

COLOR PREFERENCES AND THEIR USE
IN SELECTED RESIDENCES IN MANHATTAN, KANSAS

by

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INTRODUCTION

Color is a human need like water and fire. It is a raw material indispensable to life. In every period of his existence and history, man has associated it with his joys, his acts and pleasures.

Fernand Leger (6)

Although the above statement may be somewhat overly dramatic, it illustrates what a significant part color plays in the life of man. It has been said that of all God's gifts to the sight of man, color is the holiest, the most divine (5); and of all the uses of color the most personal use is found in the decoration of the interiors of homes.

In this study an actual survey of homes and the color preferences and choices of interior colors of the homemaker was undertaken. The homes studied were in varying socioeconomic class neighborhoods in the City of Manhattan, Kansas. The living room, or, in one case, the "family" room was chosen as the principal room for this study, due to the fact that it is the main room for family living and entertaining and is usually not as individual or personal as other rooms of the home may be. Limiting the research to one room was also necessary in order to prevent the study from becoming excessively long.

The research was designed to find what the color preferences are now; if they have changed in the past decade; and, if so, how they have changed. These color preferences have been rated by the author in terms of the desirability of color combinations, their relation to the use of the room, to the complexion of the

homemaker, and their relation to the climatic situation and orientation of the room. The interviews were made during daylight hours to alleviate discrepancies caused by the effect of artificial light on colors.

It was the author's desire that the results of this study would be of value in the teaching of courses in home decoration in this area. A need has been recognized for further research of a type that will improve the attitudes and practices of homemakers in the selection and use of home furnishings and textiles (16). In addition, in these days of stress and tension, it is believed that color will be needed for more important functions than beauty alone. The use of color to lessen nervous tension and fatigue, and to encourage the best possible reactions of humans may become an important aspect in the use of color (2). The weaknesses in color use and the needs of the homemakers interviewed, as found in the survey, can provide a partial basis for gaining an understanding of what should be included in courses of study.

The results of the research are also believed to be of interest to home furnishings merchants in this area and will be available to them in report form.

REVIEW OF LITERATURE

Color is one of the most constant and inevitable companions that humans have, found not only in living things but inanimate objects as well. People may not see color or be aware of it

because it is such an ever-present part of their lives, and this familiarity with color tends to deprive it of the importance that it merits (15). Color has fascinated man for as long as there are records to tell of his existence (12), but today it is taking on even more significant meanings, and an increasing amount of research is being conducted on the effects of color on the human organism. As yet, however, relatively few up-to-date books have been written on the functional use of color, even though it is a problem worthy of a great deal of study.

Saarinen (17) stated that color is not just a simple matter of decorative enjoyment, but it has a deeper meaning that people must individually learn to sense. Although reaction to color is largely emotional, it can be studied objectively. It not only affects moods and feelings in humans, but it also causes positive responses throughout the organism (2). The difference in a sunny or gloomy day, just like bright or dull colors make man not only feel different, but his body also acts differently.

Narrowing the broad field of color to color in the home, it is found that the intelligent use of color in homes is a case of continuing study with interior designers (15). The impulse or desire to decorate is irresistible. It can be seen in all of man's efforts to provide shelter for himself; it presents itself in man's urge for beauty; and is as demanding as his need for comfort. Whether it is for personal adornment or furnishing a home, decoration is one of the most powerful influences in life (5).

Before any study of color use can be undertaken there are certain terms that must be understood. Color, itself, has been defined as a general name for the sensations brought about by the activity of the retina of the eye and its attached nervous mechanisms. In normal individuals this activity is a specific response to certain wave lengths and intensities (13). The color seen is the result of two factors:

1. The way in which the object absorbs and reflects light (for example, a pure yellow wall absorbs all color rays except yellow rays, which it reflects).

2. The kind of light that makes it visible. White light reveals the true color quality of an object; however, light is not often completely colorless. The source of the light and whatever it passes through before coming to our eyes will determine the color of light (7). Apparently colorless light, called white light, as from the sun at noon, contains all of the hues of the spectrum.

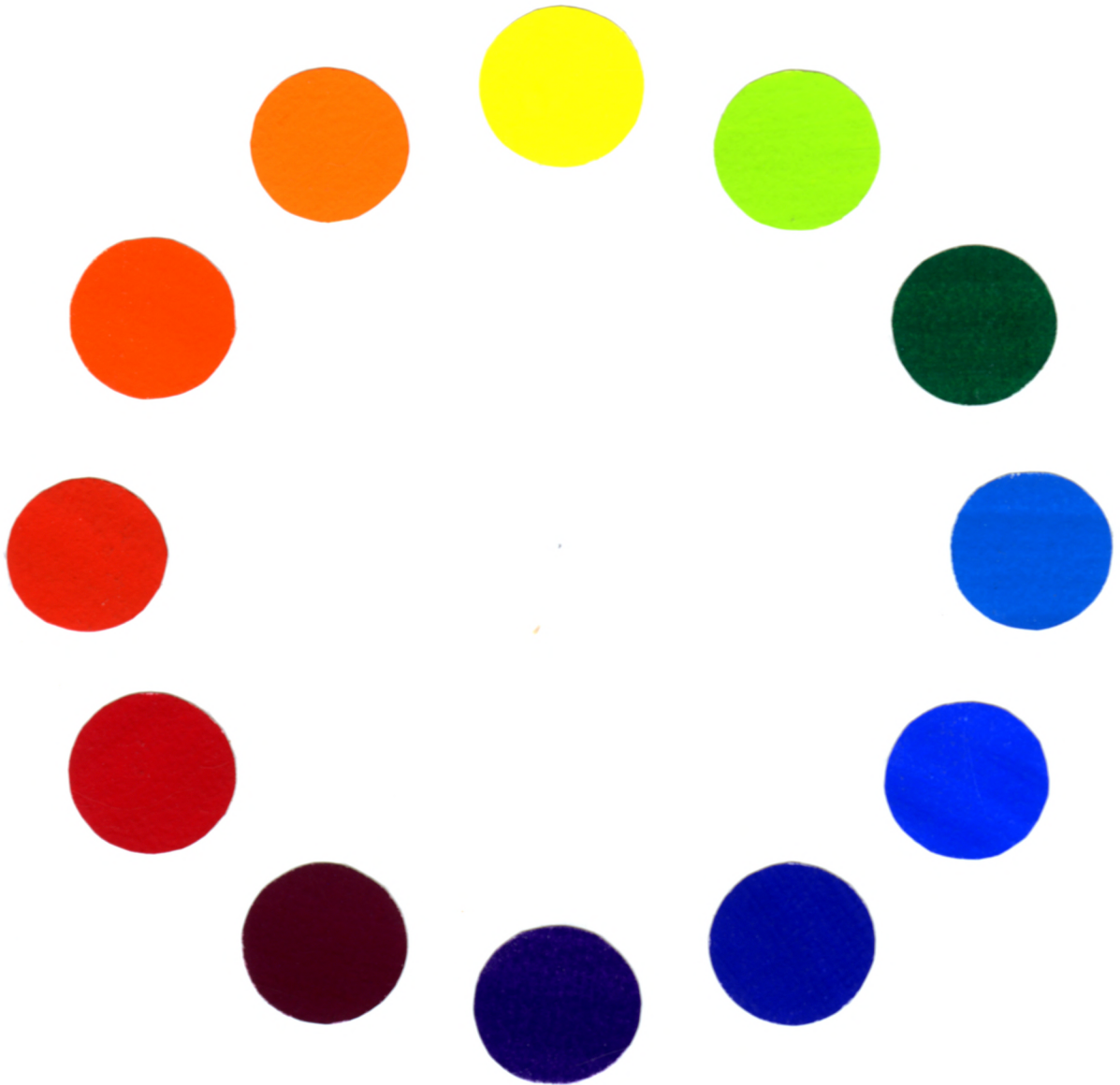
Hue is the property of the color that allows the normal eye to perceive it as being different from white, black, and neutral grays; it is the name of the color--as red or blue (13). The hue also tells the position of the color in the spectrum or on the color wheel (1). The color wheel or chart is a mechanical device for showing the relationships of color (Plate I). Hues may be primary, secondary, or intermediate colors. Primary colors--red, blue, and yellow (in pigment) are those which cannot be obtained by mixture, but may be combined to produce all other

EXPLANATION OF PLATE I

Color wheel, 12 colors

Binney and Smith pigments

PLATE I



colors. Secondaries are the three colors--green, purple, and orange--produced when two pigment primaries are mixed. All other mixed colors are referred to as intermediate colors (18), and are the result of mixing a primary and a secondary hue. Complementary hues are those directly opposite each other on the color wheel. Placed next to each other they bring contrast and each color is intensified, but when they are mixed together, as in paints, complements gray each other (8).

Another phenomenon of color that should be recognized is that of the "temperature" of each hue. The rays at the red end of the spectrum are physically warmer than those at the violet end. This effect is reinforced by our association of red, orange, and yellow with the sun and fire, while greens and blues are associated with cool, shady woods, and with water and ice (7). Yellow-green and red-violet seem to have a neutral temperature, since they contain some of both warm and cool colors (2).

Value is described as the lightness or darkness of a color; its position on a light-to-dark scale, or the quantity of light it reflects (13). Change of value can also be noted on the color wheel. White, of course, is the lightest value, black is the darkest.

Intensity, or chroma, describes the degree of purity or strength of a color; its brightness or dullness (1). It is the quantity of the dominant hue and may be pure, strong, and bright; or it can be weak and neutralized by the addition of black, white, or its complement.

The terms tint and shade are also often used. A tint is produced by adding white while reducing the amount of the color. This is also sometimes called raising the value. A shade is the product of adding black while reducing the amount of the color, sometimes called lowering the value (5).

At least one authority (1) believed that warm hues generally are more pleasing as shades and have more appeal than black--containing blue or green. Conversely, the cool hues generally make the best tints and harmonize with white.

Probably the most commonly used term in relation to colors of home interiors is "color scheme." The word "scheme" would indicate a plan for developing a harmonious arrangement of colors. There are several scientifically developed schemes that are often the basis for the selection of colors for homes. These are usually divided into two groups: related schemes and contrasting schemes. The related mono-chromatic, or one hue, schemes have gained much wider use in the past several years. They have the advantages of bringing unity and harmony, and may camouflage poorly proportioned rooms. Spaciousness and continuity are emphasized, bringing a quiet and peaceful effect unless overly bright colors are used. The danger of monotony may be overcome by using different values and intensities of the hue and by using accents of other hues (7). The mono-chromatic scheme is very rarely seen in nature, therefore it gives the impression of being more artificial than other schemes (5).

The combination of a few hues found near each other on the color wheel is termed an analogous scheme. The hues may be adjacent, separated by one step, or hues with unequal steps (as blue-green, blue, and violet). The analogous scheme is basically unified because all of the colors have one hue in common, but have more variety because there is more than one hue (7). This type of scheme usually has more life than mono-chromatic schemes, but neither type gives a balance of warm and cool hues as do those schemes based on contrast.

Contrasting color schemes include the triad, complementary, and split-complementary schemes. In these contrasting arrangements attention is drawn to the different hues through contrast. In comparison with the more related schemes they are more often found to be difficult to arrange and are more likely to be unsuccessful. They gain in variety and balance, but at the same time lose some of the unity and harmony of the related schemes (7).

In using a triad scheme, any three hues equal distances apart on the color wheel may be employed. It should be emphasized, however, that fully-saturated hues are very seldom used for home interiors. For example, green, orange, and violet could be sage green, cocoa brown, and dove gray (7).

As the name indicates, complementary schemes are composed of any two hues directly opposite each other. The third contrasting color scheme is referred to as split-complementary. This arrangement includes any hue plus the two hues at each side of its

complement. The desirability of contrasting schemes is the subject for considerable disagreement. Faulkner and Faulkner (7) believed such schemes to be strong but balanced contrasts; perhaps the most psychologically satisfying and the best with which to live because they combine stimulation and relaxation. Commercy and Stephenson (5) also felt that contrasting schemes are desirable because no single color becomes overstimulating, yet there is no monotony. They pointed out that it is relaxing because each color is kept in check by another. In addition, decorative possibilities are much greater because more colors are available.

Jacobson (12) explained the process whereby a beam of white light received by the normal human eye will be broken down, with the yellow rays converging on the retina, the red rays behind, and the blue rays in front. This focusing at different points may be the reason the human eye experiences discomfort in seeing green or blue surfaces adjacent to red. The combination strains the eyes, so it is uncomfortable and should be avoided. It should be noted, however, that this discomfort occurs only when the colors are of equal lightness, or sufficient intensity or purity, and are immediately adjacent.

Weinberg (18) also discussed the danger in using the strong contrasts of pure complementaries. If a pure hue by itself fatigues the nerve endings so that the eye would call up its complement, and the complement is also used as pure color in the room, all the nerve endings would become fatigued. In recent years this theory of nerve fatigue has been found to have no

sound basis. Even so, it should be emphasized that pure color is very seldom used in the home so that any danger of fatigue would be slight. Complementaries must be grayed or chosen in values not too contrasting.

Birren (1) criticized contrasting color combinations that are strong in opposition because he believes emotional appeal is lost when a hue of one "personality" collides with a hue of another character. "The emotional qualities of the colors are not given a chance to work--hot and cold make lukewarm." He observed that when colors are analogous, rather than contrasting, they assume more personality. The combinations are either warm or cool in feeling, so emotion has a chance to operate while the eye and mind have a chance to experience a definite, clear response.

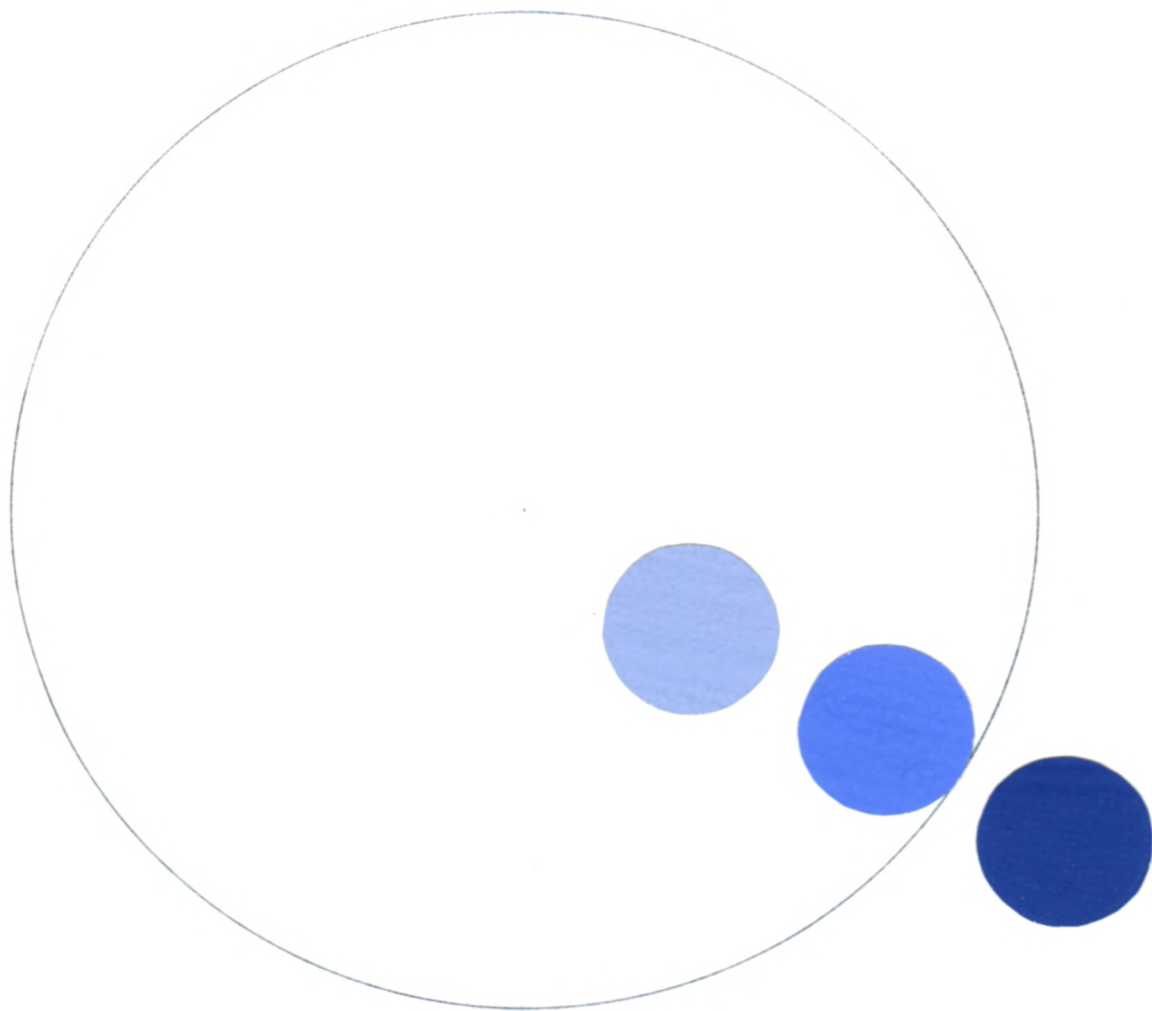
From the author's study it was found that, with care, the contrasting schemes may be used as successfully as analogous color combinations. At the present time more contrasting schemes would be a welcome relief from the over-abundance of homes using strictly mono-chromatic schemes--usually in tones of brown, with little color variation to relieve the monotony.

The schemes given here do not, of course, exhaust the possibilities of combining colors. Black, white, and gray are also used as definite components of color schemes and function as definitely as any hue (7). The color wheel is merely a starting point for planning. Mechanically devised color combinations would have an appearance of hardness and geometric rigidity with

EXPLANATION OF PLATE II

Mono-chromatic Color Scheme

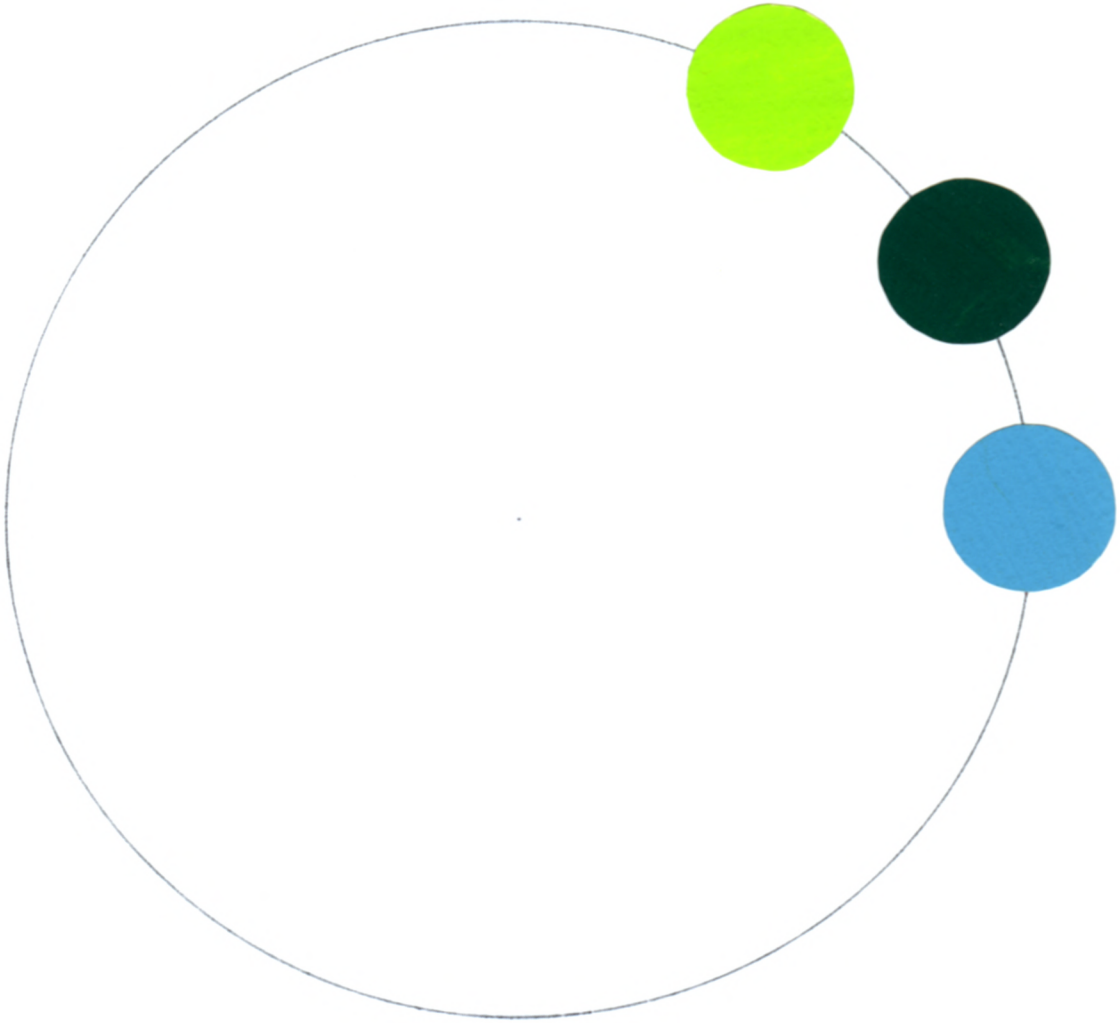
PLATE II



EXPLANATION OF PLATE III

Analogous Color Scheme

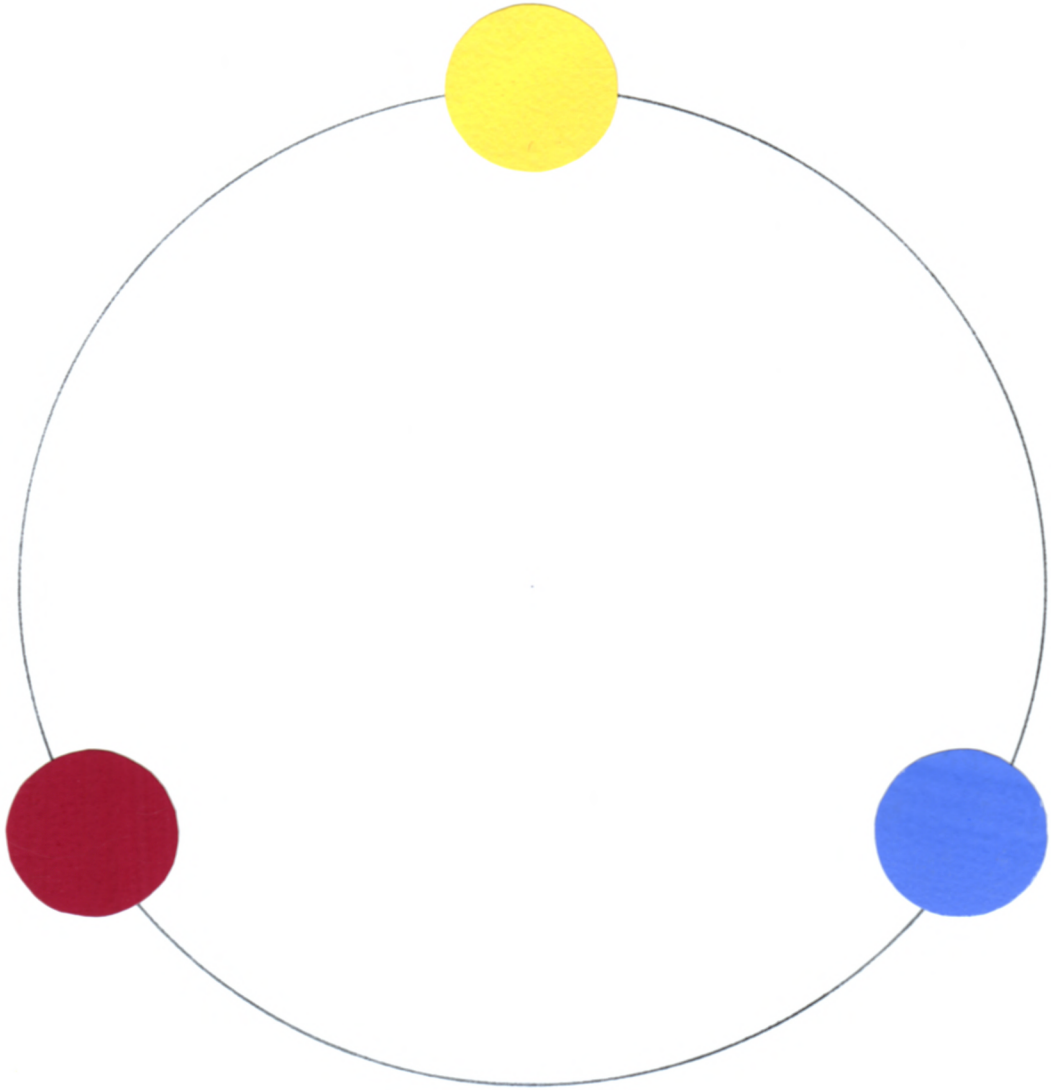
PLATE III



EXPLANATION OF PLATE IV

Triad Color Scheme

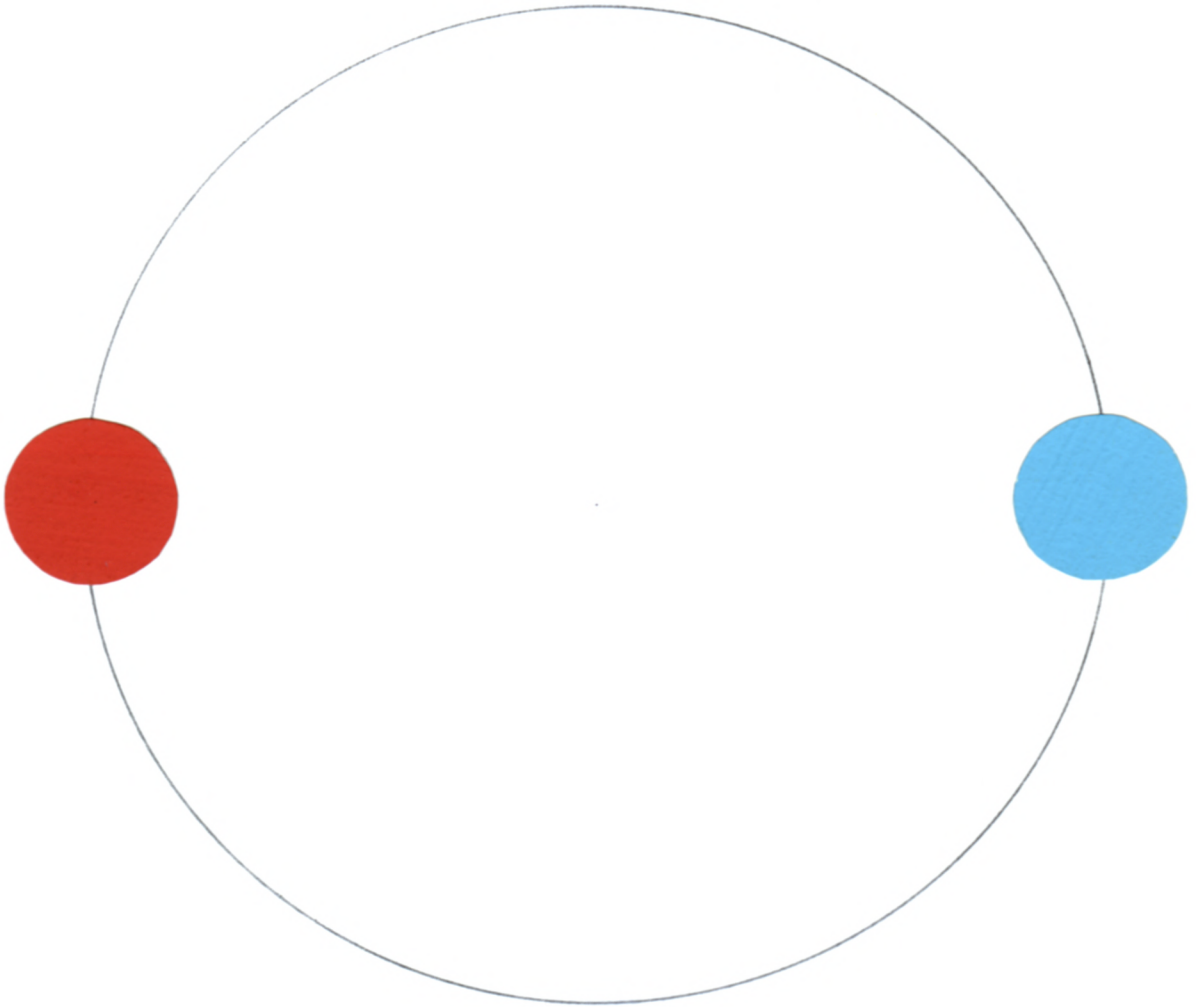
PLATE IV



EXPLANATION OF PLATE V

Complementary Color Scheme

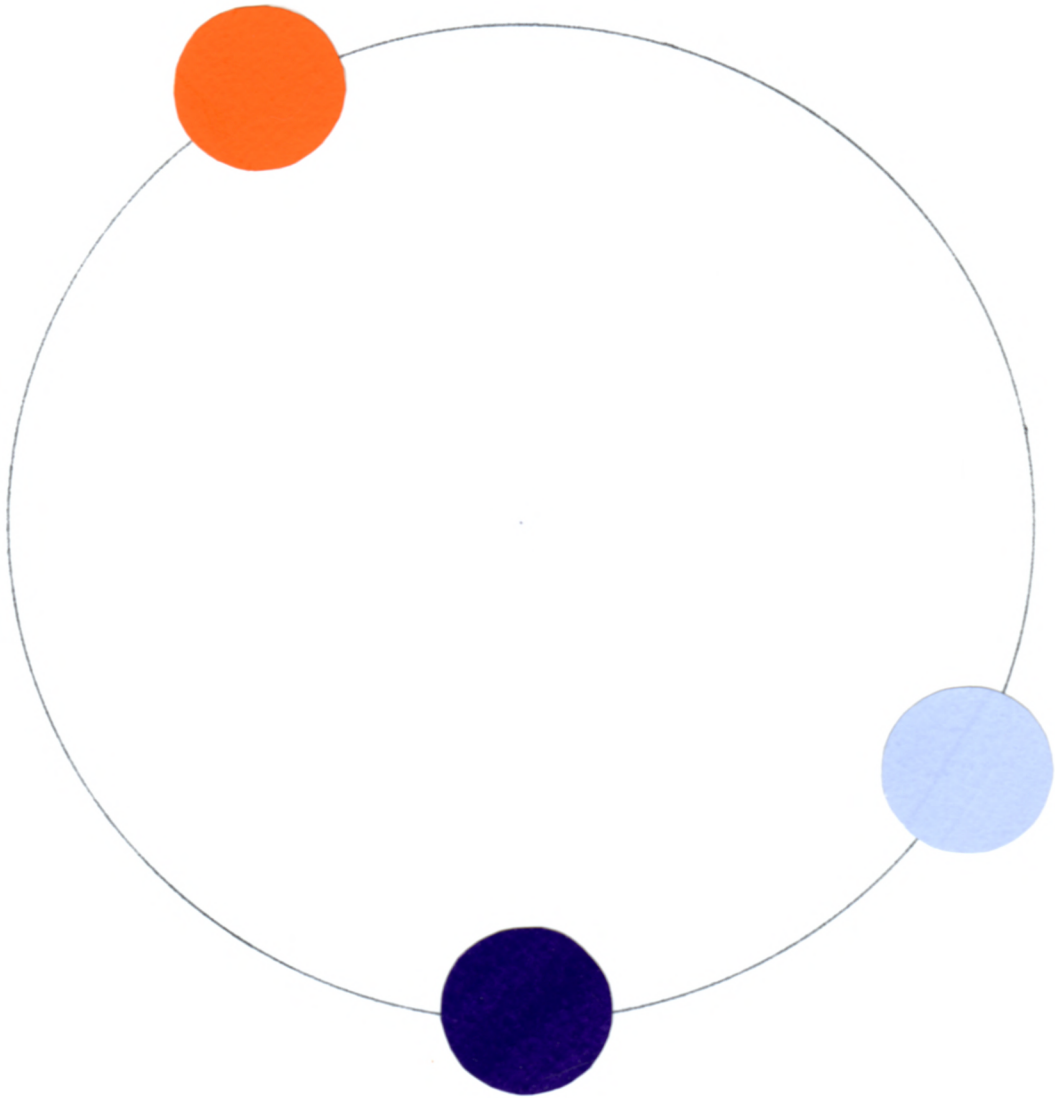
PLATE V



EXPLANATION OF PLATE VI

Split-Complementary Color Scheme

PLATE VI



which it would be difficult to live or to enjoy (5). When using scientific color schemes as a basis for decorating, it is important to vary both the amounts and the intensities of the colors used. The color selected for the background, or the largest area should be a somewhat grayed tint. Smaller areas may be a shade, with usually only accessories or small areas of pure or intense color.

An item believed to be of sufficient importance to merit its inclusion in the schedule of questions answered by the author was the question of the relation between the exterior of the house and the interior colors and style. Goldstein and Goldstein (9) discussed the importance of harmony not only in the elements of the exterior of the house, but also its harmony and sincerity with furnishings inside the house. Just as rich period furniture needs a formal setting, the colors of the interior should blend with the view from the inside, particularly in present-day homes with the emphasis upon indoor-outdoor living and large areas of glass. Any draperies or curtains hanging over the window must, of course, blend with the exterior of the house as well as the interior if it is to present a pleasing appearance to the street.

Another aspect of home decoration often overlooked by those who are not familiar with the properties of color is the relating of colors to the orientation of the house. With an increasing realization of the effect of colors on the human organism the use of color in this way is now recognized as being important. Rooms facing south and west get more heat and sunlight of a yellowish

hue than north or east-facing rooms. These differences may be minimized or emphasized depending upon the colors selected for the rooms (7). Warm colors bring cheer and the effect of sunshine into those rooms receiving no sun or rooms difficult to heat. Cool colors temper the glare of too much sunshine and help to give an illusion of greater comfort in a room that can not be kept cool (9).

In considering the relation of colors to the amount of light in the room it is important to realize that too much depth of color absorbs light, thus wasting it and cutting down visibility, while too much brightness of surfaces causes glare which also disturbs visibility. When illumination is low, white and the colors nearest white will maintain brightness most efficiently; black and deep, dark colors, of course, remain dark; grays and middle tones are affected most and drop far down in brightness. Birren (1) suggested that a living room which will be under low light must feature extremely bright and extremely deep colors. The subtle, intermediate tones are lost under dim illumination and become dull and drab. Faulkner and Faulkner (7) agreed with Birren and stated further that rooms well lighted by windows do not distort colors as do the less well lighted ones. However, very bright sunlight seems to raise values and lower intensities, causing bright colors to lose much of their intensity.

Gillies (8) suggested using white ceilings and delicate tints for walls in dark rooms. White and yellow were found to reflect more light than any other colors, and even a pale blue or

gray reduced light reflection 40 to 50 per cent. In overly bright rooms the situation is reversed and deep, rich colors can be used to absorb the light. If the room is used only at night, daytime brightness is not important, but the same rules for light reflection apply to both natural and artificial light.

A notation was made by the author of the number of lamps in the living rooms visited in the survey. Although this is not strictly a question concerning color, the color quality is influenced by the amount and kind of light that makes it visible. The number of lamps is extremely important if the colors of the room are to appear pleasing when artificial illumination is necessary, in addition to the importance of eye comfort of those in the room (5).

Birren (1) reported that the eye tends to adjust itself to the prevailing illumination in the room. Even though reading lamps and localized lighting are present, in a dim room the eye may become dark adapted. If reading or close work is done in those conditions the eye will be taxed. Every time attention goes from darkness to brightness there is a temporary moment when the eye is blinded by over-stimulation until the pupil can contract and protect the retina. The amount and type of illumination is extremely important and it can be aided or hindered by the colors selected for the room.

In order for humans to be satisfied with certain colors about them, those colors should be related to themselves and their family, to their possessions, their rooms, and the

environment (7). The personal coloring of the occupant or occupants should always be considered. In extreme cases an unbecoming color scheme can be damaging enough to create a sense of defeat and unhappiness, and it may completely eclipse a person in the room. Conversely, becoming colors in a room can flatter individuals and bring out their good points just as much as the clothes they wear (8).

Usually color is spoken of in general terms, meaning full color, or color at its brightest. For use in the home, however, most color is modified. If strong colors are used, it is usually as color accents on small areas. The colors are changed in order to make living with them more comfortable. This modifying does not destroy the color even though so much white or black may be added that only the impression of color remains. In addition to using white and black, color can also be grayed or muted by mixing it with a little of its complement (5).

The intelligent use of this modified color can seemingly alter the apparent size or dimensions of rooms. Light values seem to increase size, causing small rooms to look larger, because light colors reflect the light. Dark colors absorb light and seem to decrease size, so they would be a poor choice for a small room (1,9). Weinberg (18) noted that people are seldom conscious of the fact that they are being disturbed by poor color choice. "They grow nervous, restless, irritable without realizing that the walls have been crowding and annoying them." Activity is one of the properties of colors. In a small room active colors tend

to cramp and crowd the occupants while cool or receding colors of light value suggest space and keep the walls remote.

Patterned areas may lead to the same "crowding" of the room by being overly bold or active in color and/or design. Goldstein and Goldstein (9) listed two characteristics of patterns that are suitable for backgrounds:

1. The design should cover the surface fairly closely; figures that are widely separated with much plain space around them attract too much attention to serve as desirable backgrounds.

2. Contrasts in value should be slight; if there is a strong contrast between lights and darks the pattern becomes overly conspicuous. A patterned area in the room may add a great deal to the interest of the room, but care must be taken in selecting it, lest it become overpowering.

Warm colors are also said to "advance" more than cool colors. This tendency seems to pull the walls of the room together, making it look smaller. The visual effect of high ceilings may be lowered and the narrow walls of long rooms brought into scale when a warm color is selected for them. Warm colors also help to unite groups of furniture, but make separate chairs appear to be larger and closer, focusing attention upon them. Cool colors are the opposite, seeming to recede and making the room appear larger (5). However, the very light tints of all colors, warm or cool, result in an illusion of openness and spaciousness.

In overly large and bright rooms dark walls can give comforting enclosure. Dark walls are also helpful in unifying an

assortment of miscellaneous dark furniture. Contrasts in value emphasize the outlines of furnishings, sometimes causing the room to look spotty and disconnected. Close value rooms can become quite dull, however. Often they need a few strong value contrasts, usually in the form of accessories, to bring life to the room (7).

The basic principles for selecting values for a room in most cases apply also to intensity. High intensities are stimulating, attract attention, and increase the apparent size of objects. When used on walls, high intensities decrease apparent distances and so decrease the apparent size of the room (7). In Goldstein and Goldstein's (9) "Law of Color Areas" these principles were outlined: the larger the area to be covered, the less intense the color should be; the smaller the area, the brighter the color may be.

Bright, clean colors are being used more and more today, replacing dull, drab colors of other years. However, there would be little sense of comfort in homes if walls, floors, and furnishings were all of intense colors, with no areas of background color to emphasize the brighter colors and no quiet surfaces to allow the eyes to rest (9). Weinberg (18) pointed out that blue and green are receding compared with red or orange of the same value and intensity, yet an intense blue over a large area can become very active. Although intense colors in small amounts may give the needed brightness to a room, in large amounts they are overpowering for most rooms and overtax certain nerves on the

retina, causing fatigue and sometimes distorting clear perception of colors in general (1). Neutral tones, as gray and some beiges, have very little effect on architectural space, while strong colors destroy surface unity, especially where room openings occur and are best used as accents (6).

Size and use are two very important points to consider when selecting colors for furnishings within the room. Individual colors and combinations should be chosen with use, beauty, economy, and individuality in mind (7). According to Weinberg (18), the colors must be selected for their suitability to the purpose of the item. In addition, they must be suited to the material, as well as the shape and construction of the object and the practical needs called for by the room. The average person likes floors and floor coverings to be dark enough to appear to give the room a good foundation (9). However, very dark floors, as well as extremely light floors, are not practical because they show footprints and are not easy to keep looking well.

Commerly and Stephenson (5) and Faulkner and Faulkner (7) agreed that color can also be used to draw attention to an item of furniture or to minimize it. Warm hues tend to make objects look larger and advancing while furniture with cool hues may look smaller and seem farther away. For example, an oversize sofa in soft green will not appear as large as it really is, while a sofa upholstered in red or yellow would look larger.

In order to feel that the overall effect of a room is pleasing there must be a feeling of harmony. Harmony has been

described as a unity (9), with all parts being in inner accord. It does not necessarily mean uniformity, but it must include variety (18). Faulkner and Faulkner (7) suggested using one, two, or three hues to unify, with one or two contrasting accents. Too many colors must not be used, however, or unity will be lost. Faulkner and Faulkner (7) and Weinberg (18) regard balance, rhythm, and proportion as necessary ingredients for harmony, with emphasis also being listed by Faulkner and Faulkner (7).

Balance and proportion may be obtained by using both warm and cool colors and both dark and light colors; by distributing or spotting colors throughout the room; and by keeping the interest centered in the room. Under most circumstances, it would not be pleasant to decorate a room in all warm or all cold colors, nor in colors all low in value or all high in value. "Each should be balanced by more than just a touch of the other to modify its over-all impact" (5).

Rhythm in color is a continuity that comes through repetition, alternation, or through progression of gradual increases or decreases in value, intensity, warmth, and weight (7,9,18).

Varying the amounts of the different colors so that one is dominant, another is sub-dominant, and any others are subordinate is a reliable formula for achieving emphasis (7,18). In any color arrangement there should be one main color--one outstanding color effect, even though the color may vary in value, intensity, and distinctness. Many color authorities agree that the most beautiful color schemes are those which give a single impression.

It may be a feeling of warmth with some cool color for variation, or of coolness with an accent of warmth (1,5,9).

Faulkner and Faulkner (7) listed the most common errors in color schemes as:

1. Haphazard appearance due to lack of a color plan.
2. A cluttered, spotty effect resulting from too many colors used in too nearly equal amounts.
3. Use of too-common colors, making the home monotonously like so many others.
4. Combining colors that distract from, rather than enhance, each other.

Most color authorities recommend an approach to selecting room colors resembling nature's pattern of colors, resulting in a pleasing feeling of equilibrium. With nature in mind, floors would be moderately low in value and intensity to give a good foundation without being obtrusive, and to simplify upkeep. The floor may harmonize or contrast with the wall color, but the walls should be lighter in value than the floor to provide a transition between the floor and the ceiling. The intensity of the wall color should be low and quiet enough to keep the wall as a background. Ceilings should be high in value and low in intensity to help create a sense of spaciousness and also to reflect the light (7).

If the background colors have less emphasis than the objects placed against them, the attention will be drawn to the furnishings of the room and to the people in the room; thus the objects

seen against them will be more effective (2). Goldstein and Goldstein (9) and Birren (2) concurred in the belief that in the living room there should be a minimum of contrast in order to help the room fulfill its purpose of providing comfort and relaxation. The large surfaces for the backgrounds and some of the furniture covers may be closely keyed to each other, reserving the contrasts for smaller areas. Soft background colors are desirable; however, white is seldom a good choice for rooms that may be occupied for fairly long periods of time. White tends to draw attention to the room in general and may distract from other details, in addition to the fact that it may create glare and cause colored materials and complexions to look "muddy," by contrast (2).

When contrasting colors are used in a room they should be at the point of interest where it is desirable for attention to be focused. By this principle, it is apparent that a floor color which demands considerable attention would be a mistake in color emphasis (18).

It must be emphasized that the preceding discussion is not the only way to decorate. Varying situations will require different effects. It is more important to be concerned with achieving a cheerful and hospitable group living space than with rules for decorating.

In summarizing the components of a pleasing color combination, Weinberg (18) listed the following:

1. The colors chosen should be practical.

2. The color combination should add to the interest and suitability of the object, while seeming pleasant and agreeable to the eye.
3. The color arrangement should be well planned, so that the mind is pleased, as well as the eye.

"Like the air we breathe and the water we drink, color is with us and around us constantly in our daily lives" (10). Because of this familiarity people are not aware of the influence it has on them. Discordant elements of decoration in our homes can add considerably to the stress and tension of modern living, and, over a long period of time, they may even have psychiatric effects. Color may be used to stimulate or to depress, to soothe or to excite; it may help one when it is harmonious, or harm when it is discordant. "The appeal of color is universal and the ability to use it beautifully can be one of life's greatest pleasures" (10).

METHOD OF PROCEDURE

Three residential areas of the City of Manhattan, Kansas were selected to be studied in their use of color. Each area differed from the others in the size and type of homes predominating in that section and in the general socio-economic class of the inhabitants. The total number of lots in each of the areas was procured from the Manhattan city map department. A random sampling of a total of 125 numbers (50 from each of two of the areas, 25 from the third) was then obtained from the Kansas

State University Statistics Department. These numbers were transposed to the lot numbers of the three areas, representing approximately one-third of the total lots existing in each of the areas. Names and addresses of the persons living on the randomly selected lots were obtained through the Manhattan City Water Department and telephone numbers from the telephone directory.

A telephone call was made to each of the families to establish a time for an interview. In the few cases where no telephone was listed, a personal call was made at the address. At least three attempts were made to contact the occupants of each of the lots.

A schedule of questions was assembled, eight questions to be answered by the person interviewed and seventeen questions to be completed by the author. Ten miniature living rooms were constructed and shown to each person interviewed. The decision of which colors to use for the rooms was aided by checking color preferences of 45 students in a psychology class. Paired comparisons of 12 different colors of rug samples were made by the class. The 10 colors that were chosen most frequently were used as the basic colors for the 10 model rooms. The painted walls and rug and upholstery samples of each room were mounted on large white cards. The walls and furniture were constructed in such a manner that they folded flat for ease in transporting them. These rooms were used to aid the author in determining the color preferences of the homemakers being interviewed.

The interviews were completed during daylight hours. This was necessary because color is, in part, a result of the kind of light that makes it visible. Light from a typical incandescent bulb is yellowish, while light from fluorescent bulbs is often of a blue cast; therefore, the apparent colors of the room would be affected by the artificial lighting. Light may also be altered by lamp shades that are translucent and not white (8).

No attempt was made in this study to measure scientifically colors in the homes. Although instruments have been developed for accurate measuring of qualities of color, it was not believed necessary to identify colors to that degree of exactness. The effect of color on human nature is the important aspect of this study. Functional color must serve human ends, so it must be applied as it looks and feels, so to speak, rather than apart from life, as it exists as seen in the measuring devices (1).

In identifying the colors in homes only broad, general color names were employed. While standardization of terms has been developed in almost all other fields, in the use of color names for identifying color sensations a confused and erratic condition prevails (13), with new color names being introduced each year to stimulate retail sales.

After completion of the interviews the data obtained were then tabulated, analyzed, and evaluated.

EXPLANATION OF PLATE VII

Photograph of model-room, color scheme A

PLATE VII



EXPLANATION OF PLATE VIII

Photograph of model-room, color scheme B

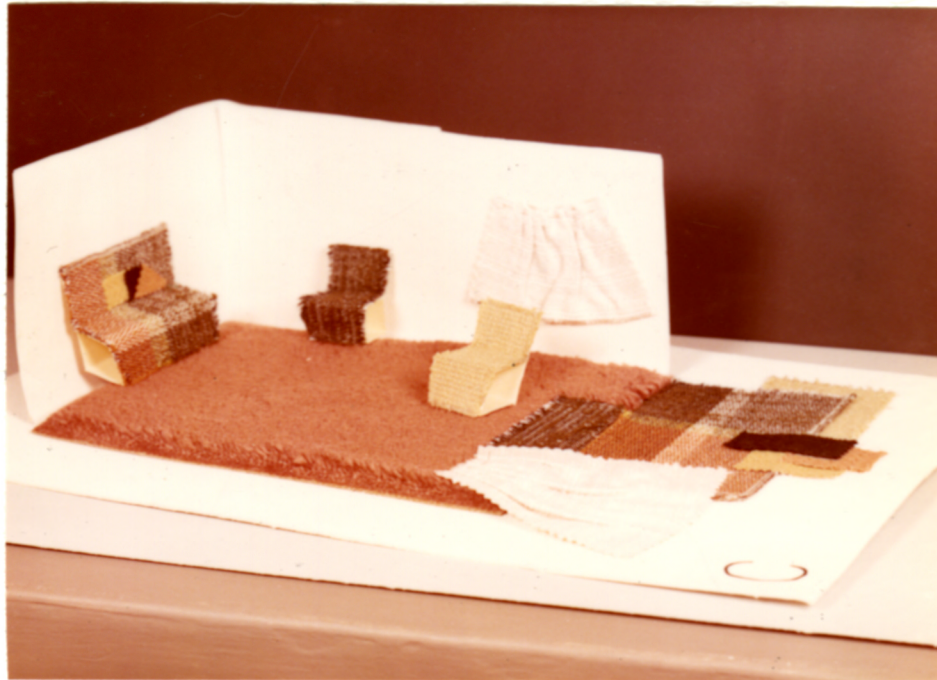
PLATE VIII



EXPLANATION OF PLATE IX

Photograph of model-room, color scheme C

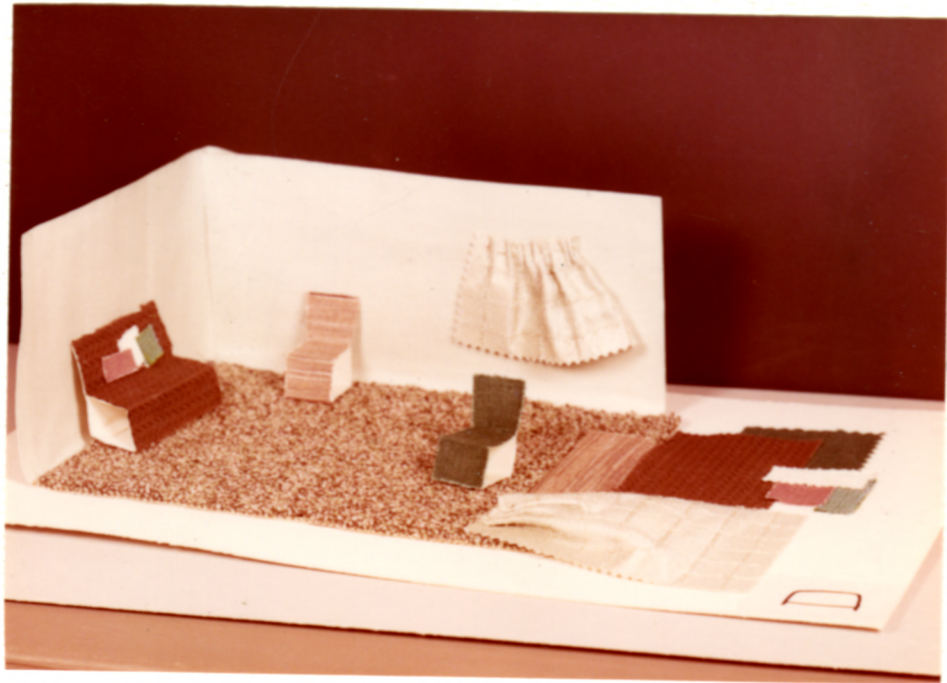
PLATE IX



EXPLANATION OF PLATE X

Photograph of model-room, color scheme D

PLATE X



EXPLANATION OF PLATE XI

Photograph of model-room, color scheme E

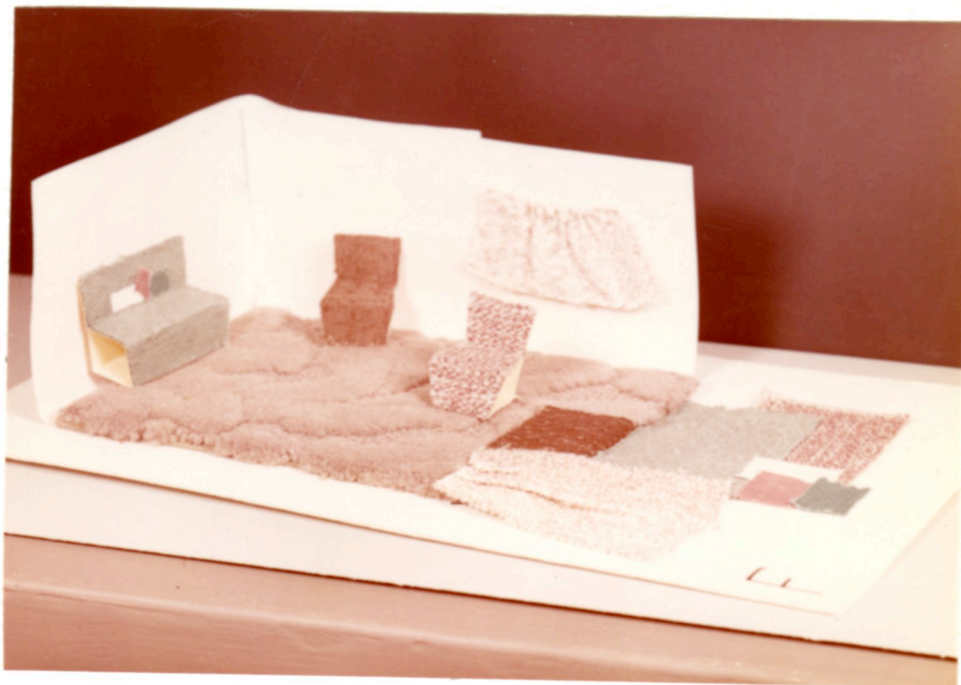
PLATE XI



EXPLANATION OF PLATE XII

Photograph of model-room, color scheme F

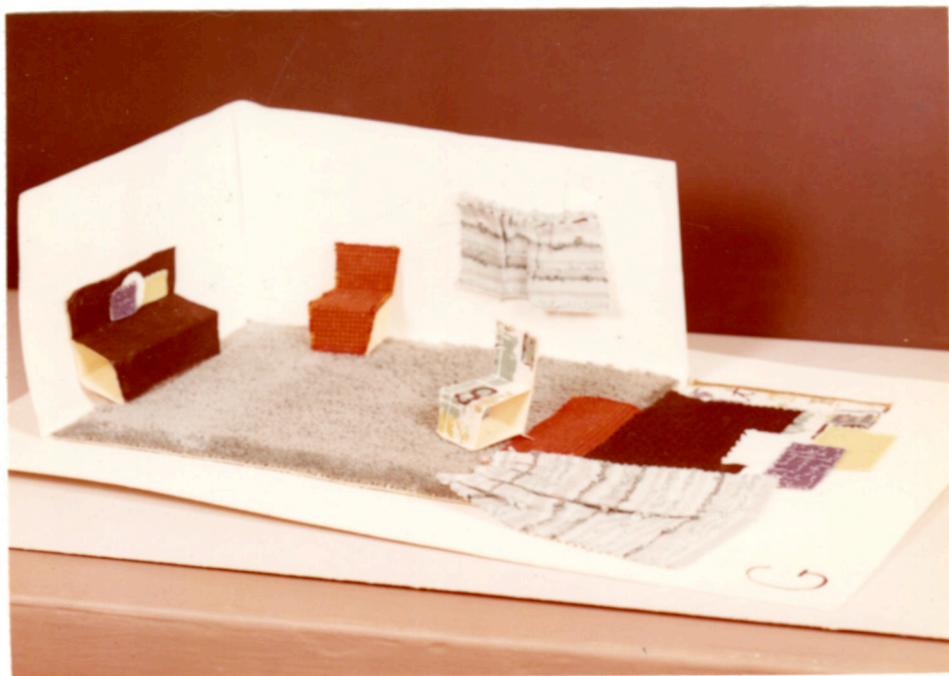
PLATE XII



EXPLANATION OF PLATE XIII

Photograph of model-room, color scheme G

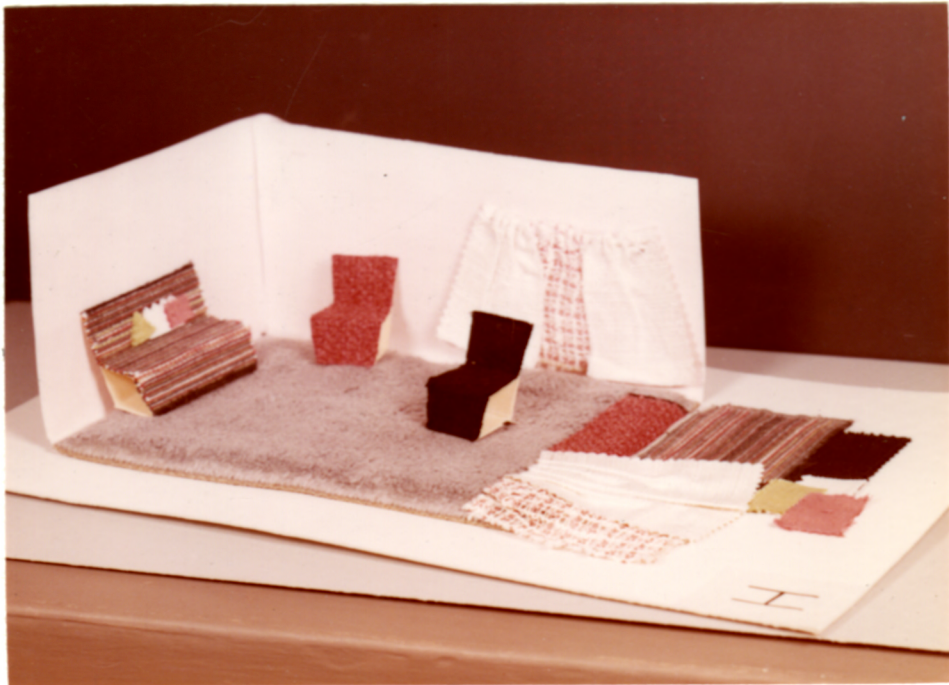
PLATE XIII



EXPLANATION OF PLATE XIV

Photograph of model-room, color scheme H

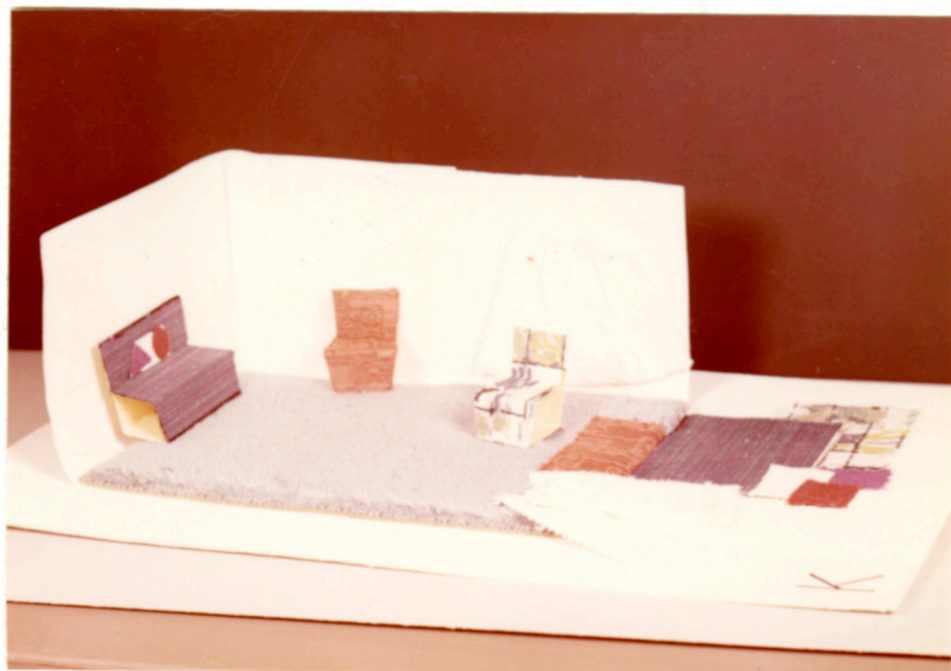
PLATE XIV



EXPLANATION OF PLATE XV

Photograph of model-room, color scheme K

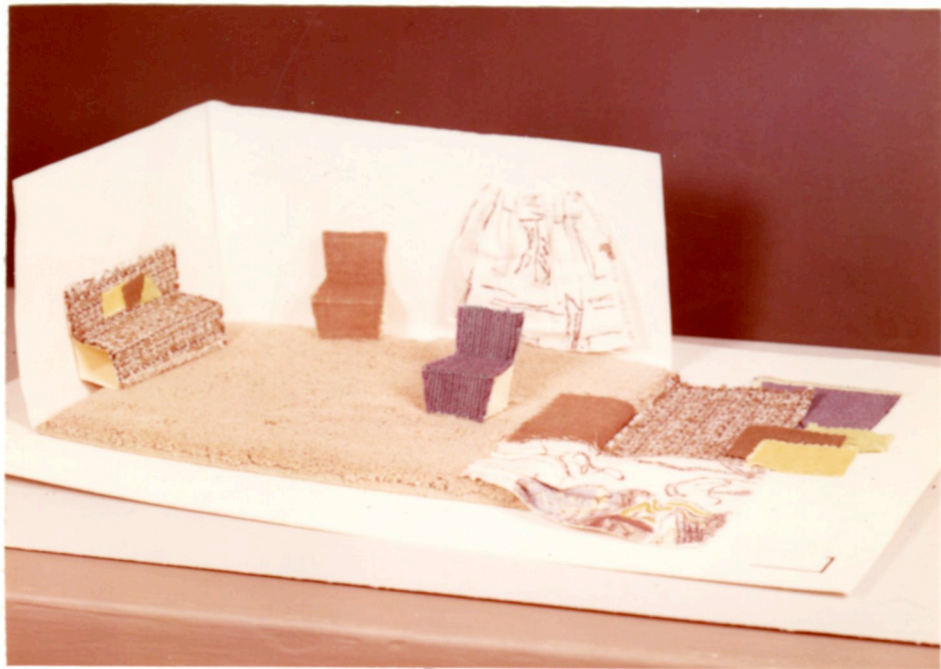
PLATE XV



EXPLANATION OF PLATE XVI

Photograph of model-room, color scheme L

PLATE XVI



FINDINGS

When the 125 random numbers were transposed to lot numbers in the three areas of Manhattan--Gross, Campus Acres (Phelps), and Bellehaven additions--it was found that 122 homes were located on those lots. Of those 122 families, 82 or 67.2 per cent were interviewed and 40 or 32.8 per cent refused to be interviewed or could not be contacted (Table 1).

Table 1. Manhattan residences.

	: Number	: Per cent
Interviewed	82	67.2
Refused interview or could not be contacted	40	32.8
Total	122	100.0

In the lowest income area, Gross addition, 32 homemakers were interviewed, while 15 could not be contacted or did not wish to be interviewed. The total number of possible interviews was 47 (Table 2).

Table 2. Residences in Gross Addition.

	: Number	: Per cent
Interviewed	32	68.1
Refused or could not be contacted	15	31.9
Total	47	100.0

Of the 51 possible homes to be visited in Campus Acres addition, 36 were interviewed while 15 refused the interview or could not be contacted. Fourteen homemakers from a possible 24 homes were contacted in Bellehaven addition, the highest income area.

Table 3. Residences in Campus Acres Addition.

	: Number	: Per cent
Interviewed	36	70.6
Refused or could not be contacted	15	29.4
Total	51	100.0

Table 4. Residences in Bellehaven Addition.

	: Number	: Per cent
Interviewed	14	58.3
Refused or could not be contacted	10	41.7
Total	24	100.0

The majority of the houses had been built from five to nine years ago, but only two had been built more than nine years ago (Table 5).

All of the homes in Gross addition were in the \$5,000 to \$9,000 range when they were constructed or purchased, and all of those in the Campus Acres addition were in the \$10,000 to \$15,000 range, with the exception of one duplex (Table 6).

Table 5. Age of house.

	: Number	: Per cent
1 to 4 years	17	20.7
5 to 9 years	63	76.8
10 to 15 years	2	2.5
Total	82	100.0

Table 6. Price of house.

	: Number	: Per cent
\$5,000 to \$9,000	32	39.0
\$10,000 to \$15,000	38	46.3
\$16,000 to \$24,000	8	9.8
\$25,000 to \$40,000	3	3.7
Over \$40,000	1	1.2

Only 15 of the 82 persons interviewed were renting the house in which they were living. There was no definite indication that the fact that they rented affected the use of color; it was mentioned as a limiting factor in only one interview.

One to four years was the length of time since most of the living rooms had been decorated (Table 7). As can be seen by comparing Tables 5, 7, and 8, several of the homes had not been redecorated since the house was constructed. When redecoration had been accomplished, the basic colors had been changed in only about one-half of the homes (Table 8).

Table 7. Length of time since decorating.

	: Number	: Per cent
1 to 12 months	18	22.0
1 to 4 years	48	58.6
5 to 9 years	14	17.0
10 to 15 years	1	1.2
In process at time of interview	1	1.2

Table 8. Basic colors changed in redecorating.

	: Gross	: Campus Acres	: Bellehaven	: Total per cent
Colors changed	21	15	2	46.3
Colors unchanged	9	8	3	24.4
No redecorating	2	13	9	29.3

A definite predominance of green was noted in previous color schemes, with gray, brown or beige tones, and blue-greens the only other colors that had been used in more than one home (Table 9). As noted in Table 8, there had been only 38 changes in color when redecorating had been accomplished.

Only nine of those interviewed had professional assistance in decorating, and, in addition, one person had extensive art training herself. When the homemaker did have help, it was most frequently by a professional decorator or from publications (Tables 10, 11). The lack of any training or assistance was quite evident in a large number of the homes.

Table 9. Previous color schemes.

	: Number	: Per cent
Green	15	39.4
Gray	9	23.7
Brown and Beige	6	15.9
Blue-green	3	7.9
Others	5	13.1
Total	38	100.0

Table 10. Assistance in decorating.

	: Gross	: Campus : Acres	: Bellehaven	: Total : per cent
Professional training	0	1	0	1.2
No assistance	30	30	12	87.8
Assistance	2	5	2	11.0

Table 11. Type of assistance.

	: Gross	: Campus : Acres	: Bellehaven
Professional decorator		4	1
Architect			1
Physical proportions of the room			1
Publications	2	1	
Other professional help		1	
Friend or relative			1

(Two homemakers checked more than one type.)

A majority of the homemakers interviewed chose one of the color schemes presented by the model rooms, or a variation of one of them (Table 12). A correlation was observed between the number in each addition choosing the schemes as they were shown and the price range of the home. Those interviewed in higher priced homes more frequently chose schemes other than those presented in the model rooms, while those living in lower priced homes chose the schemes from the miniature rooms, and usually without many variations. Birren (2) may have partially explained this by his theory that "people with high income and exclusive taste are mental and deliberate in their choices; the masses of people are emotional and are motivated less by thought than inner compulsions." He believes that the masses are more influenced by general trends and tend to want the same things and to be attracted to the same styles and colors. This theory was also observed by the author in the selection of color schemes. Many of the homemakers in the lower income area chose without hesitation those colors that tend to be most popular and "faddish" today, while in the next higher income area there were more cases of hesitancy in expressing color likes. This hesitancy may have stemmed from a fear that they might choose an undesirable combination.

When variations were desired in the color schemes a warm color was often substituted for a cool color. These changes often resulted in a scheme of warm colors only, indicating that the changes were not desirable.

Table 12. Number choosing author's color schemes.

	: Total :interviewed:	: Number	: Per cent
Gross Addition	32	30	94.0
Campus Acres Addition	36	28	77.8
Bellehaven Addition	14	8	57.1

Table 13. Variations desired in schemes chosen.

	: Variations	: Model rooms :as presented
Gross Addition	7	23
Campus Acres Addition	14	14
Bellehaven Addition	4	4

More homemakers chose color scheme L (beige carpet) than any other. There was a definite preference for colors in the beige and brown tones, with 42 of the 66 persons who chose one of the color schemes prepared by the author selecting schemes based on brown tones.

The most often preferred scheme, L, was also the one that the selectors changed most frequently. The apparent reason for the changes was the use of blue in the scheme. Blue-green, green, yellow-green, rust-orange, and gold were all selected as alternates for the blue chair, indicating again the preference for an all-warm color scheme. Very few of the homemakers interviewed desired blue in their living room, although some expressed

Table 14. Preferred color schemes.

Scheme	:	Times selected
L		13
D		11
F		10
G		9
B		8
A		5
E		4
K		4
H		2
C		0

enjoyment of its use in a bedroom.

Several color choices were listed as being preferred by those who did not choose one of the model room schemes (Table 15). Some of those colors were pointed out by the person being interviewed as being similar to a color or colors found in the model rooms, while others were merely named by the homemaker and recorded by the author.

Of the 50 rooms visited in Campus Acres and Bellehaven additions, nine homemakers were interviewed who would not change the colors in their living room if they were to redecorate at the present time. The colors used in these cases are listed in Table 16.

Table 15. Other color schemes chosen.

	: Times selected
Rose-beige, gold, green	2
Brown, beige, green	1
Beige and brown	1
Beige and gray	1
Blue-green, gold, white	1
Dark gray, white, purple, red, blue-green	1

Table 16. Present colors repeated if redecorating.

Colors used	: Number
Beige and brown	2
Beige, brown, olive green	1
Blue-green, black, white	1
Beige and white	1
Blue, gold	1
Rose-beige, blue-green, orange	1
Blue tones	1
Green tones	1

Apparently the color selections in five of the cases listed in Table 16 had been found enjoyable, because they had been in use for several years. In the remaining four cases, the room had just recently been redecorated, and the homemaker desired no change as yet.

Only eight of the homes visited were of a type of architecture characteristic enough to be listed as a definite style (Table 17). Since most of the houses were "nondescript," only three cases were found where the interior living room furnishings did not relate to the exterior in design and style. In most cases the furnishings were not of any particular "period"; however, in three homes the furniture was of a too-definite style to blend with the exterior of the house.

Table 17. Style of architecture.

	: Number	: Per cent
Contemporary	7	8.5
Cape Cod	1	1.2
Nondescript	74	90.3
Total	82	100.0

Hellman (11) made the statement that "65% of the painted houses in America are white because the average householder hasn't enough confidence in his taste to select any other color." This may be true of the country in general, but it was not the case in the three areas of Manhattan covered in this study. A variety of colors was found, but this may be attributed to the builder and not the householder in the Gross addition since many of the houses were purchased after construction, and all are of asbestos siding. In the Campus Acres addition only brick homes were constructed, so there was no chance for selecting colors,

except in the trim which was in a wide variety of colors. The Bellehaven addition was the only area where a choice of paint colors may have been left to the householder, and in that area only two of the seven homes with wood siding were painted white (Table 19).

Table 18. Exterior material.

	: Number	: Per cent
Red brick	23	28.0
Light brick	15	18.3
Native stone	3	3.7
Asbestos siding	33	40.3
Concrete block	1	1.2
Wood siding	7	8.5
Total	82	100.0

Table 19. Colors of siding (asbestos and wood).

	: Number	: Per cent
White	16	40.0
Tan or brown	10	25.0
Green	6	15.0
Gray	6	15.0
Others	2	5.0
Total	40	100.0

The study was planned for either the living room or the family room, depending upon which room was most used for family living and entertaining. Only one family room was used in this study, however. This was because the family room in other homes was often used as play space for the children, sometimes with cast-off living room furniture, and was not often used for entertaining.

It was noted previously that in all but three of the homes visited the living room furniture blended with the exterior of the house in design and style. In exactly twice that number of homes the interior colors did not harmonize with the exterior color. The six cases where the interior-exterior colors did not harmonize comprise a small percentage, however; so it would appear that it is not as serious a problem as others.

Table 20. Interior-exterior colors.

	: Number	: Per cent
Harmonized	76	92.7
Did not harmonize	6	7.3

The colors of approximately one-fourth of the living rooms were not suited to the orientation of the room. In other words, all warm colors were used in the south and west rooms or all cool colors were used on the north in those cases (Table 21).

It would appear that the homemakers in the lower income area were more conscious of the "temperature" of colors than those in

Table 21. Orientation - color relation.

Area	: : Suitable	: Per : cent	: : Unsuitable	: Per : cent
Gross (32 interviewed)	27	84.4	5	15.6
Campus Acres (36)	26	72.2	10	27.8
Bellehaven (14)	9	64.3	5	35.7
Averages		73.6		26.4

the higher income levels. However, it was noted that 31 of 32 of the living rooms in the Gross area were in a north corner of the house. There seemed to be a preponderance of all warm colors being selected, and, in this case it was desirable, since the north rooms require warmer colors.

In 18 of 32 homes in the Gross addition the colors were rated overly dark for the amount of natural light coming into the room. In the other areas this number was considerably smaller (Table 22).

Table 22. Color - natural light relation.

Area	:Total :number:	: Pleas- : ing	:Per : cent	: Too : dark	:Per : cent	: Too : light	:Per : cent
Gross	32	14	43.8	18	56.2	0	0.0
Campus Acres	36	30	83.3	6	16.7	0	0.0
Bellehaven	14	13	92.9	0	0.0	1	7.1
Averages			73.3		24.3		2.4

In 1957 Malicky (14) found the number of lamps inadequate for proper lighting in the living rooms in these same general areas. The situation has not improved in the past three years. While no attempt was made to measure the amount of illumination in the room as Malicky did, it was apparent in a large majority of the rooms that there would be inadequate artificial lighting (Table 23).

Table 23. Color - artificial light relation.

Area	:Total :number:	: Pleas- : ing	:Per :cent	: Too : dark	:Per :cent	: Too : light	:Per :cent
Gross	32	4	12.5	28	87.5	0	0.0
Campus Acres	36	14	38.9	22	61.1	0	0.0
Bellehaven	14	9	64.3	5	35.7	0	0.0
Averages			38.6		61.4		0.0

Table 24. Number of lamps.

	: Times found
One lamp	12
Two lamps	31
Three lamps	33
Four lamps	4
Five lamps	2

It is interesting to note that the number of lamps is not as directly related to the income level as might be supposed, although

the percentage of only one or two lamps is higher for the lower income area than for the other areas.

Table 25. Number of lamps by area.

Number	: : Gross	: Per : cent	: Campus: : Acres	: Per : cent	: Belle- : haven	: Per : cent
One lamp	10	31.2	0	0.0	2	14.3
Two lamps	14	43.8	15	41.6	2	14.3
Three lamps	8	25.0	19	52.8	6	42.9
Four lamps	0	0.0	1	2.8	3	21.4
Five lamps	0	0.0	1	2.8	1	7.1

In only three of the 82 rooms studied were colors used that were not becoming to the personal coloring of the homemaker. It would appear strange that a woman would surround herself with color that did not enhance her own coloring, but such was the case with three of the homemakers.

Not only were the color values of many of the rooms studied in the Gross area too dark for the amount of natural and artificial light; they were also too dark for the size of the room. In the other two areas the values were usually in proportion with the room size (Table 26). It should be noted, however, that the living rooms in the Gross area were the smallest in size, so would naturally be affected more by the use of darker values.

In four of the five cases in the Campus Acres addition where the values were too dark, the situation could have been remedied by the use of walls or rug of a lighter value. In the

Table 26. Color value - size of room relation.

Area	:Total :number:	:Pleas- :ing	:Per :cent	: Too :dark	:Per :cent	: Too :light	:Per :cent
Gross	32	14	43.8	18	56.2	0	0.0
Campus Acres	36	31	86.1	5	13.9	0	0.0
Bellehaven	14	13	92.9	1	7.1	0	0.0
Averages			74.3		25.7		0.0

other cases the general overall use of dark values was found. No cases of living rooms in uncomfortably light values were observed.

The use of overly intense colors was not found to be as prevalent as the use of too-dark colors. In the majority of rooms where the intensity of certain colors overpowered the room, it was the wall color that was too intense. One room in the Gross area was recorded as being both overly bright and overly dull, due to the fact that the furniture and walls were all a drab gray, while the rug and draperies were of an extremely intense color.

Table 27. Color intensity - size of room relation.

Area	:Total :number:	:Pleas- :ing	:Per :cent	: Overly :bright	:Per :cent	: Overly :dull	:Per :cent
Gross	32	26	81.3	5	15.6	1	3.1
Campus Acres	36	32	88.9	4	11.1	0	0.0
Bellehaven	14	14	100.0	0	0.0	0	0.0
Averages			90.1		8.9		1.0

The majority of the homemakers seemed quite concerned with choosing colors that would be practical for daily use. This was especially pronounced where there were small children in the family. In only eight of the 82 rooms studied were colors found that were not suited to the use the item would normally get. In five of the eight cases where this apparent lack of consideration for use was found, the color of only one item in the room was unsuitable. The divan was the item that was most often found to be of a color that was impractical.

Table 28. Color - use of item relation.

Area	: Total : number	: : Suitable	: Per : cent	: : Unsuitable	:Per :cent
Gross	32	28	87.5	4	12.5
Campus Acres	36	32	88.9	4	11.1
Bellehaven	14	14	100.0	0	0.0
Averages			92.1		7.9

An apparent consideration of the color in relation to the size of the object was not found to be considered as often as the use of the item (Table 29). However, in four of the eight cases of misuse of color in the Gross area, only one item in the room was of a color unsuited to its size. In three of the four cases of misuse in the Campus Acres area, the divan was the item that was in an unsuitable color for its size.

Table 29. Color - size relation.

Area	: Total : number	: : Suitable	: Per : cent	: : Unsuitable	:Per :cent
Gross	32	24	75.0	8	25.0
Campus Acres	36	32	88.9	4	11.1
Bellehaven	14	14	100.0	0	0.0
Averages			88.0		12.0

It is of particular importance to note that in approximately 42 per cent of the rooms studied the author found the overall effect of the colors used was not particularly pleasing. This fact was not limited to the lower income area, as can be seen in Table 30.

Table 30. Effect of colors used.

Area	: Total : number	: : Pleasing	: Per : cent	: : Not : pleasing	:Per :cent
Gross	32	15	46.9	17	53.1
Campus Acres	36	23	63.9	13	36.1
Bellehaven	14	9	64.3	5	35.7
Averages			58.4		41.6

Of the 13 living rooms in the Campus Acres area that were not rated pleasing in color, two were unavoidably so because, in one case, the occupant rented the home and had no choice of wall color and, in the other, the family had recently moved to the home and had not redecorated as yet. In three of the 13 rooms

the color blended, but was so monotonously one-color that it could not be considered pleasing, and in two homes the general colors blended, but were all of the same value, so were not attractive. In each of the five rooms in the Bellehaven area where the colors were not considered pleasing the colors harmonized, but in two of the rooms there was insufficient variation in value to make them interesting, and three of the rooms were monotonous and dull through the use of only one general neutral color. In addition, one room had a pleasing color combination, but every surface in the room was patterned except the draperies, and the homemaker expressed a desire to change the draperies to a patterned fabric.

Faulkner and Faulkner (7) stated that mono-chromatic or one-color schemes are being used more often because they "let us see the room and the people in it, they are undemanding, and are good foils for whatever can be seen through large windows, and for distinctive furniture." The room becomes the background, the people the foreground. This principle is desirable, but in far too many cases the tones used are colorless to the point of monotony and extreme dullness. Much of this may stem from a certain timidity in using color, often because of a fear that it might be used wrongly. It is ironic that today when we have the knowledge and ability to satisfactorily produce more colors than ever before, homemakers have succumbed to a trend for "neutral" tones of beiges and gray-beiges. As John Hopkins (4) said "Too often we do not know what we like--we like what we do."

In recording the principal colors used in the rooms that were visited, brown or beige tones were used far more often than any other colors (Tables 31, 32, 33). While the use of brown tones can be very pleasing they are usually more effective when tempered with another hue, and it was encouraging to note that in the majority of the rooms where brown tones were used, another color was used with them. In the Campus Acres area the two most often used color schemes were brown, beige, and green and brown, beige, and gold. Only five living rooms in that area had no brown tones, and only 16 of the total 82 rooms were without some brown.

Table 31. Principal colors used in Gross Addition.

Colors	:	Times	:	Total
	:	found	:	possible
Brown or beige tones		25		32
Rose or red tones		22		
Green tones		20		
Gray		19		
Yellow or gold tones		5		
Blue-greens		3		
Black		3		
Blue tones		2		
Orange		1		

Table 32. Principal colors used in Campus Acres Addition.

Colors	:	Times found	:	Total possible
Brown or beige tones	:	31	:	36
Gold or yellow tones	:	15	:	
Rose or red tones	:	11	:	
Blue-greens	:	9	:	
Gray	:	8	:	
Greens	:	7	:	
Orange or rust tones	:	4	:	
Blues	:	3	:	

Table 33. Principal colors used in Bellehaven Addition.

Colors	:	Times found	:	Total possible
Brown or beige tones	:	10	:	14
Greens	:	4	:	
Blue-greens	:	3	:	
Gold tones	:	3	:	
Gray	:	2	:	
Blue tones	:	2	:	
Rose or red tones	:	2	:	
White	:	1	:	

There was a wide variety of color combinations in each of the areas, but those most often found are listed in Tables 34,

35, and 36.

Table 34. Color combinations in Gross Addition.

Colors	:	Times	:	Total
	:	found	:	possible
Brown, red, green, gray		6		32
Brown, green		3		
Brown, yellow, green		2		
Brown, gray		2		
Dark red, green, beige		2		
Other combinations		17		

Table 35. Color combinations in Campus Acres Addition.

Colors	:	Times	:	Total
	:	found	:	possible
Brown, beige, green		4		36
Brown, beige, gold		4		
Brown, beige		3		
Red, gold, green, beige		2		
Green, rose, wine-red, gray		2		
Brown, gray, green		2		
Beige, orange, blue-green		2		
Beige, blue-green		2		
Other combinations		15		

Table 36. Color combinations in Bellehaven Addition.

Colors	:	Times found	:	Total possible
Beige and brown	:	4	:	14
Brown, blue-green, gold	:	2	:	
Other combinations	:	8	:	

In only 26 of the 82 rooms could the author relate the colors used to any of the scientifically derived color schemes. As was previously noted, the mono-chromatic scheme was employed most often, with analogous schemes also popular. The analogous schemes were usually composed of colors from the warm yellow through the orange section of the color wheel. The types of color schemes observed in the homes are listed in Table 37.

Table 37. Scientific color schemes used.

Type	:	Times used
Mono-chromatic	:	9
Analogous	:	8
Complementary	:	5
Triad	:	3
Split-complementary	:	1
Total	:	26

In the newer, higher-priced homes in Bellehaven there were no instances of haphazard, many-colored combinations, as were

found in many of the homes in the Gross addition and some in the Campus Acres addition. There was little evidence of education in decorating the home in the lower income area. Perhaps not all of the furnishings of the higher-priced homes had been purchased at the time the room was decorated, but there was evidence of a planned outcome. Conversely, in Gross addition it appeared that when new furnishings were added they were chosen in the "latest fad" colors, with little thought for the total effect of the room. This could explain why the brown, red, green, and gray combination was found more often than any other. The gray, red, and green tones were popular a few years ago, when a part of the furnishings were purchased, then the brown tones became more popular, and so new items added to the room tended to be in brown tones. Table 9 would support this theory, emphasizing the switch from green and gray tones to brown shades in the past decade. Weinberg (18) also pointed out a fact corresponding to the findings of the colors used in the Gross addition when he commented that many young, newly-married couples go out and select the furnishings with which they will live for years "with very little basis for critical judgment."

SUMMARY

The use of color was studied in 82 living or family rooms in three Manhattan areas--Gross, Campus Acres (Phelps), and Bellehaven additions. Color preferences, or what the homemaker would like to have, were noted as well as the colors that were

in the room at the time of the interview.

Most of the houses in which these families lived had been built within the last ten years, while most of the decorating or redecorating had occurred in the last five years. Only 11 per cent of those interviewed had taken advantage of professional aids available to most homemakers in decorating their homes. This fact is especially deplorable in a city such as Manhattan, with qualified instructors in interior design in the University, and a university extension department designed, in part, to aid homemakers.

A direct correlation was found between the income level area and the choosing of color schemes presented by the author in the form of model rooms. Ninety-four per cent of the homemakers in the lower income area chose one of the miniature room schemes, or a slight variation of it, while only 57 per cent of those interviewed in the highest income area chose one of the schemes. Almost one-half of the higher income homemakers preferred color schemes other than those presented in the models, or else desired no change from the colors that were being used in the living or family room at the time of the interview.

Desired color combinations have changed a tremendous amount throughout history, with the black walls patterned with brilliant reds and blue-greens of Pompeii (3) far removed from the off-white and light wall colors so prevalent today; giving consideration, of course, to the variation in climate.

Even in this relatively young country, color trends have undergone continuous change over the years. In 1955, Birren (2) considered the colors most in demand a generation ago as greens, rust, and some purple. Preferences shifted to rose and blue just before World War II, while at the time of his writing, he felt green was most popular with gray and beige, flesh tones, bright pink, chartreuse and yellow most often desired. Blue-green (turquoise), dull blue, brown, and white were used in lesser amounts. In 1960 the brown, white, and blue-green have become more popular, overshadowing most of the other colors mentioned by him.

Tones of brown or beige were the most often used colors in the rooms studied, and were most frequently chosen as the colors that would be used if the room could be redecorated. Forty-two of the 66 persons choosing one of the model room schemes selected schemes based on brown tones. While some browns and tans can be very pleasing, the author encountered several homes where there was almost a complete absence of color in the room, other than various tints and shades of brown. These rooms may have been relaxing and restful, certainly not stimulating; but a revolt might be expected in the near future by all the color-starved families in the "neutral" homes.

The use of brown has become a "fad," supported by retail dealers who stock a predominance of the color. The blending of all brown tones is not as difficult as achieving a harmony of different colors which may also account for the popularity of browns.

Although there did not seem to be a general knowledge of the "temperature" of colors, in less than 30 per cent of the rooms studied the colors were found to be unsuitable for the orientation of the room. The use of all warm colors in a south or west room was by far the most frequently found misuse of the temperature of colors. Very few cases were found where overly cool colors had been used.

The most frequent misuse of color was found in the use of values that were too dark for the amount of natural and artificial light in the room, and for the size of the room. This was particularly true of the lower income area where rooms were smaller, and where insufficient artificial lighting was available. The lack of adequate lighting was not limited to the lower income area, however. In only 27 of the 82 living rooms studied did the author find a sufficient number of lamps to give a pleasing and comfortable illumination to the room.

Almost all of the persons interviewed seemed to give considerable attention to the practicality and durability of colors selected for their homes. However, in some cases, the relation of the color to the size of the object apparently was not considered.

The most startling result of the research was in the finding of so many homes where the overall effect of the colors was not pleasing. Such was the case in 42 per cent of the rooms studied. Over one-half of the rooms in the lower income area were considered lacking in a pleasing combination of colors, but the poor

use of color was not limited to that area alone. Approximately 35 per cent of the room colors in each of the higher income areas were found to be lacking in qualities necessary for a pleasing effect. There would appear to be a widespread need for an increased knowledge of color use throughout the society, at least in this area.

Too many people are not aware of the significance of color in their daily life, even though all people are impressed by it in one way or another. Saarinen (17) felt that the "inner sensibilities" of humans are of countless "grades" or levels, and that everyone enjoys and uses color "according to his individual sensibility, whatever its grade." This grade can undoubtedly be improved by study or even an observation of the effects of color.

The attractive home reveals the nature of its occupants even more definitely than their dress. "The habit of conformity, the lack of originality and of experiment and joy in home planning reveal themselves through too many of the homes of America, where one knows in advance in any given class of the community, the general scheme and even the accessories" (18). The research of this study bears out that statement by Weinberg, but finds it even more spread throughout the social classes, in both furniture and color.

It is not necessary to be of a high income level in order to have an attractive home. One of the homemakers interviewed by the author had read and studied before choosing a color scheme.

The home reflected the fact that the colors had been chosen by someone with a knowledge of the use of color. This homemaker quoted from Andrew Gump, saying "Good taste costs no more." This is a fact that far too many people do not seem to realize, just as a high income does not insure good taste.

Adult classes through schools or organizations could begin to make people aware of the many phases of color and its use. Both parents and young people could benefit from an increased amount of color study in the schools. With the ever-increasing recognition of the importance of color in the lives of humans, it would seem of utmost importance that the study of color should be furthered.

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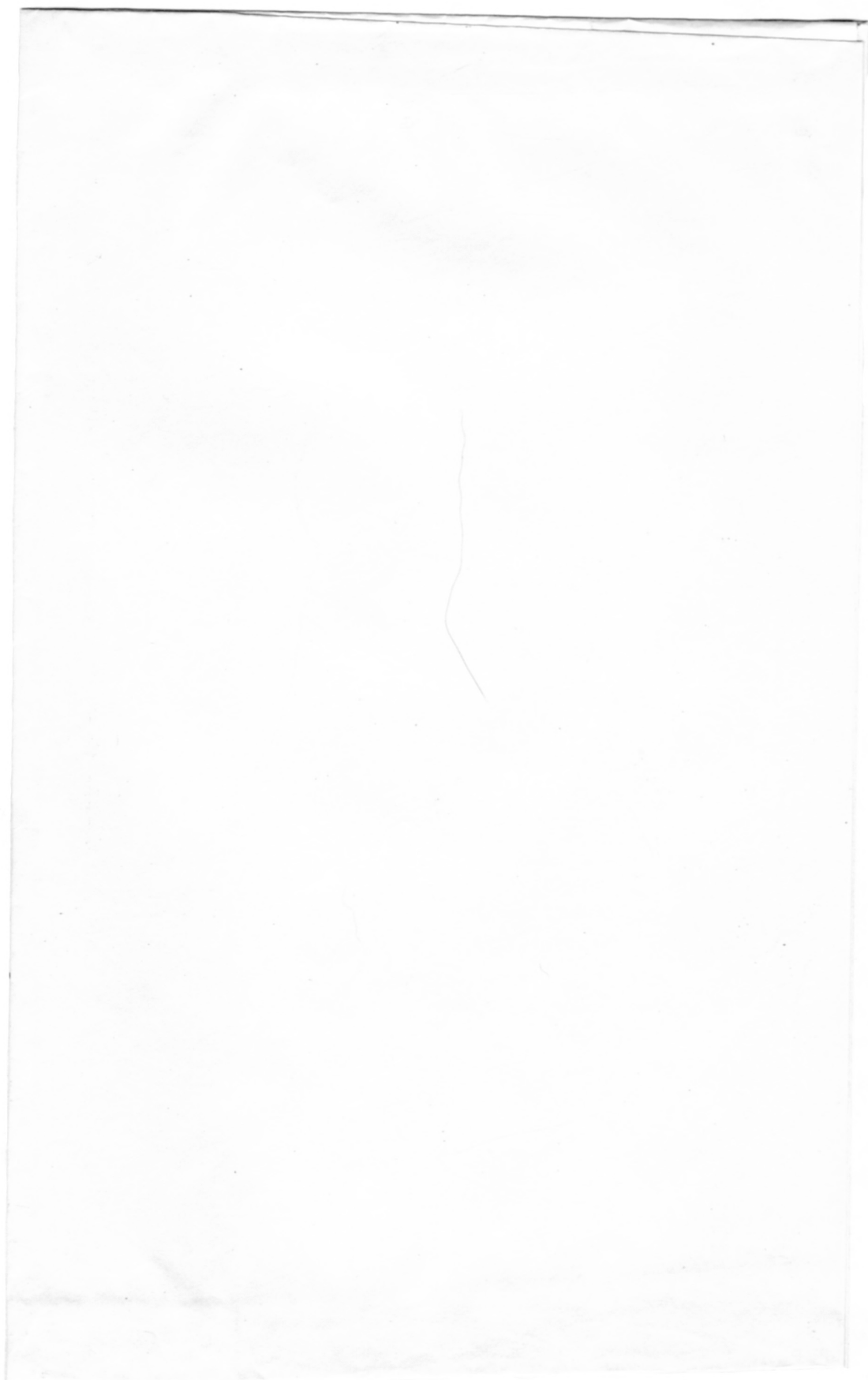
Appreciation is also expressed to the families in Gross, Campus Acres, and Bellehaven additions who participated in the interviews, making this study possible.

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APPENDIX



SCHEDULE

Living Room Color Usage

1. Name of occupant _____

2. Address _____

3. When was the house in which you are living built? Check one
1 to 4 years ago _____
5 to 19 years ago _____
10 to 15 years ago _____
16 to 20 years ago _____
More than 20 years ago _____

4. Do you rent the house in which you are living? Yes _____ No _____

5. In which price range was the house when it was purchased or constructed?
Less than \$5,000 _____
\$5,000 to \$9,000 _____
\$10,000 to \$15,000 _____
\$16,000 to \$24,000 _____
\$25,000 to \$40,000 _____
Over \$40,000 _____

6. When was the most recent decorating of the living (or family) room accomplished?
1 to 12 months ago _____
1 to 4 years ago _____
5 to 9 years ago _____
10 to 15 years ago _____
Over 15 years ago _____

7. Were the basic colors of the living (or family) room changed in the most recent redecorating? Yes _____ No _____

If so, what was the previous color scheme? Check one:

Basically browns and beige tones _____	Basically green _____
Basically rose or pink tones _____	Basically blues _____
Basically blue-greens or turquoise _____	Basically grey tones _____
Basically gold or yellow _____	Basically tones of red _____

8. Did you have assistance in decorating? Yes _____ No _____

If so, was it from.....

- a. Professional decorator _____
- b. Architect..... _____
- c. Physical proportions of the room..... _____
- d. Publications (magazines, books, annual decorating guides)..... _____
- e. Other professional help _____
- f. A friend..... _____

8. If your living (family) room could be redecorated at this time, would you choose one of the color schemes arranged on the large cards? Yes _____ No _____

If so, please check which one:

Scheme A _____
Scheme B _____
Scheme C _____

Scheme D _____
Scheme E _____
Scheme F _____
Scheme G _____

Scheme H _____
Scheme K _____
Scheme L _____

If not, what colors would you choose? (If your preferred colors are similar to any used in the schemes, please note the scheme letter.)

Floor covering _____, as in Scheme _____.

Wall color _____, as in Scheme _____.

Draperies _____, as in Scheme _____.

Divan _____, as in Scheme _____.

Chair _____, as in Scheme _____.

Chair _____, as in Scheme _____.

Accessories _____, as in Scheme _____.

Thank you

QUESTIONS TO BE CONSIDERED BY AUTHOR

Occupant's name _____ Address _____

1. What is the style of architecture of the house?

- a. Contemporary _____
- b. Colonial _____
- c. Cape Cod _____
- d. Nondescript _____
- e. Other _____

2. The color of the exterior of the house is:

- a. Red brick _____
- b. Light brick _____
- c. Native stone _____
- d. Other material _____
- e. Wood siding painted.....
 - 1. White _____
 - 2. Tan _____
 - 3. Green _____
 - 4. Blue _____
 - 5. Pink _____
 - 6. Red _____
 - 7. Grey _____
 - 8. Yellow _____
 - 9. Other _____

3. The room selected for study is the:

- a. Living room _____
- b. Family room _____

4. Do the interior furnishings of the room relate to the exterior in design and style?

Yes _____ No _____

5. Is the interior color harmonious with the color of the exterior?

Yes _____ No _____

6. What is the orientation of the room?

North _____ South _____ East _____ West _____

7. Are the colors in the room suited to the orientation? Yes _____ No _____

8. What is the relation of the colors used to the amount of natural light (the lightness or darkness) of the room?

- a. Pleasing _____
- b. Too dark _____
- c. Too light _____

9. What is the relation of the colors used to the apparent amount of artificial lighting in the room?

- a. Pleasing _____
 - b. Too dark _____
 - c. Too light _____
- Number of lamps in the room _____

10. Are the colors, in general, becoming to the personal coloring of the homemaker?

Yes _____ No _____

11. Is the value (lightness or darkness) of the principal colors in proportion to the size of the room?

a. Yes _____
b. Too dark _____
c. Too light _____

12. Is the intensity (brightness or dullness) of the principal colors pleasing in relation to the size of the room?

a. yes _____
b. Overly bright _____
c. Overly dull _____

13. The principal colors of the room are:

Red _____ Orange _____ Brown _____ White _____
Yellow _____ Green _____ Beige _____ Black _____
Blue _____ Violet _____ Grey _____ Other _____

14. Has the color of the furnishings (divan, chairs, accessories) been chosen with apparent consideration of the use of the item? Yes _____ No _____

15. Has the color been chosen with apparent consideration of the size of the item? Yes _____ No _____

16. Is the over-all effect of the colors in the room pleasing? Yes _____ No _____

17. The preferred color scheme chosen by the homemaker was:

Alternatives and Notations

Wall Draperies Divan Chair Chair Accessories

Scheme A					
Scheme B					
Scheme C					
Scheme D					
Scheme E					
Scheme F					
Scheme G					

(Cont)

Alternatives and Notations (continued)

Wall Draperies Divan Chair Chair Accessories

	Wall	Draperies	Divan	Chair	Chair	Accessories
Scheme H						
Scheme K						
Scheme L						

COLOR PREFERENCES AND THEIR USE
IN SELECTED RESIDENCES IN MANHATTAN, KANSAS

by

DELAINÉ STALKER

B. S., Kansas State University, 1956

AN ABSTRACT OF A THESIS

submitted in partial fulfillment of the

requirements for the degree

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In order to secure data for the study, the living rooms of certain selected residences of Gross, Campus Acres, and Bellehaven additions in Manhattan, Kansas were visited. These residences represented approximately one-third of the total lots existing in each area, and each addition varied in socio-economic standing. An attempt was made to contact each person selected by random sampling to arrange for an interview. Each of the eighty-two persons interviewed filled out a schedule of questions cooperatively with the author.

The rooms visited by the author were rated in terms of the desirability of the color combinations. The colors were also rated in their relation to the room size and use, to the amount of available light--both artificial and natural, to the complexion of the homemaker, and to the orientation of the room. In addition to rating the colors already used in the homes visited, the author allowed each person interviewed to choose the colors they would like to have in a living room. Ten model rooms, each with a different color scheme, aided the homemakers in pointing out what colors they preferred, as well as enabling the author to gain a more accurate understanding of the colors the person being interviewed was choosing. These data were tabulated, analyzed, and evaluated.

The highest percentages of misuse of color were checked in the use of colors unsuited to the orientation of the room, and the use of values that were too dark for the amount of natural and artificial light in the room. The lack of sufficient

artificial lighting was especially noticeable, with only twenty-seven of the eighty-two rooms studied having a sufficient number of lamps to give a pleasing and comfortable illumination to the room.

A definite preference for tones of brown was noted in both the colors used in the home and those the homemaker would choose if the room could be redecorated.

In forty-two per cent of the rooms studied, the overall effect of the colors was rated as not pleasing. Over one-half of the rooms in the lowest income area were checked as lacking in a pleasing combination of colors, but the poor use of color was not limited to that income area alone.

These results would indicate a definite need for an increased amount of color study, enabling persons involved in the teaching of color to obtain a better understanding of the needs of their students. As noted in the study, the art of color has lagged far behind the times, becoming weighted down with personal prejudices and faulty reasoning and ideas. Faber Birren, noted color authority, states "Functionalism with color should always coordinate purpose and beauty. A color scheme which does a specific job with efficiency and which at the same time is beautiful leaves nothing more to be asked for."