice for persons with a sallow complexion.

It is generally becoming for those with a clear skin or those who have more red than yellow in their skin coloring.

Those who have more red than yellow in their skin coloring will find that colors which bring out the red in their skin are to be avoided. Dull colors and those of medium value, in the hues which are becoming, will be the wisest choice.

The white or gray-haired woman of mature years may have a sallow complexion with no coloring, or a fair complexion with slight or good coloring. As a rule, colors which have been worn satisfactorily in youth may be worn in advanced years, provided they are grayed to keep pace with the increasing amount of gray in the hair. For example, the bright brown which is becoming to the young woman with fresh, brilliant skin and auburn hair will be altogether unsuited to her when both skin and hair have faded, so must be grayed to a dullness in harmony with them.

The sallow gray-haired woman will find her best color in midnight and navy blues, warm grays, dull purple, or dull shades of red, but in each instance the effect is best if relieved by cream at the throat.

The white-haired woman with fair complexion is best in soft pastel colors, and should avoid all colors in their full intensity. She should look to old rose, heliotrope, dark, dull purples, dull old-blue, midnight blue, silver gray, or dark green for her colors, and select those which best suit her individual qualities. She may also wear black if a creamy, thin material is worn next to the face.

The Hair. The various colors of human hair may be represented by different values and chromas of yellow and orange. Black hair is really a very dark brown. Red hair is a shade of orange rather than of red. Gray or white hair is due to a loss of color. As gray appears in the hair less intense colors should be worn, in order to avoid harsh contrasts and to make the gray of the hair less noticeable. Brown and yellow are always trying to yellow hair, since they are apt to make it appear dull and faded. Blue, which is the complement of yellow, makes yellow hair appear at its best. Dark or middle value colors are more satisfactory with black hair than lighter values which make a stronger contrast. Green makes red hair appear redder, while blue emphasizes the yellow in it.

The Eyes. The range of colors found in the eyes includes tints and shades of practically every color in the color circle and varies more than that of either the complexion or hair. Black eyes are really a dark brown, and may be either yellowish or orange in tinge, while brown eyes are higher values of the same hues. Blue eyes may vary in hue from that of the violet tint to greenish, and in chroma from an almost neutral gray to deep blue. Hazel eyes are made up of flecks of blue, green and violet, and appear to be either blue, green, or violet, according to which of these colors is placed near them. Eyes of light color are apt to appear weak and faded by the side of intense colors. To strengthen the blue of the eyes and make it appear deeper, a blue of the same general tone as the eyes, but a little darker should be worn. A strand of beads or a small area of trimming will suffice for this purpose.

AGE, SIZE AND PERSONALITY

Bright colors may be worn by the young and vivacious whose coloring is good, but should be avoided by the mature woman. They make a faded coloring appear more faded, and at the same time detract from the dignity which a woman of advancing years should cultivate. Small children may appropriately dress in bright colors, because of their size and activity. The infant, tho small, is inactive, therefore bright colors are inappropriate to it.

Large persons, regardless of age, should wear subdued colors, since bright colors increase apparent size. In nature we find birds, bees and small insects in brilliant coloring, but the elephant and hippopotamus are taupe. Black decreases size, but white increases it.

EFFECT OF TEXTURE ON COLOR

Often colors which are rich and beautiful in one fabric appear harsh and cheap in another. Broadcloth, velvet and other napped surfaces give a rich, deep color, but serge, Indian head and other plain, hard-weave materials give less interesting effects. Silk and rayon, especially in the satin weave, make all colors appear more intense.

OCCASION AND SEASON

Light, delicate, or intense colors are suitable for evening wear, bright colors for sports wear, but dark or neutral colors are more appropriate for street, travel, or office. House dresses may be of any color that is becoming to the wearer and launders well. Warm colors suggest warmth and are appropriate for wear on cold, drab days. White and cool colors are best for warm, bright days.

DYEING

Many discarded garments can be given new usefulness by the application of dye. Select the kind of dye best suited to your materials. Some dye companies have placed on the mar-

ket dyes which are to be used only for wool and silk, other dyes may be used equally well on all fibers.

The color wheel may be an aid in home dyeing.

Complementary colors, or those which are directly opposite to each other on the color wheel, when put into a solution in a dye bath or when top-dyed over each other gray or soften each other. A bright blue dress might have its color dulled by the addition of its complementary color, orange, in the dye bath.

When colors which are neighbors to each other on the color wheel are put into solution they blend together and form a new color.

Yellow plus blue produces green.

Yellow plus green produces yellow-green.

Yellow plus red produces orange.

Blue plus green produces blue-green.

Blue plus red produces purple.

Blue plus purple produces blue-purple.

Red plus orange produces red-orange.

Yellow plus orange produces yellow-orange.

Yellow plus brown produces golden brown.

Always test the color to determine if it is the one desired, by dipping a small sample of material, before immersing the entire garment.

When a garment is to be dyed black, a more successful black will result if the original color of the garment is grayed by the addition of its opposite color in the dye bath. For instance, a brown dress will take a better black if blue dye which is opposite to brown on the color wheel is added to the black dye bath.

All dye companies give directions for using their products. To obtain the best results these directions should be followed carefully.

The following are important items in successful home dyeing:

1. Have the material wet before placing it in the dye bath.
2. Strain the dye before using.
3. Have large enough vessel so that goods is not crowded.
4. Use plenty of water.
5. Keep goods moving while in dye bath.
6. Rinse thoroly.

FACTS TO KEEP IN MIND WHEN SELECTING COLORS FOR THE WARDROBE

Black, navy blue and gray are always good.

It is economical to key the wardrobe to one color each season, as fewer hats, shoes and other accessories will then be necessary in order to maintain harmony and unity of costume.

A hat of one color, a dress of another, and shoes and hose of another give a spotty and unsatisfactory effect.

A one-color costume is always distinctive.

The color selected as the basis of one's costume should be becoming and appropriate to one's age, size and personality. Scarfs, ties, beads, collars and other accessories give one an opportunity to form interesting color combinations as well as to vary the costume thruout the season.

Colors are apt to appear different under artificial light from what they are in daylight. In selecting colors, therefore, one should see them in the light in which they are to be worn.

Always keep in mind the other colors in the wardrobe with which an article being selected must be worn.

Black is made more becoming to practically all persons by the addition of a collar of lace or some soft material of ecru, light gray or egg shell. Black, because it offers such a contrast to the "freshness of youth" is a becoming color for young girls.

Light colors make one seem darker by contrast, dark colors absorb the color of the face and make it appear paler.

Becomingness rather than popularity in a particular season should always be the deciding factor in selecting colors for the wardrobe.